Kempsey Shire Council

Kempsey Shire Bike Plan

January 2018

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1. Introduction

1.1 Background

Cycling is a fundamental and direct means of transport. It provides a healthy and environmentally friendly transport option, whilst also providing an opportunity for increased tourism and social well-being.

The NSW Government supports bicycle riding as an important part of the transport mix and has set a target in the state plan, NSW 2021, to increase cycling. The NSW Government recognises that a well-planned and integrated bicycle network can contribute to more accessible, sustainable and connected communities. (*How to Prepare a Bike plan – Roads and Maritime Services, 2012)*

Those creating public and private spaces or facilities should therefore consider creating cyclist access which is attractive, safe, convenient and accessible for everyone. All responsible agencies should respect and recognise the importance of constructing and maintaining facilities for transport, health, safety, leisure and social purposes.

This Bike Plan has been prepared for Kempsey Shire Council to provide a framework for existing cyclist needs, future management and to establish opportunities for future development of the cyclist network within the Kempsey Shire. The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

A Bike Plan is a strategic document that identifies an approach to developing and managing cycling infrastructure within a community. The strategic, high-level goals of a Bike Plan are based around:

- Integrating consistent and continuous cyclist networks into the transport system to facilitate and encourage cycling.
- Linking cyclist concentrations to networks to facilitate and encourage safe and convenient accessibility.
- Identifying clusters and patterns of cyclist crashes to highlight areas that restrict safe and convenient access.
- Developing and integrating cyclist routes that form part of a wider connected network.
- Linking to and between Planning Instruments (e.g. Local Environment Plans [LEPs] and Development Control Plans [DCPs]).

1.2 Limitations

This report has been prepared by GHD for Kempsey Shire Council and may only be used and relied on by Kempsey Shire Council for the purpose agreed between GHD and the Kempsey Shire Council as set out in this report.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD as well as conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared and disclaims liability arising from any of the assumptions being incorrect.

1.3 Purpose and scope

The purpose of this bike plan is to review the current and future needs of cyclists within the Kempsey Shire to provide a consistent standard of facilities. The bike plan provides a list of prioritised infrastructure improvements with the aim to provide safer, more attractive transport choices for residents and visitors. The plan also aims to increase cycling activity and to improve the amenity for all local residents and visitors to the Shire.

This bike plan has been prepared in accordance with the RMS guidance document *"How to Prepare a Bike Plan"* (2012).

1.3.1 Objective

In line with the RMS Bike Plan Guide, the objective of this bike plan is to:

- Contribute to a healthy, active and liveable community.
- Help reduce greenhouse gas emissions.
- Improve bicycle and pedestrian infrastructure.
- Reduce dependency on private motor vehicle usage.
- Reduce road congestion.
- Reduce parking congestion.
- Increase mobility and independence for those without cars.
- Increase capacity for local public transport networks.
- Reduce health costs, travel times, noise and vehicle operating costs.

1.3.2 Study area

The Kempsey Shire is located on the Mid North Coast of New South Wales, halfway between Sydney and Brisbane. The Shire is known for its popular surf beaches and rich cultural heritage, making it appealing to residents and tourists.

This Bike Plan focusses on the main population centres in the Shire being:

- Kempsey
- South West Rocks
- Crescent Head
- Frederickton
- Smithtown/Gladstone
- Hat Head
- Stuarts Point

These centres are identified in Figure 1-1.

These centres were selected by Kempsey Shire Council as they are expected to be the areas of highest cyclist demand within the Shire. Specifically, the townships of Willawarrin and Bellbrook were not included in this plan given their comparatively small size and rural location. In the future, the methodology used can be extended to these and other centres as required.

1.4 Consultation

Consultation with the community has been a crucial part of the development of this Bike Plan to ensure that the plan meets the needs of the community now and into the future.

The consultation process included key stakeholders and local community members, as it is important to include the community in the development of a document that seeks to address local issues. Overall, the aims of the consultation process were to:

- Assist in understanding stakeholder and community needs for each of the town centres.
- Provide information about the project process to stakeholders and the community.
- Involve the community in the planning process to increase the sense of ownership of the project outcomes.

Further information on the findings and outcomes of the consultation process can be found in section 3 of this document.

1.5 Report structure

This report comprises the following sections:

- Section 2 – **Background review.** A summary of the previous planning and related policies from the Council and the various State Government agencies is provided.
- Section 3 – **Consultation.** An outline of the consultation methodology and community concerns is provided.
- Section 4 – **Existing cyclist network audit.** A detailed list of the issues, constraints and opportunities for cyclist access and movement is given for the main population centres investigated.
- Section 5 – **Planning for cyclists.** Provides an overview of best practice standards that apply to the treatment of cyclist facilities.
- Section 6 – **Proposed cycle improvements.** Provides an overview of how proposed improvements were prioritised, including community priority projects.
- Section 7 –**Priorities for cycle improvements.** For each of the town centres, a list of potential improvements is given, aiming to improve the safety, amenity and access for cyclists.
- Section 8 – **Conclusions and recommendations.** The key findings of the Bike Plan are summarised along with a list of the recommendations for improvements.

LEGEND

- Area of Interest
- Waterbody
- Suburb boundary
- State Forest
- National Park
- Nature Reserve
- Road

Paper Size A4

0 0.75 1.5 3 4.5 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Kempsey Shire Council
Bike Plan

Job Number -185120200
Revision
Date 01 Jun 2017

Overview

Figure 1-1

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G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R006_Locality_A.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

2. Background review

2.1 Overview

This section includes a review of existing relevant Government planning documents and Council's own planning documents including:

- Open space and community facility strategies
- Development Control Plans (DCPs)
- Local Environmental Plans (LEPs)
- Council's disability and access policies and reports

The purpose of this review is to ensure that the recommendations of bike plan are in line with intent of relevant planning documentation.

2.2 Kempsey Shire Council context

The Kempsey Shire spans approximately 3,377 square kilometres of environmentally diverse land ranging from coastal beaches to inland mountains on the Mid North Coast of New South Wales. Approximately 80% of the 80 km coastline within the shire is protected from development by a variety of national parks. The area also contains a number of significant Aboriginal cultural sites.

The natural environment and relatively undeveloped character of the place make the Shire a highly diverse and appealing place to visit, particularly along the coastal communities. As a result of this tourism forms a significant part of the local economy.

In 2011, the total population of Kempsey Shire was estimated to be 29,128 people. It is expected to increase by over 1,600 people to 30,779 by 2026, at an average annual growth rate of 0.37%. However, the relative isolation of some towns within the Shire has constrained the growth of the population which has influenced the past provision and quality of open space and community facilities.

2.3 Policy review

A review of previous relevant planning policies was conducted:

- To ensure the Kempsey Shire Council Bike Plan aligns with National, State Government and Council policy directions in relation to the development of bike plans, and the wider context of transport and urban planning.
- To identify any deficiencies within the current network and strategy that will guide the importance of the proposed measures to improve the access, amenity and safety for cyclists.

These policies provide a strategic framework to improve the cyclist network so that it encourages and supports cycling within the Kempsey Shire.

2.3.1 National

At a National level, the Government has an approved National Cycling Strategy 2011-2016. This strategy has been developed by the Australia Bicycle Council, with the overarching vision "to realise a step-change in attitudes to cycling and in the numbers of riders in this country". With a short term goal of doubling cyclist numbers over 5 years.

This strategy has 6 key priorities and objectives:

- **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 bicycle routes and end-of-trip facilities.
- **Integrated planning**: consider and address cycling needs in all relevant transport and planning activities.
- **Safety**: enable people to cycle safely.
- **Monitoring and evaluation**: improve the monitoring and evaluation of cycling programmes, and develop a national decision-making process for investing in cycling.
- **Guidance and best practice**: Develop nationally consistent technical guidance for stakeholders to use and share best practice across jurisdictions.

2.3.2 State

The State Government has prepared State-wide strategies for road safety and transport that have implications for pedestrian/ cyclist planning and strategies for Kempsey Shire Council.

NSW Road Safety Strategy

Transport for NSW prepared the NSW Road Safety Strategy in 2012.

The strategy aims to implement and enhance a NSW Safer Roads program with targeted infrastructure safety works programs including safety barriers, highway route reviews, local road reviews, pedestrian safety measures, and motorcycle recreational routes.

The potential to address fatal and serious injury crashes on the road network exists through improved intersection design, eliminating or shielding road users from roadside objects or from opposing vehicles and by considering bicycle riders particularly in urban areas. Following the Safe System approach will bring positive road safety outcomes.

The key measures in the NSW Roads Strategy to improve cyclist safety are:

- Work with local government to undertake road safety audits to address the maintenance and upgrade of facilities.
- Land use planning guidelines to consider cyclist requirements, especially at transport hubs and new residential developments.
- Develop communications and awareness campaigns to promote safety between cyclists and other road users.
- Review the application of shared paths and safer interaction between pedestrians and bicycle riders.

NSW Bike Plan

The NSW Bike Plan acknowledges that well-planned and integrated bicycle networks can contribute to more accessible, sustainable and connected communities. It sets a 10 year target (2006-2016) to double the use of commuter cycling in NSW with an infrastructure plan to invest at least $5 million every year for local councils across NSW to complete neighbourhood cycleway networks.

The plan also focuses on the need for NSW government to work with councils to deliver improved signage, parking and facilities to further enable local cycle networks shape sustainable, active communities. The NSW bike plan aims to encourage a network whereby cycling is as easy as walking or driving for short trips.

Further to these localised investments, this plan encourages economic benefits to cycling outside metropolitan areas through promotion of cycle-tourism, recreational cycling, and statewide.

NSW Transport Masterplan

Details are included in the Transport Master Plan relating to the uptake of cycling and development of connected networks and infrastructure for cycling and improved pedestrian access and amenity across the transport network.

The NSW Transport Masterplan and the Mid-North Coast Regional Transport Plan 2013 supports this vision with specific Council funding programs designed to increase rates of cycling.

2020 Ageing Strategy

The NSW Ageing Strategy, released in 2012, identifies people aged over 65 as the fastest growing population group in NSW. An estimated 2 million community transport trips are provided each year to help older people access recreation, shopping, medical care, community services and social activities in NSW. This travel demand will continue to growth with this population group forecast to double by 2050.

2.3.3 Council planning legislation and policies

Kempsey Local Environmental Plan 2013

The Kempsey Local Environmental Plan 2013 (LEP) provides guides for planning decisions for within the local government area. The LEP does not contain any specific development information regarding cyclist infrastructure however, it provides the zoning and development controls which provide the frame work for all future development within the Shire.

Kempsey Development Control Plan 2013

The Kempsey Development Control Plan 2013 (DCP) contains detailed guidelines that illustrate the controls that apply to a particular type of development or in a particular area. The DCP came into effect in 2013. The DCP contains broader information regarding the requirements of footpaths, however no specific guidelines are presented for the provision of cyclist routes or shared pathways in new development.

Kempsey Shire's Action on Ageing Strategy – Ageing 2022

Councils Ageing strategy was developed as:

Council's response to opportunities and challenges faced by an ageing population. This Strategy and Action Plan will ensure that Council is well informed and able to respond and provide leadership to manage these changes up to and including the year 2022 and beyond.

Specific items contained within this document relating to planning for cyclists include:

The Asset Management Plans progressively being developed take into consideration:

- Footpaths, cycleways, scooterways, scooter parking and ramped access.

Section 94 Developer Contribution Plans

Council levies and contributions from developers as a condition of consent for the provision of public infrastructure, facilities and services that are required as a result of increased development.

The Local Roads and Traffic Infrastructure Developer Contribution Plan 2009 includes the provision for levies as follows:

This contribution plan establishes strategies that allow section 94 contributions to be levied towards the provision of the following categories of infrastructure or service provided these relate to the need generated through increased development demands:

- Local Road Upgrades
- Intersection Upgrade
- Cycle Paths
- Drainage associated with road infrastructure

Kempsey PAMP 2016

Kempsey Council developed and adopted a Pedestrian Access and Mobility Plan (PAMP), outlining the proposed treatments and policies regarding pedestrian facilities within the Shire. The findings and recommendations of the PAMP have been considered in the development of this plan.

Provision of a Shire bike plan will enable the council to prioritise works in conjunction with this PAMP such that the overall safety and needs of those utilising non-motorised modes of transport will be met.

2.4 Existing travel characteristics and demographics

Travel within the Kempsey Shire is currently dominated by private vehicle transport. This is likely a result of limited public transport coverage and large distances between origins and destinations within the Shire.

The following sections serve to highlight the demographic and travel statistics of the Shire. All data is sourced from the Australian Bureau of Statistics (ABS) (2011).

2.4.1 Population density in Kempsey Shire

Figure 2-1 shows the population density of Kempsey Shire. Evident is a confined increase in population density in the town centres of Kempsey, South West Rocks, Crescent Head, Frederickton, Smithtown/Gladstone, Hat Head and Stuarts Point. Inset are detailed densities of the two largest population centres; Kempsey and South West Rocks.

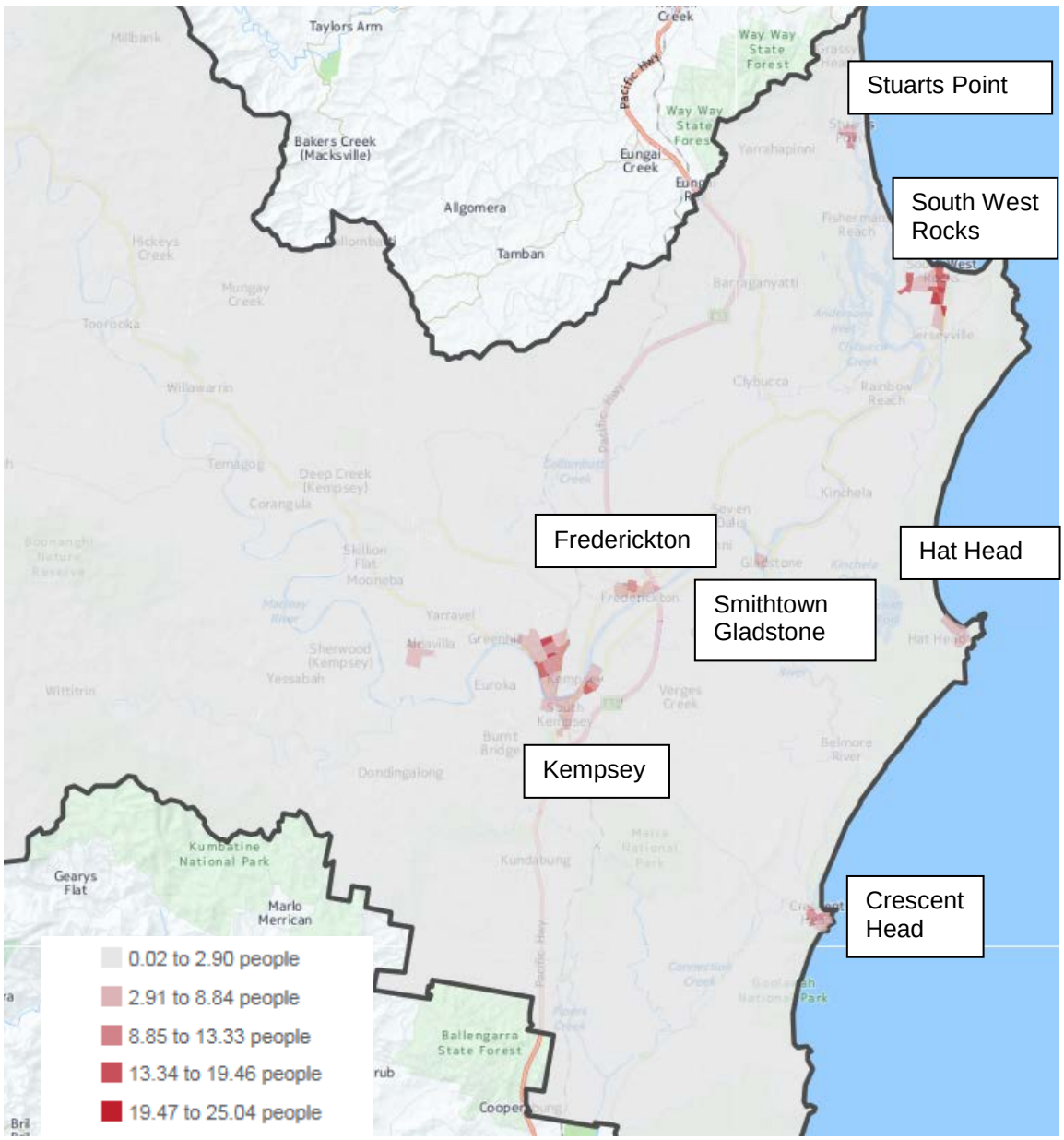


Figure 2-1 Population Density – Kempsey Shire

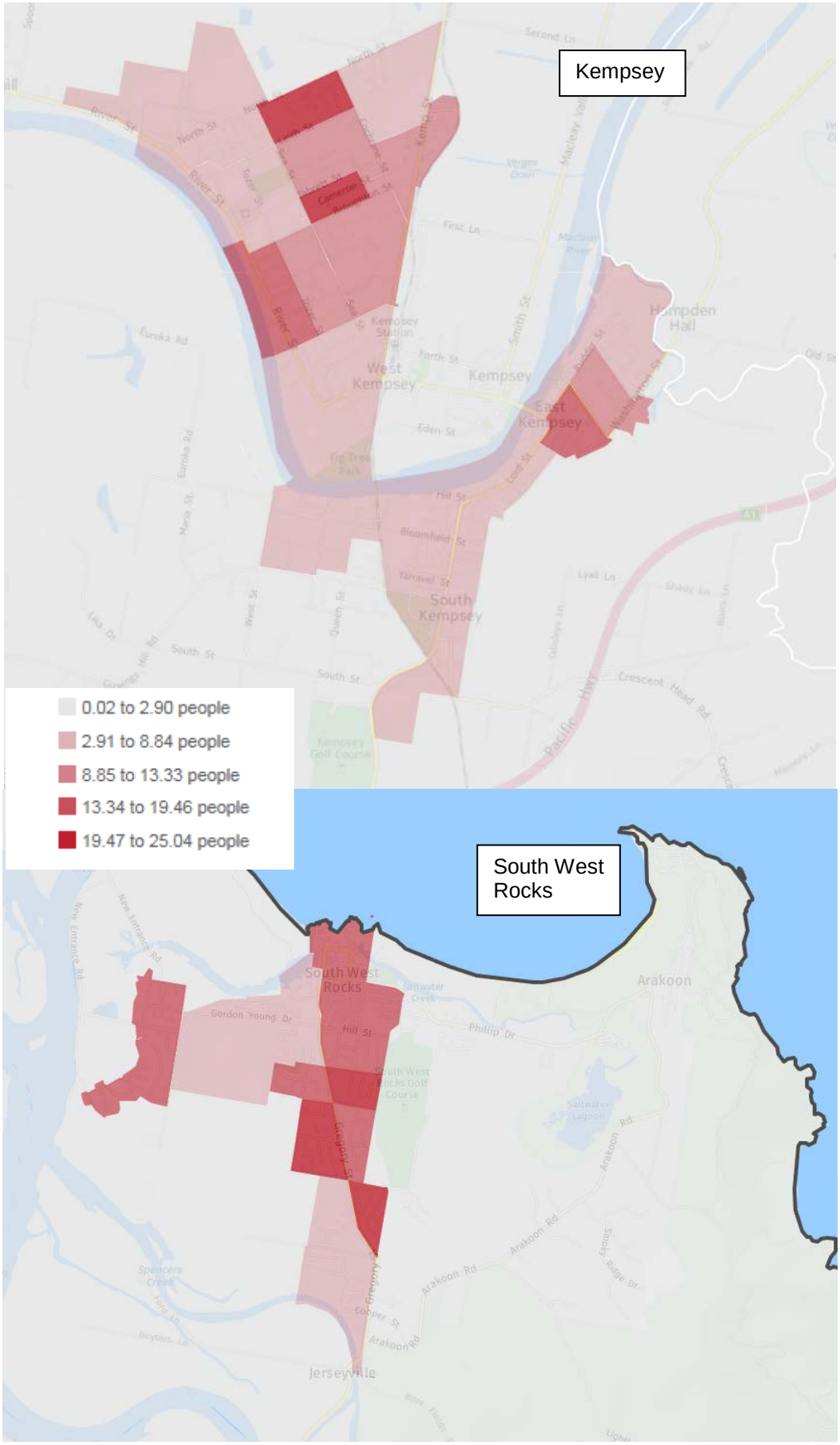


Figure 2-2 Population Density – Kempsey, South West Rocks

2.4.2 Demographics for age groups in Kempsey Shire

The age group profile for the Kempsey Shire as compared to regional NSW, based upon 2011 census data is shown in Figure 2-3.

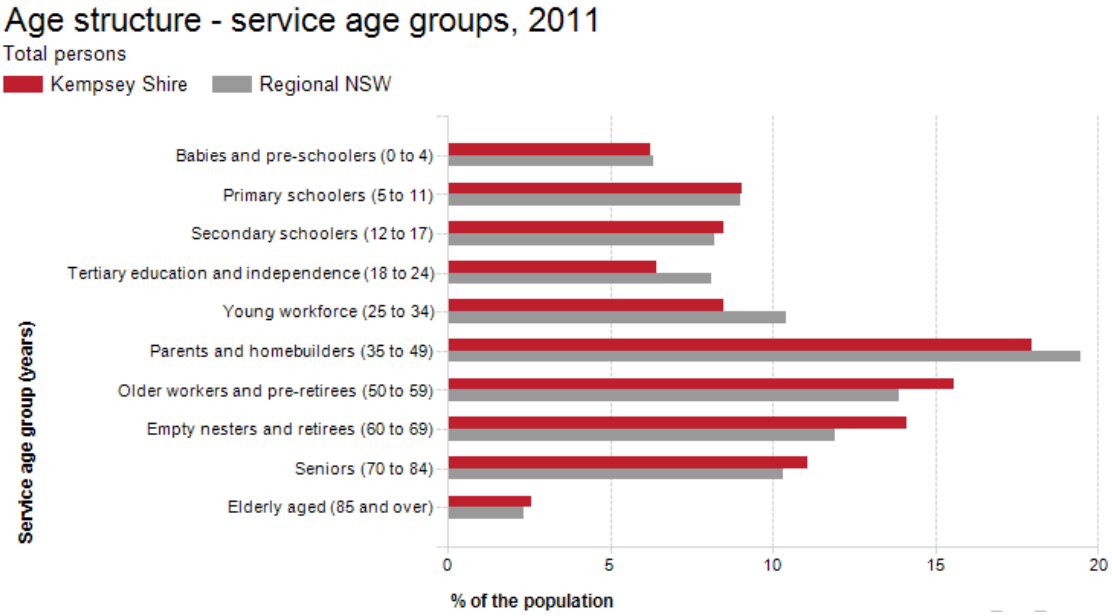


Figure 2-3 Service age demographics for Kempsey Shire

These statistics show the Kempsey Shire has:

- A similar population proportion as regional NSW for age ranges 5-17 years, indicating a potential for a reasonable level of school age children who will be walking/cycling to and from school during the week and making recreational trips at other times.
- Significantly reduced proportion of people aged 18-34 years in the Kempsey shire when compared against Regional NSW.
- Increased proportions of those aged 50 and above. This indicates a higher proportion of retirees in Kempsey Shire who are more likely to make short, non-work based trips.

As a user group, older pedestrians are over represented in fatal crashes. This is most likely due to frailty and a reduced tolerance from the force of a crash, rather than risk taking behaviour. Therefore, it is critically important to promote safe routes that are designed with consideration for the older aged groups.

In developing cyclist infrastructure, consideration should also be given to the relatively high number of younger pedestrians and cyclists, particularly around key attractors such as schools and parks/reserves.

2.4.3 Journey to work data

Currently, statistics on journey to work data for the Kempsey Shire shows a predominant mode choice of private vehicle travel. Maps showing journey to work data by private vehicle, walking and cycling are shown in to Figure 2-4 to Figure 2-6.

Walk to work data shows an increased proportion of people walking within town centres, as well as in more rural areas. It is possible that this increase in rural areas is attributed to farmers travelling by foot to work within their own property.

Cycle to work data shows a consistent 1.5-2.8% mode share across all parts of the shire, with increases in close proximity to town centres. The highest percentage of residents cycling to work can be found in Smithtown, followed by parts of South West Rocks and Kempsey.

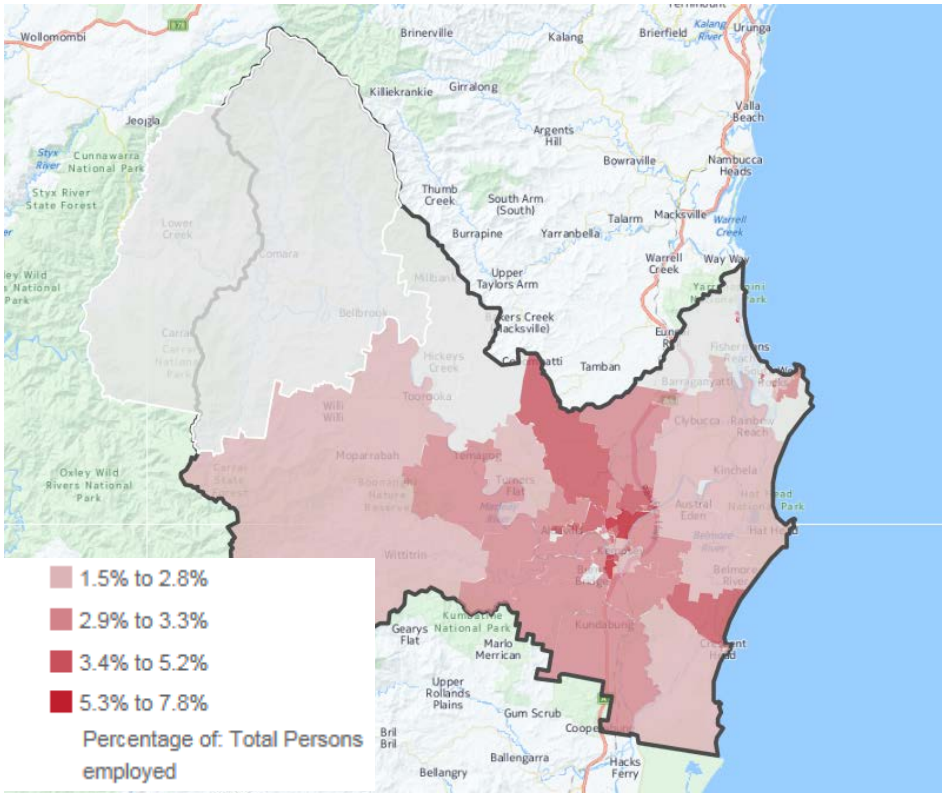


Figure 2-4 Drive to Work

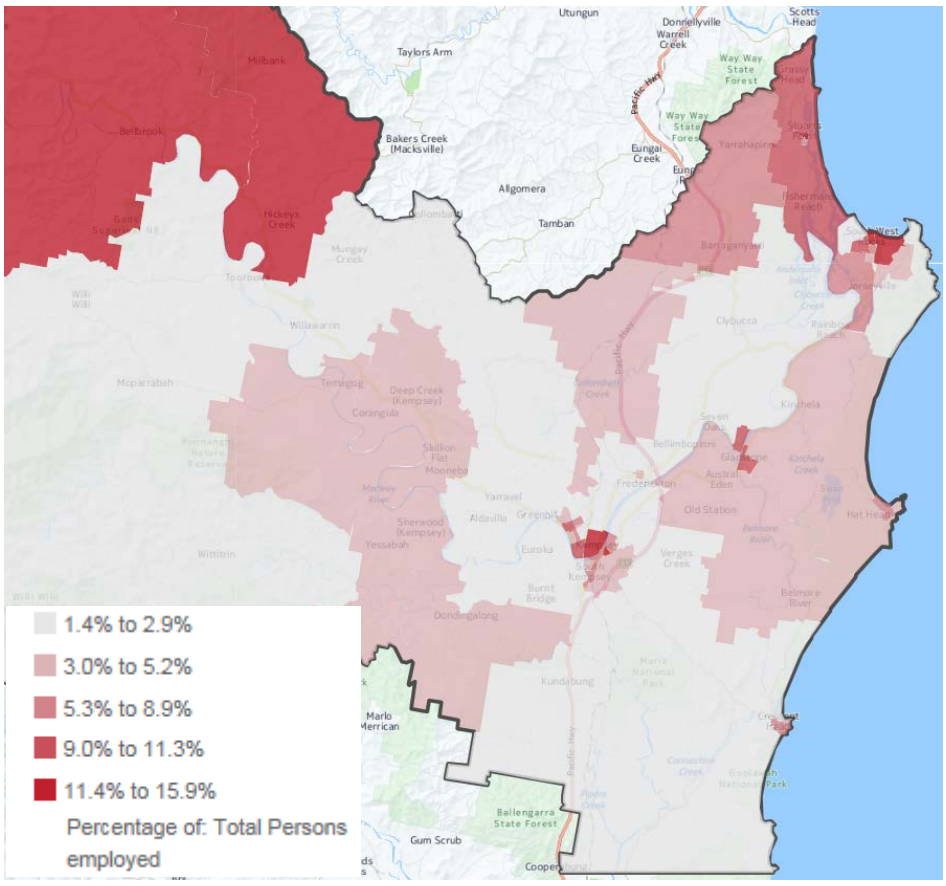


Figure 2-5 Walk to Work

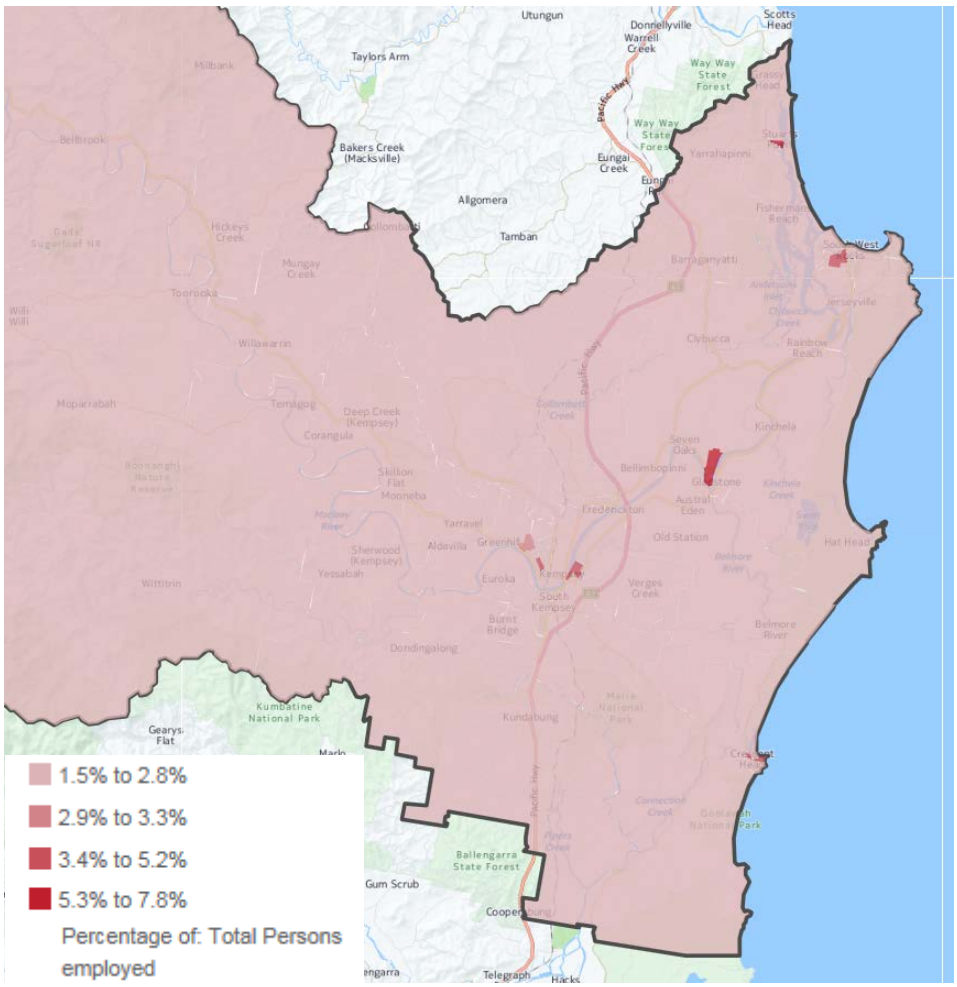


Figure 2-6 Cycle to Work

2.5 Existing land use and infrastructure

2.5.1 Land use

Land use for the Shire is typically rural, with small industrial and tourist based locations. Population centres are typically compact, with a few major trip generators within a close proximity.

Existing land use patterns and the key cycle trip generators are provided for each of the main population centres in Appendix A.

2.5.2 Transport Network

The primary mode of choice for travel for the Shire is private vehicle travel with limited public transport or walking/cycling. Given the large population spread, the Kempsey Shire has a large sparse network of both sealed and unsealed rural roads. These roads are typically ageing two-way rural roads with narrow, unsealed shoulders.

Public transport is limited to buses travelling to and from the major town centres of Kempsey and South West Rocks. The North Coast railway line passes through the Shire, however only two stops are available, Kempsey and Eungai Creek.

Pedestrian and cyclist infrastructure is limited to town centres and typically provides basic access to shops and amenities around main roads within each of the town centres.

2.5.3 Key pedestrian generators

Key generators of cycle trips are areas of primary and secondary trip generators, as outlined in section 5.1. Plans containing the locations of key cyclist and pedestrian generators within each population centre have been developed and are contained in Appendix A.

2.5.4 Future development and growth

Throughout Kempsey Shire several key areas have been identified as having potential for future growth. These areas have been marked on figures found in Appendix A. It is expected that when development of these areas does occur Kempsey Shire Council will work with developers to ensure that the needs of cyclists are met. Funding for such facilities should be levied through means such as Section 94 Developer Contribution Plans

2.6 Cyclist crash statistics

In order to provide reference to safety concerns within the Kempsey Shire, NSW Police were consulted to provide information concerning cyclist crash statistics. The data presented on the figures within Appendix B shows the location of major crashes requiring police presence from 2011-2016. Acknowledgement should be made to the fact that more incidents involving cyclists may have occurred during this time that did not require police presence.

From the crash data no specific clusters of incidents could be identified. A total of 12 major incidents were recorded, with 11 resulting in injury. No fatalities were recorded in this time period. A majority of incidents were recorded within the bounds of Kempsey and South West Rocks, typically local urban roads. Of these 12 incidents 2 reported the cyclist as not wearing a helmet.

3. Community consultation

Consultation with the community is crucial in the development of a Bike Plan that considers the needs and requirements of the local cycling community. The information obtained during the consultation process is aimed to assist in understanding any issues with the current cyclist network and assists in proposing new infrastructure that will meet the community needs into the future.

Council completed the community consultation process for the bike plan with assistance from GHD.

3.1 Online survey

The community consultation process involved the development of a publicly available online survey that was made available through the Kempsey Shire Council website and advertised through various media outlets such as newspapers and social media.

The survey questions were prepared by GHD in a similar format to that used in Council's 2016 PAMP in that it contained a series of multiple choice and written response questions. The survey was created using Council's "Your Say Macleay" website and was made as simple as possible for users. The aim of the survey was to provide the following information:

- The main reasons for bicycle usage i.e. social, exercise, transport
- Identify common routes within towns i.e. facilities/locations within towns that are frequently visited by cyclists
- Identify issues with the current (or lack of) infrastructure
- Identify potential infrastructure/routes to be investigated

Given the relatively small number of responses expected from the survey (approx 50-100) it was deemed to be difficult to determine statistics surrounding the level of bike usage in the Shire, questions of this nature were therefore not included in the survey.

The survey was also supported by interactive online maps for each population area within the Shire. These maps were used by participants to outline proposed cycle routes that they thought would be beneficial to the community.

3.2 Community response

The survey webpage site was visited 254 times and each question had a varying number of responses typically ranging from 30 to 50 responses. This value is in line with responses from previous Council surveys of a similar nature. A larger response to the survey would have been ideal in order to ensure the responses were representative of the wider community however, it was found that the responses were typically consistent in their concerns and proposals for the cyclist infrastructure network.

3.2.1 Multiple choice responses

A summary report detailing the multiple choice and questions and responses can be seen in Appendix C.

The following summarises the key information obtained:

- Residents from each of the population centres responded to the survey. 39% of responses were from Kempsey and 27.3% were from South West Rocks.

- The reasons people cycled most in the Shire were:
    1. Training as a competitive or fitness based cyclist
    2. Recreation or leisure
    3. Accessing local shops, facilities and amenities
    4. Commuting to/from work or school
- The main reasons people don't cycle more often were:
    1. The road shoulder is too narrow or unsealed
    2. There is a lack of cyclist routes
    3. The road has no marked cyclist lanes
- The appeal, safety and convenience of the local cycling network was rated as either poor or very poor by approximately 75% of survey respondents.
- The following were ranked as the most important methods in improving the cycling network:
    1. Increasing the number of bike paths separated from the road
    2. Increasing the number of marked cyclist lanes
    3. Increasing the width of the seal on connecting roads

3.2.2 Written responses

Two written response questions were included as part of the survey. The purpose of these questions were to allow the respondents the opportunity to describe specific issues with the existing network and to propose specific new infrastructure ideas.

Written answer Question 1 asked:

Are there any specific issues with the current cyclist network you would like to see fixed that would increase the appeal, convenience and/or safety of the cyclist network? Issues may include lack of pathways, narrow or uneven paths, narrow roads, lack of bike racks etc.

If possible, please outline the main locality of the concern i.e. Street name or Town.

The following provides a summary of the responses to written answer question 1:

- Pathways often don't connect to any attractors
- Pathways are too narrow for shared use
- There is a lack of cycling infrastructure including paths separated from the road and marked cyclist lanes.
- Better signage is required warning motorists of cyclists on the road
- Road shoulders are too narrow and are often unsealed or in poor condition
- Lack of bike racks in key tourist areas
- Lack of mountain biking trails throughout the Shire
- Footpaths are often in poor condition

Written answer Question 2 asked:

Are there any particular cyclist routes that you would like to see constructed in future? This may include new pathways, widened roads, addition of cycle lanes etc.

Please specify the specific locations that you would like to be connected via a cyclist route.

Table 3-1 summarises the major upgrades proposed in the responses to written answer Question 2 and the number of times each upgrade idea was proposed.

Table 3-1 Summary of Multiple Choice Question 2 responses

ID No.	Proposed Upgrade	Location	No.of Requests	Infrastructure Type
1	Arakoon Rd / Lighthouse Rd	South West Rocks	7	Off-road Cycleway
2	Kempsey - Fredrickton	Kempsey	6	Off-road Cycleway
3	Kempsey - Crescent Head	Kempsey	5	Off-road Cycleway
4	South West Rocks - Crescent Head (Incl. Gregory street)	South West Rocks	4	Off-road Cycleway
5	New Entrance Road - Boat Ramp to the tavern	South West Rocks	3	Off-road Cycleway
6	New Entrance Road - tavern to the extent of existing path near breakwall.	South West Rocks	3	Off-road Cycleway
7	New Entrance Road - Quarry Street to northern extent	South West Rocks	3	On-road Cycleway
8	Pacific Street - Baker Drive to School	Crescent Head	2	Off-road Cycleway
9	Pacific Street - School to sports field	Crescent Head	2	Off-road Cycleway
10	Pacific Street - Sports field to Dulcongi Heights	Crescent Head	2	Off-road Cycleway
11	Gregory Street - Spencers Creek road to Lindsay Noonan Dr	South West Rocks	2	Off-road Cycleway
12	Gregory Street - Lindsay Noonan Dr to Cooper Street	South West Rocks	2	Off-road Cycleway
13	Gregory Street - Cooper Street to Austin Street	South West Rocks	2	Off-road Cycleway
14	Gilbert Cory Street - Gordon Young Drive to Marlin drive	South West Rocks	2	Off-road Cycleway
15	Marlin Drive - Gilbert Cory Street to New Entrance Road.	South West Rocks	2	Off-road Cycleway
16	Stuarts Point to Grassy Head along Grassy Head Road	Stuarts Point	2	Off-road Cycleway
17	Kempsey - Smithtown - Gladstone loop	Kempsey	2	Off-road Cycleway
18	Hat Head - Crescent Head	Crescent Head	1	Off-road Cycleway
19	Gregory Street to Belle O'Connor Street along Meehan Close	South West Rocks	1	Off-road Cycleway
20	Along the western edge of the golf course, from Belle O'Connor Street to Hill Street	South West Rocks	1	Off-road Cycleway
21	Hill Street to Short Street	South West Rocks	1	Off-road Cycleway
22	Rawson Street - Jeffery St to Smithtown Road	Smithtown	1	Off-road Cycleway
23	Kempsey to Stuarts Point	Stuarts Point	1	Off-road Cycleway

The full list of responses can be seen in Appendix C.

3.3 Letters from the community

A number of written letters were received from the community outlining the wants and needs of cyclists within the shire. A summary of requests via letters is as follows:

- Erection of road signage at critical points warning of cyclists on the road. These can be used where there is physical limitations to widening of the road for the provision of footpaths. Specific mention is made to New Entrance Road and Arakoon Road in South West Rocks.
- Marking of cycle lanes at least 1m in width wherever possible around key cyclist routes.
- Continuation of the cycle route along Sherwood road to Link Road, creating a safe cycle connection between Aldavilla and the Kempsey township. This path is outlined within section 6.3.

4. Existing cyclist network audit

This section builds on the desktop review undertaken up to this point in order to define a set of user and function requirements to be addressed through improvements to cyclist infrastructure. The outputs of this section constitute the brief for the development of cyclist infrastructure improvement options for the shire.

An audit of existing conditions and infrastructure was undertaken for each of the main population centres included in the study area. The audits focussed on identifying existing facilities, land uses, any shortcomings in the cyclist environment and potential safety issues. The audit has been developed through:

- Site inspections
- Community survey, as undertaken by Council
- Emails and hard copy correspondence

4.1 Existing cycling infrastructure

Existing infrastructure within the Kempsey Shire is sparse. Currently, a majority of cyclists are required to use the general road network for travel, with no extra provisions made for cyclists.

Primary arterial roads such as the Pacific Highway, Macleay Valley Way, Crescent Head Road and South West Rocks Road form the spine of the cycle network, providing the most direct links between population centres. These roads are traditionally travelled by cyclists who are commuting or riding for sport, with high speed vehicles and narrow shoulders limiting use by amateur and recreational cyclists.

Local routes and links consist of the local urban street system. These minor roads link cyclists with trip generators; such as residential areas, beaches, reserves, shops, schools and sporting facilities. These links are used by cyclists of all ages and experience levels. Please see Section 5.4 of this bike plan for more detail on typical user types.

Council have provided GHD with GIS data pertaining to existing footpaths, shared routes and pedestrian routes. GHD has not independently verified or checked this data beyond the agreed scope of work and as such GHD does not accept liability in connection with such unverified information.

Maps showing the existing footpath and shared path infrastructure within the Shire, based upon the supplied GIS, site inspections and community response can be found in Appendix D.

The footpath network within urban areas are also utilised as part of the cyclist network, particularly for younger cyclists. As seen in Appendix D, existing footpaths within the shire are typically narrower than the 2.5 m minimum required for a designated shared pathway. As outlined in Council's 2016 PAMP the condition of the footpath network has also deteriorated in areas.

Under NSW road rules, those under the age of 12 or supervisors of those under 12 are permitted to use the footpath for cycling. It is an offence for others to do so unless the path is signposted as a shared path or bicycle route. Keeping this in mind, the audit of existing facilities focused upon links within the network whereby a footpath was not present or the addition of a separate cycleway would increase the safety and desirability of the route to cyclists.

4.2 Existing cycle issues and constraints

Issues and constraints within the cycling network were established through a series of desktop reviews, site investigations and community feedback.

A summary of the general constraint categories is outlined within Table 4-1:

Table 4-1 Typical issues and constraints within the cycle network

Issue/Constraint	Comments and Description
Missing links	Throughout the Shire several locations were observed whereby there was an obvious gap in the cycle network between key trip generators. Local streets with low traffic speeds and volumes were included as a links within the network. Priority was placed upon routes whereby there was a safety issue with riding on the roadway, as such
Cycleway/Footpath ends with no connections	It was observed that footpath and cycle routes often ended abruptly with no connection to further trip generating locations. For adults cyclists, particularly those who are experienced this is not a major issue as the general road network can be used. However, for children and beginner riders that may lack the confidence to cycle alongside traffic this can be a major deterrent to cycling.
Poor paths along desired routes	In several places throughout the Shire strong desire lines and community comments indicate the desire for a given route to be upgraded to accommodate cycling. Such examples include Stuarts Point to Grassy Head and the path along the levy bank at Hat Head; paths that are currently sand/dirt.
Poor or missed crossing opportunities	Crossings opportunities should be provided where there is a significant demand for cyclists to cross the road, particularly if the primary user group is children or novice riders. Depending on the demand, crossings can be in the form of kerb ramps on either side of the road, a median refuge island, zebra crossing or a signalised crossing. Locations were identified during the audit where there was demand for a new crossing or where an existing crossing presented access or safety issues.
Large distances between population centres	Large distances between population centres and a relatively small population density within the Shire constrain the ability of Kempsey Shire Council to fund the construction of intertown cyclist routes without funding from state and federal sources.

These issues were common throughout the Shire and are typical of all population centres. Section 3 of this report summarises the response from the community regarding issues with the existing cyclist infrastructure.

5. Planning for cyclists

The analysis of the demographic and transport characteristics, cyclist crash statistics and existing land use and transport infrastructure in the Shire highlights limited public transport coverage, adverse topography and large distances between origins and destinations within the Shire as constraints to cycling. Despite these constraints the community stated a lack of footpaths, cycleways and trails (with signposting) in the Shire.

5.1 Methodology for identifying cyclist needs

The following approach was adopted in developing a hierarchy of cyclist needs. Trip generation areas within town centres were assigned as one of the following:

Primary activity zone

This is typically the main commercial street in the town centre. Throughout the day, pedestrians and cyclists are attracted to this zone from surrounding residential areas. It is therefore an important trip attractor. Also, there are high levels of activity occurring within this zone, making it an important area for short trips. The provision of bicycle parking should also be considered in primary activity zones.

Secondary activity generators

These include shops, schools, sporting facilities, clubs, hospitals and community facilities such as churches that are not located within the Primary Activity Zone. These land uses will attract people, but possibly only at certain times of the day or week.

Tertiary activity generators

These include the above land uses from the Secondary Activity Generators, but differentiate them based on a lower level of activity. Again, these are not located within the Primary Pedestrian Activity Zone.

Primary cyclist routes

These are routes from residential areas to the Primary, Secondary and Tertiary Activity Zones and Generators. They are trunk or collector level routes, which do not reach every property but instead form a network of routes that are accessible to a significant catchment of population. These routes take account the existing street network and topographical constraints, aiming to provide a direct and convenient route to the major trip generators. The demographic use of connecting generators is considered when defining the routes (i.e. schools and playing fields, aged care facilities and return service league clubs).

5.2 Creating a safe and attractive environment for cycling

5.2.1 Background

Cycling is a highly efficient, environmentally friendly form of transport. As with walking, cyclists are improving their health and contributing to an active environment at a human scale.

Cyclists move around the public domain in various ways, largely depending on the trip purpose and rider characteristics. For example, children will tend to use the footpath and cycle at low speeds, while an adult on the way to work will ride along the fastest and most direct route available (on or off-road).

Cyclists therefore move through an “environment” in a similar way to pedestrians, although the speed and distance which they travel mean that they identify more with the concept of a network. Attention to cycling facilities should not be confined to one or two “routes” or “links” in an area, as trip origins and destinations are diverse. Every street must be a safe route for cyclists and be designed in accordance with the function, traffic volume and width of the street.

Infrastructure for cycling can be designed in a similar way to other vehicles, through consideration of speed, sight distance, priority at intersections etc. However, bicycles have a degree of manoeuvrability that makes them somewhat unpredictable to motorists and pedestrians. Therefore, the design of both on- and off-road facilities should aim to encourage predictability and clear priority at all conflict points.

5.2.2 Cyclist needs

As for pedestrians, the provision of cyclist infrastructure should not only aim to fulfil the requirements of existing users, but to increase the number of cycling trips in the area. Such an outcome would likely result in fewer car trips (particularly for shorter travel distances), healthier residents and a more active (and safe) streetscape.

A number of elements are required in order to provide a high quality cycling environment. These include:

Coherence

Coherence refers to the extent of coverage and completeness of the bicycle facilities. Within built-up areas, coherence can be characterised by the completeness of the network. Outside built-up areas, it is characterised by the completeness of connecting routes.

Coherence also can refer to how the bicycle routes and network matches with the need to travel, offering a consistent quality across individual paths, continuity of paths and routes, and the ability to provide users with freedom of route choice.

Safety

Cyclists are particularly vulnerable road users. They are slower and smaller than the dominant vehicles in traffic, making them less likely to be seen. Furthermore, cyclists have little protection at times of collisions.

When approaching an intersection, cyclists are rarely in a position that motorists expect. Cyclists are positioned close to cars and are not often in view of drivers. This can lead to conflict.

Intersections present a danger for cyclists due to the many movements from different directions. Clear guidance is needed on the approach, through and exit from the intersection for both cyclists and motorised traffic.

Off-road paths reduce the risk of collision with vehicles, but still endanger cyclists at intersections with roads. Also, cyclists can collide with pedestrians with potentially fatal outcomes. The general principles of predictability and clear priority remain important for off-road paths, including directional segregation and high visibility for all users.

Personal security for cyclists is perhaps less critical than for pedestrians. However, narrow and dark areas remain dangerous for cyclists and should be avoided.

Directness

As for pedestrians, cyclists dislike significant deviations to their route. However, some flexibility can be expected where a better cycling environment is provided on a minor deviation from the most direct route. A careful balance must be found between providing a direct route and also one free of delays or safety concerns.

Amenity

People will be more likely to cycle in a pleasant environment. The route should be scenic, quiet, and free of heavy traffic and traffic travelling at high speeds. The best cycling environment is found in areas that have been traffic calmed.

Suitable for all users

Cyclists cover a large range of user skill levels and trip purposes. While skill level often depends on age, other factors such as frequency of cycling and carrying heavy loads can affect a user's actions. Trip purposes often dictate the preferred cycling facility.

Best practice aims to provide for all users on a particular cycle route, ensuring that no users are excluded from using the facility. If one type of bicycle facility is unable to provide for all users of that route, a duplicate (both on and off-road facilities) facility should be provided.

End of trip facilities

As noted above, bicycle users need to know that their bike is safe from theft while it is not attended. This can be achieved through the provision of bike racks and lockers in areas that are well lit, in view of the public and protected from the weather. Where possible, Council should also encourage the provision of shower and change rooms in new buildings such as offices through planning controls.

5.3 Cycling strategies

Council should support and encourage cycling through the following actions:

- Actively promote cycling through the provision of quality cycling facilities and the establishment of an attractive and amenable cycling environment.
- Build a network of primary cycle routes within the Shire. These should serve key local and regional cycling demand and provide direct and convenient links between commuting, social and recreational destinations.
- Bicycle access to this network should be promoted through the establishment of an ambient traffic environment that makes local roads bicycle-friendly.
- Provide secure parking and 'end-of-trip' facilities for cyclists.
- Utilise traffic calming and reduction of speed limits (to 40-50 km/h) where necessary to lower the speed environment on local roads.
- Develop policies, guidelines, training and assessment measures to ensure that the needs of cyclists are considered when planning and designing traffic facilities and other elements of the urban environment.

5.4 User types

Cycling attracts a large variety of participants, a selection of which is outlined in Figure-5-1, many of which have very different motivations for participating. It is particularly important to recognise the needs of each user type to ensure facilities cater and encourage use of current, new and proposed routes.

Many non-cyclists lack the self-efficacy to cycle, even if they are willing to try it. There is a substantial body of evidence which reveals that there is also a difference in what non-cyclists and cyclists consider as the necessary “enablers” for cyclists, particularly where infrastructure is concerned. For example, non-cyclists place more importance on segregated bicycle lanes, whereas regular cyclists, particularly males, are more willing to share the road with motorists (even if motorists do not share the same view).

Figure-5-1 Different bicycle user types

5.4.1 Recreational cyclists

Recreational cyclists ride mainly for leisure and place a high value on enjoying the experience. They are usually less constrained by time and vary widely in skill and experience.

Popular recreation cycling destinations include routes along rivers, natural corridors and reserves, as well as attractive routes with low traffic volume and speed.

Recreational cyclists prefer:

- Comfort
- Good surfaces
- Minimal gradients
- A high degree of safety and personal security
- Routes that are pleasant, attractive and interesting
- Circuitous routes with multiple route options
- Screening from weather and wind
- Parking facilities where they dismount to use facilities or visit attractions along the journey

5.4.2 Commuter cyclists

Commuter cyclists ride mainly as a mode of transport for journeys to and from a workplace, school or university. They prefer the fastest safe route between their origin and destination and are generally more skilled and experienced.

Commuter cyclists prefer:

- Directness
- Minimal delays
- Good surfaces
- All-weather routes
- Well lit routes for after-hours journeys
- Parking facilities and end of trip facilities at their destination

5.4.3 Sport cyclists

Sport cyclists ride mainly for fitness and leisure, but like recreational cyclists also place a value on enjoying the experience. They are also less constrained by time and have a high skill and experience.

Sport cycling destinations include off-road mountain bike trails in addition to areas which provide continuous on or off-road routes.

Sport cyclists prefer:

- Comfort
- Good surfaces or off-road trails
- Minimal conflict with other road users
- A reasonable degree of safety and personal security
- Routes that are pleasant, attractive and interesting
- Circuitous routes

5.4.4 Local trip cyclists

Local trip cyclists ride mainly as a mode of transport for running errands, but may also include short commute cyclists. They may be constrained by time and vary widely in skill and experience.

Popular local trip cycling destinations include shops, shopping, schools and town centres.

Local trip cyclists prefer:

- Comfort
- Good surfaces
- Minimal gradients
- A high degree of safety and personal security
- Parking facilities at their destination

5.5 Selecting the appropriate path type

5.5.1 Types of cycle paths

A number of path types have been described in various technical guidelines to assist decision-makers in selecting the appropriate treatment to suit local conditions. Bicycle paths can either be on-road, which are essentially “bicycle lanes” alongside motor vehicle traffic on a roadway within the road corridor, or off-road paths, which are separated from the road corridor.

The selection of the appropriate path type treatment depends on a combination of factors, which may include the level of demand for the cycle path, the conditions present in the surrounding environment, the availability of space in which to provide the path, and whether path usage is for exclusive cycle use or shared use with pedestrians.

5.5.2 Separation treatment

A key concern in the design of bicycle facilities following the alignment of roads is whether warrants exist for providing bicycle paths separated from vehicular traffic, or whether a mix of bicycle and vehicular traffic may be acceptable.

The *NSW Bicycle Guidelines* provide for conditions when a separated cycle facility may be required, or when cycles operating in mixed traffic conditions may be acceptable. These are based on bicycle research in the Netherlands and other studies.

The traffic separation treatment will depend on the volume of vehicles on the road, and the vehicle speed environment.

Figure 5-2 provides a general guide in determining traffic separation treatment. In essence, separated paths are needed when the vehicle speed environment is 80 km/hour or faster, or when vehicle volumes are high enough even at lower vehicle speeds (e.g. 10,000 vehicles per day 40 km/hour will require separated facilities).

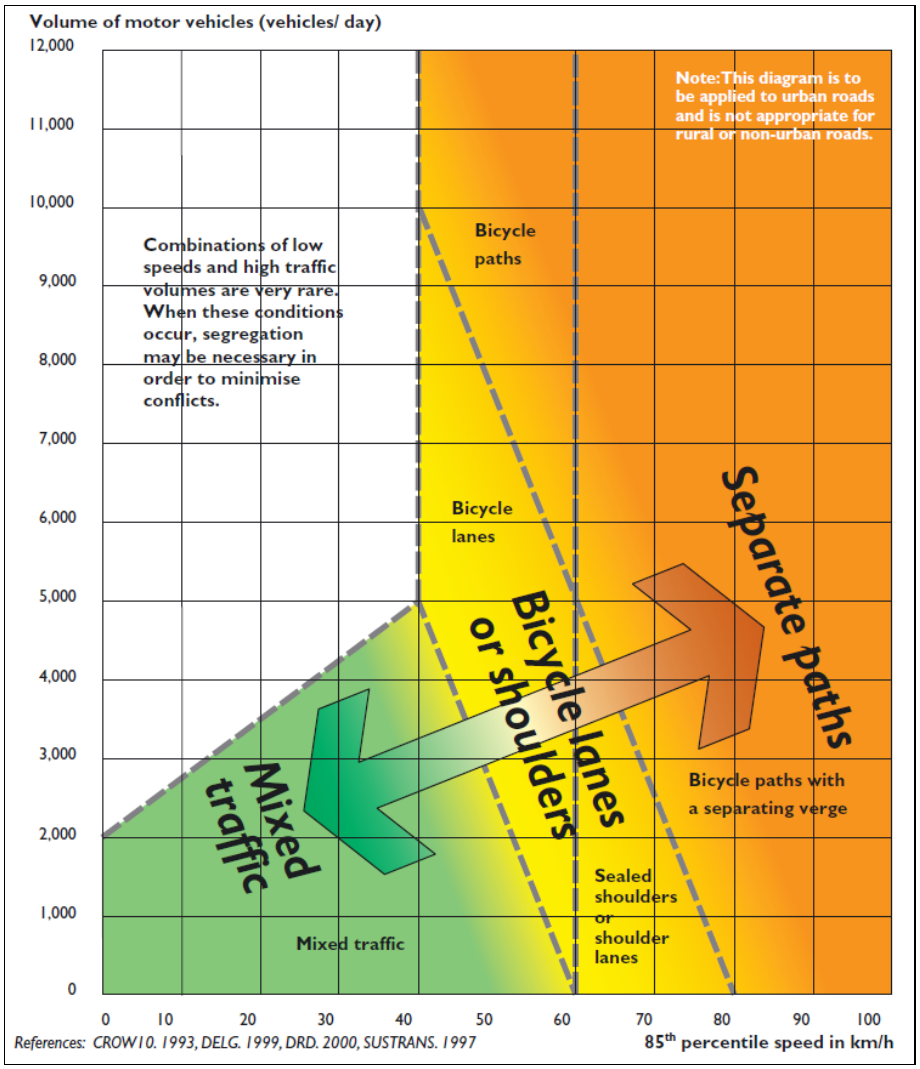


Figure 5-2 Guide for Determining Separation of Bicycles and Motor Vehicles

Source: *NSW Bicycle Guidelines*, Roads and Traffic Authority (2005).

5.5.3 On-Road path types

A number of different path treatments can be applied for on-road cycle facilities. These are presented and discussed in the *NSW Bicycle Guidelines* (RTA, 2005). The different on-road path types may provide physical or visual separation from the adjacent roadway, or allow for mixed bicycle-motor vehicle traffic.

In the context of the Bike Plan, on-road bicycle paths would typically be provided with some form of physical or visual separation from the adjacent traffic lane or by providing mixed traffic routes where bicycles and traffic share the road space.

The on-road paths considered in this plan are discussed below:

On-road Mixed Traffic Bicycle Routes

On-road mixed traffic routes consist of signage and pavement marking denoting a cyclist route, but no physical separation from traffic. These type of on-road paths are only suitable where traffic flows are low and road width is too limited to provide a marked cycle lane or sealed shoulder of adequate width. A typical cross section is seen below in Figure 5-3.

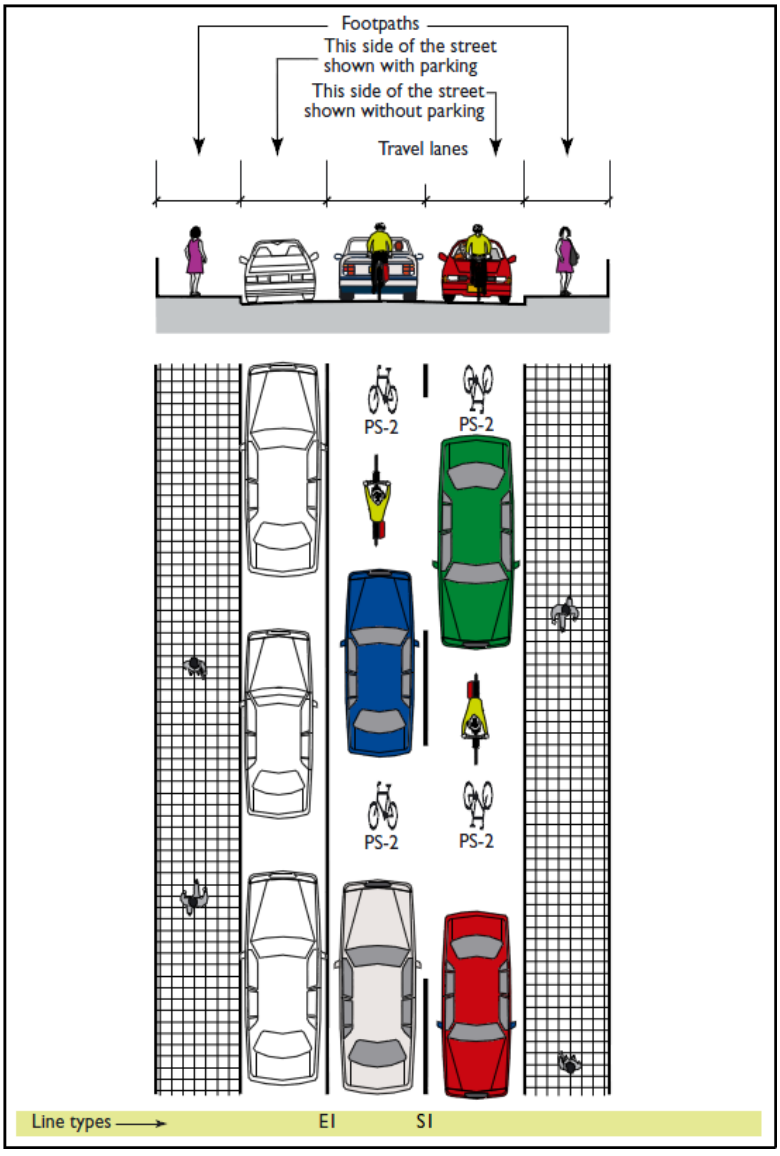


Figure 5-3 Typical Plan and Cross-Section for On-Road Mixed Traffic Bicycle Routes

Source: *NSW Bicycle Guidelines*, RTA 2005.

On-Road Bicycle Lane

On-road bicycle lanes are formed of a line marked travel lane for exclusive cyclist use. These aim to segregate vehicles and cyclists, increasing the amenity and safety of users.

The width for bicycle lanes will vary depending on the number of cyclists, the speed of motor vehicles, the volume of large vehicles and the space available given the needs of other road user groups, physical constraints and budgetary constraints (AUSTROADS, *Part 14 – Bicycles*, 1999). Recommended widths are summarised below and shown in Table 5-1.

Overall, the following widths are recommended:

- 3.0 metres is the preferred width and is desirable where the motor traffic is moving at high speeds (100 km/h).
- At least 2.0 metres is desirable where the motor traffic is moving at high speeds (100 km/h) or where speeds are moderate (80 km/h).
- 1.5 metres is the desirable width to be used in 60 km/h speed zones.
- 1.2 metres is the minimum recommended width which should be used along the length of the lane and should only be used where the provision of a wider lane is impractical.

Table 5-1 Recommended on-road bicycle lane widths

	Lane Width (m)		
Road Speed	60 km/h	80 km/h	100 km/h
Desirable	1.5 m	2.0 m	2.5 m
Accepted Range	1.2 – 2.5 m	1.8 – 2.7 m	2.0 – 3.0 m

Source: Guide to Traffic Engineering Practice, Part 14 – Bicycles (AUSTROADS, 1999).

A 1.0 metre width may also be acceptable where the speed environment is less than 60 km/h and space is severely restricted.

A typical cross section is seen in Figure 5-4.

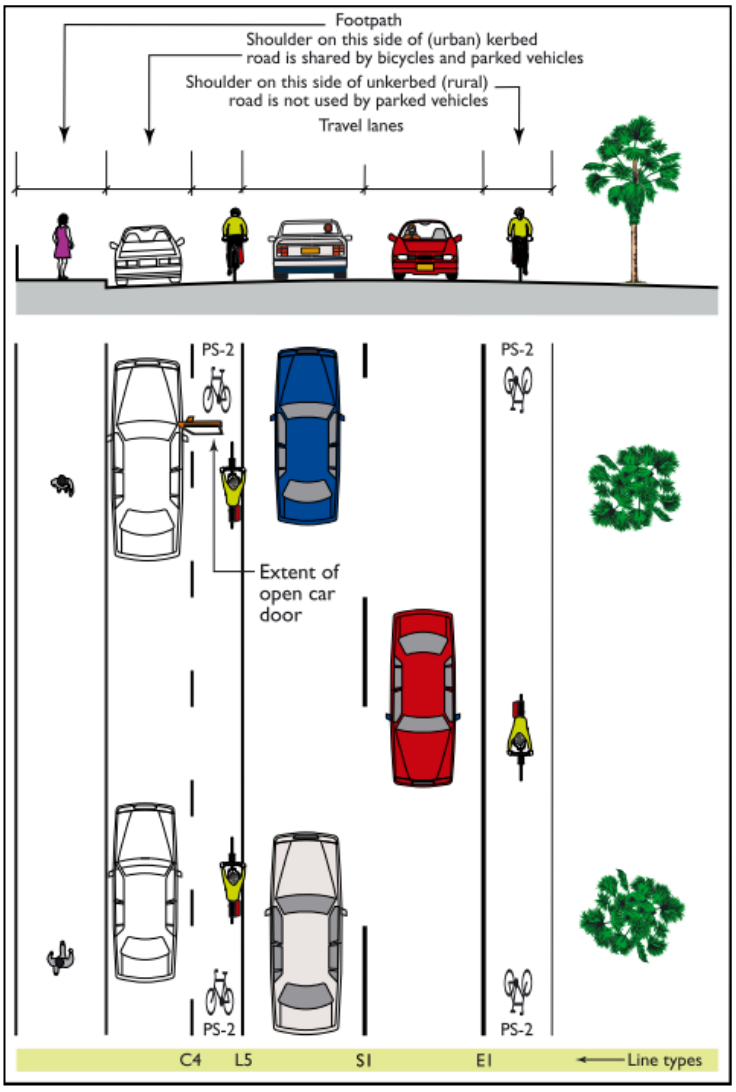


Figure 5-4 Typical Plan and Cross-Section for On-Road Bicycle Paths

Source: *NSW Bicycle Guidelines*, RTA 2005.

5.5.4 Off-road cycle paths

Off-road cycle paths are typically physically separated from adjacent parking or traffic lanes.

Off-road paths can be of three basic types:

- Exclusively for bicycle use
- Shared cyclist and pedestrian use
- Separate paths provided for cyclists and for pedestrians

The *Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* (AUSTROADS 2009) presents a guide on selecting the treatment type for off-road paths. This is shown in Figure 5-5.

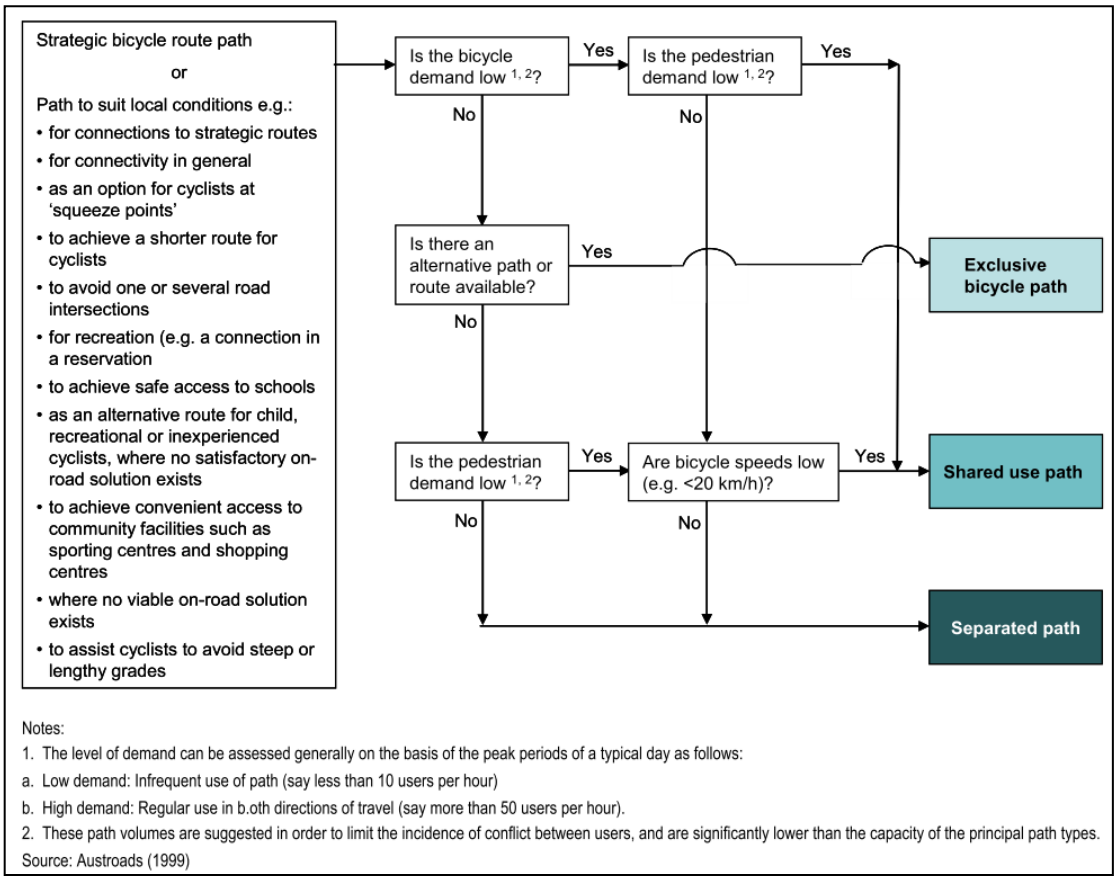


Figure 5-5 Selection Guide for Off-Road Path Types

Source: *Figure 2.1, Guide to Road Design Part 6A: Pedestrian and Cyclist Path (AUSTROADS 2009)*.

Exclusive cycle paths

According to the AUSTROADS Guide, exclusive bicycle paths are most appropriate under the following conditions:

- There is a significant cycling demand and very few pedestrians desire to use the path or a separate footpath is provided
- There is very limited motor vehicle access across the path
- It is possible to achieve an alignment that generally allows cyclists uninterrupted and safe travel at a relatively high constant speed (say 30 km/h)

Figure 5-6 presents a typical road cross section for a one-way pair of off-road cycle paths, while Figure 5-7 shows the same for a two-way off-road exclusive cycle path on one side of the road. For local conditions where kerbside parking is not present, the dividing strip or separating verge would not be required.

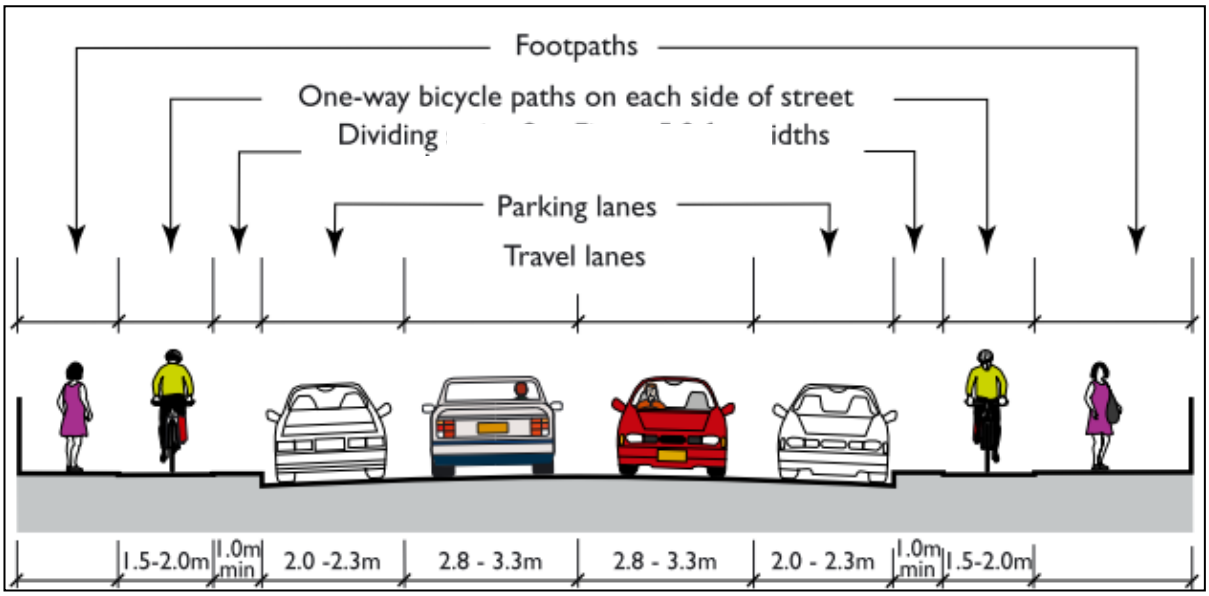


Figure 5-6 Typical Cross-Section - One-Way Pair of Off-Road Bicycle Paths

Source: *NSW Bicycle Guidelines*, RTA 2005.

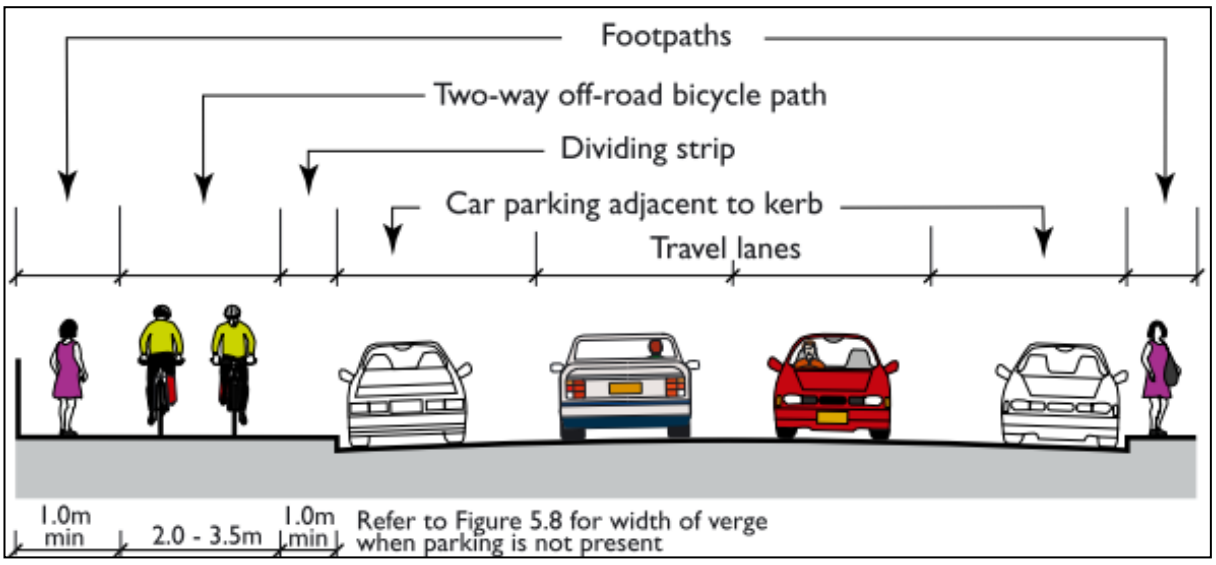


Figure 5-7 Typical Cross-Section - Two- Way Off -Road Bicycle Path on One Side of Road

Source: *NSW Bicycle Guidelines*, RTA 2005.

The AUSTROADS Guide also prescribes the design widths for exclusive cycle paths. These are shown in Table E-2.

Table 5-2 Path widths – exclusive bicycle paths

	Path Width	
	Local Access Path	Major Path
Desirable Minimum Width	2.5 m	3.0 m
Minimum width – typical maximum	2.5 – 3.0 m (a)	2.5 – 4.0 m (b)
a: A lesser width should only be adopted where cyclist volumes and operations speeds will remain low. b: A greater width may be required where the number of cyclists is very high.		

Source: *Guide to Road Design Part 6A: Pedestrian and Cyclist Path (AUSTROADS, 2009)*.

Shared use paths

Shared use paths, or shared paths, are a type of off-road facility that allows common use of the facility by both cyclists and pedestrians.

According to the AUSTROADS Guide, a shared use path may be appropriate where:

- Demand exists for both a pedestrian path and a bicycle path but where the intensity of use is not expected to be sufficiently great to provide separate facilities
- An existing low-use footpath can be modified to provide for cyclists by satisfying legal requirements and as necessary upgrading the surface, width and kerb ramps
- There is an existing road nearby which caters well for faster cyclists (e.g. has on-road bicycle lanes), to limit the extent of user conflict on the shared path.

A typical cross section of a shared path (two-way) is shown in Figure 5-8 (left hand portion of drawing).

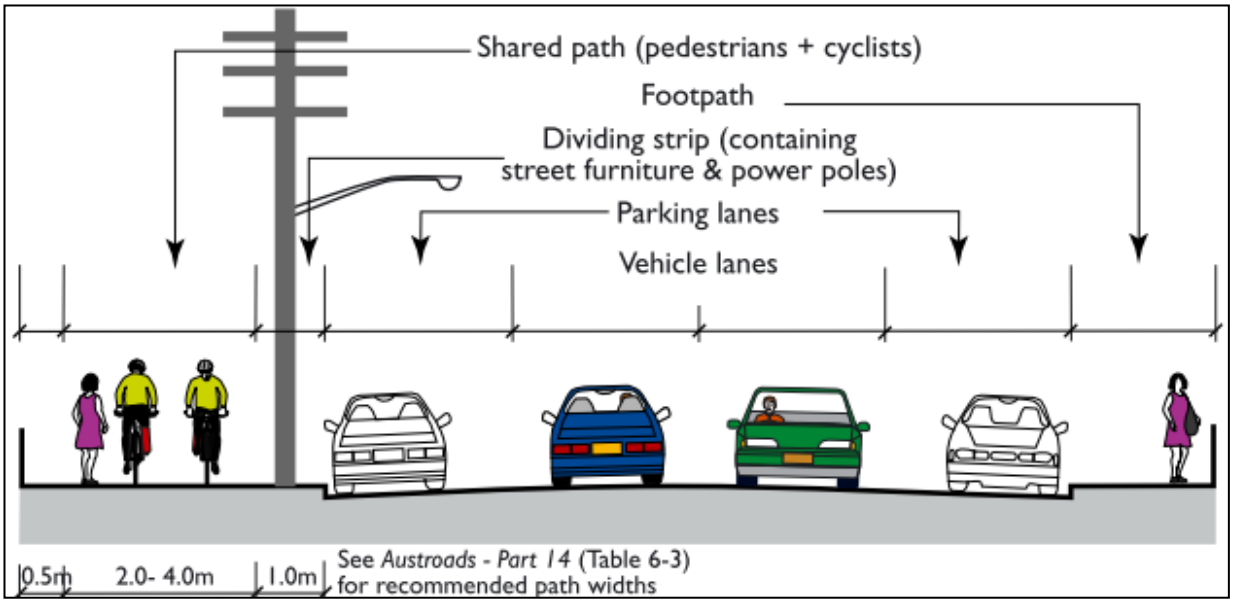


Figure 5-8 Typical Cross-Section for a Two-Way Off-Road Shared Path

Source: *NSW Bicycle Guidelines*, RTA 2005.

Table 5-3 provides an indication of widths for shared paths.

Table 5-3 Shared path widths

	Path Width		
	Local Access Path	Commuter Path	Recreational Path
Desirable Minimum Width	2.5 m	3.0	3.5
Minimum width – typical maximum	2.5 (a) – 3.0 m (b)	2.5 (a) – 4.0 m (b)	3.0 (a) – 4.0 m (b)
a: A lesser width should only be adopted where cyclist volumes and operations speeds will remain low. b: A greater width may be required where the number of cyclists and pedestrians are very high or there is a high probability of conflict between users.			

Source: *Guide to Road Design Part 6A: Pedestrian and Cyclist Path (AUSTROADS, 2009)*.

Separate paths

Where there are significant volumes of both pedestrians and cyclists, separate paths for each may need to be provided to minimise conflict issues associated with shared use of paths.

Typically, separate paths would require a minimum of 3.0 metres on each side of the road for one-way paths, and 4.5-metre wide off-road paths for separated two-way paths.

The AUSTROADS *Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* notes that such separated paths are rarely provided. Such is the case in Ku-ring-gai, where pedestrian and cyclist volumes are still at levels which will not require separated paths to be provided.

6. Proposed cycle improvements

6.1 Project listings for each town

Recommended improvements to the cycle network are shown in Appendix E. These proposed improvements are derived from an audit of existing infrastructure and the needs of cyclists, in line with Section 4 and 5 of this report.

6.2 Inter-town/regional routes

In addition to consideration of urban pedestrian and bicycle routes, the community has identified a number of inter-town or regional routes within the Shire.

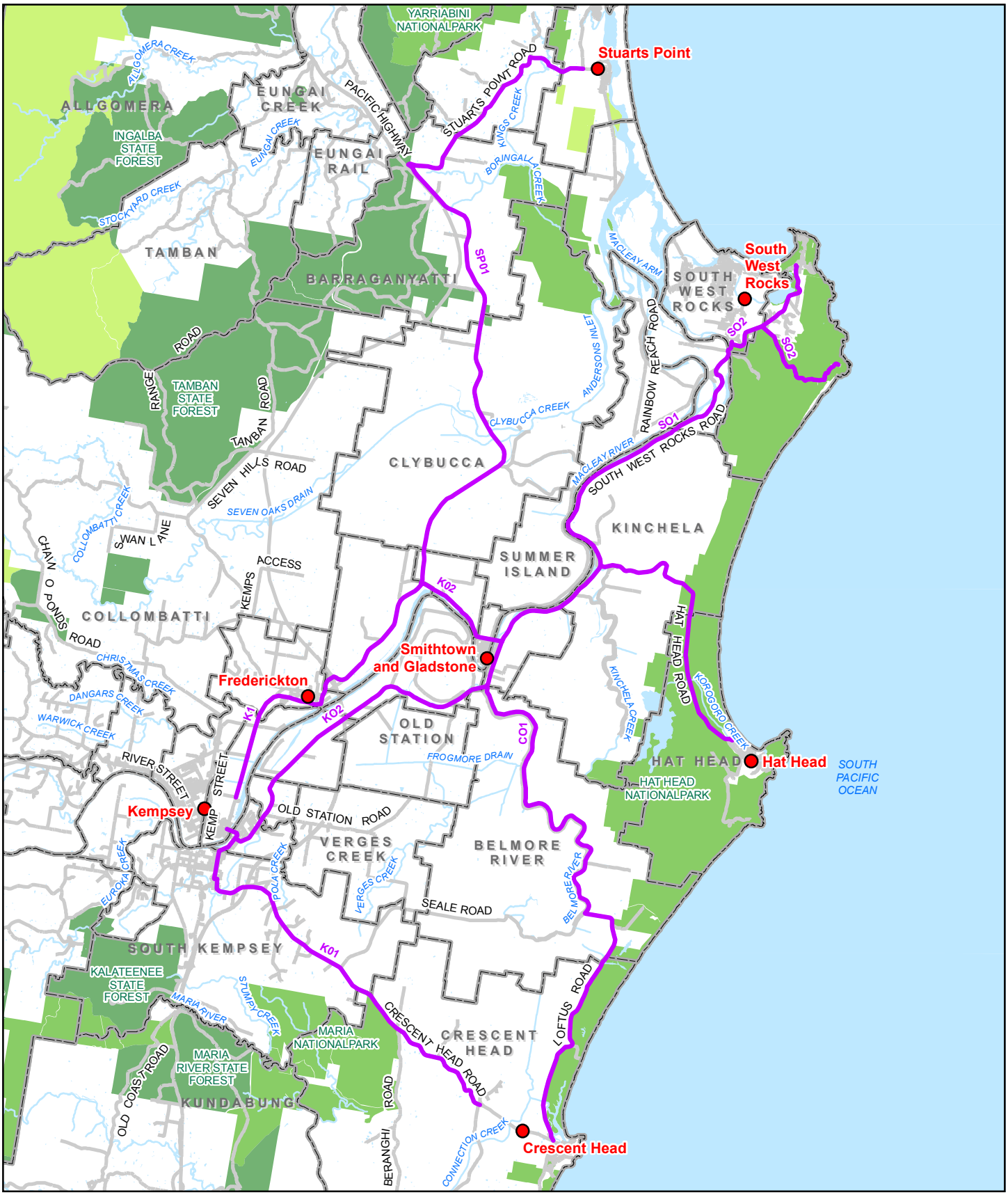
Inter-town routes could use existing arterial road corridors such as the Pacific Highway and Macleay Valley Way. Roads and Maritime Services (RMS) may therefore be a key partner in the provision of future inter-town bicycle routes. It is recommended that Council play a role as advocate for such facilities in ongoing discussions with the RMS, taking advantage of opportunities as they arise, including during planning of road maintenance works.

Other inter-town routes will make use of Council maintained local arterial roads. Given the length and cost associated with provision of cycle lanes across the routes, it is not feasible to propose construction in one stage. It is therefore recommended that council consider the needs of cyclists in the design of future road upgrades in line with the information presented in Section 5.

As a minimum, a sealed shoulder seal is recommended for the use of cyclists on upgraded rural roads with cyclist demand. The appropriate width of the shoulder is determined by the speed limit for vehicles, and ranges from 1.5 m (60 km/h) to 3 m (100 km/h) (see Austroads Part 14). Nominated routes arising from consultation with the community are outlined in Table 6-1 and shown in Figure 6.1.

Table 6-1 Proposed inter-town links

Route	Figure reference
Kempsey to Smithtown/Gladstone loop via Macleay Valley Way and South West Rocks	KO2
Kempsey to Stuarts Point	SPO1
Kempsey to Crescent Head	KO1
South West Rocks to Smithtown/Gladstone	SO1
Lighthouse Road and Arakoon Road, South West Rocks	SO2
Crescent Head to Hat Head	CO1



LEGEND

- Area of Interest
- Waterbody
- Suburb boundary
- State Forest
- National Park
- Nature Reserve
- Road
- Intertown links

Paper Size A4

0 0.75 1.5 3 4.5 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Intertown Links

Figure 6-1

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R004_IntertownLinks_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

6.3 Key Routes

There is potential to link smaller towns/ localities in the shire via a future network of paths and cycle lanes, as appropriate. These routes have the potential to encourage longer distance cycle trips for recreation, sport, transportation and tourism.

Two key routes arising from community consultation is that of Kempsey to Frederickton and the continuation of the Sherwood Road Cycle route

6.3.1 Kempsey to Frederickton:

The route from Kempsey to Frederickton runs along the side of the old Pacific Highway, now Macleay Valley Way, a distance of 4.5 km. Due to the flat grade comfortable distance for riders of all levels it has been identified by the community as a key future link in the cycle network.

The route crosses a series of waterways, all of which will require substantial works to traverse, increasing the expected cost of the route substantially.

This route has been investigated previously by Kempsey Shire Council.

Due to the high community interest levels and large expected capital outlay a high level assessment of options has been undertaken.

Options for the Kempsey to Frederickton route include:

1. Addition of a marked cycle lane to both edges of Macleay Valley Way:

   This will involve widening of the existing road pavement by approximately 2 m (refer Figure 6-2 for the existing cross section of Macleay Valley Way). This is not expected to be the favoured option by the community given the results of the community consultation and the lack of physical separation between traffic and the cycle route. It should also be noted that the minimum width required for an on-road cycle lane can not be obtained at the three waterway crossings of Glenrock Drain, Christmas Creek and Easter Creek. Council would either need to provide a sub-standard lane width across these bridges/culverts with signage and warnings sufficient to mitigate these risks or consider extending the width of the bridges.

   See Figure 6-3 for a typical cross section, note that the cross section is not to scale and is indicative only.

2. Provision of a cycleway within the road easement, separate from the roadway:

   This option will increase the safety of the cycleway significantly over the addition of on-road cycle lanes, however will require large quantities of earthworks and the construction of additional bridges across Glenrock Drain, Easter Creek and Christmas Creek. It should also be noted that the steepness of the road batters within the road corridor may mean retaining walls and safety barriers will be required to construct the pathway, further increasing the cost of the project.
   Generally this option would see the cycleway run on the outside of the existing table drain, however may result in a reduction in drain size. Care should be taken in this regard to minimise impacts and a flood assessment should be undertaken.

   See Figure 6-4 for a typical cross section, please note that the cross section is not to scale and is indicative only.

3. Provision of a cycleway running parallel to the road easement:

   As with Option 2, this will increase the safety of the cycleway significantly over the addition of on-road cycle lanes, however will require a large acquisition of land in addition to the construction of three waterway crossings. Benefits to this option over option 2 are the

reduction in required earthworks and the ability to further separate the cycleway from the road. The need for retaining walls and safety barriers will also be reduced.

See Figure 6-5 for a typical cross section, please note that the cross section is not to scale and is indicative only.

A cost estimate for Option 2 was previously undertaken by Council, with a total cost estimated at $2,788,000. For the purposes of this report, this cost will be adopted to determine priority route rankings.

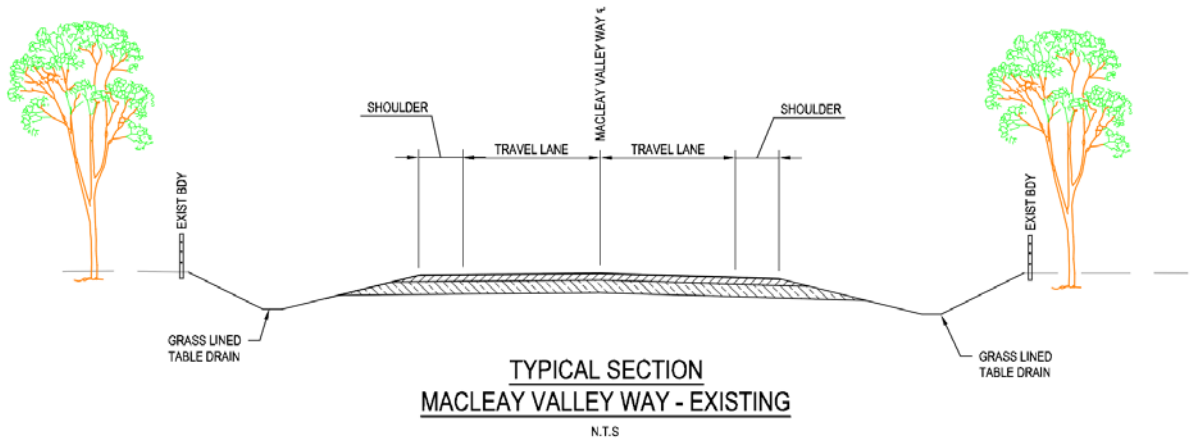


Figure 6-2 Existing Macleay Valley Way

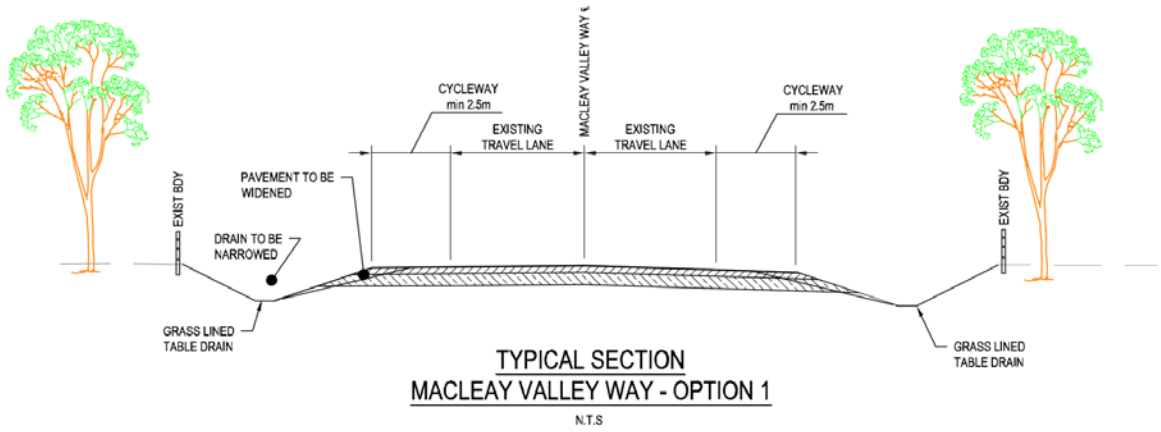


Figure 6-3 Kempsey to Frederickton - Option 1

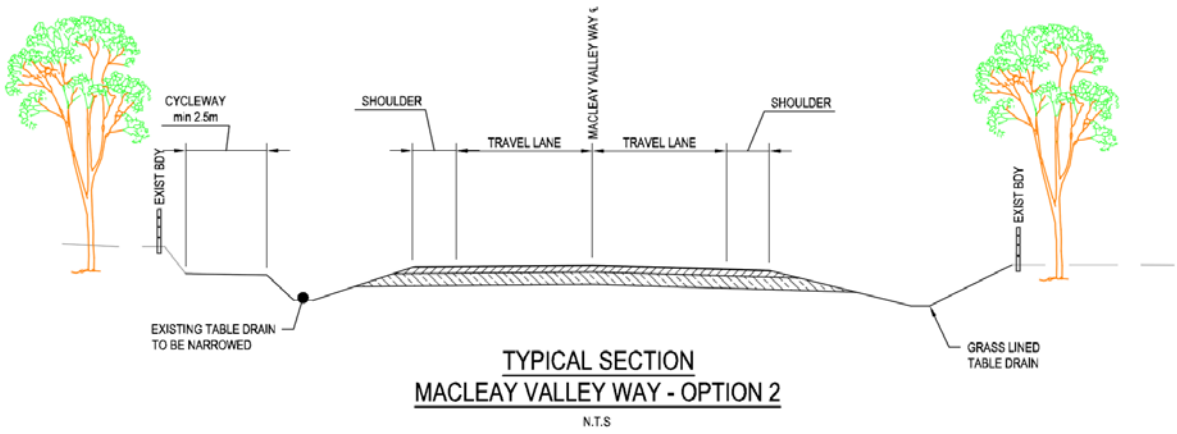


Figure 6-4 Kempsey to Frederickton - Option 2

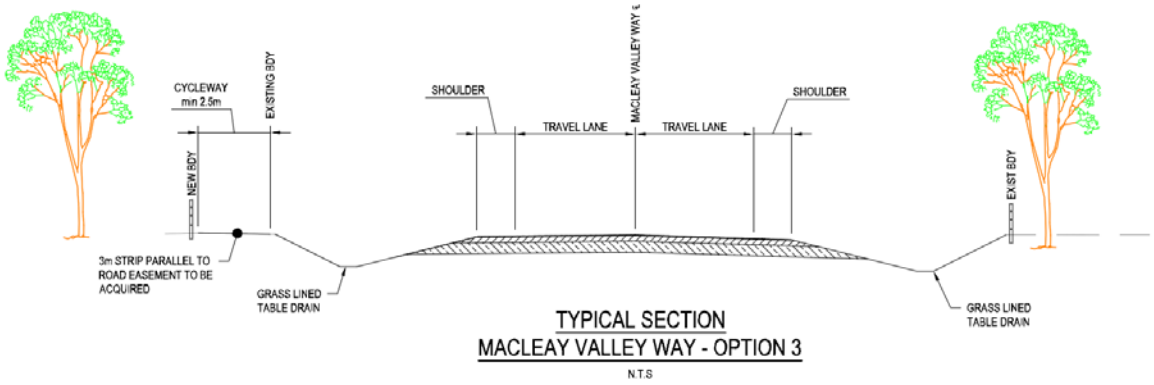


Figure 6-5 Kempsey to Frederickton - Option 3

6.3.2 Sherwood Road

Currently, an off road cycle route exists along Sherwood Road between River Street and 100 m east of the Hillview Drive intersection, at which point cyclists are forced onto the road.

The continuation of this route west along Sherwood Road will service the large number of children, commuters and older residents in the area, linking to a number of key trip generators such as the school, aerodrome and correctional facility. Approximately 300 residences will be serviced by a continuation of the route.

Currently, road shoulders are in poor condition along the entirety of the route, forcing cyclists to ride in the travel lane.

For the purposes of budgeting and planning, this route has been broken down into four stages:

- Existing pathway to Old Aerodrome Road
- Old Aerodrome Road to Airport Road
- Aerodrome Road to Ponds Way
- Ponds Way to Link Road.

Existing to Old Aerodrome Road

Currently, cyclists crossing Fattorini Creek are forced to share the narrow roadway with vehicles as there is no traversable shoulder available. Figure 6-6, taken from Google Maps, shows the narrow roadway over the Fattorini Creek crossing.

Prioritising the upgrade of this section of cycle path will increase cyclist safety for the entire route and cater for a large cyclist community within the neighbouring Hillview Drive residential subdivision.

Figure 6-6 Fattorini Creek crossing

In this section is it proposed to create a 500 m off road cycle path beside the existing Fattorini Creek culvert, with a low causeway across the normally dry creek bed. This option is favoured as it will reduce the capital costs required when compared to widening the roadway, as well providing a physical separation between cyclists and vehicles.

Figure 6-7 shows the dry Fattorini creekbed.

Figure 6-7 Fattorini creekbed

Old Aerodrome Road to Airport Road

Section two of the proposed route would entail approximately 500 metres of off-road cycle path running parallel to Sherwood Road. This section of the route is quite straight, involving high vehicle speeds. Separation of cyclists and vehicles will increase cyclist safety.

Airport Road to Ponds Way

Section three of the proposed route would entail approximately 770 metres of off-road cycle path running parallel to Sherwood Road. As with section two, this section is straight, involving high vehicle speeds. Separation of cyclists and vehicles will increase cyclist safety.

Ponds Way to Link Road.

Section four of the proposed route would entail approximately 1630 metres of off-road cycle path running parallel to Sherwood Road; linking the Sherwood road cycle route with Aldavilla Road and Link Road. This section is generally straight and involves high vehicle speeds. Separation of cyclists and vehicles will increase cyclist safety.

6.4 Early Works

In order to provide an early improvement to the cycle environment in each population centre, it is recommended that the cycle network be marked through the use of line marking and signage along existing roads. Dependent upon the width of the road, these markings may entail separated cycle lanes or signage denoting a mixed route.

Appropriate designs for these works are described and illustrated in Austroads *AP-G88-14 - Cycling Aspects of Austroads Guides* (2014).

6.5 Assumptions on strategic costs

The strategic cost estimates presented in this report are high level estimates only based on unit rates obtained from cost estimation guides and recent experience. These estimates are not site specific and may be subject to rise or fall based on the ground conditions and the surrounding infrastructure at a given site. All cost estimates have been prepared for the purpose of high level planning and must not be used for any other purpose.

The following assumptions were made as part of the strategic cost estimation process, unless specific mention has been made otherwise:

- No allowance has been made for any property acquisition;
- No allowance has been made for any kerbing works as part of the estimates. It has been assumed that where kerbing is required, the works will be undertaken prior to (or in conjunction with) footpath works;
- No allowance has been made for implementation of wearing course across partially sealed carriageways where pedestrian crossings are proposed. It has been assumed that where bitumen is required, the works will be undertaken prior to (or in conjunction with) footpath and drop kerb works;
- No allowance has been made for labour costs;
- Cycleway lengths have been measured from GIS information provided by Council and as such their accuracy is dependent on the accuracy of the GIS information;
- No allowance has been made for pathway lighting;
- Shared paths have been costed as being constructed with concrete unless stated otherwise. Where a cheaper option has been deemed the most appropriate, an asphalt

path has been specified; if further reductions in cost are required bituminous pavement types may be considered. Note that aggregate sizes less than 10mm for bituminous seals are recommended in order to provide a smoother and less abrasive surface.

- On-road cycle path costs have been costed based upon line markings on road shoulders. The costs do not include any allowance for construction of new shoulders for cycle paths. Many shoulders and streets are very rough and not necessarily suitable for cycles. There may be opportunities to profile and seal a specific narrow section before line marking a cycle path. The costs associated with these works, however, were excluded from the strategic cost estimates.

No detailed quotation has been obtained for actions identified in this report and as such GHD does guarantee that the works can be undertaken at a cost which is the same or less than outlined within this report.

6.6 Cost inclusions

The infrastructure components included in the cost estimates are described further below:

On Road Mixed Traffic Routes

For on-road mixed traffic routes, the cost principally incorporates pavement symbols and signage.

On Road Cycle Path Routes

For on-road cycle paths, the cost principally incorporates line-marking, pavement symbols and signage.

Off Road Cycle Path or Shared Path Routes

For off-road cycle paths, the cost principally incorporates concrete surfacing, line-marking, pavement symbols and signage.

6.7 Bicycle support facilities

As well as treatments to the cycle network within the Kempsey Shire, facilities that support and enable cycling should also be considered.

6.7.1.1 Bicycle Parking

The provision of appropriate bicycle parking facilities will encourage people to ride to their destination. Bicycle parking needs to be safe and secure, ideally placed in a highly visible location with good passive surveillance. Two key factors to consider are the type of facility required and the location.

Table 6-2 identifies the most common locations where bicycle parking facilities are required and indicates an appropriate type of bicycle parking facility that should be provided.

Table 6-2 Bicycle Parking Facilities

Location	Appropriate Parking Facility
Shopping centres or business districts.	Individual and small clusters of bicycle parking rails.
Shopping complexes. Swimming pools. Libraries. Markets.	Clusters of bicycle parking rails at main entrances.
Work places. Primary and Secondary schools.	Groups of bicycle parking rails within an enclosure.
Train stations.	Groups of bicycle parking rails within an enclosure.

Apartments or residential complexes.	Groups of bicycle parking rails within an enclosure such as a car park.

To ensure the continued use of bicycle parking facilities, they must be maintained. Poorly maintained facilities will have an adverse effect on patronage and the wider use of bicycles as a means of transport. As such, maintenance costs should also be factored into ongoing budgeting.

Locations identified as requiring bicycle parking facilities are identified in Appendix E.

6.7.1.2 Water Stations

The provision of facilities for cyclists and pedestrians to access water will encourage utilisation of the cycle network within the Shire. Water stations should be located centrally, in highly visible locations with good passive surveillance.

It is proposed that Kempsey Shire Council install water stations at locations such as Riverside Park, the Kempsey CBD and heavy tourist areas such as Horseshoe Bay, South West Rocks.

6.8 Future expansion

The recommended routes reflect the identified existing environment in terms of trip generators, traffic conditions, and the extent of urban development. Changes to these factors cannot be easily forecast. Therefore, when assessing future development proposals within the Kempsey Shire, Council should require proponents to address the potential need for pedestrian and cycling infrastructure. The potential for developer contributions, as outlined in Section 2.3.3 should be investigated when considering the connection of new development areas or trip generators to the existing or planned pedestrian and bicycle network.

7. Priorities for cycle improvements

7.1 Prioritisation methodology

The RMS guidelines from *How to Prepare a Bicycle Plan* (RTA, 2012) indicate that future bicycle routes should be based on a set of priorities, including:

- Safety
- Community needs and expectations
- Council commitment
- Available funding and future planning opportunities
- Rectification / maintenance programs

Overall, this set of priorities is considered to be general in nature and does not provide specific guidance on prioritising one route above another. However, specific guidance does exist from the related RTA publication *How to Prepare a Pedestrian Access and Mobility Plan* (PAMP) (NSW RTA, 2002), which can be adopted to suit a prioritisation methodology for bicycle routes.

Table 7-1 Cyclist infrastructure prioritisation methodology

Category	Criteria	Performance Conditions.	Score
Land Use	Number of attractors/ generators (locations)	more than 5 locations 3-5 locations 1-2 locations 0 locations	10 8 5 0
	Land use type	schools commercial/retail/major recreational residential other	10 8 5 0
	Proximity to generators/ attractors	less than 250 metres >250-500 metres >500-1000 metres >1000 metres	10 8 5 0
	Future development with attractors/generators	high medium low	5 3 1
Traffic Impact	Road hierarchy	State road Regional road local road special use other	15 10 8 5 0
Safety	Identified hazardous area (from audit or consultation)	high medium low none	10 8 5 0

Category	Criteria	Performance Conditions.	Score
	Identified cycle crashes	>3 reported crashes per year 3 reported crashes per year 2 reported crashes per year 1 reported crash per year 0 reported crashes per year	15 10 8 5 0
Facility Benefits	Demonstrated path	high usage medium usage low usage not demonstrated	10 8 5 0
Continuity of routes	Addition to existing facility	link up cycle route extension of route add to devices other	10 8 5 0
Priority	Cycle route hierarchy	high medium low	5 3 1

Due to the large variations of estimated cost and the relatively low amount of capital funding available to Council, the cost of the proposed upgrade measures have been considered in the analysis.

A breakdown of associated costing scores are outlined within Table 7-2.

Table 7-2 Capital expenditure performance criteria

Category	Criteria	Performance Conditions.	Score
Cost	Estimated Capital Expenditure	>$1,000,000 >$250,000 - <$1,000,000 >$100,000 - <$250,000 >$50,000 - <$100,000 <$50,000	0 1 4 7 10

The overall priority of the works is determined by summing the score of each criterion where:

- High (100 – 70)
- Medium (<70 – 40)
- Low (<40)

7.2 Priority improvements

Applying the methodology seen in section 7.1 a priority ranking was given to the proposed system improvements.

The top ten improvements identified are outlined within Table 7-3; for a full list of improvements by rank refer to Appendix F:

Table 7-3 Top 10 improvements by priority

Rank	Ref	Road/ Description	Location	Category of Work	Comment	Total Cost $	Score
1	**K6**	Smith Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	**$61,019.00**	**77**
2	**C1b**	Pacific Street - School to sports field	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	**$34,666.00**	**74**
3	**S4c**	Gregory Street - Cooper Street to Austin Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	**$40,333.00**	**73**
4	**S4a**	Gregory Street - Spencers Creek road to Lindsay Noonan Dr	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	**$60,700.00**	**70**
4	**S4b**	Gregory Street - Lindsay Noonan Dr to Cooper Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	**$77,896.00**	**70**
6	**K1**	Kempsey - Fredrickton	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	**$2,787,980.00**	**69**
6	**K10**	Lachlan Street - Middleton Street to Bloomfield Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	**$29,619.00**	**69**
6	**S3a**	Gregory Street to Belle O'Connor Street along Meehan Close	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	**$79,087.00**	**69**
6	**S3c**	Hill Street to Short Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	**$61,764.00**	**69**
6	**K7**	River Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	**$130,272.00**	**69**

8. Conclusion and recommendations

8.1 Findings of the investigation

This Bike Plan has been prepared by GHD for Council to provide a framework for existing cyclist needs, future management and to establish opportunities for future development of the cyclist network within the Shire.

This bike plan forms a strategic document that identifies an approach to developing and managing cycling infrastructure within the community through identification of proposed improvements and a cost estimation and prioritisation of their implementation. This process has been undertaken following an audit of existing infrastructure and in accordance with relevant standards and guidelines.

Consultation was undertaken with key stakeholders and the wider community as part of the development of this Bike Plan to ensure that it meets the needs of the community now and into the future. The consultation involved a community survey advertised online by Council. Along with community consultation, site inspections were carried out. Specific areas of concern that were raised included:

- Pathways often don't connect to any attractors
- Pathways are too narrow for shared use
- A lack of cycling infrastructure including paths separated from the road and marked cyclist lanes.
- Better signage is required warning motorists of cyclists on the road
- Road shoulders are too narrow and are often unsealed or in poor condition
- Lack of bike racks in key tourist areas
- Lack of mountain biking trails throughout the Shire
- Footpaths are often in poor condition

A review of pedestrian/ cyclist crash data for the Shire was undertaken and identified no crash clusters.

8.2 Recommendations

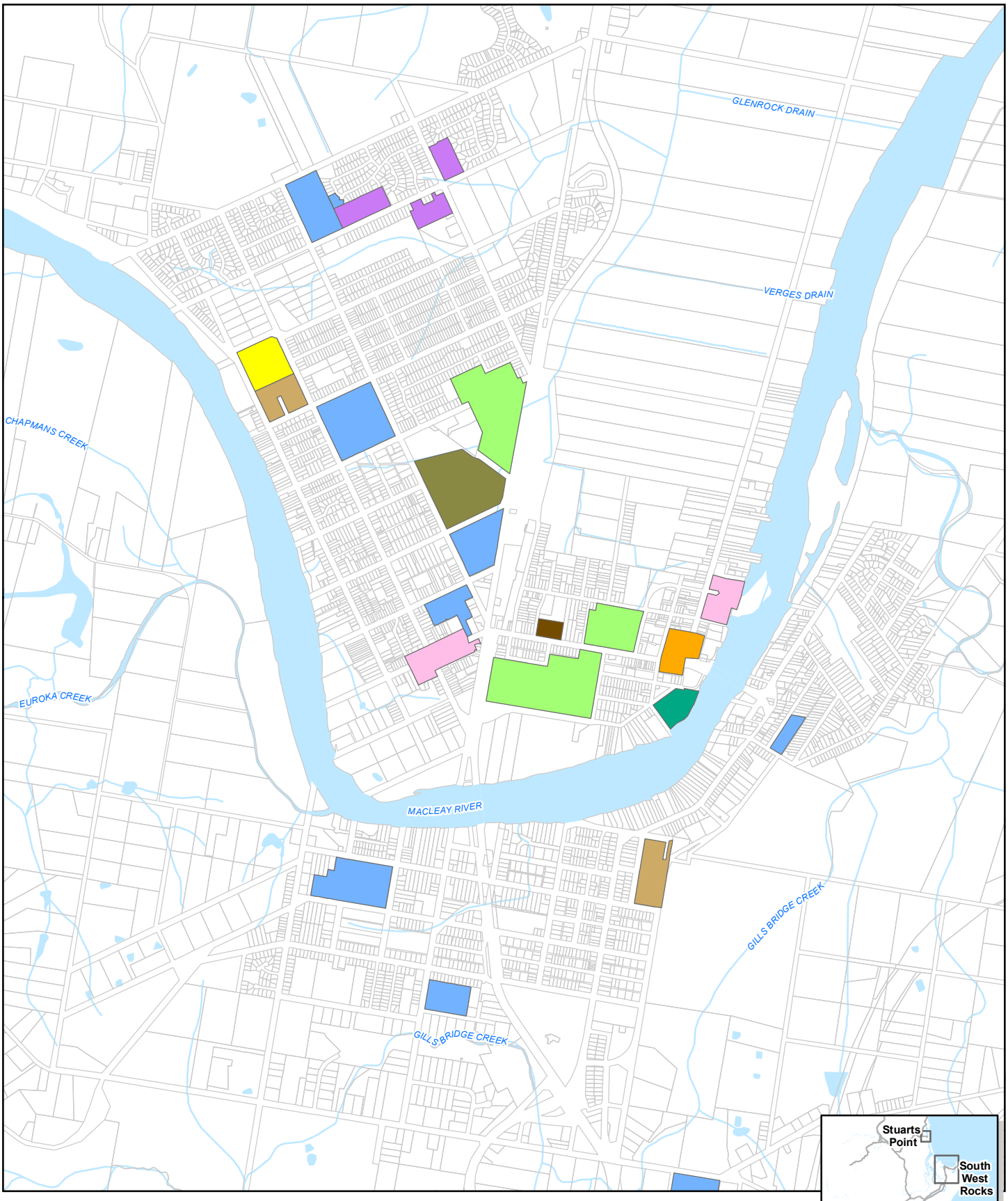
A number of pedestrian and cyclist improvements were recommended as part of this plan for both localised and inter-town links. A number of on-road and off-road cyclist routes were proposed along with associated infrastructure such as bike racks and water stations in order to provide a more complete and coherent cyclist network and to promote cycling as a whole across the shire.

A priority assessment was undertaken on each of the proposed improvements. It is recommended that Council use these rankings as a guide in developing future works programs and when applying for infrastructure funding. It should be noted that further engineering investigation should be undertaken prior to submitting funding applications or constructing the proposed improvements.

In order to incorporate the inter-town linkages for cyclists into the network it is also recommended that on-going construction and maintenance programs take into consideration the needs of cyclists. Particularly in works that involve resurfacing or shoulder widening of major linkage roads.

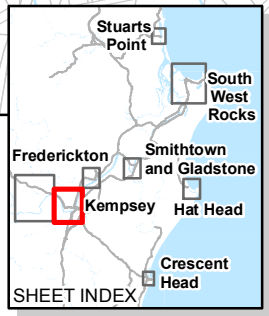
Appendices

Appendix A – Land Use and Key Trip Generators



LEGEND

- Cadastre
- Waterbody
- Aged care facility
- Cemetery
- Kempsey CBD
- Kempsey hospital
- Pool & skatepark
- Park / reserve
- School
- Shops
- Showground
- Sports field



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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Kempsey Shire Council
Bike Plan

Kempsey
Land Use and Key Trip Generators

Figure A-1

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

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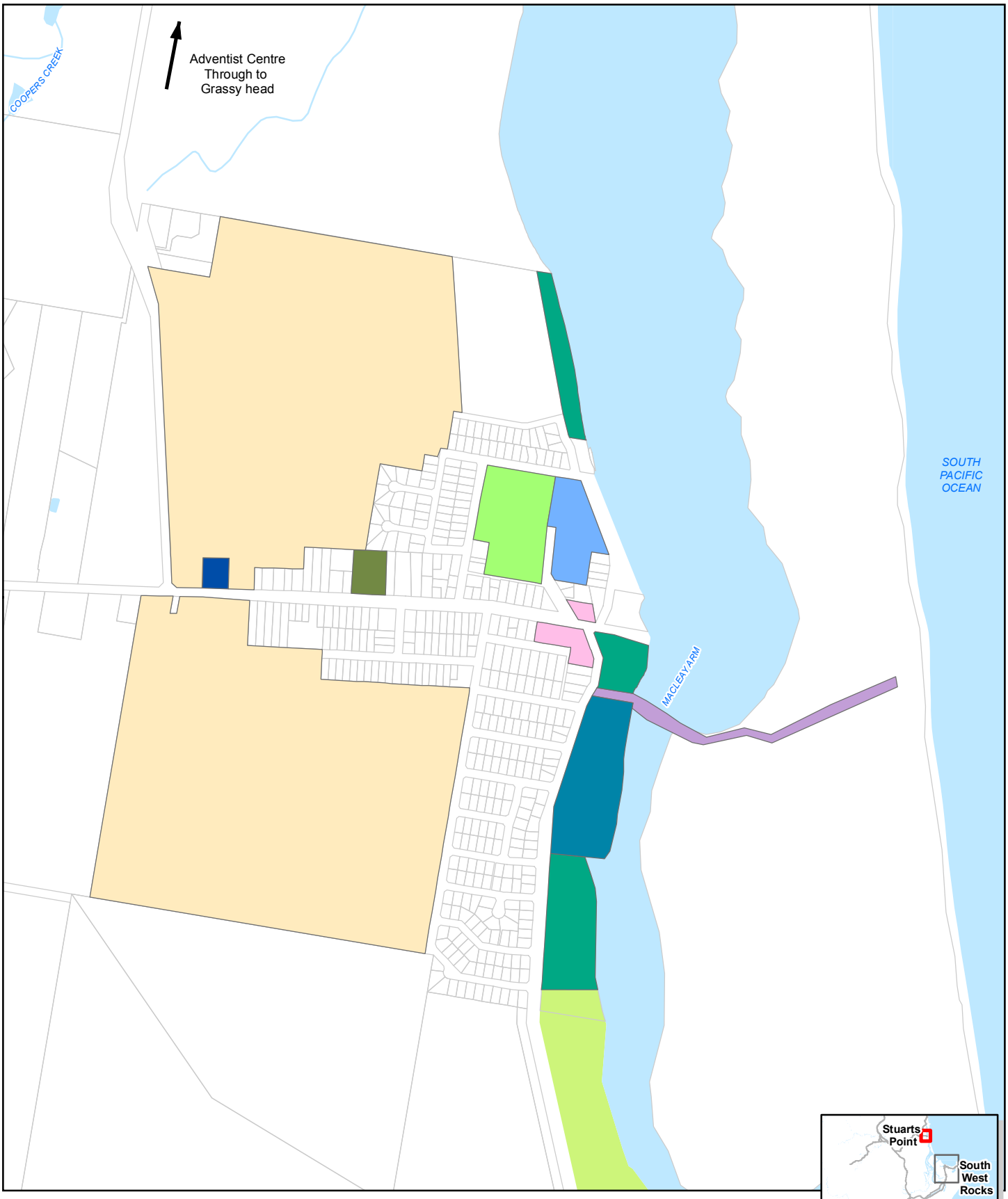

LEGEND

- Cadastre
- Waterbody
- Nature Reserve
- Bowling club
- Caravan park
- Footbridge / Beach access
- Future growth area
- Pub / Tavern
- Park / reserve
- School
- Shops
- Sports field

Paper Size A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Kempsey Shire Council
Bike Plan

Stuarts Point
Land Use and Key Trip Generators

Figure A-2

Job Number	22-185120200
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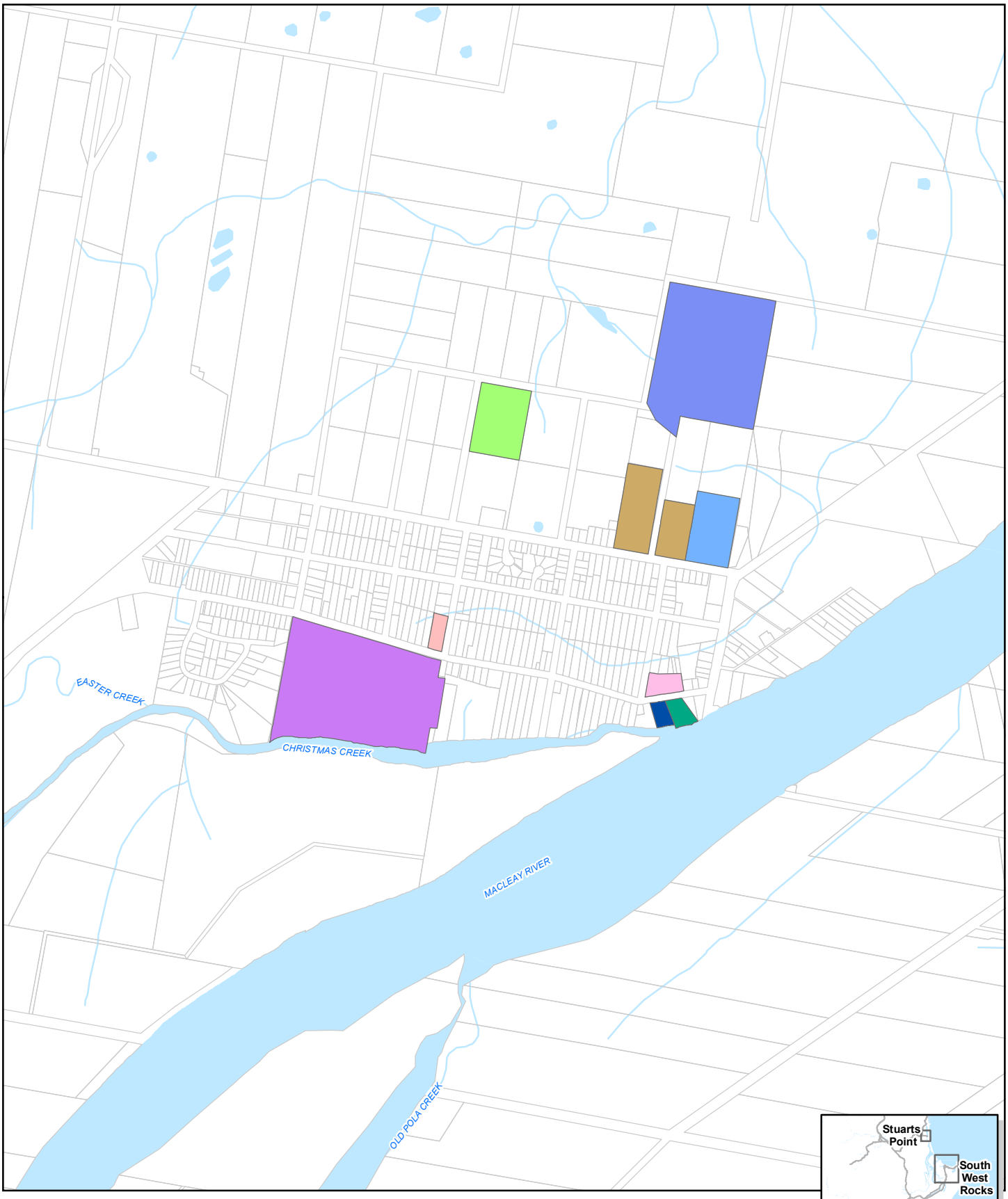
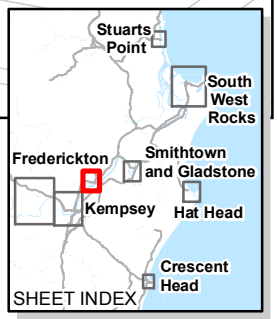


LEGEND

- Cadastre
- Waterbody
- 'Freddo Pies and Cafe'
- Aged care facility
- Cemetery
- Golf course
- Pub / Tavern
- Park / reserve
- School
- Shops
- Sports field



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Grid: GDA 1994 MGA Zone 56

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Kempsey Shire Council
Bike Plan

Frederickton
Land Use and Key Trip Generators

Figure A-3

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

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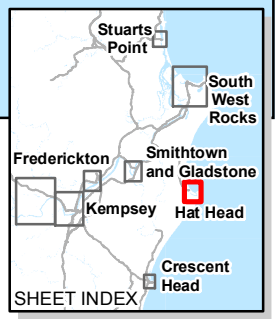
LEGEND

- Cadastre
- National Park
- Beach
- Bowling club
- Caravan park
- Surf club



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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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GHD

Kempsey Shire Council
Bike Plan

Hat Head
Land Use and Key Trip Generators

Figure A-4

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

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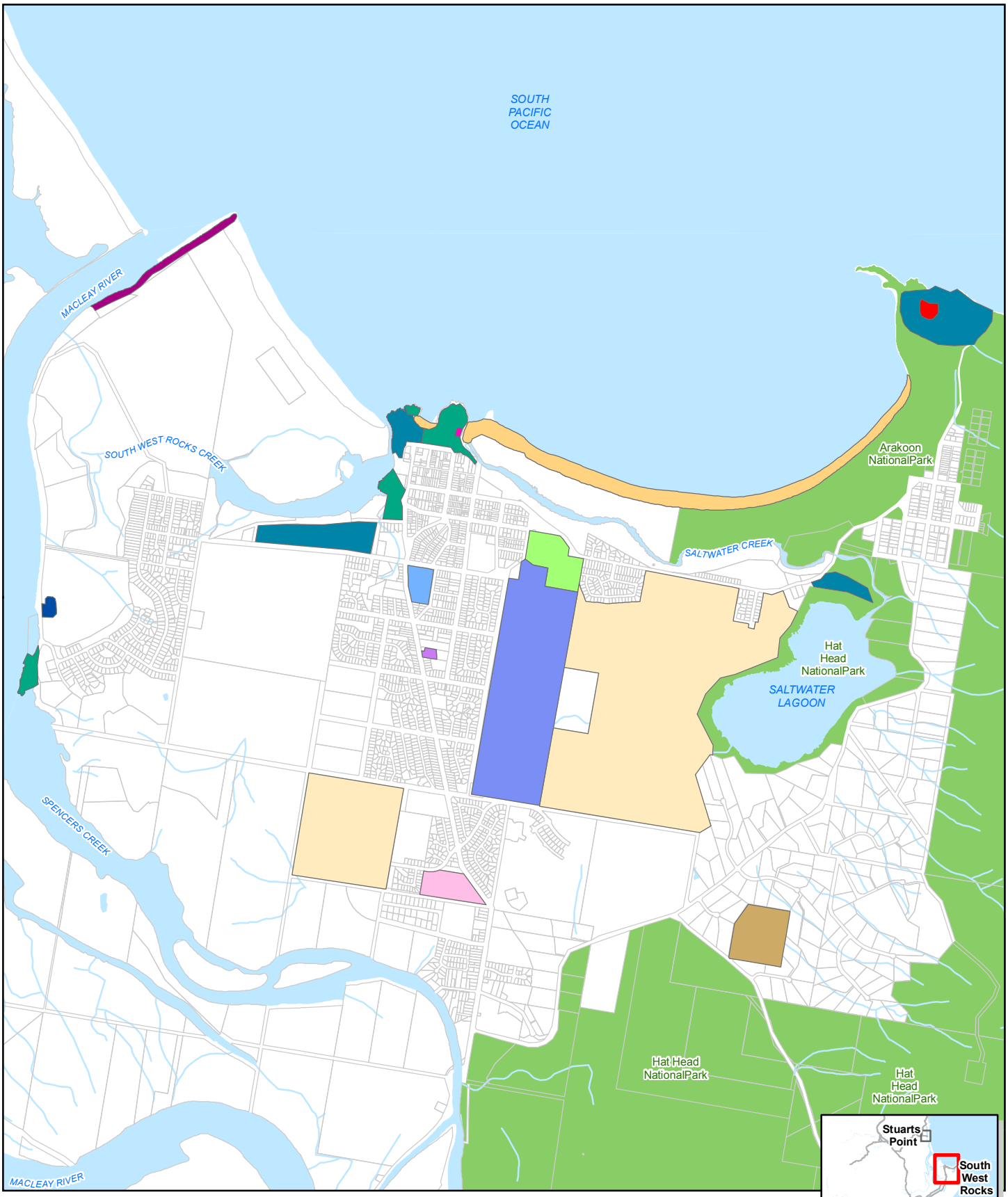
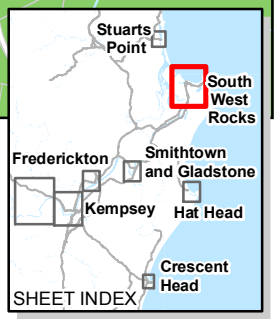


LEGEND

- Cadastre
- Waterbody
- National Park
- Aged care facility
- Beach
- Breakwall
- Caravan park
- Cemetery
- Future growth area
- Golf course
- Pub / Tavern
- Park / reserve
- School
- Shops
- Sports field
- Surf club
- Trial Bay Gaol



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GHD

Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

South West Rocks
Land Use and Key Trip Generators

Figure A-5

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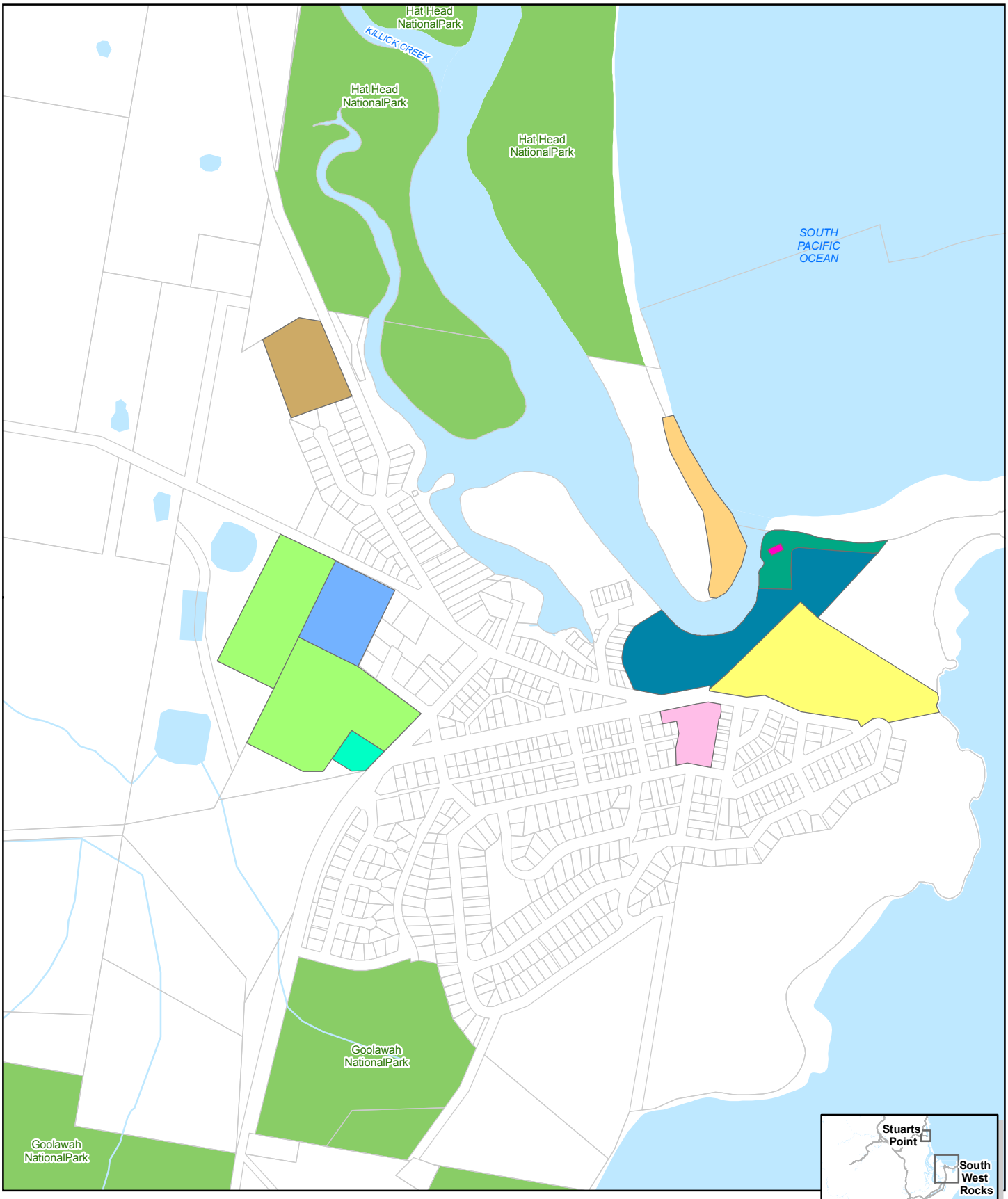

LEGEND

- Cadastre
- Waterbody
- National Park
- Beach
- Caravan park
- Cemetery
- Country club
- Pool
- Park / reserve
- School
- Shops
- Sports field
- Surf club

Paper Size A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Crescent Head
Land Use and Key Trip Generators

Figure A-6

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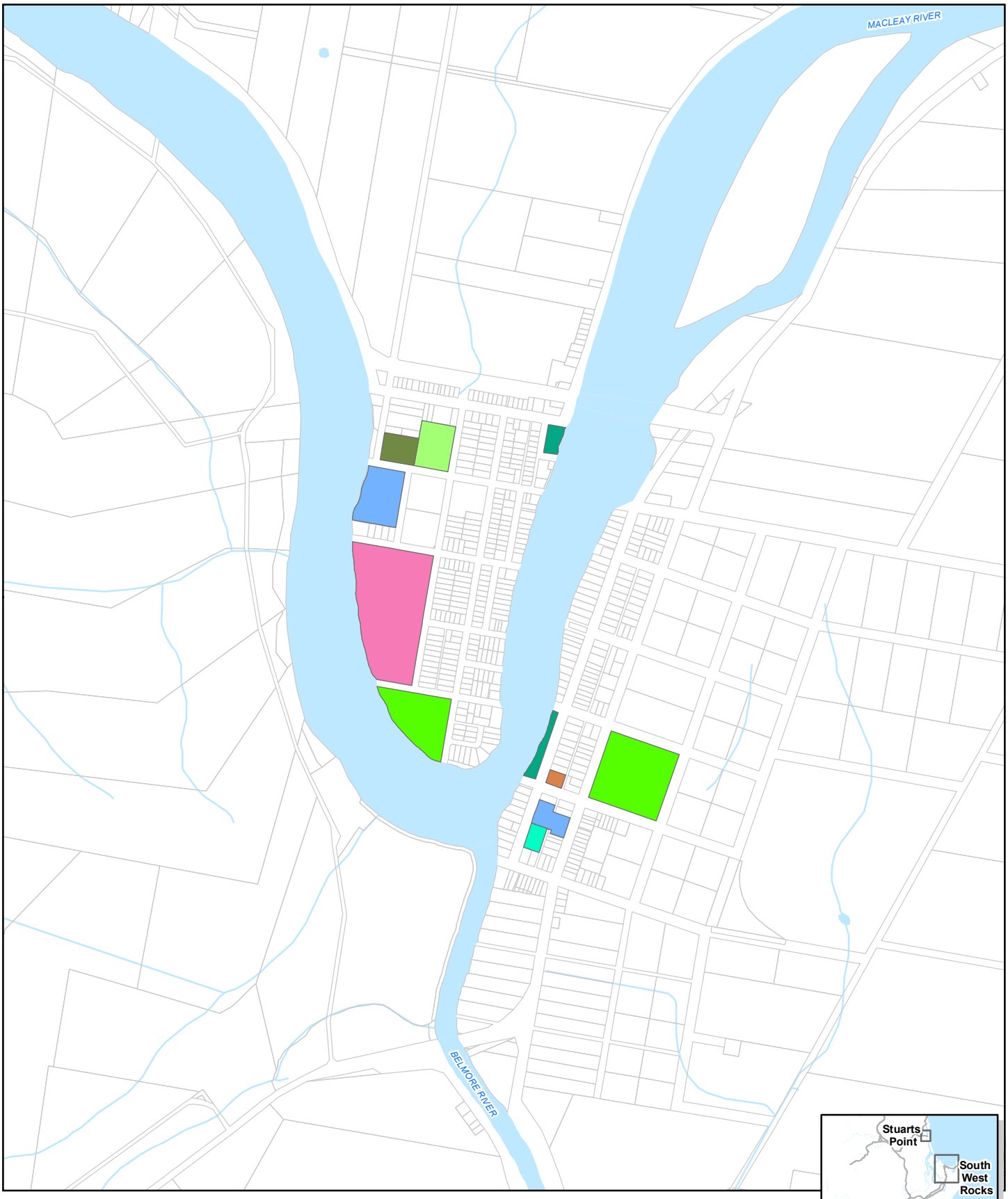
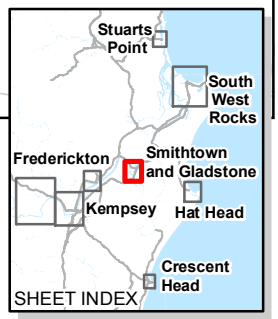


LEGEND

- Cadastre
- Waterbody
- Bowling club
- Nestle' factory
- Playing field
- Pool
- Pub
- Park / reserve
- School
- Sports field



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Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Smithtown and Gladstone
Land Use and Key Trip Generators

Figure A-7

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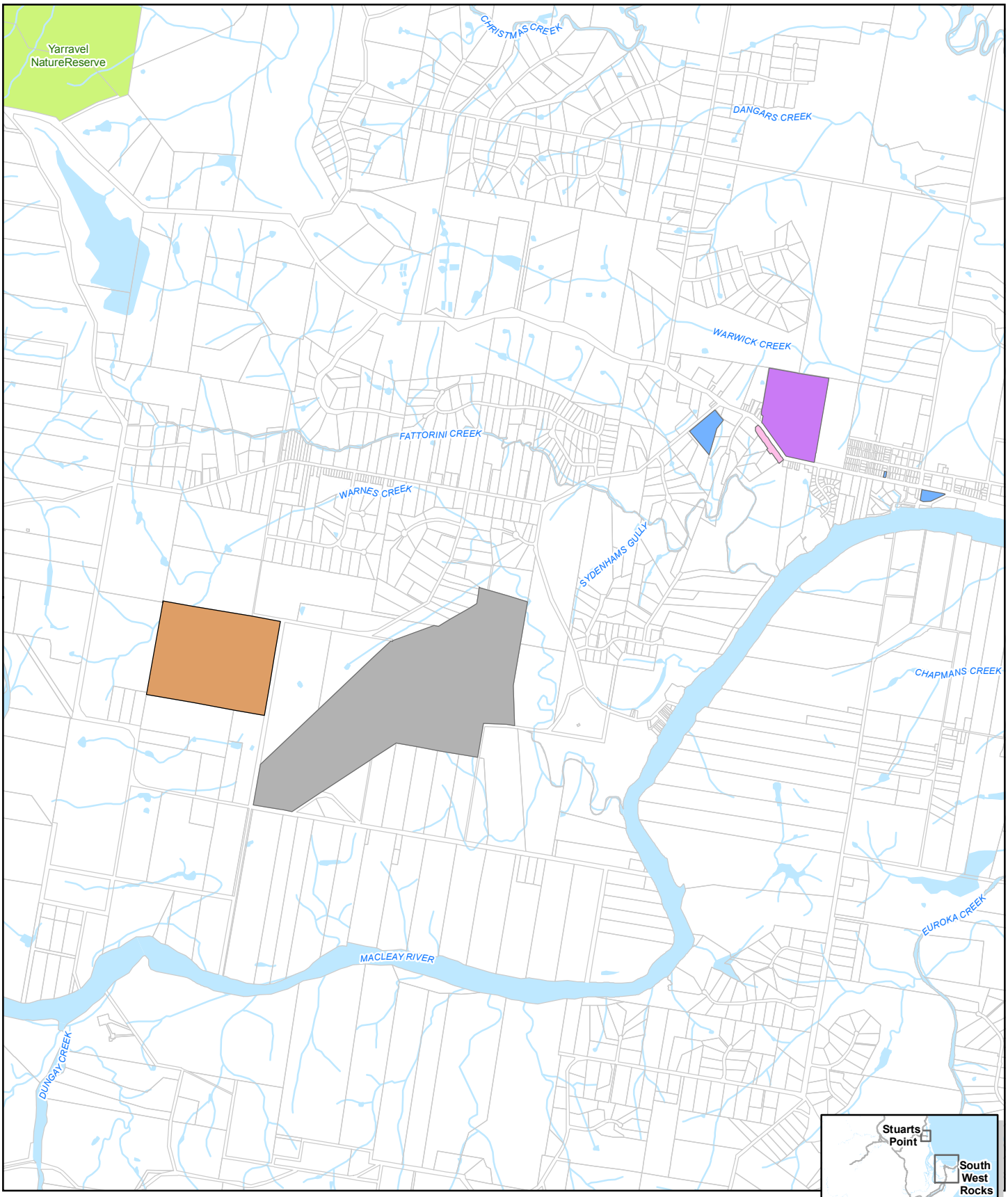
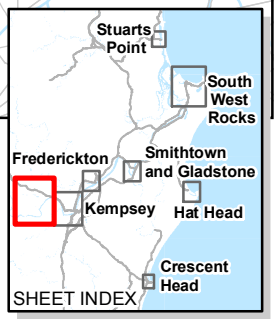




LEGEND

- Cadastre
- Waterbody
- Nature Reserve
- Aged care facility
- Airport
- Mid North Coast Correctional Facility
- School
- Shops

Paper Size A4

0 125 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Kempsey Shire Council
Bike Plan

Aldavilla
Land Use and Key Trip Generators

Figure A-8

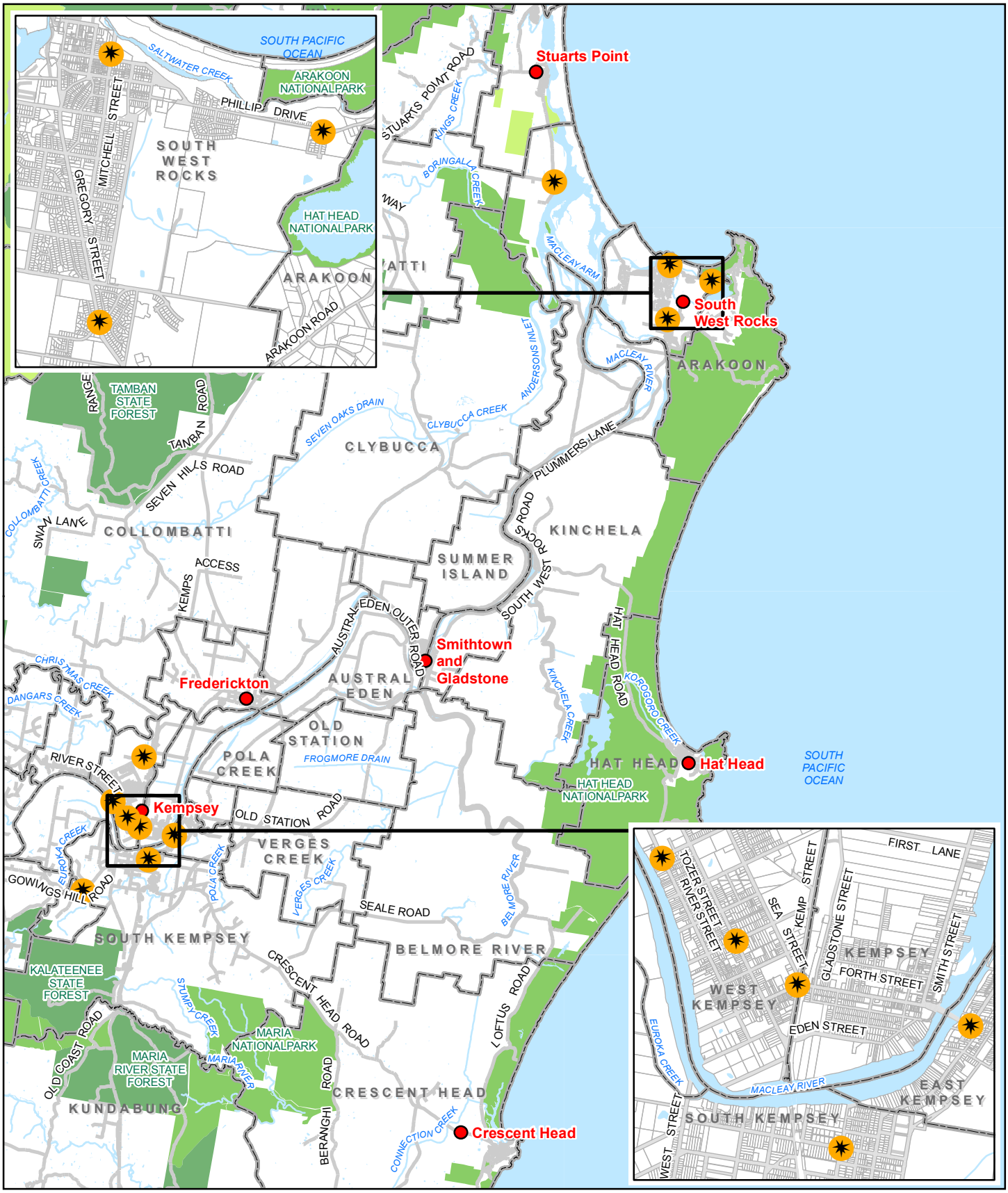
Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R001_KeyTripGenerators_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay, tmorton

Appendix B – Crashes involving Cyclists



LEGEND

- Area of Interest
- Cadastre
- Waterbody
- Suburb boundary
- State Forest
- National Park
- Nature Reserve
- Road
- Accidents Involving Cyclists 2011-2016

Paper Size A4

0 0.75 1.5 3 4.5 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Accidents Involving Cyclists 2011-2016

Job Number	22-185120200
Revision	0
Date	08 Jun 2017

Figure B-1

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G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R005_CyclistAccidents_0.mxd

Data source: NSW Pilice: Cyclist accidents, 2016; LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

Appendix C – Community Consultation

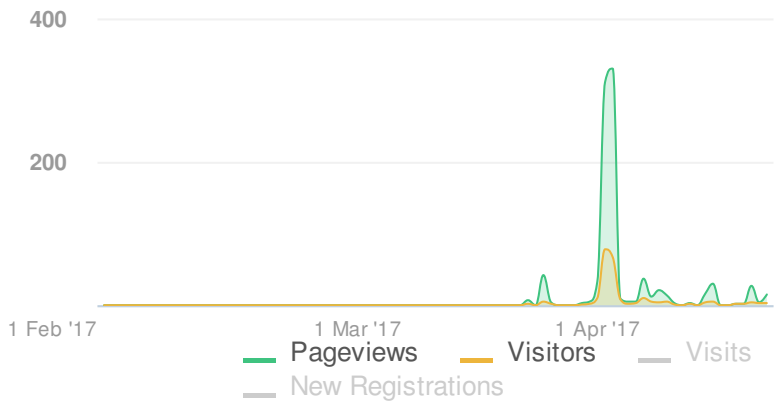
Project Report

14 October 2016 - 20 April 2017

Your Say Macleay

Kempsey Shire Bike Plan

Visitors Summary



Highlights

TOTAL VISITS	MAX VISITORS PER DAY	NEW REGISTRATIONS
254	78	31

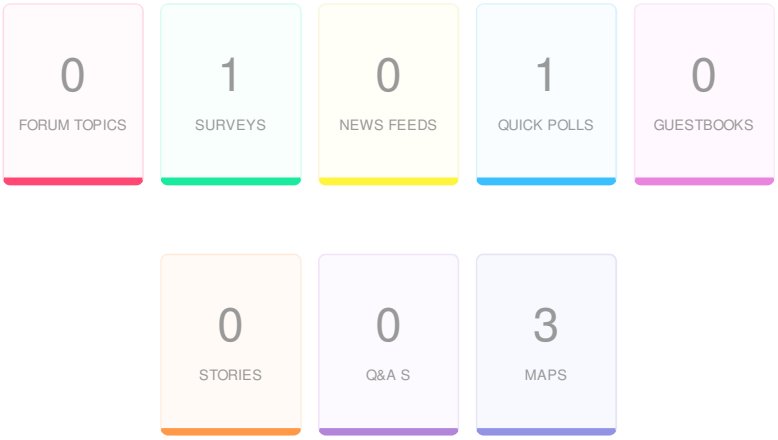
ENGAGED VISITORS	INFORMED VISITORS	AWARE VISITORS
59	154	208

Aware Participants	208
Aware Actions Performed	Participants
Visited a Project or Tool Page	208

Informed Participants	154
Informed Actions Performed	Participants
Viewed a video	0
Viewed a photo	19
Downloaded a document	23
Visited the Key Dates page	0
Visited an FAQ list Page	19
Visited Instagram Page	0
Visited Multiple Project Pages	97
Contributed to a tool (engaged)	59

Engaged	59		
Engaged Actions Performed	Registered	Unverified	Anonymous
Contributed on Forums	0	0	0
Participated in Surveys	44	0	0
Contributed to Newsfeeds	0	0	0
Participated in Quick Polls	17	1	12
Posted on Guestbooks	0	0	0
Contributed to Stories	0	0	0
Asked Questions	0	0	0
Placed Pins on Maps	12	0	0
Contributed to Brainstormers	0	0	0

ENGAGEMENT TOOLS SUMMARY



Tool Type	Engagement Tool Name	Tool Status	Visitors	Contributors		
				Registered	Unverified	Anonymous
Map	Kempsey cycling facilities	Published	19	7	0	0
Map	South West Rocks Cycling facilities	Published	9	4	0	0
Map	Crescent Head Cycling Facilities	Published	5	2	0	0
Survey Tool	Community Survey	Published	125	44	0	0
Quick Poll	What is the most common reason for you to ride a bike?	Published	31	17	1	12

INFORMATION WIDGET SUMMARY

1	3	0	1	0
DOCUMENTS	PHOTOS	VIDEOS	FAQS	KEY DATES

Widget Type	Engagement Tool Name	Visitors	Views/Downloads
Document	Existing Bike Paths	23	23
Faqs	faqs	19	21
Photo	Off road riding	18	19
Photo	Competative cycling for all age groups	12	14
Photo	Recreational riding	11	11
Key Dates	Key Date	0	0

ENGAGEMENT TOOL: MAP

Tool title/name: Kempsey cycling facilities

VISITORS 19	CONTRIBUTORS 7	CONTRIBUTIONS 11

No Graphs to show

Pro Tip:

The following types of questions are shown here as graphs.

Dropdown Type Question

Checkbox Type Question

Radio Type Question

Region Type Question

Number Type Question

Text based responses are not shown in this report.

ENGAGEMENT TOOL: MAP

Tool title/name: South West Rocks Cycling facilities

VISITORS 9	CONTRIBUTORS 4	CONTRIBUTIONS 12

No Graphs to show

Pro Tip:

The following types of questions are shown here as graphs.

Dropdown Type Question

Checkbox Type Question

Radio Type Question

Region Type Question

Number Type Question

Text based responses are not shown in this report.

ENGAGEMENT TOOL: MAP

Tool title/name: Crescent Head Cycling Facilities

VISITORS 5	CONTRIBUTORS 2	CONTRIBUTIONS 2

No Graphs to show

Pro Tip:

The following types of questions are shown here as graphs.

Dropdown Type Question

Checkbox Type Question

Radio Type Question

Region Type Question

Number Type Question

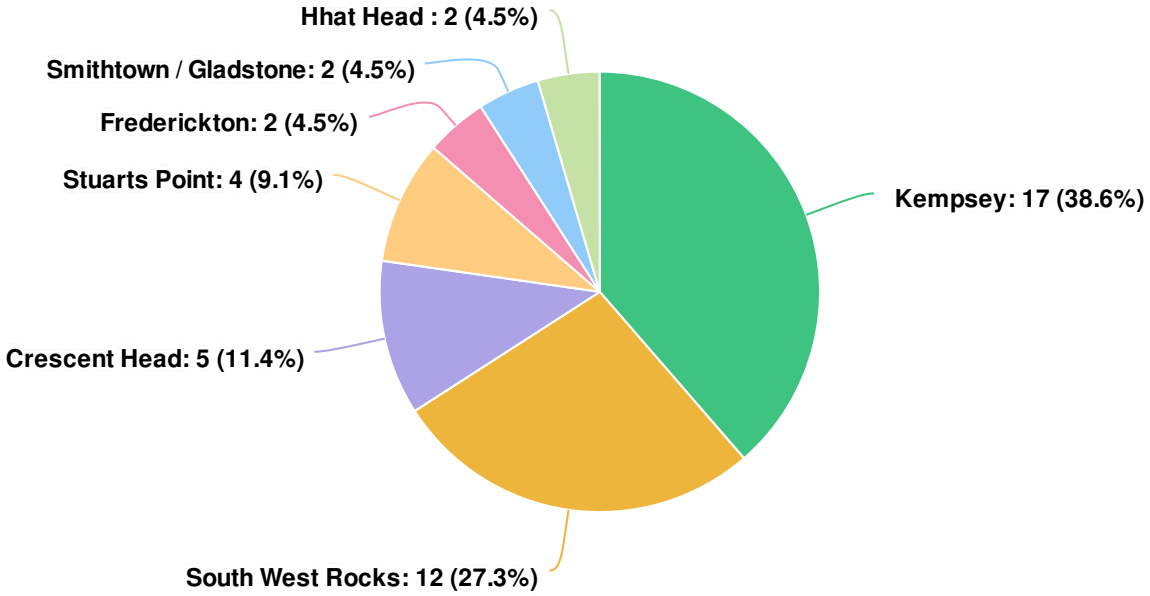
Text based responses are not shown in this report.

ENGAGEMENT TOOL: SURVEY TOOL

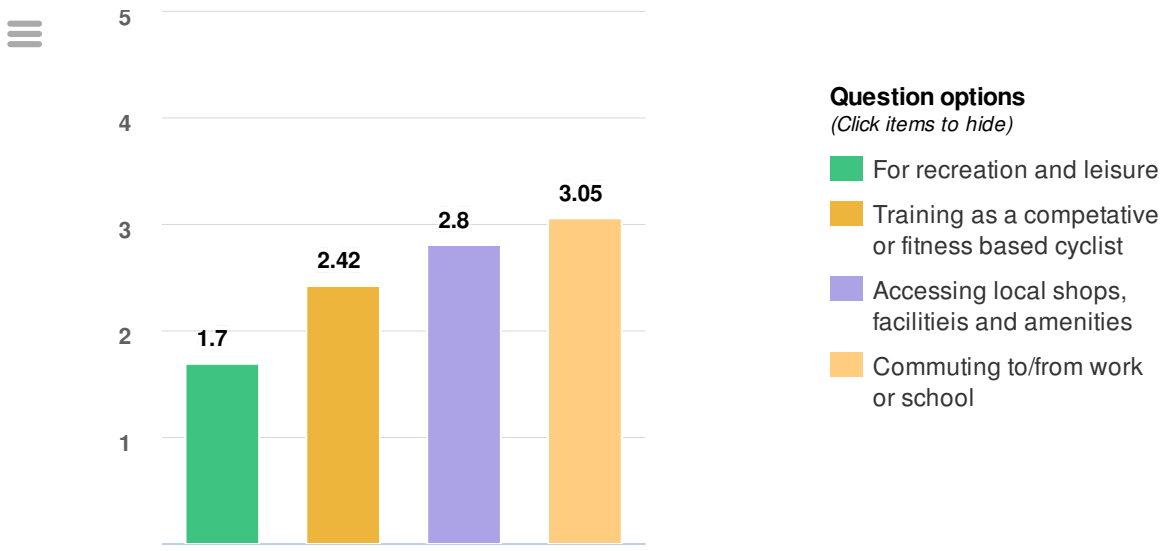
Tool title/name: Community Survey

VISITORS 125	CONTRIBUTORS 44	CONTRIBUTIONS 44

Which local area do you most often bike ride?

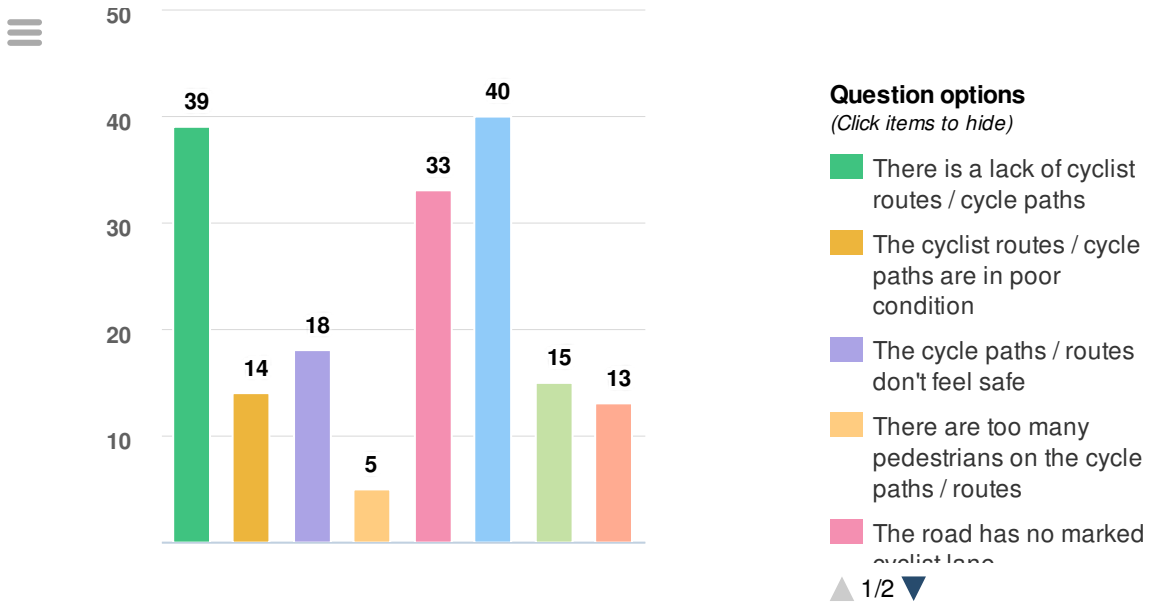


Please rank in order from most often to least often, the reason you would ride a bike.

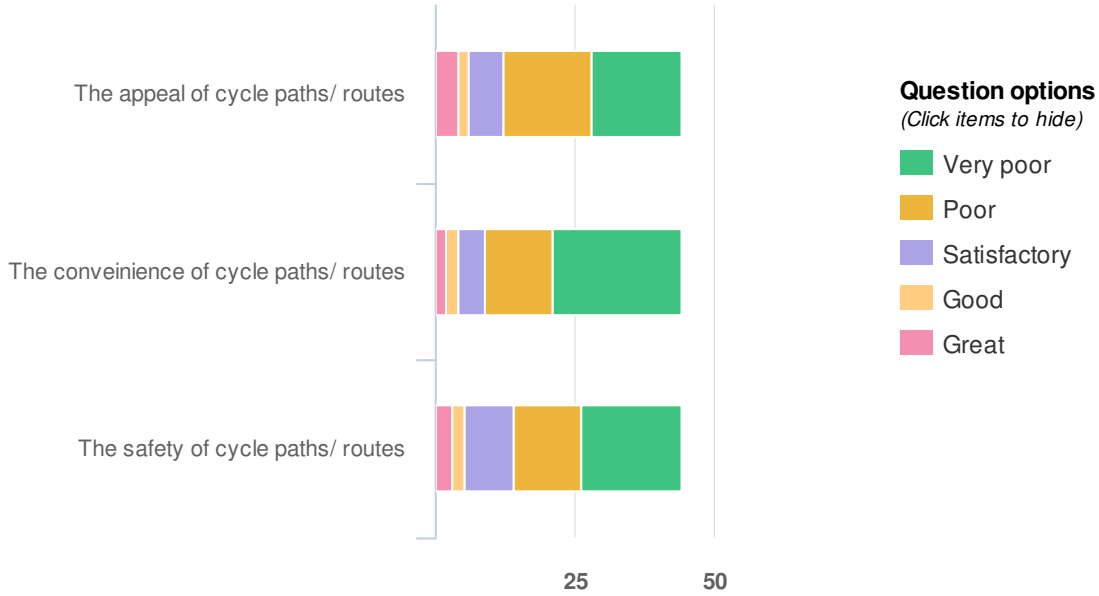


What are the reasons you don't cycle more often? (Tick all that apply)

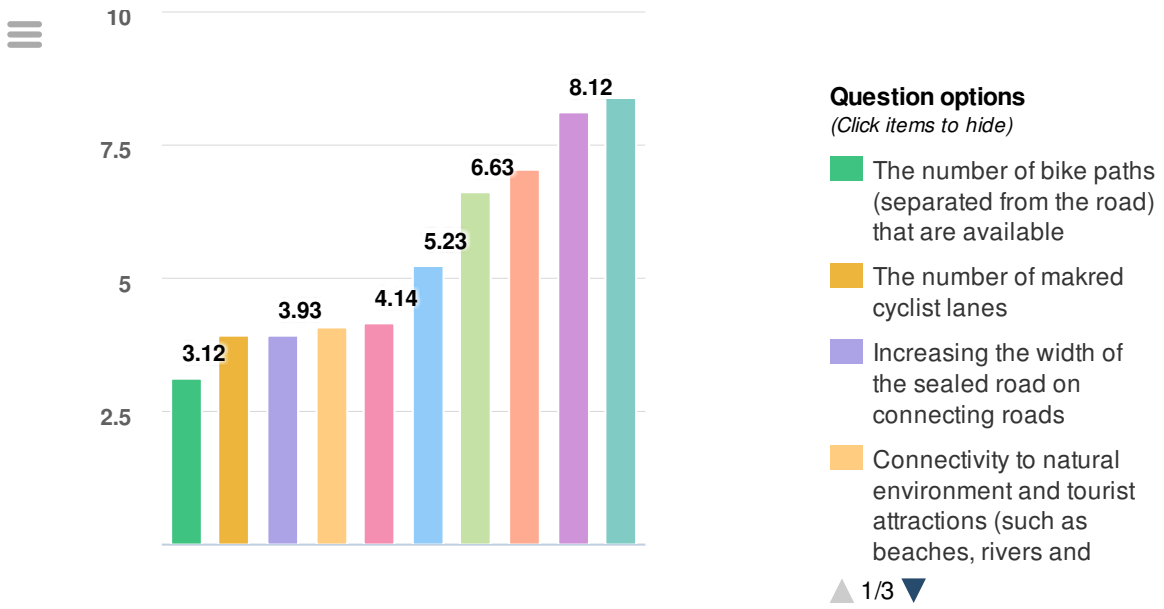
Optional question



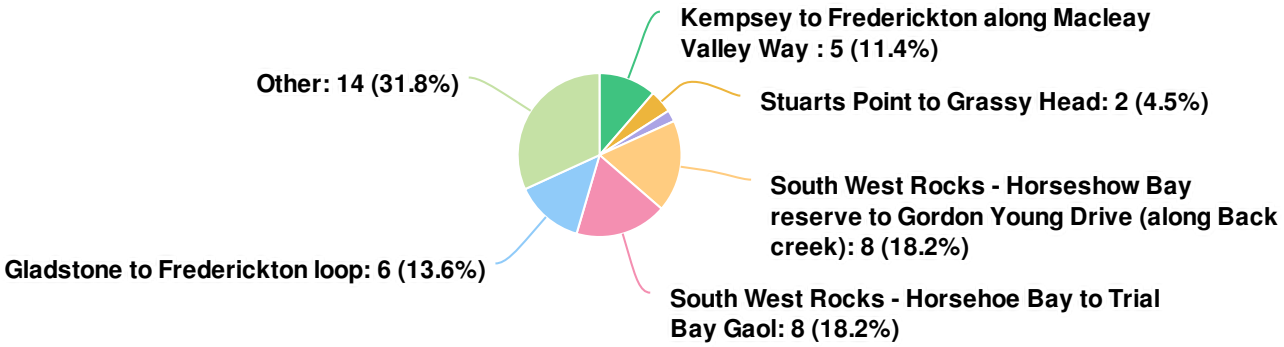
Thinking about the local cycling network or infrastructure, please rate the following factors.



How important do you think the following are for improving the cycling network? Please rank from 1-10 with 1 being the most important.



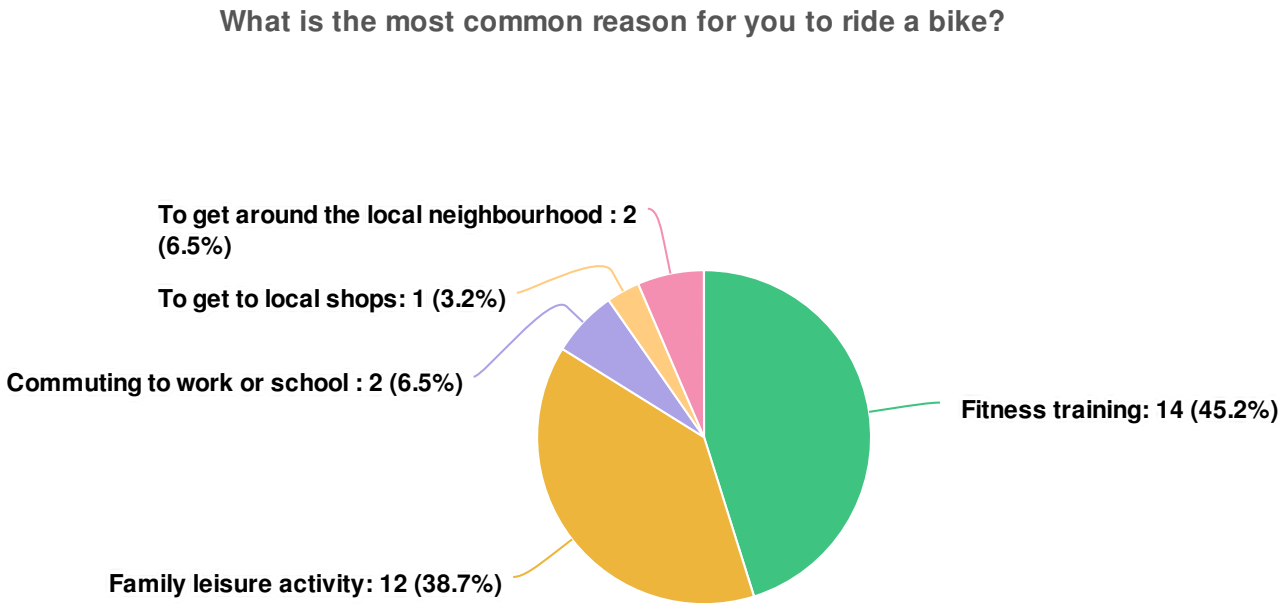
Which of the following cycling routes do you think would be most popular for attracting tourists to the area?



ENGAGEMENT TOOL: QUICK POLL

Tool title/name: What is the most common reason for you to ride a bike?

VISITORS 31	CONTRIBUTORS 30	CONTRIBUTIONS 31



Written Response Question 1

Are there any specific issues with the current cyclist network you would like to see fixed that would increase the appeal, convenience and/or safety of the cyclist network?
Issues may include lack of pathways, narrow or uneven paths, narrow roads, lack of bike racks etc.
If possible, please outline the main locality of the concern i.e. Street name or Town.

Pathways don't connect up to anything. Need widening. A better plan needs to be done to ensure future pathways can connect and make sense. No pathways down or at the entrance to Gordon Young Drive and extremely dangerous for children and older poeople trying to move around that section of road.
Our community here at Dulconghi Hts, Crescent Head would love to see a cycleway built from here into the village
Probably the most used bike track is from Gladstone to Crescent Head- better signage warning motorists of Bikes on Road.
More mountain bike trails, separate from cars
Shoulders are narrow but worst of all are filled with sharp rocks, glass, bolts, metal, rubber etc. Forcing me to ride in the lane.
Not enough cycleway infrastructure in the Kempsey Shire. Some more bike racks at key tourist spots like Back Creek, the playground and Matty's Flat.
More needs to be done in schools to encourage more kids to take up bike riding instead of being inside playing on computer games. Funding for the Kempsey mountain bike club allot of people ride out at the golf club tracks but funding from the council would inprove the tracks encouraging people from out of Kempsey to come to town brining more money into the community
There are no adequate cycle facilities within the shire. Most roads are rough with pot holes and poor maintenance, road shoulders are a threat to safety and damaging to expensive cycle equipment. Quieter roads are too narrow and also pose a threat to cyclist safety. New bypass is the only comfortable surface to cycle on, however heavy traffic and speed make cycling that course unnerving.
Arakoon road and lighthouse road are regular cycle routes with very poor infrastructure. Roads too narrow for bikes to share safely with motor vehicles
The cycle track at SWR would benefit from improved educational signage (eg. "shared pedestrian/bike path; please keep left, show courtesy to fellow users" etc), plus a central dotted or solid line to encourage people to stay left. Ideally, it would be better connected to go from the entrance all the way to the Gaol (not have gaps eg. from Horseshoe to Gordon Young Dv; up to Gaol on Cardwell St etc, so less confident cyclists (& kids) spend less time on roads. Maybe have signage eg. "SWR (or Hat Head, SP etc) is a cyclist-friendly town" with a 1m gap indicator to remind motorists to be considerate of their fellow road-users
There are no real facilities so driver education would most likely be the way to go. One stretch of road would be very expensive to widen so u may as well put that money into driver education
Get the mix of vehicles and bikes separated.
Create path or cycleway along the entire length of Gregory St to Arakoon road. My children cycle daily to school and have to share the main road with cars/trucks as no path or cycleway on Gregory St after Coles shopping centre. Very dangerous
Signage to educate, encourage and support bike riding within Macleay Valley. Programs in schools to encourage young people to choose cycling. Adult cycling training and maintenance opportunities across Macleay Valley.
Only path near Lika Drive is the new one that leads to Middleton street, but who would want to ride their bike along Middleton St? And riding my bike on the edges of the road if I ride up river is too dangerous because there is no cycle lane and the road edges are too bumpy or vegetated to safely get off the road when a huge truck comes bouncing along with it load of gravel travelling at 100 km at least on Armidale road. It's not just the big heavy and fast trucks, there are some crazy fast drivers on Armidale road before 7 am. They fly in to town early at speeds around 200 km at some parts, I have seen them flash past when riding my bike early in the morning.
I don't think Kempsey to Frederickton cycleway would attract tourists - but it would get used by locals
Kempsey needs wider roads with marked cycling lanes and more cycling paths as there is no cycling lanes or cycling paths.
Increase in cycle ways to create a better experience
We like to cycle from Hat Head to Crescent Head along the Belmore river roads, from Hat Head Gladstone, summer island rd, SWRs and to Town. It can be hazardous due to pot holes, pot holes filled in to high or low, rough road surfaces,not enough room for cars to pass (small shoulders) poor road surface, rubbish on the road and in the bike lanes if there are bike lanes, and most of all drivers driving too close. It would be great to have a wider roads.
Arakoon Rd is very popular for cyclists but is very dangerous , i fear a tragedy if not addressed .
The condition is very poor, not connected, not connected for duration that is satisfying to ride for. Not appropriate for small bikers (kids), nowhere to stop bikes at attractions.
there is no cycling network in the Macleay shire. Major roads between all the towns should include a cycle lane at least making it safer to road from Kempsey to South West Rocks or Kempsey, Crescent head and Gladstone
At the moment we are riding in the dark. There aren't really any bike pathwsys. Any pathway or road that has lighting would be a 100% improvement. You can not take inexperienced riders in these conditions. A path between Kempsey and Frederickton with lights would be a start.
There are really not many cycle paths around but then for the type of cycling that I do, I don't really use cycle paths anyway. Were there dedicated cycle lanes/added width to the roads between towns throughout the Macleay then cycling would become more popular and of course safer.
There is a lack of lighting on any roads or tracks in the local area
There are no facilities along Gilbert Cory street and road is very narrow for cars as it is.
Improve convenience
Currently no safe areas to take our children to learn how to ride. A park with bike rules and signs and lines would be ideal - similar to what is at Wauchope.
There's no shared cycle & pedestrian path in Kempsey.
Improvement/restoration of Stuarts point to Grassy Head pedestrian/cycleway
All villages need to be connected with safe cycle paths, including those up river
No network to speak of. Provide cycle lanes in all of the small towns so that locals and tourists can get around safely. SWR, Smithtown, Gladstone, Crescent H. Provide a cycle lane at the side of the major roads. Kempsey to SWR, Hat Head Rd, Crescent Head Rd, Macleay Valley Way to Freddo. Town to Sherwood, Link Rd to Kempsey.

Written Response Question 2

Are there any particular cyclist routes that you would like to see constructed in future. This may include new pathways, widened roads, addition of cycle lanes etc. Please specify the specific locations that you would like to be connected via a cyclist route.

Pathways connections either end of town from the club and horseshoe bay to bilo and Jerseyville. Pathways around the golf course connecting back to the sports complex. Pathways out to the river. Bike racks around town to park your bikes.

As mentioned above, a cycleway from Dulconghi Hts to the village of Crescent Hd. There are more lots about to be placed on the market in this area and it would be great to have such a cycleway for residents of Dulconghi Hts, Crescent Hd and tourists.

Bike path from Maria River Rd to Crescent Head School

Downhill/gravity assisted trails

Kempsey to Crescent Head would be great, as well as other beach locations. Town loops would be good also such as around Dongdingalong/ Euroka etc.

New cycleways or extensions to existing cycleways Western side of the SWRs golf course from Frank Cooper St (or even Belle O'Connor St if possible) through to the tennis courts. Continue the shared pathway behind Phillip Drive through to Trial Bay Gaol. Construct a pathway along Back Creek to either connect to Gordon Young Drive or continue along Back Creek through to Quarry St or New Entrance Road. Along the Macleay River from the break wall to Matty's Flat. A lot of school children ride from the New Entrance area to school, they really need a designated cycleway or lane along Gilbert Cory St to link to the Gordon Young Drive shared pathway. Make the Malbec and the Saltwater developments include cycleways linking Belle O'Connor St to Phillip Drive. Mountain Bike tracks There is a need for a man-made mountain bike circuit in the Macleay.

There are more people gettting into road riding and doing a loop from Kempsey to crescent head via smithtown and Gladstone and then back to Kempsey, some parts of these roads arnt wide enough for 2 cars to even pass without having to go off the road, widening parts of the road woulf make kt safer for al the road users

Widening of roads to allow for bike lanes would be beneficial accross the valley. There are a number of roadways that recreation and competitive cyclist use regularly being; Return loop kempsey, Gladstone, frederickton. Kempsey, Gladstone, Crescent Head, kempsey Kempsey, Gladstone, smithtown, summer island, south west rocks South west rocks, Gladstone, crescent head Kempsey, Euroka, dondingalong, Aldavilla

Arakoon road and lighthouse road

As many as possible! More cyclists = improved safety as knowledge and familiarity increase. Outside towns, maybe just marked bike-lanes or even signage (as above). A cycle "path" than ran from Crescent Head via SWR to Stuart's Point/Scott's could be a real tourist attraction, especially if linked to improved and extended mountainbike opportunities (see Blue Derby, Tasmania for inspiration). Thanks

A runners pathway from Krmpsey to Freddo would be better

Extend path along entire length of Gregory St. Add cycleway or path from Phillip drive to Gaol.

Kempsey-Gladstone Loop via Fredo.

Crescent head road from highway to crescent. Armidale road. Dungay creek road. Go wings hill road. The roads leading from town to surrounding areas need to be wider so cyclists can ride on both sides of a road. A cyclists lane would be ok but it's good to have the choice of which side of the road to ride on.

Kempsey to Freddo. A little extra width on the Kempsey to Bellbrook road would make a good training ride but will be a little long for the average rider.

I would like to see a cycle path constructed from Central Kempsey to Kempsey Golf Course this will get a lot more people riding because it will have a lot more people riding in the Kempsey Macleay off Road Cyclist Club because people will feel a lot safer riding to the Mountain bike track at the Golf Course.

Arakoon road from Gregory street to Phillip drive

Yes the SWR to Hat Head to Crescent Head loop would be a great tourist cycle. It would make our area a destination for recreational and serious cyclists. It would also be great for a future cycle event.

Arakoon Rd from Phillip Drive to Gregry St . thank you.

Including cycle routes along South West Rocks road, i.e South West Rocks to Gladstone / Crescent Head.

Kempsey to South West Rocks or Kempsey, Crescent Head and Gladstone loop

Bike lane Kempsey to Frederickton that also links with Third Lane, Kemp Street, North Street and River Strret. It needs to also have lights. This would enable kids to also ride to school along North Street and Kemp Street promoting fitness. Kempsey was the second most Obese Municipal Shire behind Bundaberg so the more paths the better. These paths would than have the ability to link back to the CBD. You could utilise the parks and cafes in the CBD. You often see families riding at the netball courts because there isn't a safe alternative.

Improve the surface and width of the old sections of highway as these roads become popular with cyclists. Since these roads are still often the tourist routes, both cyclists and drivers would benefit from improvements to these such roads.

Yes along Gilbert Cory street and then over marlin drive down to the river, could possibly do a loop or finish at either the boat shed or the break walk.

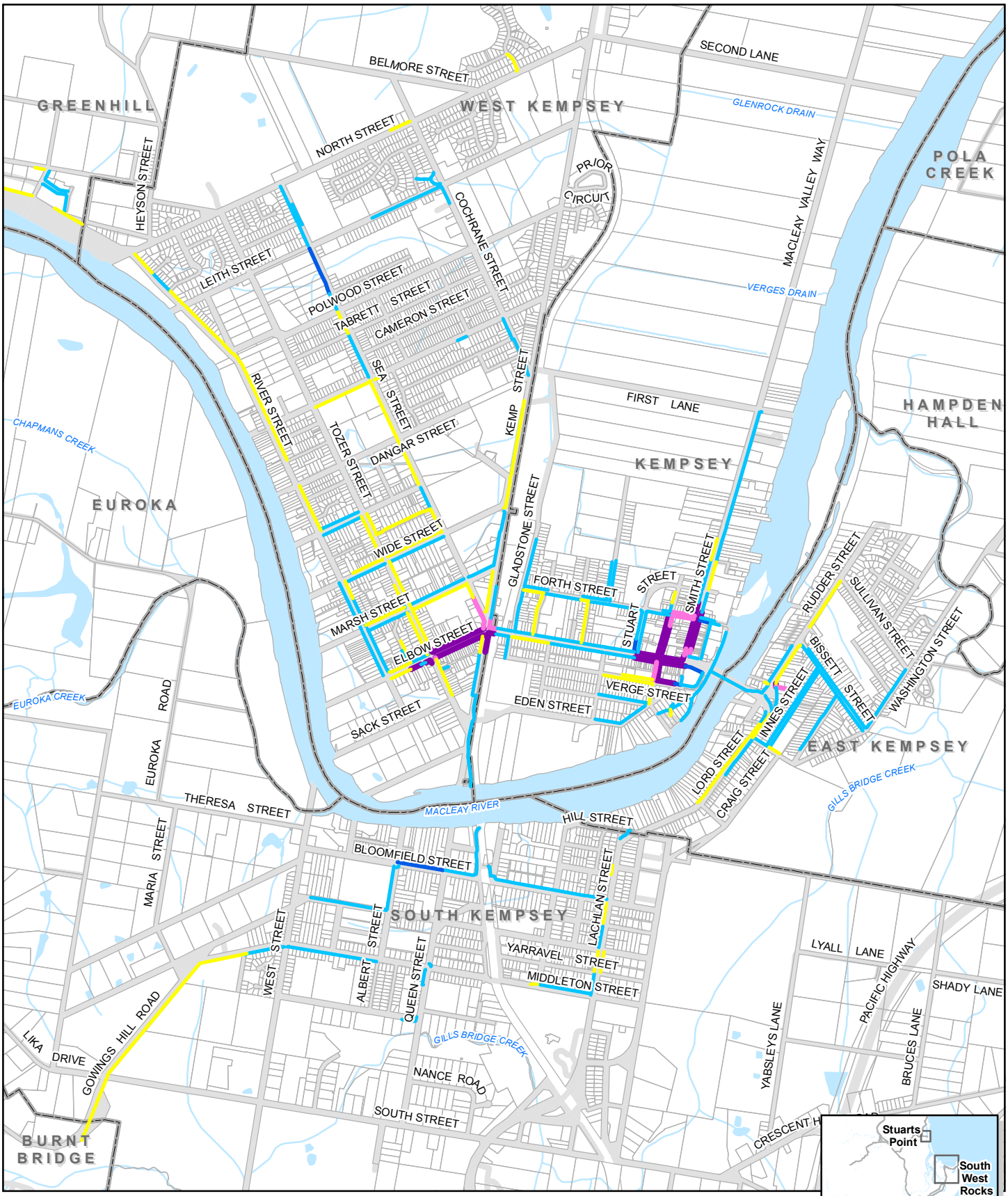
More bike patjs seperate from car roads along the entire coast line.

Any!

Shared path Starting at Riverside Park, Western section go along the river to West Kempsey then go along Tozer St to North St then loop back to CBD via Kemp St. North Section go alongside the river to Frederickton then loop back to Third Lane to Saleyard Rd, then back to CBD via Kemp St.

See above. Would also be good to have a loop ride in one of the state forests. Most efficient way to increase access is by providing access lanes adjacent to existing roads. A ride around some of the creeks eg Belmore River or Kinchela Creek would be a great tourist attraction.

Appendix D – Existing Infrastructure



LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0
- 5.0 - 6.6

Paper Size A4

0 90 180 360 540 720

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Kempsey
Existing Infrastructure

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure D-1

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Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Nature Reserve

Existing footpaths (width)

- 5.0 - 6.6
- 1.8 - 2.0
- 2.0 - 3.0

Paper Size A4

0 40 80 160 240 320

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Stuarts Point
Existing Infrastructure

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure D-2

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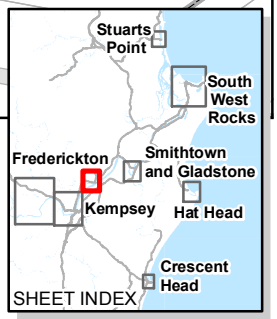
Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0



Paper Size A4

0 55 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Frederickton
Existing Infrastructure

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure D-3

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

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Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Road corridor
- Suburb boundary
- National Park

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 5.0 - 6.6

Paper Size A4

0 55 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Hat Head
Existing Infrastructure

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Figure D-4

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

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Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0
- 5.0 - 6.6

Paper Size A4

0 110 220 440 660 880

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Kempsey Shire Council
Bike Plan

South West Rocks Existing Infrastructure

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure D-5

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

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Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 4.0 - 5.0
- 5.0 - 6.6

Paper Size A4

0 35 70 140 210 280

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Crescent Head
Existing Infrastructure

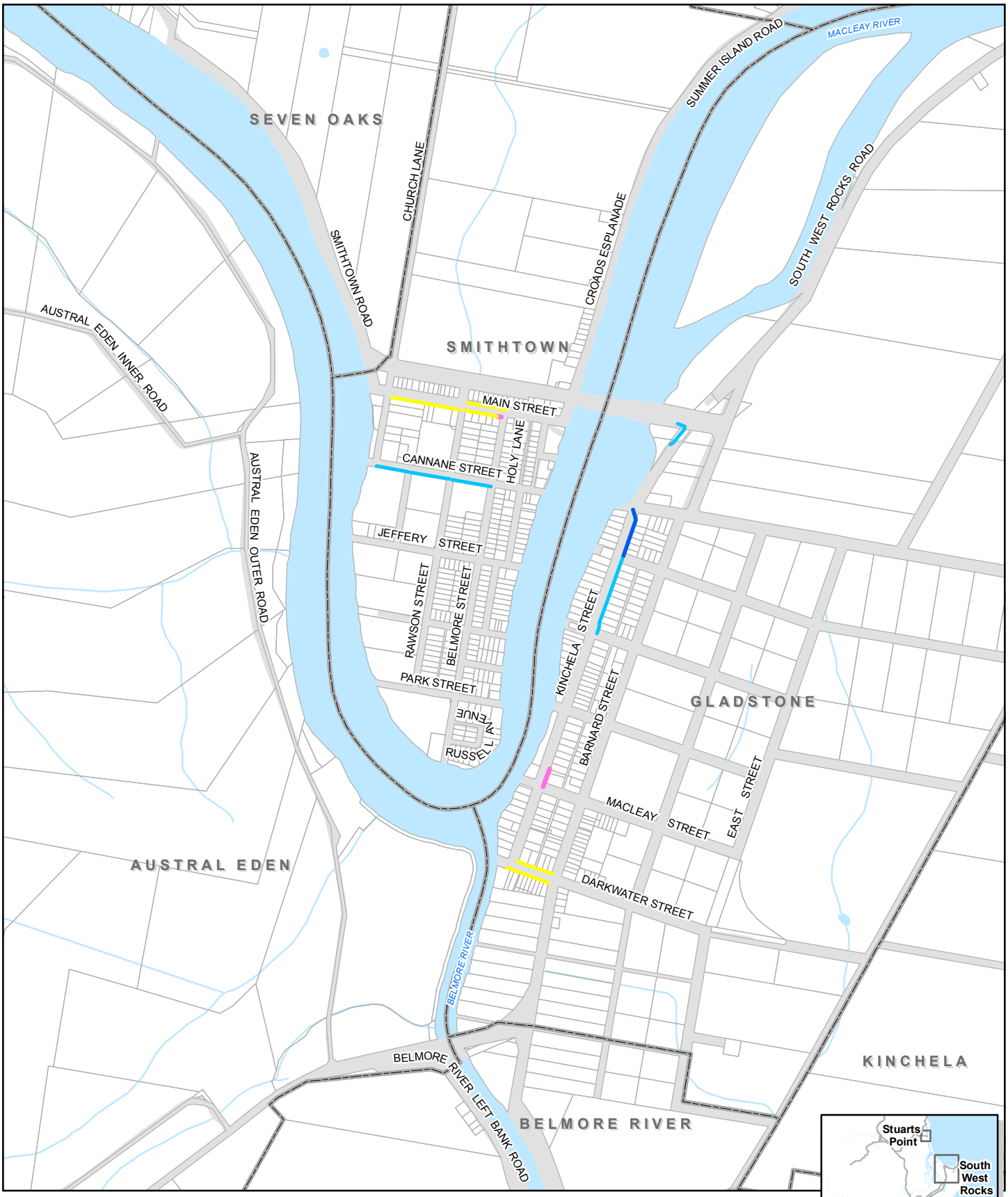
Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Figure D-6

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R002_ExistingInfrastructure_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay



LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0

Paper Size A4

0 55 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Kempsey Shire Council
Bike Plan

Smithtown and Gladstone
Existing Infrastructure

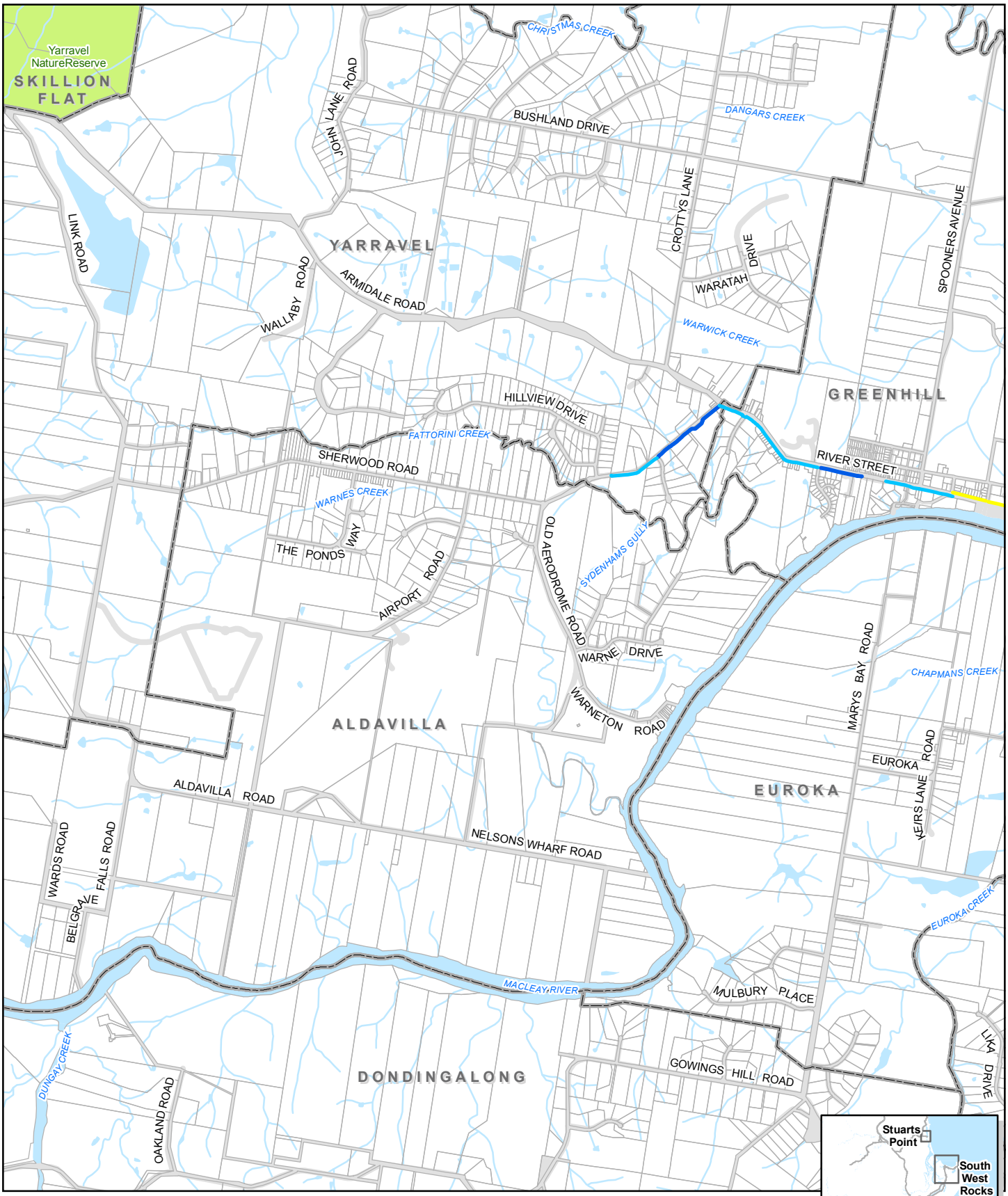
Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure D-7

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R002_ExistingInfrastructure_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay



LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Nature Reserve

Existing footpaths (width)

- 1.8 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0

Paper Size A4

0 125 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Aldavilla
Existing Infrastructure

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

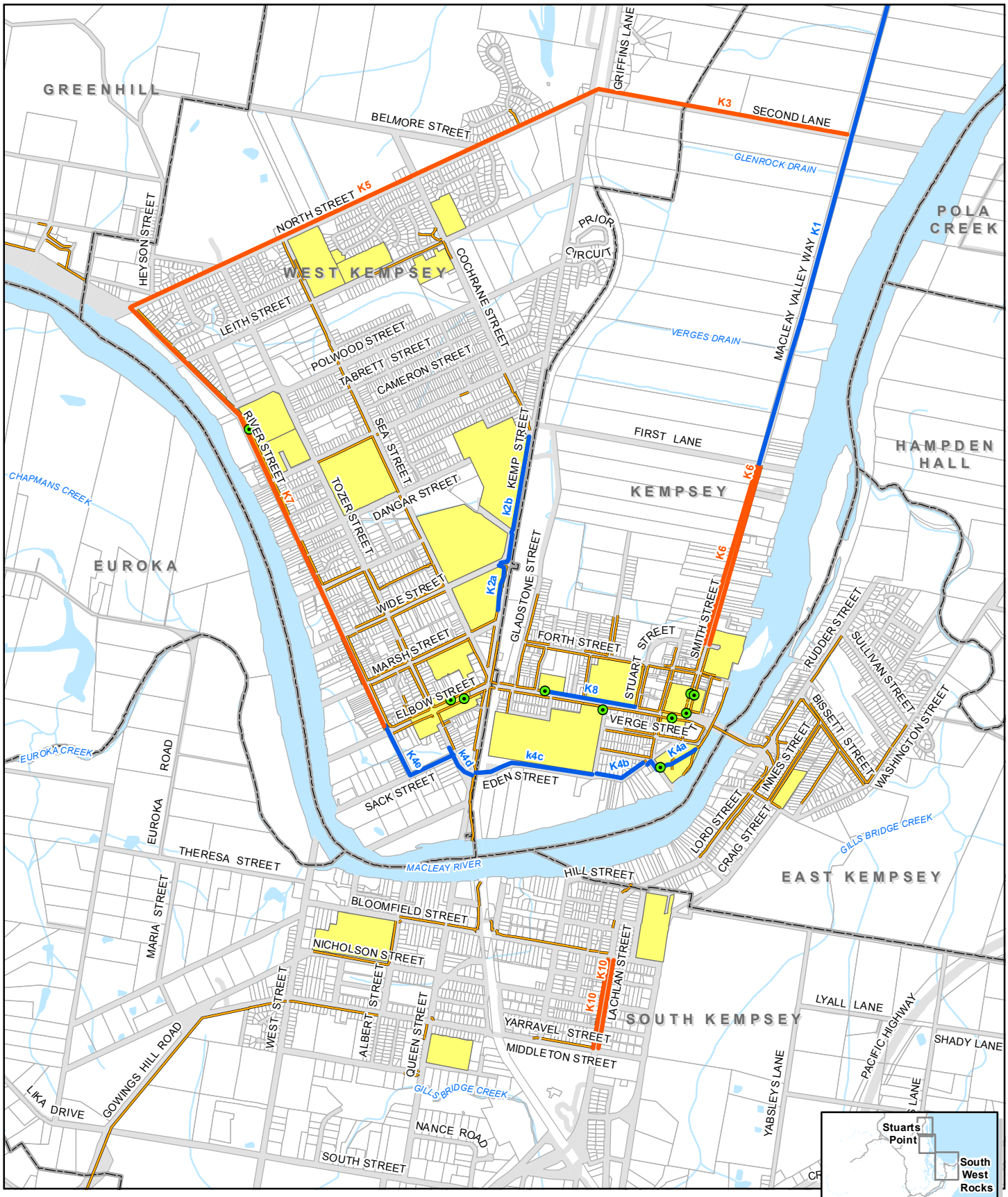
Figure D-8

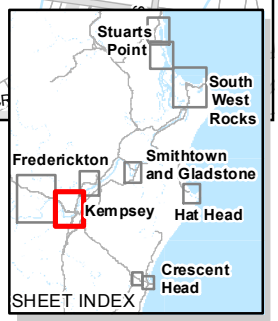
Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R002_ExistingInfrastructure_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

Appendix E – Proposed Network Improvements





LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Trip generator
- Existing footpaths
- Proposed bike rack
- Proposed off-road cycleway
- Proposed on-road cycleway

Paper Size A4

0 90 180 360 540 720

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Kempsey Shire Council
Bike Plan

Kempsey
Proposed Improvements

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Figure E-1

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R003_ProposedImprovements_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park
- Nature Reserve
- Trip generator
- Existing footpaths
- Proposed off-road cycleway

Paper Size A4

0 70 140 280 420 560

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Stuarts Point
Proposed Improvements - Sheet 1

Figure E-2

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\22185120\2Report\221851202_R003_ProposedImprovements_DDP_1.mxd

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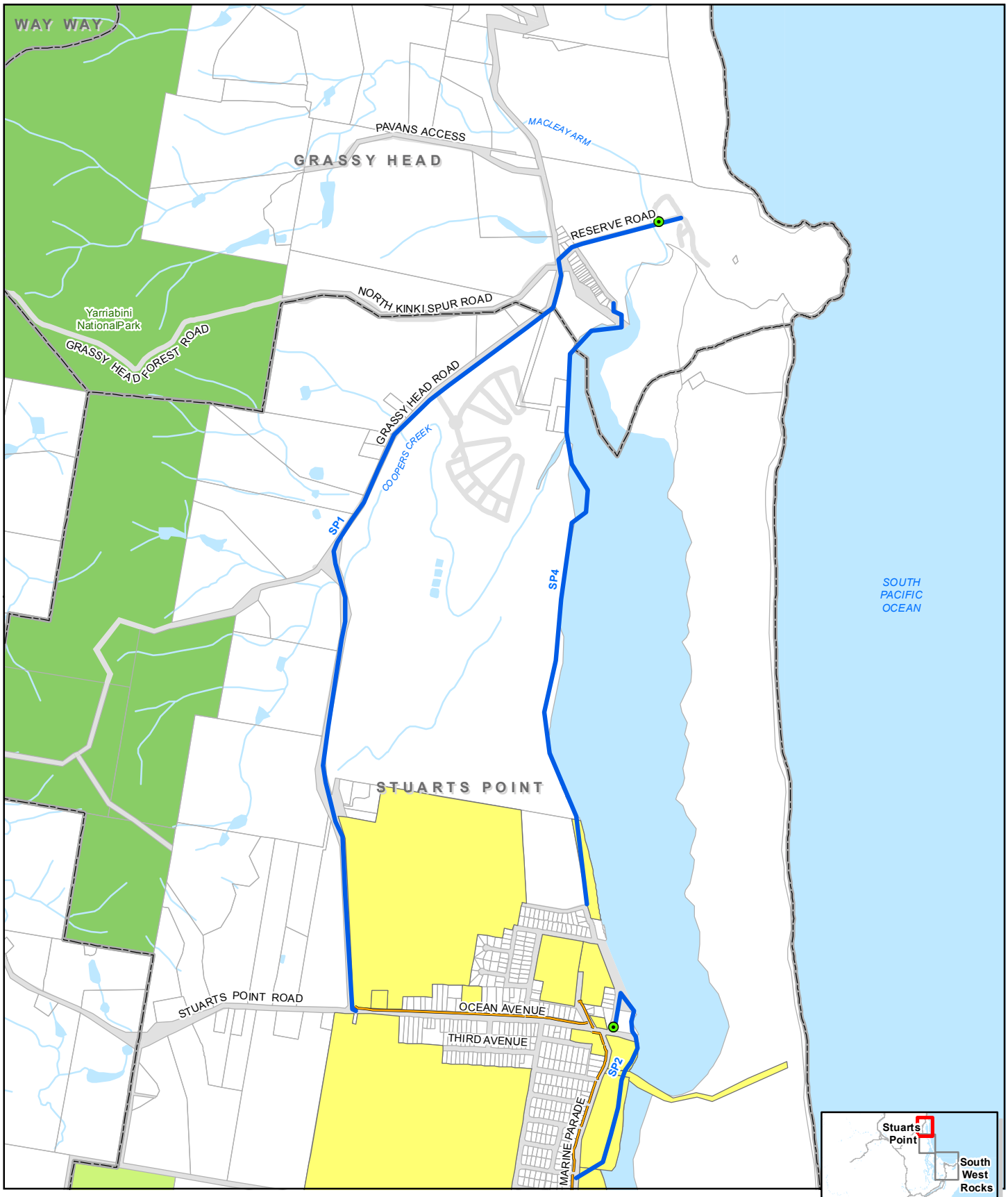

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park
- Nature Reserve
- Trip generator
- Existing footpaths
- Proposed bike rack
- Proposed off-road cycleway

Paper Size A4

0 70 140 280 420 560

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Stuarts Point
Proposed Improvements - Sheet 2

Figure E-3

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\22185120\2\Report\221851202_R003_ProposedImprovements_DDP_1.mxd

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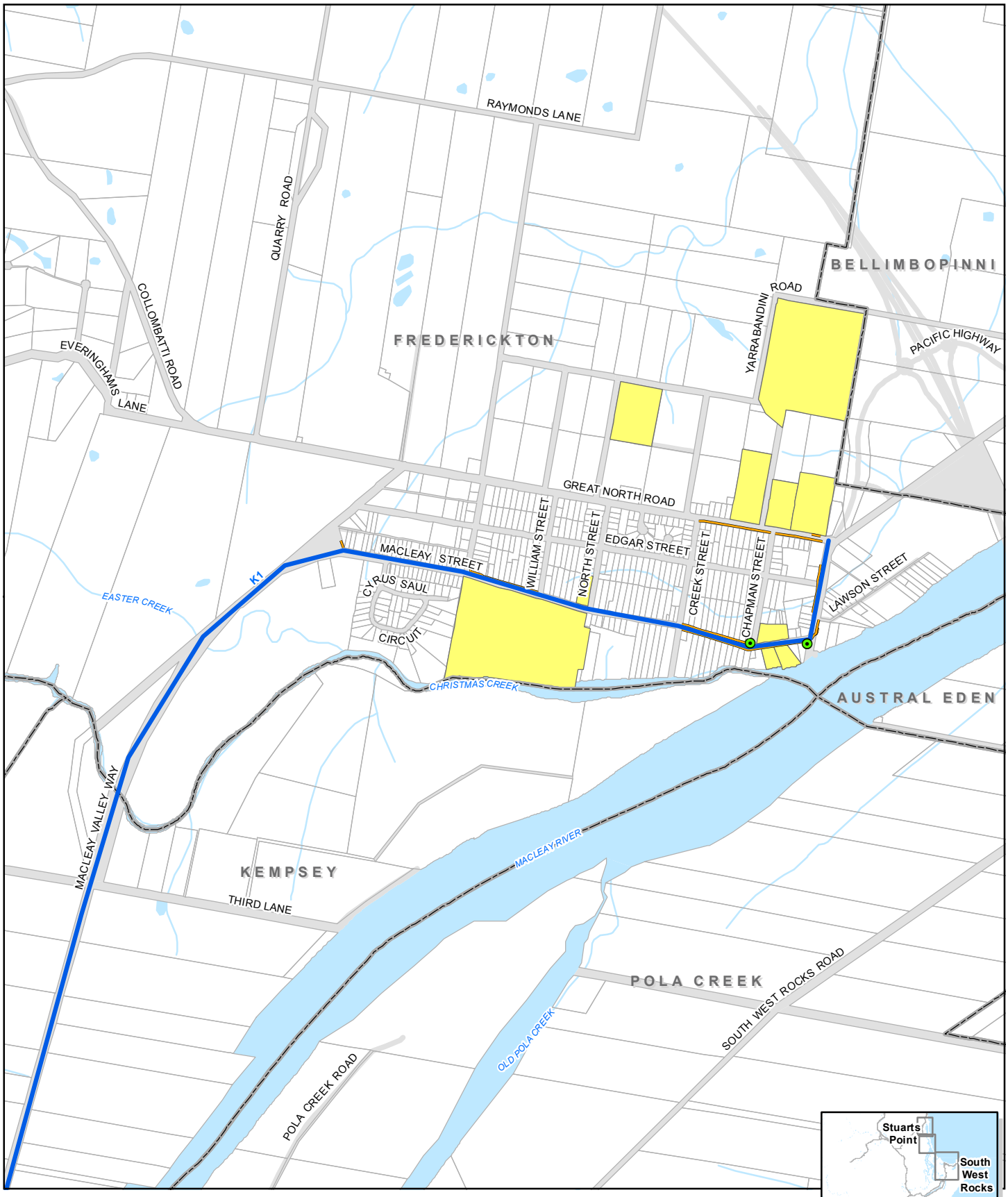

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Trip generator
- Existing footpaths
- Proposed bike rack
- Proposed off-road cycleway

Paper Size A4

0 65 130 260 390 520

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Fredericton
Proposed Improvements

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Figure E-4

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R003_ProposedImprovements_DDP_1.mxd

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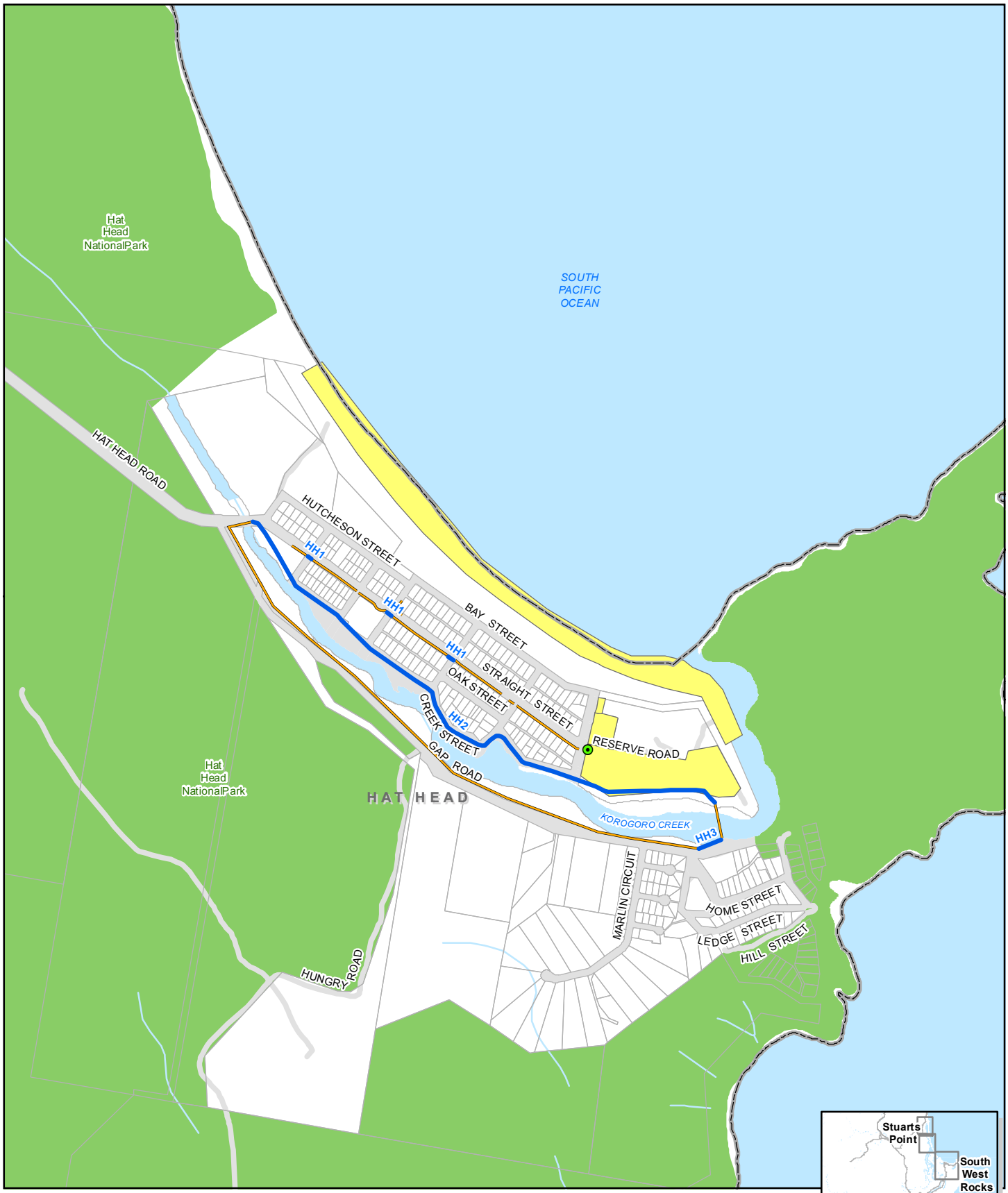
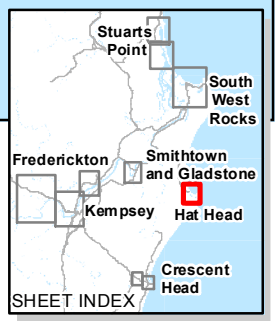


LEGEND

- Cadastre
- Road corridor
- Suburb boundary
- National Park
- Trip generator
- Existing footpaths
- Proposed bike rack
- Proposed off-road cycleway



Paper Size A4

0 55 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Hat Head
Proposed Improvements

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure E-5

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

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Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park
- Trip generator
- Existing footpaths
- Proposed bike rack
- Possible future cycleway
- Proposed off-road cycleway
- Proposed on-road cycleway

Paper Size A4

0 110 220 440 660 880

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

South West Rocks
Proposed Improvements

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure E-6

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

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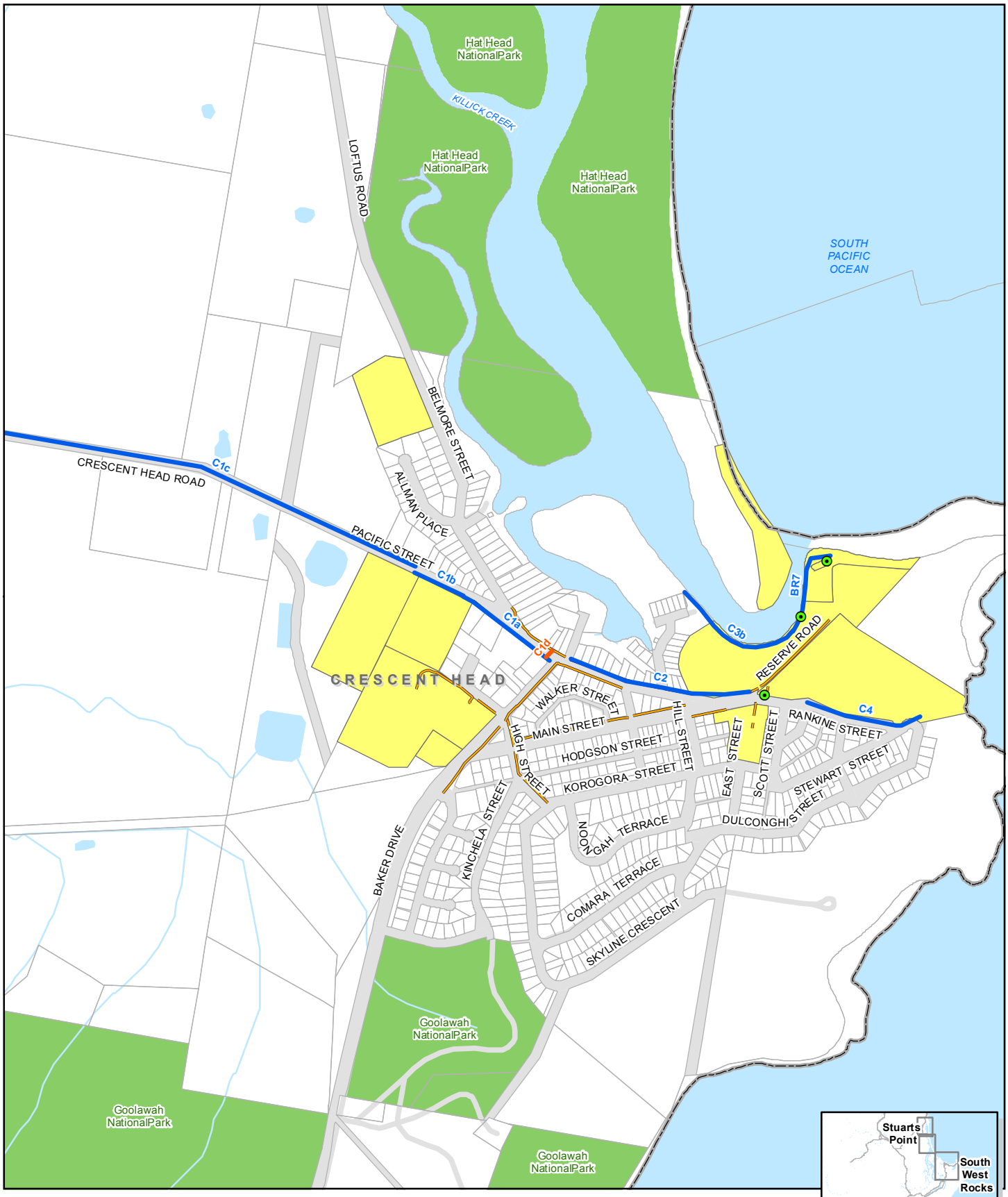

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- National Park
- Trip generator
- Existing footpaths
- Proposed bike rack
- Proposed off-road cycleway
- Proposed on-road cycleway

Paper Size A4

0 40 80 160 240 320

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Crescent Head
Proposed Improvements - Sheet 1

Figure E-7

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

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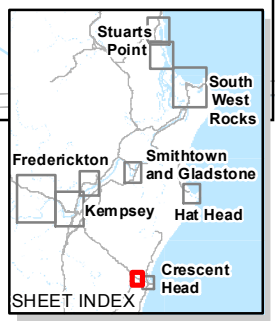
Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Proposed off-road cycleway



Paper Size A4

0 40 80 160 240 320

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Crescent Head
Proposed Improvements - Sheet 2

Figure E-8

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\22185202\Report\221851202_R003_ProposedImprovements_DDP_1.mxd

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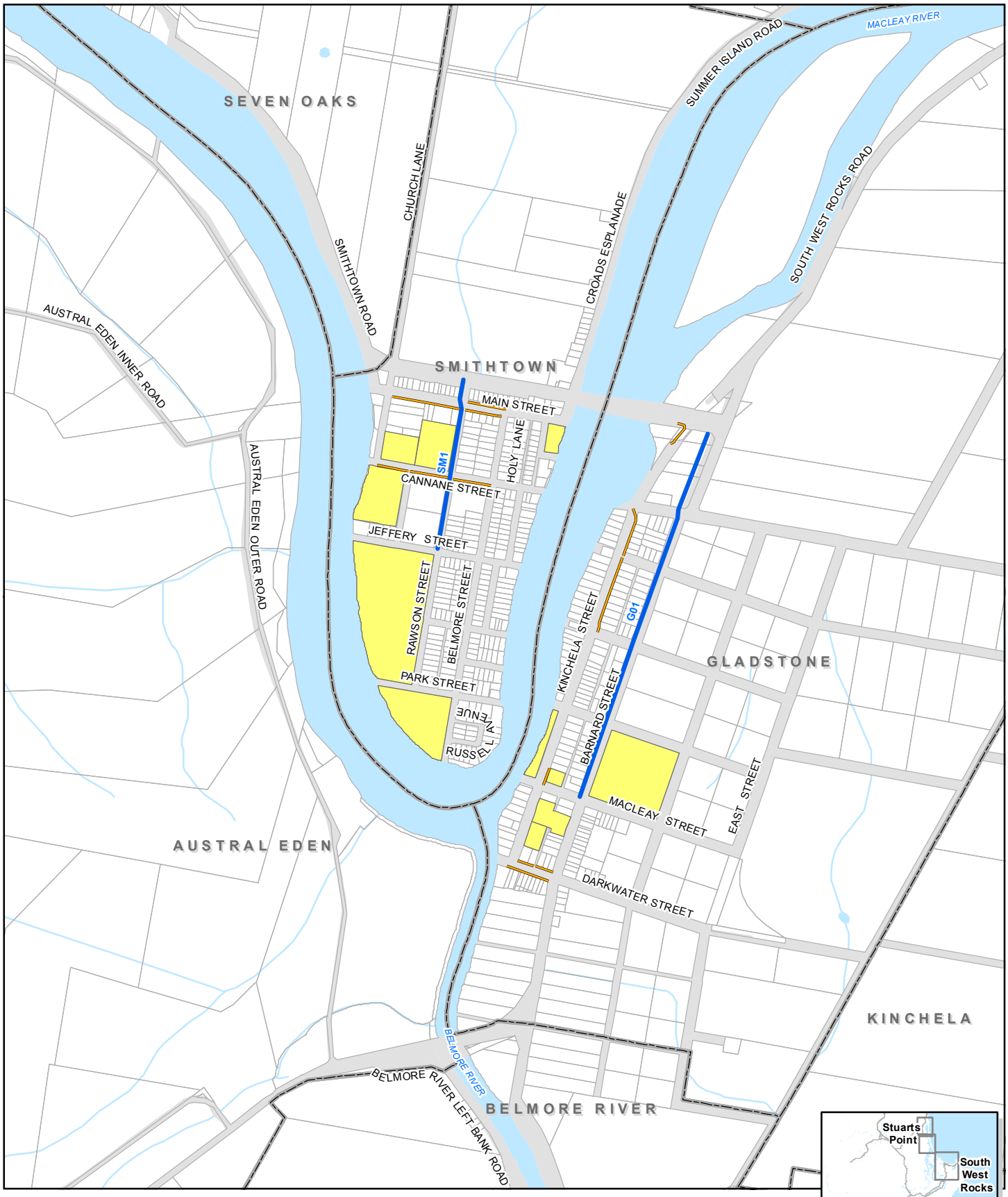

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Trip generator
- Existing footpaths
- Proposed off-road cycleway

Paper Size A4

0 55 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Kempsey Shire Council
Bike Plan

Smithtown and Gladstone
Proposed Improvements

Job Number 22-185120200
Revision 1
Date 17 Nov 2017

Figure E-9

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

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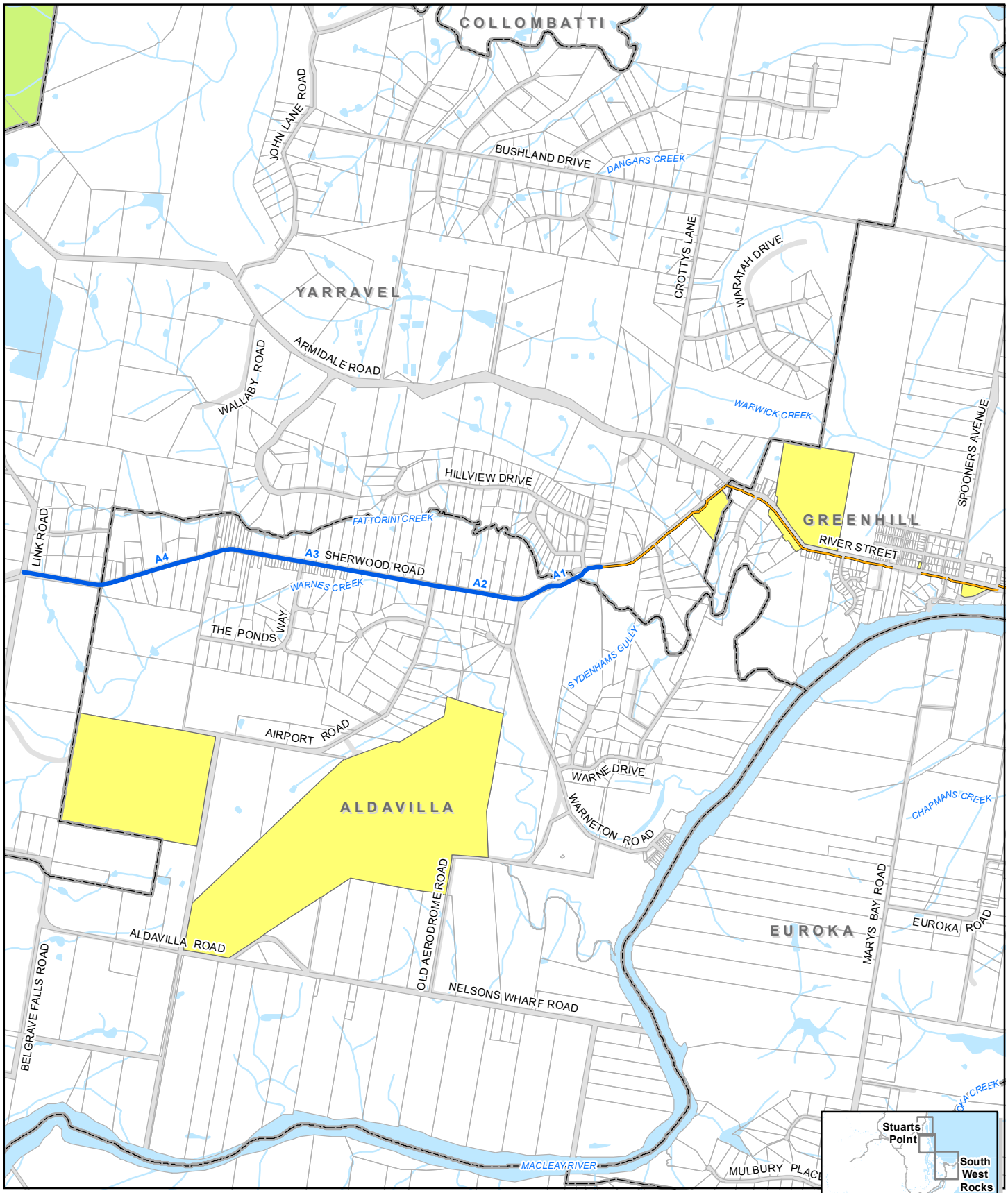

LEGEND

- Cadastre
- Waterbody
- Road corridor
- Suburb boundary
- Nature Reserve
- Trip generator
- Existing footpaths
- Proposed off-road cycleway

Paper Size A4

0 110 220 440 660 880

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Kempsey Shire Council
Bike Plan

Aldavilla
Proposed Improvements

Figure E-10

Job Number	22-185120200
Revision	1
Date	17 Nov 2017

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 T 61 2 4979 9999 F 61 2 4979 9988 E ntlmail@ghd.com W www.ghd.com.au

G:\22\18512\GIS\Maps\Deliverables\221851202\Report\221851202_R003_ProposedImprovements_DDP_1.mxd

Data source: LPI: DTDB / DCDB, 2012; KSC: Existing Infrastructure Data, 2016. Created by: fmackay

Reference	Road/ Description	Location	Category of Work	Comment	Qty	Unit	Rate $	Cost $	Preliminaries	Contingency $	Total Cost $
A1	Sherwood Road - Existing to Old Aerdodrome Road	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	500.00	m	200-244	100000-122000	$ 16,650.00	$ 25,530.00	$ 153,180.00
A2	Sherwood Road - Old Aerodrome to Airport Road	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	500.00	m	200-244	100000-122000	$ 16,650.00	$ 25,530.00	$ 153,180.00
A3	Sherwood Road - Airport Road to Ponds Way	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	770.00	m	200-244	154000-188000	$ 25,641.00	$ 39,316.20	$ 235,898.00
A4	Sherwood Road - Ponds Way to Link Roaf	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	1630.00	m	200-244	326000-398000	$ 54,279.00	$ 83,227.80	$ 499,367.00
C1a	Pacific Street - Baker Drive to School	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	225.59	m	194-238	44000-54000	$ 7,308.98	$ 11,207.10	$ 67,243.00
C1b	Pacific Street - School to sports field	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	113.15	m	200-244	23000-28000	$ 3,767.96	$ 5,777.54	$ 34,666.00
C1c	Pacific Street - Sports field to Dulcongi Heights	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	2948.65	m	200-244	589000-720000	$ 98,190.05	$ 150,558.08	$ 903,349.00
C1d	Pacific Street - Crossing near School	Crescent Head	On-road Cycleway	Cycle/Pedestrian Crossing - informal with traffic calming measures.	1.00	each	11000-13000	11000-13000	$ 1,800.00	$ 2,760.00	$ 16,560.00
C2	Lee street to reserve road roundabout	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	386.65	m	194-238	75000-92000	$ 12,527.55	$ 19,208.91	$ 115,254.00
C3a	Reserve road foreshore.	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	199.53	m	200-244	40000-49000	$ 6,644.42	$ 10,188.11	$ 61,129.00
C3b	Foreshore near caravan park	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	283.39	m	194-238	55000-67000	$ 9,181.75	$ 14,078.68	$ 84,473.00
C4	Rankine Street	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	246.11	m	200-244	49000-60000	$ 8,195.45	$ 12,566.36	$ 75,399.00
G1	Barnard Street - Smithtown Road to Macleay Street	Gladstone	Off-road Cycleway	Concrete shared path (2.5m)	1098.92	m	200-244	220000-268000	$ 36,594.04	$ 56,110.86	$ 336,666.00
HH1	Straight Street	Hat head	Off-road Cycleway	3 x small road tie ins. Asphalt	50.63	m	167-204	8000-10000	$ 1,404.98	$ 2,154.31	$ 12,926.00
HH2	Levy Bank	Hat head	Off-road Cycleway	Asphalt shared path (2.5m)	1682.51	m	167-204	280000-342000	$ 46,689.65	$ 71,590.80	$ 429,545.00
HH3	Gap Street to Kinchela Street	Hat head	Off-road Cycleway	Asphalt shared path (2.5m)	114.20	m	167-204	19000-23000	$ 3,169.05	$ 4,859.21	$ 29,156.00
K1	Kempsey - Fredrickton	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	4500.00	m	404-494	1818000-2222000	$ 303,041.25	$ 464,663.25	$ 2,787,980.00
K10	Lachlan Street - Middleton Street to Bloomfield Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	429.25	m	45-55	19000-24000	$ 3,219.38	$ 4,936.38	$ 29,619.00
K2a	Kemp Street - St Josephs School to Wide Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	231.80	m	194-238	45000-55000	$ 7,510.32	$ 11,515.82	$ 69,095.00
K2b	Kemp Street - Wide Street to Cochrane Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	639.09	m	194-238	124000-152000	$ 20,706.52	$ 31,749.99	$ 190,500.00
K3	Second Lane	Kempsey	On-road Cycleway	Widening of pavement to allow a 3.5m lane and 2m sealed shoulder	1208.54	m	162-198	196000-239000	$ 32,630.58	$ 50,033.56	$ 300,202.00
K4a	Riverside park, Eden street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	280.21	m	194-238	54000-67000	$ 9,078.83	$ 13,920.87	$ 83,526.00
K4b	Eden Street, Austral Street to Sydney Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	247.06	m	194-238	48000-59000	$ 8,004.86	$ 12,274.12	$ 73,645.00

Reference	Road/ Description	Location	Category of Work	Comment	Qty	Unit	Rate $	Cost $	Preliminaries	Contingency $	Total Cost $
K4c	Eden Street, Sydney Street to Kemp Street	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	564.95	m	200-244	113000-138000	$ 18,812.96	$ 28,846.54	**$ 173,080.00**
K4d	Tozer Street, Kemp Street to start pf widened pavement.	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	179.78	m	200-244	36000-44000	$ 5,986.69	$ 9,179.60	**$ 55,078.00**
K4e	From Tozer Street, through road reserve to corner of River Street and Elbow Street	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	495.10	m	200-244	99000-121000	$ 16,486.72	$ 25,279.64	**$ 151,678.00**
K5	North Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway where possible - linemarking, signage and pavement marking. Where road narrows use signage and pavement marking to warn of cyclist route.	2450.12	m	36-44	88000-108000	$ 14,700.75	$ 22,541.15	**$ 135,247.00**
K6	Smith Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	884.32	m	45-55	40000-49000	$ 6,632.40	$ 10,169.68	**$ 61,019.00**
K7	River Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	2360.00	m	36-44	85000-104000	$ 14,160.00	$ 21,712.00	**$ 130,272.00**
K8	Belgrave Street - Stuart Street to the swimming pool	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	446.26	m	194-238	87000-106000	$ 14,458.82	$ 22,170.20	**$ 133,022.00**
S1	Cardwell Street - From Wilson Street to the gaol.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1118.38	m	200-244	223000-273000	$ 37,242.11	$ 57,104.56	**$ 342,628.00**
S2a	Back Creek -O'Keefe Road to footbridge on Buchanan Drive.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	399.79	m	200-244	80000-98000	$ 13,312.94	$ 20,413.18	**$ 122,480.00**
S2b	Buchanan Drive, onto Fig Tree Lane to edge of caravan park.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	463.67	m	200-244	93000-113000	$ 15,440.27	$ 23,675.08	**$ 142,051.00**
S2c	From Fig tree lane along edge of caravan park to the boat ramp.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	441.26	m	200-244	88000-108000	$ 14,693.91	$ 22,530.67	**$ 135,184.00**
S2d	Boat Ramp to Gordon Young Drive	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	318.56	m	200-244	64000-78000	$ 10,608.19	$ 16,265.89	**$ 97,596.00**
S2e	Crossing Gordon Young	South West Rocks	On-road Cycleway	Cycle/Pedestrian Crossing - informal with traffic calming measures.	1.00	each	11000-13000	11000-13000	$ 1,800.00	$ 2,760.00	**$ 16,560.00**
S3a	Gregory Street to Belle O'Connor Street along Meehan Close	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	258.15	m	200-244	52000-63000	$ 8,596.40	$ 13,181.14	**$ 79,087.00**
S3b	Along the western edge of the golf course, from Belle O'Connor Street to Hill Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1252.47	m	200-244	250000-306000	$ 41,707.37	$ 63,951.30	**$ 383,708.00**
S3c	Hill Street to Short Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	201.60	m	200-244	40000-49000	$ 6,713.37	$ 10,293.84	**$ 61,764.00**
S4a	Gregory Street - Spencers Creek road to Lindsay Noonan Dr	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	198.13	m	200-244	40000-48000	$ 6,597.80	$ 10,116.62	**$ 60,700.00**
S4b	Gregory Street - Lindsay Noonan Dr to Cooper Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	254.26	m	200-244	51000-62000	$ 8,466.94	$ 12,982.65	**$ 77,896.00**
S4c	Gregory Street - Cooper Street to Austin Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	131.65	m	200-244	26000-32000	$ 4,383.97	$ 6,722.09	**$ 40,333.00**
S5a	Gilbert Cory Street - Gordon Young Drive to Marlin drive	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	754.44	m	200-244	151000-184000	$ 25,122.70	$ 38,521.48	**$ 231,129.00**
S5b	Marlin Drive - Gilbert Cory Street to New Entrance Road.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	893.28	m	200-244	178000-218000	$ 29,746.32	$ 45,611.03	**$ 273,667.00**
S6a	New Entrance Road - Boat Ramp to the tavern	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	279.15	m	200-244	56000-68000	$ 9,295.78	$ 14,253.53	**$ 85,522.00**
S6b	New Entrance Road - tavern to the extent of existing path near breakwall.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1237.13	m	200-244	247000-302000	$ 41,196.48	$ 63,167.94	**$ 379,008.00**

Reference	Road/ Description	Location	Category of Work	Comment	Qty	Unit	Rate $	Cost $	Preliminaries	Contingency $	Total Cost $
S6c	New Entrance Road - Quarry Street to northern extent	South West Rocks	On-road Cycleway	Onroad mixed traffic route - signage and pavement marking to warn of cyclist route.	1220.98	m	36-44	44000-54000	$ 7,325.90	$ 11,233.05	**$ 67,399.00**
SM1	Rawson Street - Jeffery St to Smithtown Road	Smithtown	Off-road Cycleway	Concrete shared path (2.5m)	489.64	m	200-244	98000-120000	$ 16,305.01	$ 25,001.02	**$ 150,007.00**
SP1	Stuarts Point to Grassy Head along Grassy Head Road	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	3750.84	m	200-244	749000-916000	$ 124,902.97	$ 191,517.89	**$ 1,149,108.00**
SP2	Along river bank, near caravan park.	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	947.82	m	200-244	189000-231000	$ 31,562.41	$ 48,395.69	**$ 290,375.00**
SP3	Fishermans Reach road from Nineteenth Ave to Serrata lane	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	3301.20	m	200-244	660000-806000	$ 109,929.96	$ 168,559.27	**$ 1,011,356.00**
SP4	Stuarts Point to Grassy head - riverside path	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m) - Includes provision for small water crossings	2523.08	m	260-317	655000-801000	$ 109,224.13	$ 167,477.00	**$ 1,004,863.00**

Appendix F – Priority Rankings

Rank	Reference	Road/ Description	Location	Category of Work	Comment	Cost Ranking	Number of Generators	Land Use Type	Proximity to Generators	Future Development	Road Heirachy	Hazardous Area	Cycle crashes	Demonstrated Path	Addition to Facilities	Route Heirachy	Score
1	K6	Smith Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	7	8	8	10	3	10	8	0	10	8	5	77
2	C1b	Pacific Street - School to sports field	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	10	8	10	8	3	8	8	0	8	8	3	74
3	S4c	Gregory Street - Cooper Street to Austin Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	10	8	8	8	5	8	8	0	8	5	5	73
4	S4a	Gregory Street - Spencers Creek road to Lindsay Noonan Dr	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	8	8	8	5	8	8	0	8	5	5	70
4	S4b	Gregory Street - Lindsay Noonan Dr to Cooper Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	8	8	8	5	8	8	0	8	5	5	70
6	K1	Kempsey - Fredrickton	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	0	8	5	8	5	10	10	0	10	8	5	69
6	K10	Lachlan Street - Middleton Street to Bloomfield Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	10	8	8	8	3	8	8	0	8	5	3	69
6	S3a	Gregory Street to Belle O'Connor Street along Meehan Close	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	10	5	8	5	8	8	0	8	5	5	69
6	S3c	Hill Street to Short Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	10	5	8	5	8	8	0	8	5	5	69
6	K7	River Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway - linemarking, signage and pavement marking	4	8	5	5	8	8	8	5	8	5	5	69
11	C1d	Pacific Street - Crossing near School	Crescent Head	On-road Cycleway	Cycle/Pedestrian Crossing - informal with traffic calming measures.	10	8	10	8	3	8	5	0	5	8	3	68
11	S2e	Crossing Gordon Young	South West Rocks	On-road Cycleway	Cycle/Pedestrian Crossing - informal with traffic calming measures.	10	8	8	8	5	5	8	0	5	8	3	68
13	C1a	Pacific Street - Baker Drive to School	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	7	8	10	10	3	8	5	0	8	5	3	67
13	HH1	Straight Street	Hat head	Off-road Cycleway	3 x small road tie ins. Asphalt	10	8	5	10	3	8	5	0	5	10	3	67
13	K2a	Kemp Street - St Josephs School to Wide Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	7	8	10	10	3	8	8	0	5	5	3	67
13	S6a	New Entrance Road - Boat Ramp to the tavern	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	10	8	5	5	8	8	0	8	5	3	67
13	S6c	New Entrance Road - Quarry Street to northern extent	South West Rocks	On-road Cycleway	Onroad mixed traffic route - signage and pavement marking to warn of cyclist route.	7	8	8	5	5	8	8	0	8	5	5	67
18	C1c	Pacific Street - Sports field to Dulcongi Heights	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	1	8	10	8	5	10	8	0	5	8	3	66
19	A1	Sherwood Road - Existing to Old Aerdodrome Road	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	4	8	5	8	5	8	8	0	8	8	3	65
19	A2	Sherwood Road - Old Aerodrome to Airport Road	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	4	8	5	8	5	8	8	0	8	8	3	65
21	K4d	Tozer Street, Kemp Street to start pf widened pavement.	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	7	8	5	8	3	8	8	0	5	8	3	63
21	S3b	Along the western edge of the golf course, from Belle O'Connor Street to Hill Street	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1	10	5	8	5	8	8	0	8	5	5	63
23	C3a	Reserve road foreshore.	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	7	8	8	5	5	5	5	0	8	8	3	62
23	C3b	Foreshore near caravan park	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	7	8	8	5	5	5	5	0	8	8	3	62
23	K2b	Kemp Street - Wide Street to Cochrane Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	4	8	10	8	3	8	8	0	5	5	3	62
23	K8	Belgrave Street - Stuart Street to the swimming pool	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	4	5	8	8	5	8	8	0	8	5	3	62

Rank	Reference	Road/ Description	Location	Category of Work	Comment	Cost Ranking	Number of Generators	Land Use Type	Proximity to Generators	Future Development	Road Heirachy	Hazardous Area	Cycle crashes	Demonstrated Path	Addition to Facilities	Route Heirachy	Score
23	S2d	Boat Ramp to Gordon Young Drive	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	7	8	8	8	5	5	5	0	5	8	3	62
28	S6b	New Entrance Road - tavern to the extent of existing path near breakwall.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1	8	8	5	5	8	8	0	8	5	5	61
28	SP2	Along river bank, near caravan park.	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	1	10	8	8	5	8	5	0	8	5	3	61
30	C4	Rankine Street	Crescent Head	Off-road Cycleway	Concrete shared path (2.5m)	7	8	8	5	3	8	5	0	5	8	3	60
30	HH3	Gap Street to Kinchela Street	Hat head	Off-road Cycleway	Asphalt shared path (2.5m)	10	5	5	8	3	5	5	0	8	8	3	60
30	K4c	Eden Street, Sydney Street to Kemp Street	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	4	8	5	8	3	8	8	0	5	8	3	60
30	K4e	From Tozer Street, through road reserve to corner of River Street and Elbow Street	Kempsey	Off-road Cycleway	Concrete shared path (2.5m)	4	8	5	8	3	8	8	0	5	8	3	60
30	SM1	Rawson Street - Jeffery St to Smithtown Road	Smithtown	Off-road Cycleway	Concrete shared path (2.5m)	4	8	8	8	3	8	5	0	5	8	3	60
35	A3	Sherwood Road - Airport Road to Ponds Way	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	4	5	5	5	5	8	8	0	8	8	3	59
35	C2	Lee street to reserve road roundabout	Crescent Head	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	4	8	8	8	5	8	5	0	5	5	3	59
35	S1	Cardwell Street - From Wilson Street to the gaol.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1	8	8	8	5	8	5	0	5	8	3	59
35	S2a	Back Creek -O'Keefe Road to footbridge on Buchanan Drive.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	4	8	8	8	5	5	5	0	5	8	3	59
35	S2c	From Fig tree lane along edge of caravan park to the boat ramp.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	4	8	8	8	5	5	5	0	5	8	3	59
35	SP1	Stuarts Point to Grassy Head along Grassy Head Road	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	0	10	8	5	5	8	8	0	5	5	5	59
41	K5	North Street	Kempsey	On-road Cycleway	Twin cyclelanes on existing roadway where possible - linemarking, signage and pavement marking. Where road narrows use signage and pavement marking to warn of cyclist route.	4	5	5	5	3	8	8	5	5	5	5	58
41	S5a	Gilbert Cory Street - Gordon Young Drive to Marlin drive	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	4	5	5	8	5	8	8	0	5	5	5	58
43	G1	Barnard Street - Smithtown Road to Macleay Street	Gladstone	Off-road Cycleway	Concrete shared path (2.5m)	1	8	8	8	3	8	5	0	5	8	3	57
43	K4a	Riverside park, Eden street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	7	8	8	5	3	5	5	0	8	5	3	57
43	K4b	Eden Street, Austral Street to Sydney Street	Kempsey	Off-road Cycleway	Widen existing pathway - concrete (2.5m)	7	8	8	5	3	5	5	0	8	5	3	57
46	S2b	Buchanan Drive, onto Fig Tree Lane to edge of caravan park.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	4	8	8	5	5	5	5	0	5	8	3	56
47	S5b	Marlin Drive - Gilbert Cory Street to New Entrance Road.	South West Rocks	Off-road Cycleway	Concrete shared path (2.5m)	1	5	5	8	5	8	8	0	5	5	5	55
48	A4	Sherwood Road - Ponds Way to Link Roaf	Aldavilla	Off-road Cycleway	Concrete shared path (2.5m)	1	5	5	5	5	8	8	0	5	8	3	53
48	K3	Second Lane	Kempsey	On-road Cycleway	Widening of pavement to allow a 3.5m lane and 2m sealed shoulder	1	5	5	5	3	8	8	5	5	5	3	53
50	HH2	Levy Bank	Hat head	Off-road Cycleway	Asphalt shared path (2.5m)	1	5	5	8	3	5	5	0	8	8	3	51
51	SP3	Fishermans Reach road from Nineteenth Ave to Serrata lane	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m)	0	8	5	5	5	8	5	0	5	5	3	49
52	SP4	Stuarts Point to Grassy head - riverside path	Stuarts Point	Off-road Cycleway	Concrete shared path (2.5m) - Includes provision for small water crossings	0	8	5	5	5	0	0	0	5	5	1	34

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Document Status

Revision	Author	Reviewer		Approved for Issue		
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