Government of **Western Australia**
Department of **Transport**

Empowering a thriving community

AVON CENTRAL COAST 2050 CYCLING STRATEGY

Shire of Dandaragan

Shire of Toodyay
place of plenty

Shire of Beverley

Shire of Northam
Heritage, Commerce and Lifestyle

Shire of Gingin
History | Beauty | Prosperity

Shire of Chittering

Shire of York

Acknowledgement

The authors of the Avon Central Coast 2050 Cycling Strategy acknowledge the Traditional Custodians of the land on which we work and live, and recognise their continuing connection to land, waters and community. We pay respect to Elders past and present.

Specific acknowledgement is given to the Ballardong, Whadjuk and Yued Noongar peoples.

Specific acknowledgements have been made throughout the document to recognise Country and the Traditional Custodians.

In the first instance this has been informed by Native Title Determination Areas[1] [2] [3], as per the Native Title Tribunal Native Title Claimant Applications and Determination Areas Map, available from the National Native Title Tribunal.

Where no formal Native Title claim has been determined, reference has been made to the AIATSIS Map of Indigenous Australia[4]. We note that some of the information shown on that map is contested and may not be agreed to by some Traditional Custodians. We additionally recognise there are alternative spellings for some of these names.

Please contact activetransport@transport.wa.gov.au if Traditional Custodians have not been accurately recognised.

Aboriginal and Torres Strait Islander peoples are respectfully advised that this publication may contain images or names of people who are deceased.

About this report

Alternative formats

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Executive Summary

The Western Australian Bicycle Network Plan (WABN) recognises the importance of bike riding to Western Australia. It enables partnerships between local and state governments to improve cycle infrastructure throughout the State. The State Government has developed a Long-Term Cycle Network (LTCN) in collaboration with local governments that recognises the important integration of connections to major and local attractions, tourist destinations and trails. This network is recognised in the 12 regional cycle strategies that have been, or are being, developed. They celebrate the growing attraction of cycle tourism within the State as well as promoting the importance of connected networks and a safer environment to cater for the growing demand for bike riding in regional and metropolitan areas.

Cities and towns with high levels of bike riding enjoy a range of economic, environmental and social benefits. Not only is bike riding proven to reduce traffic congestion and improve air quality, it also helps to create more vibrant and welcoming communities. Bike riding can facilitate new forms of industry (such as cycle-tourism) and more generally, it enables people to live happier, healthier and more active lives. Fundamentally, increasing active transport, including walking and riding, is about improving quality of life – something that is critical for attracting and retaining people in regional areas.

The key to increasing walking and riding is providing and activating infrastructure which is safe and convenient. When applied successfully, the Activation, Consultation and Evaluation (ACE) model actively encourages people to utilise the infrastructure delivered, creates opportunities for constructive engagement, links social and built environment factors, and facilitates definition and measurement of project outcomes.

Active transport needs to be prioritised and encouraged ahead of other modes in appropriate locations and integrated with adjoing land use. If we are serious about reducing car dependency and helping people make better travel choices, particularly for short trips, these priorities need to be reflected in the way our communities are planned.

The Avon Central Coast 2050 Cycling Strategy is the result of a collaboration of seven local government authorities (LGAs) with state government agencies. The Strategy establishes an agreed long-term cycle network for the region. It also establishes key priorities for the local governments.

The Strategy captures community aspirations as well as future directions of Councils and State Government to allow a coordinated approach to realising the common ambitions. The Strategy recognises the important part bike riding and other micromobility can play in attracting tourism to the region, increasing the health and well being of existing and future residents and providing a focus on an increasingly important transport option. Improving the infrastructure and environment for bike riding adds to the overall efficency of the transport sytem as a whole.

The Avon Central Coast region is renowned for its scenery, wildflowers, farmland and history. The proximity of towns and relatively flat terrain means many options are available for locals and visitors to enjoy bike riding in its many forms. There are many opportunities to create cycle tourism initiatives to showcase the region.

From short-term initiatives such as improving access to schools and commercial areas, to longer-term incentives for people to cycle between towns for extended cycle holidays, this Strategy provides many opportunities for focus for the whole region.

Why we want more people walking and riding

More vibrant, friendly and safe communities

Increasing active transport improves community cohesion and can enhance local security.[5]

More than 1 in 4 regional Western Australians bike ride in a typical week – the highest proportion of any Australian state and territory.[6]

A more sustainable health system

More than 4 in 10 Western Australian adults don't get enough physical activity.

Consistent walking or riding can help reduce cardiovascular disease, type 2 diabetes and the mortality rate.[7]

Improving access to walking and riding infrastructure in regional areas is a key focus to better sustain outer metro health systems.[8, 9]

A stronger economy

Australians pay an average of $20,013 in transport costs per year. Bicycle upkeep is significantly lower at around $800 to $1,100 per year.[10]

Bike tourism is a growing niche, encouraging more repeat travel to regional WA areas.[11]

In 2022, the bike riding industry contributed $6.7 billion to our economy, supporting 58,272 full time jobs.[12]

Healthier and happier people

Bike riding can improve mental, physical and social health and wellbeing, as well as reduce sickness absence to work.[13]

A fairer and more equitable society

Many people living in outer urban, rural and remote regions have very limited transport options.[14]

By improving walking and bike riding conditions, motorised travel can be reduced, and healthier, more cost-effective active travel modes can be used by people of all ages and abilities.[15]

Greener and cleaner places

Bike riders had 84% lower CO2 emissions from all daily travel than non-riders, and people who shifted from car to bike were found to decrease life cycle CO2 emissions by 3.2 kg CO2/day.[16]

1. Introduction

1.1 Guiding principles

This Strategy sets out a long-term vision of creating safe, resilient, vibrant and integrated communities across the Avon and Central Coast region, encompassing the shires of Beverley, Chittering, Dandaragan, Gingin, Northam, Toodyay and York.

The *Avon and Central Coast 2050 Cycling Strategy* has been developed to facilitate all forms of micromobility. With the rise of newer technology, the forms of micromobility captured in this Strategy extends beyond walking and bike riding to include new and emerging technologies such as e-bikes and e-scooters. The Strategy aims to create an overall integrated network throughout the Avon and Central Coast regions that is safe, comfortable and direct, to encourage users of all ages and abilities.

Comprehensive riding networks promote social inclusion, lead to more active and healthy communities and help to showcase some of the most unique natural landscapes to residents and visitors.

The long-term cycle network proposed in this Strategy has been developed based on the following principles:

Safe: The 2050 cycling network should be built to a standard which reflects an all ages and abilities design philosophy. People of all ages should be able to ride safely and confidently to the places they need and want to go. Unprotected cycling facilities located on busy roads are not considered suitable for vulnerable road users and will not encourage more people to ride, more often.

Connected: Like a road network, all bike riding routes should connect to something at each end (whether that is a destination or another bike riding route).

Widespread: In suburbs and towns, the network should be extensive enough for people to safely assume they can get to their destination without encountering hostile traffic conditions. When bike riding networks reach a certain level of density it enables families to live comfortably without a second car.

Legible: The bike riding network needs to be both intuitive and direct. To achieve this, it makes sense to locate major bike riding routes parallel to natural landforms such as rivers and coastlines or within existing road and rail corridors. The development of coherent wayfinding initiatives is also important in supporting legibility.

Aspirational: Given the long-term nature of this Strategy, several ambitious ideas have been put forward to enable residents to adopt bike riding as a viable and priority transport mode, as well as encourage visitors to stay longer and explore the Avon Central Coast region comfortably by bike.

In some cases, local governments may not have the funding or organisational capacity to progress initiatives, but this Strategy identifies opportunities for future delivery.

Achievable: For the most part, the proposals put forward in this Strategy adopt tried-and-tested planning principles. The case studies chosen provide regional, interstate and international examples of similar projects undertaken in recent years.

Bike riding disciplines that are dependent on purpose-built facilities (such as BMX parks, downhill mountain bike trails and velodromes for track cycling) typically perform non-transport related functions and as such, are not considered within this Strategy. However, the existing and planned locations of these facilities have been considered as part of planning the overall network.

An all ages and abilities design philosophy is about creating places and facilities that are safe, comfortable and convenient for as many people as possible. By designing walking and bike riding facilities that cater for the youngest and most vulnerable users, we create a network that everyone can use. At the heart of this approach is fairness and enabling all people to use the network regardless of age, physical ability or the wheels they use.

1.2 Avon Central Coast in context

The *Avon Central Coast 2050 Cycling Strategy* covers a segment of the Wheatbelt region in proximity with metropolitan Perth. The Strategy area looks at two subregions:

- Avon, including the Shires of Beverley, Northam, Toodyay and York
- Central Coast, including the Shires of Chittering, Dandaragan and Gingin.

The lands covered by the Strategy are located on Ballardong, Whadjuk and Yued Noongar Boodja (Country).

The Strategy area encompasses breathtaking coastline, national parks and reserves, scenic hills and historic country towns. Being so close to Perth, the area has all the attractions of rural and regional lifestyle while offering convenience of the metropolitan area[17].

The Avon Central Coast has a relatively low population density. The area's large population centres include the townsites of Northam and Toodyay located in the Avon subregion. Other key townsites in Avon subregion include Bakers Hill; Beverley; Clackline; Spencers Brook; York; and Wundowie.

Figure 1: Avon Central Coast and Key Statistics [18]

Strategy area

18,765 square kilometres

Population

Total:	35,973
Avon:	21,112
Central Coast:	14,861

Key towns

Northam:	6,679
Toodyay:	1,362
York:	2,393
Jurien:	1,985
Beverley:	1,100

Key industries

Agriculture including broadacre cropping and livestock grazing; aquaculture; renewable energy; mining, construction and light industry; transport, logistics and manufacturing.

Most of the population in the Central Coast subregion reside in Cervantes, Jurien Bay and Lancelin. Coastal townsites also cater for significant tourism populations, with peak season seeing inhabitants of these towns nearly double[19]. Other key townsites in the Central Coast subregion include Badgingarra; Bindoon; Gingin; Guilderton; Ledge Point; Muchea; and Seabird.

Each shire in the strategy area reports a proportion of residents over 55 currently that is higher than the Australian average. There is an expectation that this cohort will continue to increase[20]. Population growth is generally stable throughout the strategy area[21]. The biggest growth in population is reported as occurring in Dandaragan (due to attractive lifestyle for retirees[22]) and Chittering (attributed to proximity to the Perth metropolitan area[23]). Shires throughout the strategy area project steady growth based on retiree and semi-retiree in-migration to high amenity areas.

Agriculture is the historical backbone of the strategy area, and it remains a key industry throughout Avon and Central Coast. There are a variety of agriculture activities across the area including broadacre cropping and livestock grazing with large property holdings outside of towns. In the Central Coast, aquaculture is of increasing importance, as are renewable energy and mining, construction and light industry. In Avon, transport, logistics and manufacturing are also growth areas. All these industries lead to the presence of large vehicles on the region's roads and active railways.

Tourism is of increasing importance to the strategy area, with visitors from local, interstate and overseas drawn to the coast particularly in summer months. As well, they are attracted to natural features such as the Pinnacles and heritage destinations across the area. Cultural, heritage and experience tourism such as stargazing, wildflower viewing and food and wine tourism are predicted to drive additional visitation in the strategy area.

1.3 The need for a long-term regional cycling strategy

This Strategy is designed to guide investment and improve planning for bike riding in the Avon Central Coast region over the coming decades. The outcomes from this Strategy will:

- facilitate the planning and development of long-distance bike riding routes;
- ensure that the standard of future bike riding facilities meets current best practice;
- adopt a consistent approach with other long-term cycling strategies being developed across WA;
- address key opportunities which may have previously been overlooked, particularly in relation to future land use and transport developments throughout the region; and
- help guide investment between local and State Government, and in certain circumstances between neighbouring local governments.

It is important that this Strategy is reviewed on a regular basis to ensure it keeps up with the changing face of the strategy area, reflecting on all the future changes to bike riding as a mode of transport. A framework outlining how this Strategy will be maintained is provided in Section 6.3.

1.3.1 Expected changes in population

Recent subregional economic planning predicts the population of the Avon Central Coast region to double from 35,500 to 71,000 by 2050.[24]

The Wheatbelt Development Commission's Wheatbelt Blueprint (2014[25]) estimates that Avon will be a successfully thriving subregion with just over 42 per cent of the Wheatbelt's population. Avon is expected to experience a more robust and sustained rate of population growth over the next decade given its relative proximity to the Perth metropolitan area.

Population growth is also anticipated to accelerate in the Central Coast subregion. The strongest average growth rate over the past decade was in the Chittering local government area, which grew 54 per cent (three times faster than the subregion as a whole). By 2050, the Central Coast subregion is expected to account for 13 per cent of the Wheatbelt's population, growing by 23,000 people.

1.3.2 Expected changes in land use

Major enterprises serve as economic and employment hotspots in the subregions. New and expanding businesses are anticipated to enhance employment and increase the transport requirements from residential areas. Many new business and job opportunities are likely to establish across the region including fishing and food, mining, tourism and renewable energy projects. Linking key employment hotspots with residential areas will encourage commuting by active transport. Linking tourism hotspots with accommodation centres will also encourage active mobility and relieve the dependency on motorised transport.

1.3.3 Expected changes to transport

Several regional transport projects are proposed to be delivered within the Avon and Central Coast prior to 2050, these include:

- upgrade of the Bindoon bypass on Great Northern Highway;
- Eastlink connecting Midland to Northam;
- completion of Dryandra Road to Goomalling-Toodyay Road; and
- review of Tier 3 Rail lines.

With each of these major projects, appropriate consideration must be given to the provision of high-quality active transport infrastructure and facilities, noting the economic benefits of inclusion in the initial project rather than retrofitting.

1.3.4 Relationship with other documents

The *2014-2031 Western Australian Bicycle Network (WABN) Plan*[26] identifies the need to review bike riding facilities in WA's regional centres. Although many local governments have their own local bike plans, it is recognised that there is a need to develop long-term regional strategies which have an aspirational focus and, where appropriate, span across entire regions. Key objectives of this process include:

- improving connections to activity centres and schools;
- identifying inter-regional routes; and
- harnessing the potential for cycle-tourism.

Funding applications for the development of key strategic projects are currently supported through the Regional Bicycle Network (RBN) Grants Program. This program makes funds available for the planning, design and construction of bike riding infrastructure by local governments in regional and metropolitan WA, with funding matched on a dollar-for-dollar basis. Development of a regional strategy can also help facilitate Federal funding opportunities.

Long-term cycling strategies such as this do not preclude local governments from preparing a local bike plan. While the purpose of this Strategy is to provide a blueprint for the Avon Central Coast cycling network, a local bike plan may be used to identify short-term priorities such as upgrades to existing infrastructure and maintenance requirements. Local bike plans are also important for outlining strategies around the activation of bike riding infrastructure and various education, promotion and encouragement strategies aimed at affecting behavioural change.

The Department of Transport (DoT) is currently leading the development of a new active travel strategy, *Walk, Wheel, Ride, Thrive*, which will better align existing State Government strategies and outline a collaborative approach to increasing active travel across Western Australia. Once published, *Walk, Wheel, Ride, Thrive* will replace the WABN Plan.

1.3.5 Expected changes due to climate change.

There are very real considerations in asset management for local governments in terms of coastal inundation risks, impacts of urban heat island effects and availability of materials, amongst a raft of other impacts. This is relevant to decisions on where and how future paths will be designed and constructed.

1.4 Background research and analysis

1.4.1 Document review

A range of documents were reviewed pertaining to land use and transport in the Avon Central Coast region, particularly relating to the shires of Beverley, Chittering, Dandaragan, Gingin, Northam, Toodyay and York.

Combined with detailed stakeholder engagement, these documents were critical to understanding the current approach to bike planning and where planning and feasibility for certain routes has already been undertaken. A list of these documents is contained in Appendix B.

1.4.2 Mapping of current and future trip generators

Existing and known future trip attractors were mapped to enhance development of the network. Trip attractors are defined as any place that people could reasonably be expected to need or want to cycle to, and include destinations such as schools, shopping centres, recreational facilities, industrial areas, caravan parks and tourist attractions. The identified trip attractors are shown together with the proposed 2050 cycling networks contained in Section 4.

1.4.3 Analysis of crash data

The most recent (2018-2022) five-year crash statistics were obtained from Main Roads' Crash Analysis Reporting System (CARS). Both pedestrian and cyclist crash data were obtained, noting that areas which are unsafe for people walking are often also unsafe for those riding. An analysis of this data is provided in Appendix B.

1.4.4 Analysis of GPS travel data

The GPS mapping tool, Strava Labs, was employed to better understand which parts of the Avon Central Coast road and path networks are most heavily utilised by bike riders. Strava is a website and mobile app used to track athletic activity via GPS and can be used to highlight popular bike riding routes throughout the Avon Central Coast and surrounding areas. Despite the usefulness of this information, it should be noted that GPS travel data is typically representative of people who cycle for training or high-intensity recreational purposes. An analysis of this data is contained in Appendix B.

1.4.5 Community consultation

Consultation with the local community was central to the development of this Strategy. The objectives of the consultation were to:

- help refine the overarching aims and objectives of the Strategy;
- gain an understanding of the community's expectations when it comes to bike riding infrastructure, as well as the needs of different user groups;
- reveal the major issues and missing links associated with the Avon and Central Coast's existing bike riding networks;
- provide the community with an opportunity to share their ideas; and
- seek local buy-in and ongoing community support for the Strategy.

The consultation was carried out in three distinct phases: initial engagement with key stakeholder groups including local governments; surveys and mapping exercises online; and Community drop-in sessions providing face to face contact for local residents.

The results of the engagement process are summarised in Appendix C.

1.4.6 Stakeholder consultation

This Strategy has been developed by DoT in partnership with the Shires of Beverley, Chittering, Dandaragan, Gingin, Northam, Toodyay and York. Consultation was undertaken with various stakeholders, including:

- ARC Infrastructure;
- Department of Biodiversity, Conservation and Attractions (DBCA);
- Department of Local Government, Sport and Cultural Industries (DLGSCI);
- Department of Planning, Lands and Heritage;
- Tourism WA;
- Main Roads WA;
- WA Trails Reference Group;
- WA Bike Riding Reference Group;
- WALGA; and
- WestCycle.

1.4.7 Review of existing cycling network

Alongside community and stakeholder consultation, a technical review of the existing bike riding network was undertaken to identify strengths, weaknesses and opportunities. Many of the towns across the region benefit from existing networks of suitable infrastructure, including wide footpaths which facilitate local access to many destinations. However, there are significant opportunities to enhance and supplement the existing networks and better cater for bike riding trips, particularly to industrial workplaces and tourist destinations. Along with the development of new cycle routes, these opportunities include:

- improving connectivity by constructing missing links;
- completing loops around the region's cities and towns;
- providing separated infrastructure to improve bike rider safety on heavy vehicle routes;
- upgrading older sections of shared paths to provide more comfortable walking and bike riding experiences;
- introducing consistent wayfinding to assist with network legibility;
- installing climate and terrain specific mid-trip and end of trip facilities; and
- enhancing local bike riding networks through activation initiatives that emphasise the unique cultural and environmental landscapes.

The maps contained in the Action Plan (Section 6) classify the existing cycle network in the context of the proposed network hierarchy.

Consultation session in Jurien Bay. Credit: Department of Transport

2. Encouraging Bike Riding

The built environment and the social environment are two key factors which influence the uptake of bike riding. Traditionally, bike riding strategies have focused on built environment factors alone. These important factors include all elements of infrastructure such as adequate paths, road-crossing points and trip facilities. Bike riding infrastructure has traditionally been provided in a 'build it and they will come' model, much like car-based road infrastructure which appears to attract people once it is constructed. Providing only the infrastructure for bike riding does not deal with factors to enable more people to make the choice to ride.

The social environment includes the built environment as well as relationships, institutions and culture. More specifically for encouragement of bike riding, the social environment means responding to perceptions, access, ability and awareness to help develop behavioural norms[27]. This involves consideration of who could be riding on the paths to understand and address their barriers and motivations related to bike riding.

Consideration for both factors are included in the Strategy and actions to help create and support a culture of bike riding are identified.

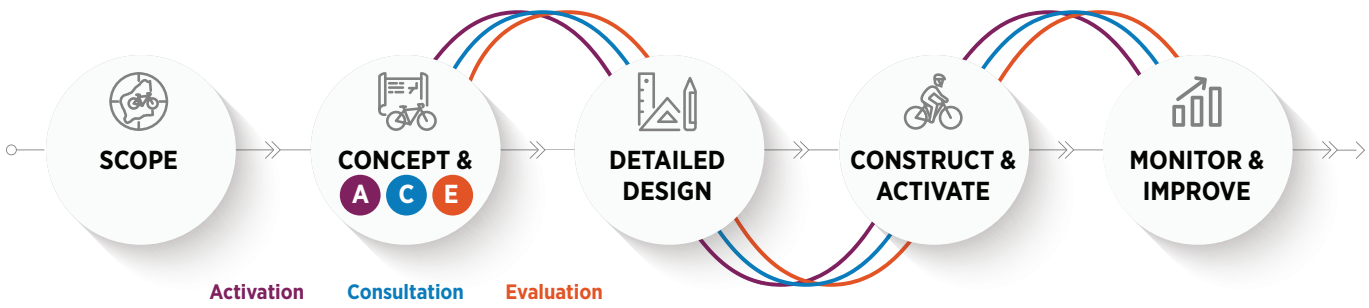
2.1 Activation, consultation and evaluation

This Strategy outlines how new bike riding infrastructure can support greater participation in bike riding in the Avon Central Coast region. However, planning and building infrastructure in isolation will not necessarily lead to significantly more people riding.

There needs to be an emphasis on creating inclusive infrastructure projects so that the product delivered fully serves the needs of the local community as well as people visiting the region. This can be achieved through a range of engagement and monitoring activities as projects are planned, designed and constructed, and as the infrastructure continues to be used after construction.

Effective engagement incorporates three essential elements into project delivery – activation, consultation and evaluation. This approach is outlined in the following framework.

Figure 2: Activation Consultation and Evaluation model



- **Activation** includes promotions and programs designed to encourage people onto the infrastructure by raising awareness and appeal. This can range from highlighting the new facilities in media releases and creating local maps, to making bike riding trips more pleasant through added amenities such as end-of-trip facilities, bike parking, natural landscaping, art works and other initiatives. Activation can take place throughout all phases of an infrastructure project – starting well before a project is built – and can be temporary (one-off activities), intermittent (such as a monthly group ride) or permanent (such as wayfinding signage).
- **Consultation** is a crucial part of the delivery of inclusive bike riding infrastructure to ensure that the facilities meet the needs of users, stakeholders and the local community. Consultation can be undertaken in a variety of formats and is typically led by local government.
- **Evaluation** of the infrastructure is essential to measuring the impact it is having, both for people using the infrastructure and for the wider community experiencing the outcomes of increased transport mobility. These outcomes may include better local liveability, improved congestion and parking management, growth in cycle tourism and increased spending at local businesses. Ongoing monitoring will ensure facilities are well maintained and that the planning and delivery of bike riding initiatives undergo continuous improvement.

All three of these elements are inherently linked and some activities will deliver outputs for more than one, such as a community workshop where people are asked to review existing facilities (evaluation), help prioritise new ones (consultation), and participate in the delivery and promotion of new facilities and amenities (activation).

At its core, this approach acknowledges that cycle networks are part of a richer local landscape and should be delivered in an inclusive way that invites participation and supports a range of community outcomes.

2.2 Cross agency synergies

An integrated approach to transport planning is a positive way to influence the planning and provision of transport systems towards more sustainable patterns. Integrated transport planning considers key transport issues such as transport system interdependencies, interactions between transport and land use, transport safety, traffic congestion, parking, travel demand management and accessibility. Integrated transport plans will help identify and prioritise transport infrastructure and service improvements and meet community and government objectives.

Developing and leveraging the benefits of bike riding and other forms of active transport throughout the Avon Central Coast region will rely on the cooperation of several government agencies. The diversity of opportunity allows for key agencies to work together with local governments, communities and businesses to promote active transport.

A key consideration for transport trails and paths in the Avon Central Coast region (particularly those connecting towns) are public drinking water source areas. Prior to development, it is critical that consultation is undertaken with the Department of Water and Environmental Regulation (DWER). Similarly, transport trails through reserve areas should be referred to the DBCA at an early stage of the design process. Early consideration should also be given to Aboriginal heritage and recognition of local sensitivities.

Working together provides greater scope in integrating communities and allows a more effective use of resources to achieve outcomes to benefit more communities.

3. Regional Route Hierarchy

A hierarchy comprising five types of bike riding routes has been used to plan and illustrate the Avon Central Coast's 2050 cycling network. This hierarchy has been adopted for all bike riding strategies in WA as a key action of the WABN Plan. An important aspect of the hierarchy is that unlike many traditional cycling network plans, routes are defined primarily by function, rather than built form. The key differences between the five types of routes are explained in Sections 3.1 to 3.5, with additional detail provided in Appendix A.

3.1 Primary routes

Primary routes form the backbone of the Avon Central Coast 2050 cycling network. They define high demand corridors connecting major destinations of regional importance. Primary routes afford people riding and walking with safe and generally uninterrupted journeys.

Primary routes should be completely separated from motorised traffic. Due to this, major road and rail corridors, as well as river and ocean foreshores, tend to be the most practical locations for these types of facilities.

In terms of built form, primary routes predominantly consist of high-quality shared paths at least 3 metres in width. To ensure high levels of rideability and legibility, red asphalt is usually the preferred surface treatment however this may depend on the localised climate and terrain. An important consideration for shared paths is managing safety and ensuring etiquette between different users. In areas of high pedestrian activity, it may be necessary to provide separate facilities for people walking and riding.

In regional areas, which often include long distance connections, consideration should be given to convenience and emergency facilities such as water fountains, rest points and toilets.

Example of Primary route. Credit: Department of Transport

3.2 Secondary routes

Secondary routes are typically located within built-up environments. The aim of these routes is to provide connectivity for users between primary routes and important trip attractors such as shopping centres and industrial areas, as well as education, health and sporting and civic precincts.

In most cases, secondary routes are located adjacent to busy streets and take the form of protected on-road bike lanes or separated shared paths. It is important that the design of all new bike riding infrastructure (including secondary routes) incorporates an 'all ages and abilities' approach. To ensure that on-road bike riding infrastructure is safe and attractive to such a wide range of users, separation in the form of kerbed medians is desirable to minimise the interaction between those riding bikes and those driving cars – particularly on busier roads.

Where this is not possible, softer measures such as painted hatching, mountable plastic kerbing or flexible bollards can be considered, however these treatments are normally only acceptable in low speed environments. In some cases, off-road shared paths are the best option for secondary routes.

Unlike primary routes, secondary routes do not necessarily provide users with uninterrupted journeys. Consequently, it is important that appropriate consideration is given to the design of secondary routes at all intersecting roads, but particularly those controlled by either traffic signals or roundabouts. Where possible, priority should be given to the bike riding route at intersecting minor roads and driveways.

3.3 Local routes

The objective of local routes is to collect bike riding traffic from local residential areas and distribute it to the secondary and primary bike riding networks. Local routes are also used by bike riders to access a range of lower-order destinations such as local shops and parks. The look and feel of local routes are distinctively different from primary and secondary routes.

Examples of local route treatments include:

- 30 km/h safe active streets which adopt 'self-explaining street' and 'filtered permeability' urban design principles;
- very quiet suburban streets, communicated using sharrows[28] and other signage or way finding;
- sections of shared path (normally linking two or more quiet streets together); and
- on-road bike lanes (but only on quiet roads with low traffic volumes and where posted speed limits are less than or equal to 50 km/h).

In many cases, a local route may consist of a combination of two or more types of treatment. Where this is the case, the transition from one type of facility to another needs to be carefully considered.

Example of Secondary route. Credit: Department of Transport

Example of Local route. Credit: Department of Transport

3.4 Transport trails

Transport trails are long-distance, predominantly unsealed trails which are typically used to connect towns. Unlike downhill mountain biking trails, transport trails are non-technical in design. While there will be some level of crossover, transport trails provide users with a more passive bike riding experience.

In some cases, transport trails cater for other types of users including bushwalkers, trail runners and horse-riders. On such trails, it is essential that paths are managed appropriately to ensure the safety and satisfaction of all user groups.

In terms of their built form, transport trails should ideally be wide enough to allow two people to ride comfortably side-by-side. As they are often located in remote locations, it is important that extensive wayfinding signage is used to direct users to, from and along the route.

Transport trails are often constructed along the alignments of disused or closed railways, watercourses (such as rivers, drains and irrigation channels), utility corridors (such as electricity, gas or water supply), as well as fire breaks and other tracks through forested areas including nature reserves and national parks.

Depending on land ownership, the planning, design, construction and maintenance of transport trails is typically led by local government or the DBCA. Funding is usually sought through the DLGSCI or Lotterywest. Other government agencies such as DoT and Tourism WA can assist in the planning, design and promotion of these facilities.

3.5 Road cycling routes

Road cycling routes cater for people cycling long distances for training, sport or recreational purposes. For this user group, distances of 100 km or more are achievable.

This type of bike riding, which is often undertaken by groups or clubs, is commonly carried out on rural and semi-rural roads which tend to feature nice scenery, challenging terrain and low traffic volumes, but are also selected in order to minimise the likelihood of interactions with pedestrians and lower speed cyclists.

Around WA there is a growing need to review the key routes being used by road cyclists in order to improve safety and user experience. The introduction of safe passing legislation has gone some way to protect those riding on the road[29]. However, other initiatives may include shoulder widening, pull-off bays, advisory signage, and electronic flashing warning signs which detect when groups of cyclists are using certain sections of road. Detailed assessment is required in partnership with cycling bodies and groups to determine appropriate locations and preferred safety measures, which will likely differ on each route.

Example of a Transport Trail.
Credit: Department of Transport

A Road Cycling route rider in Karratha.
Credit: Department of Transport

4. Proposed Network

This Strategy covers 17 townsites and several regional connections between towns. It includes relatively short distances as well as consideration for longer distance connections for recreational and touring bike riders.

The exact alignments of some routes may change following further feasibility assessment and consideration of local environmental, heritage and engineering constraints. Of relevance to the region are coastal hazard areas on foreshores, riverbeds and flood plains, native vegetation, and public drinking water source areas. Prior to development of any trails and routes that may impact on sensitive areas, it is critical that consultation is undertaken with the relevant stakeholders including DWER, DBCA and the Department for Lands, Planning and Heritage.

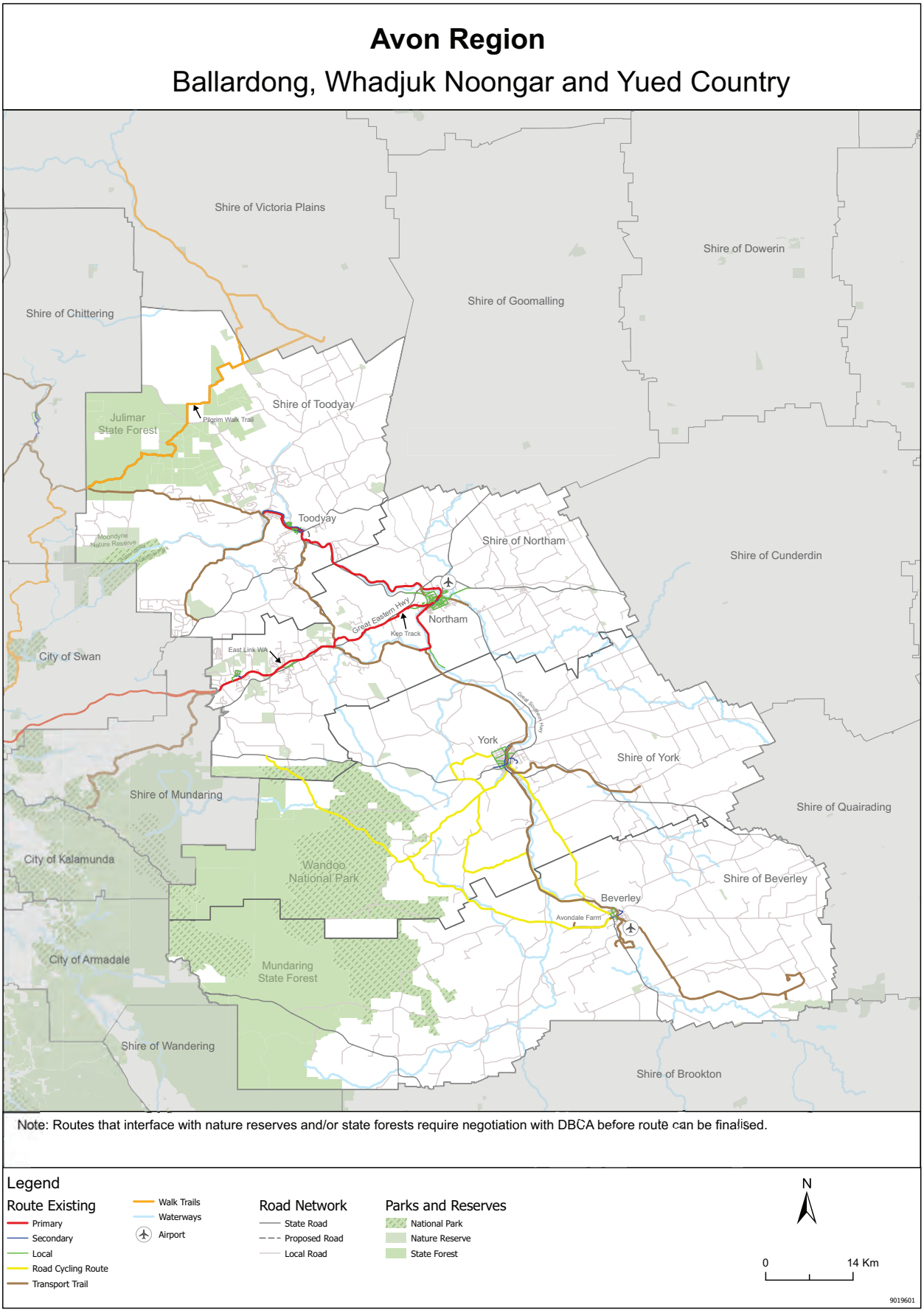
The proposed network has been developed as a result of a comprehensive review of routes and destinations by transport engineers and the participating local governments, as well as community consultation. The network highlights the opportunities in the region and helps inform the action plan, so as if and when finances and capacity permits, or when alternative funding opportunities arise, readily identified projects may be able to be progressed.

4.1 Overall network

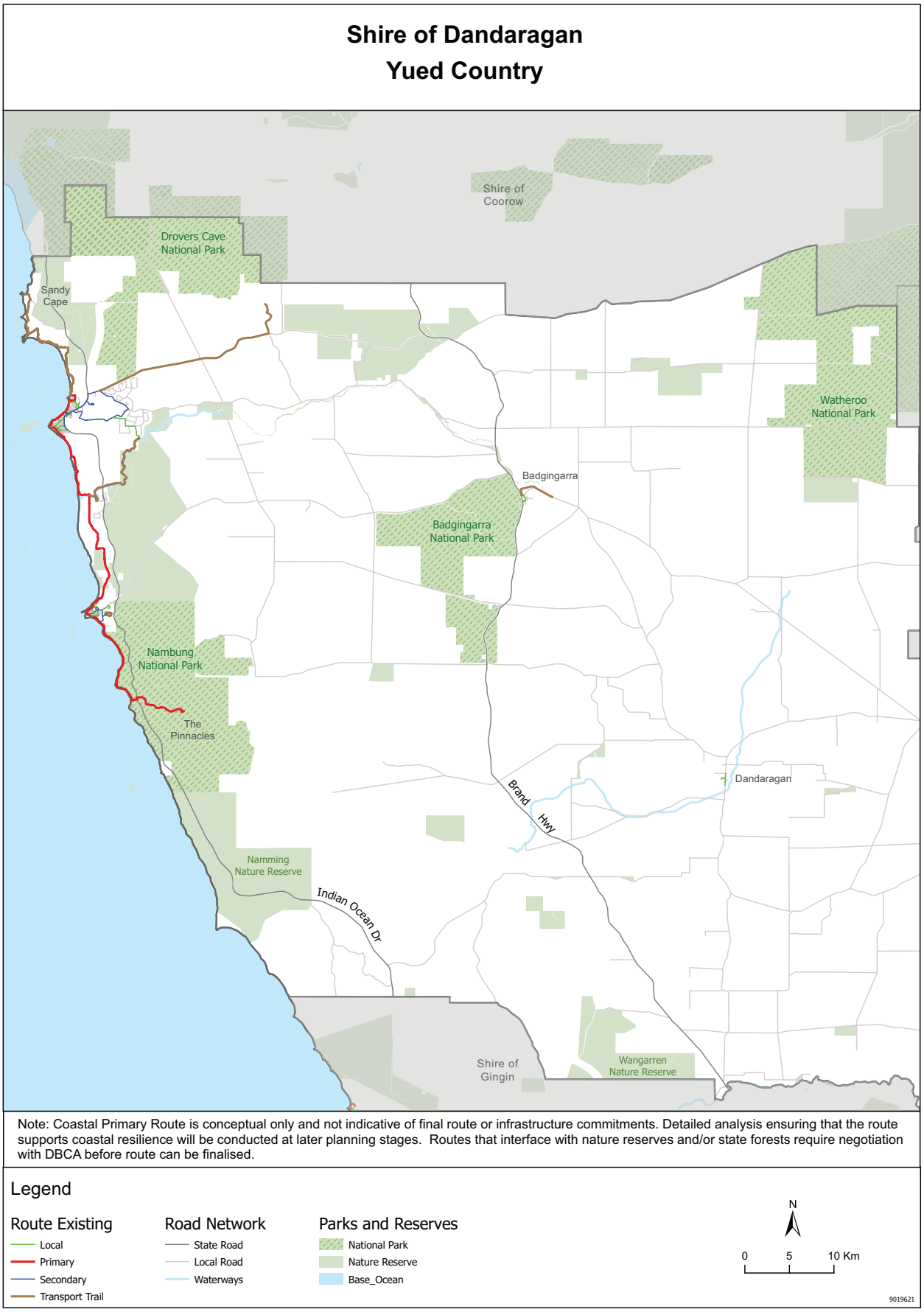
Maps 1 to 4 provide a regional overview of the proposed 2050 Avon and Central Coast LTCN.

The LTCN features primary, secondary and local routes, as well as transport trails and road cycling routes throughout the shires of Beverley, Chittering, Dandaragan, Gingin, Northam, Toodyay and York.

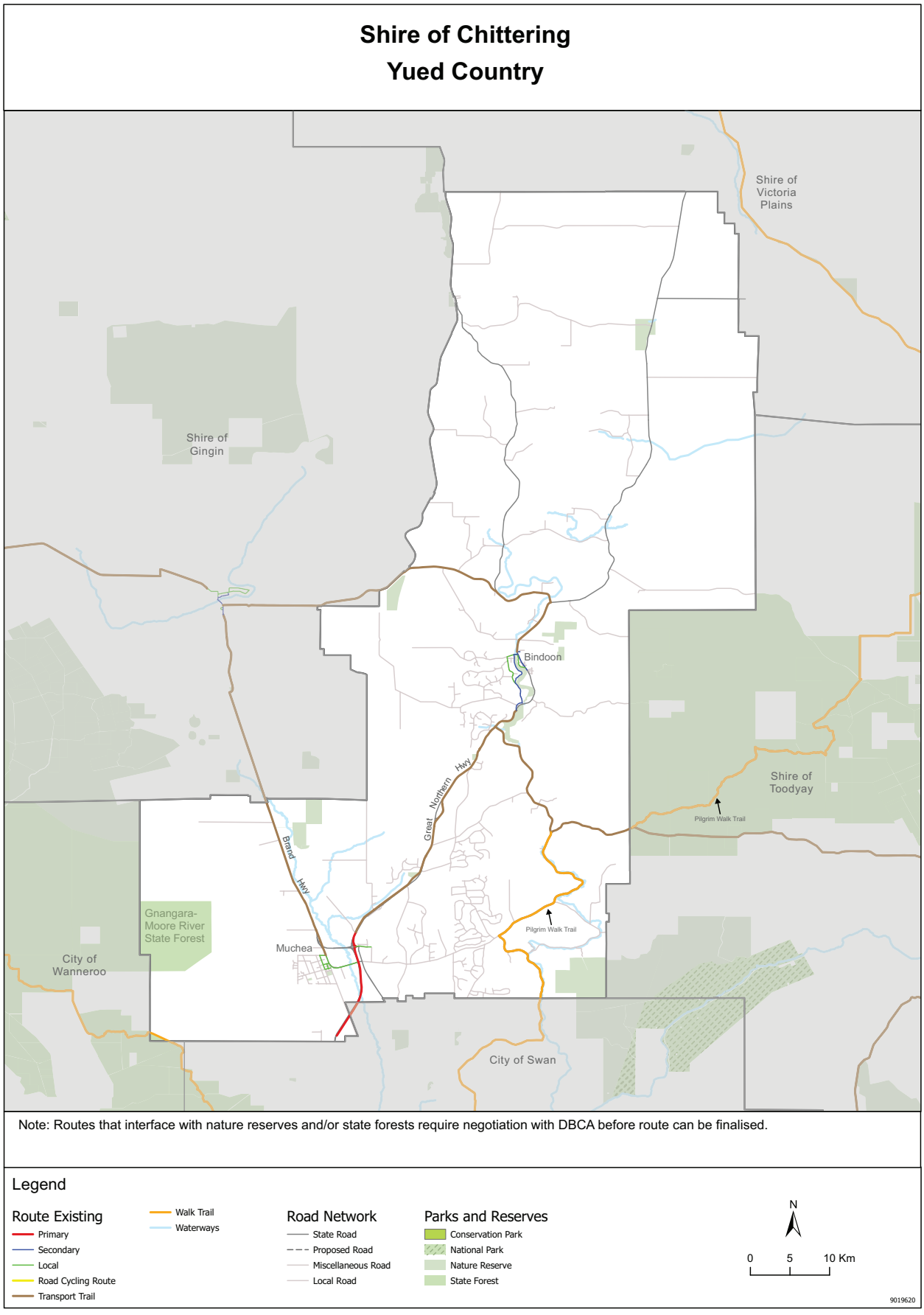
Map 1: Avon subregion network map



Map 2: Shire of Dandaragan network map



Map 3: Shire of Chittering network map



Map 4: Shire of Gingin network map

4.2 Avon subregion

Map 5 to 12 provide more detailed networks for the local centres of Beverley, Bakers Hill, Clackline, Northam, Spencers Brook, Toodyay, Wundowie and York.

Primary routes for the Avon subregion connect Northam to the metropolitan area, a key attractor at Spencers Brook and providing a key link between Northam and Toodyay.

Secondary routes reflect the intensity of local townsites providing a conduit connecting the primary route to the bike friendly local routes.

Local routes highlight the local bike friendly streets that provide the best connections within townsites.

Transport trails provide opportunities for longer tourist rides that can be marketed as inclusive itineraries, individual journeys of discovery or providing connections between smaller locations.

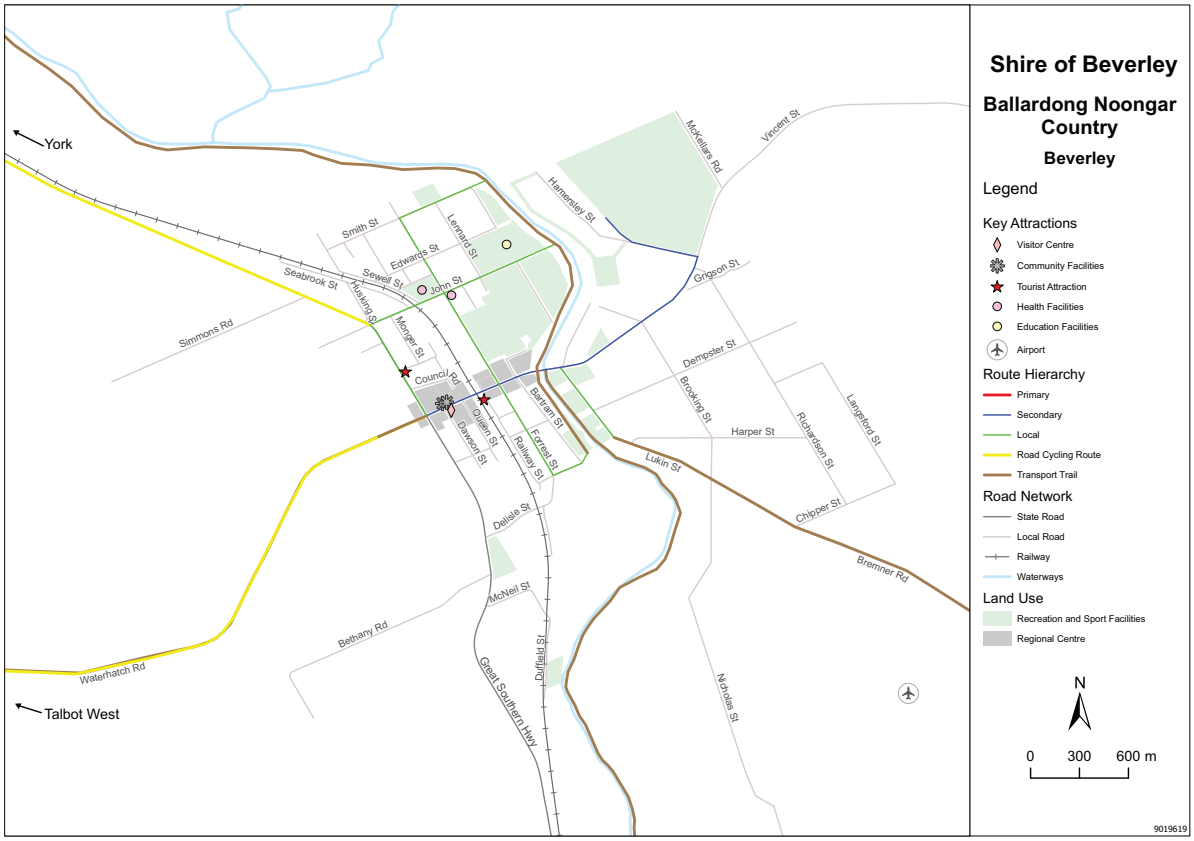
Where appropriate, **road cycling routes** are identified to support cycling training, regular events and long-distance cycle touring.

4.2.1 Shire of Beverley (Ballardong, Noongar Country)

The routes proposed for Beverley's 2050 LTCN are shown in Map 5. They embrace opportunities and priority projects including:

- Constructing a path along John Street, with east-west connections north of the town centre. John Street provides an important link for residents to workplaces in Beverley, the Beverley District High School and other community facilities such as churches and medical facilities.

Map 5: Shire of Beverley Network Map

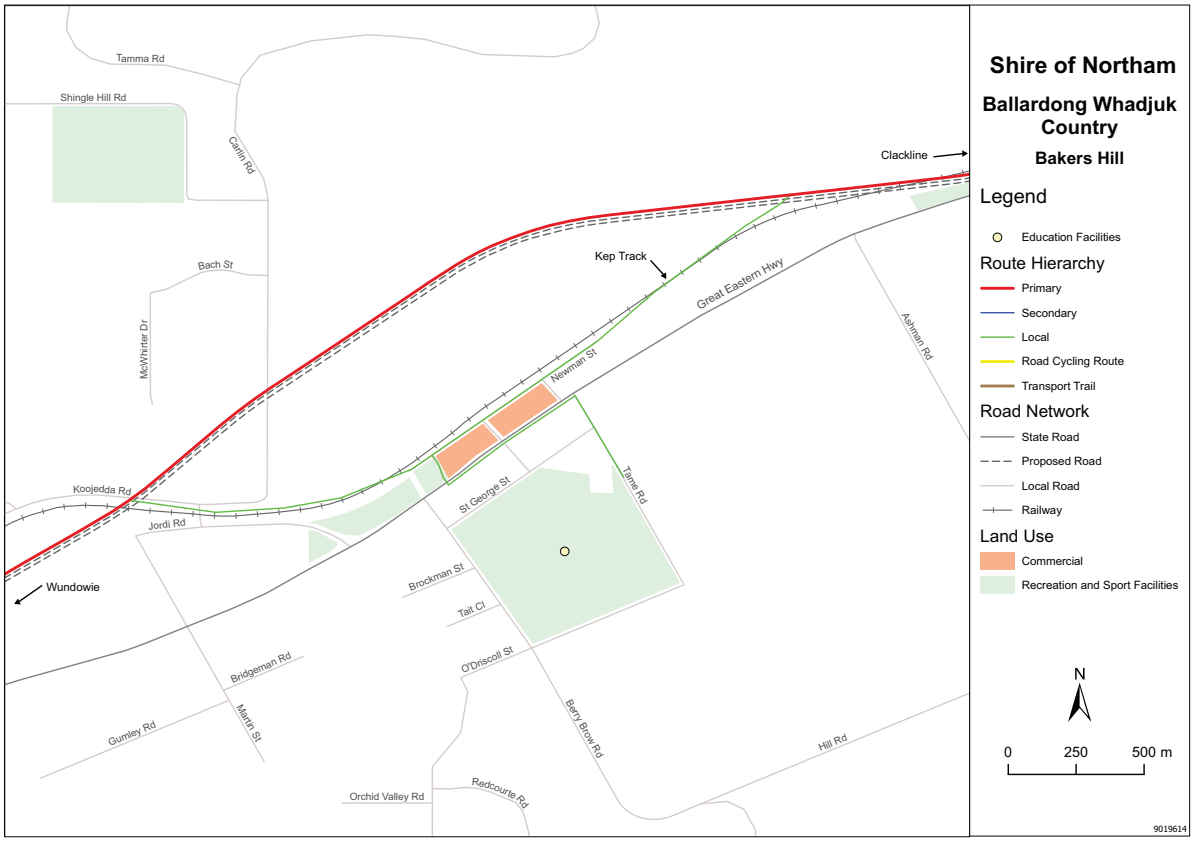


4.2.2 Shire of Northam (Ballardong, Whadjuk Country)

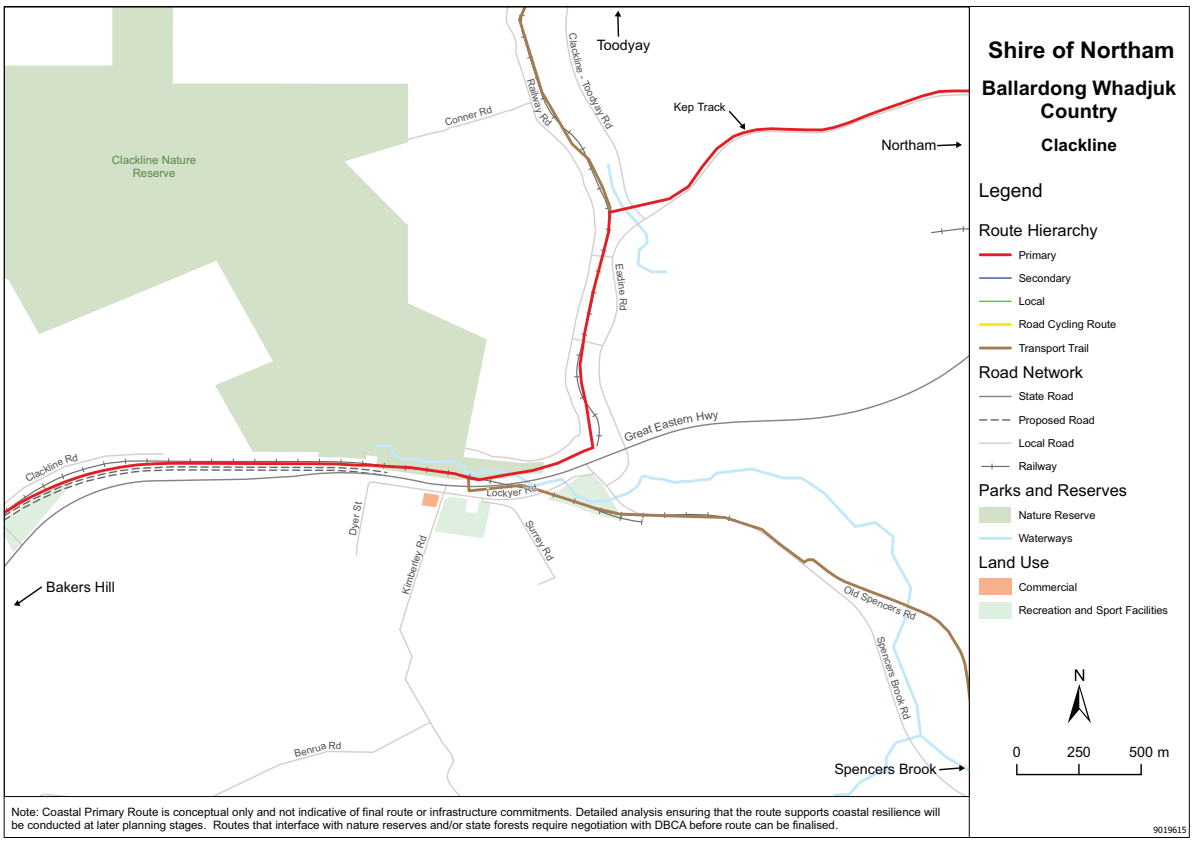
The routes proposed for Northam's 2050 LTCN are shown in Maps 6 to 10. They contain opportunities and priority projects including:

- Constructing a path along Taylor Street to Katrine Road and Mitchell Avenue from Mount Ommanney Road as stages of the Northam Recreational Shared Path; and
- Constructing paths on Hawke Avenue to link Wundowie town site to the proposed Eastlink.

Map 6: Shire of Northam (Bakers Hill) Network Map



Map 7: Shire of Northam (Clackline) network map



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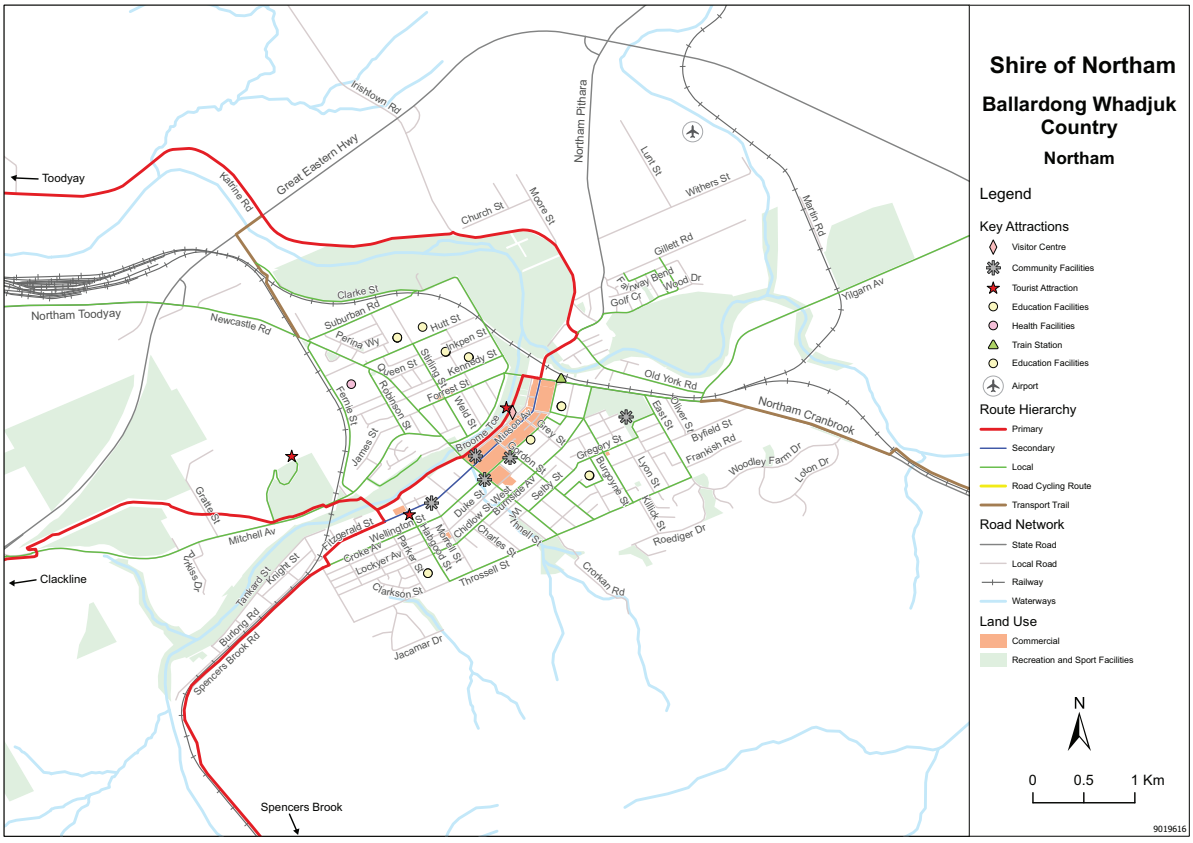
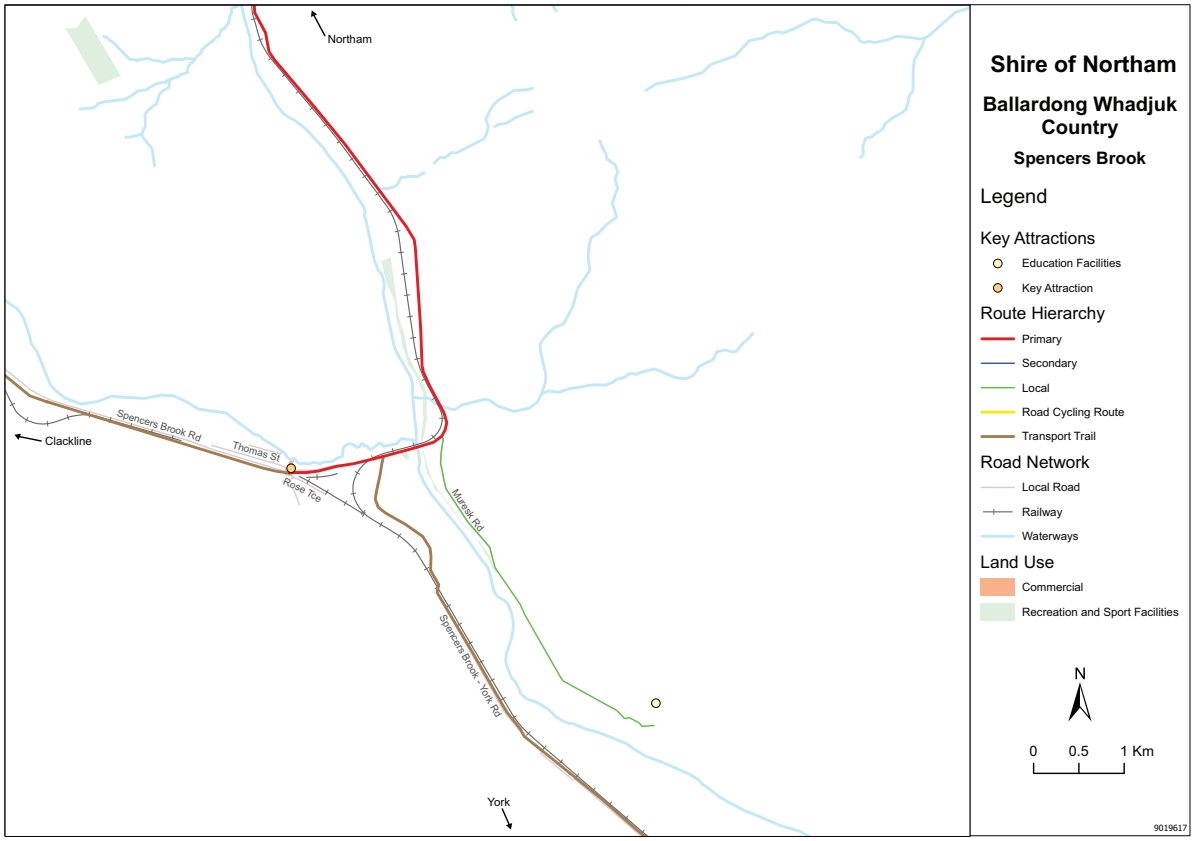
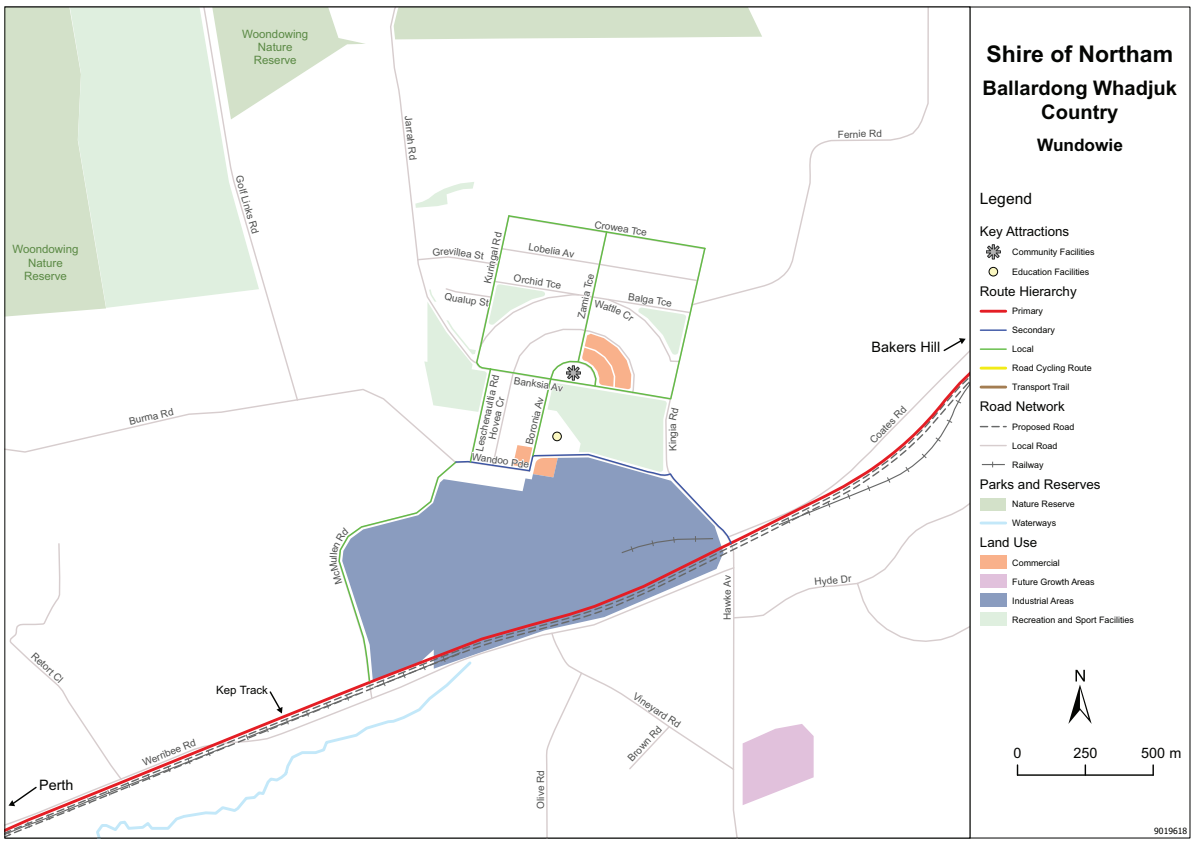
Map 8: Shire of Northam (Northam) network map



Map 9: Shire of Northam (Spencers Brook) network map



Map 10: Shire of Northam (Wundowie) network map

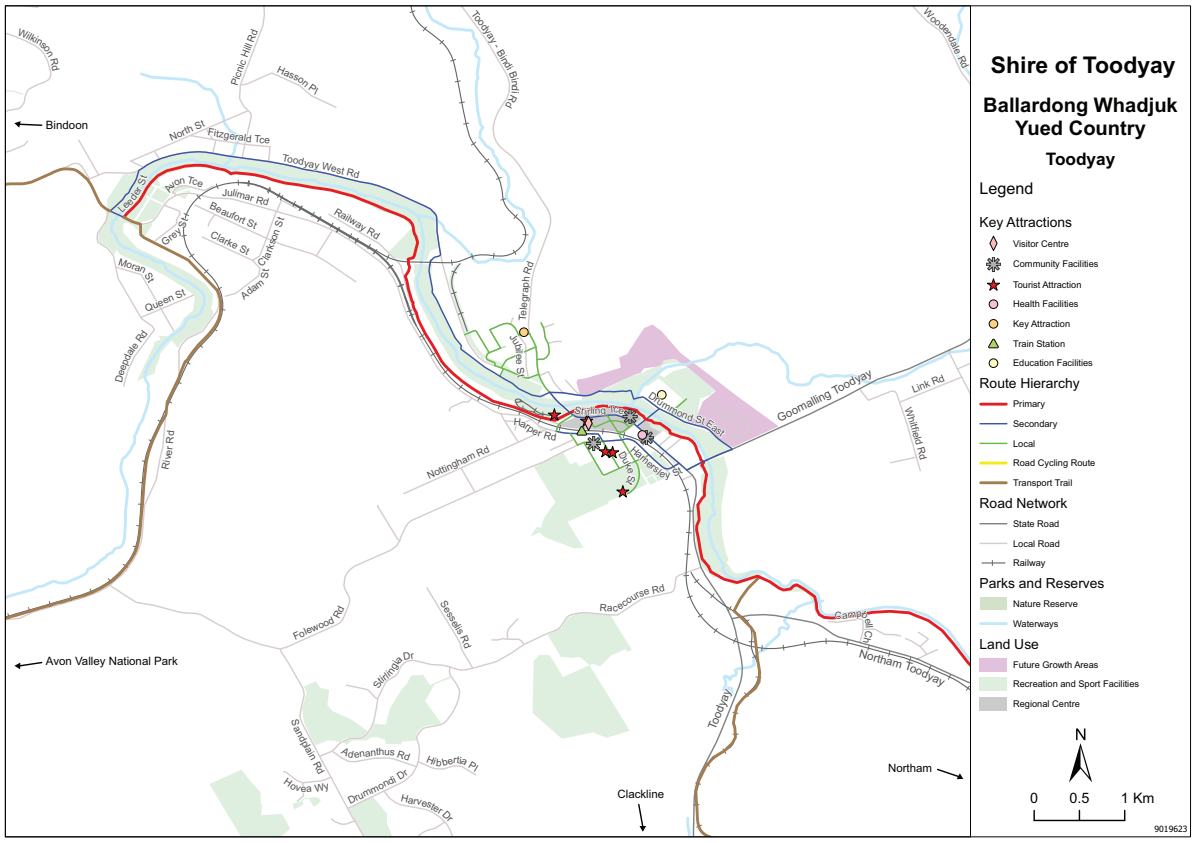


4.2.3 Shire of Toodyay (Ballardong, Yued, Whadjuk Country)

The routes proposed for Toodyay's 2050 LTCN are shown in Map 11. They embrace opportunities and priority projects including:

- Designing and constructing a shared path on Settlers Ridge to improve local residential connectivity; and
- Constructing the riverside trail from Connor's Bridge to Caravan Park to improve connection for residents and visitors as well as providing a continuous link along the river[30].

Map 11: Shire of Toodyay (Toodyay) network map

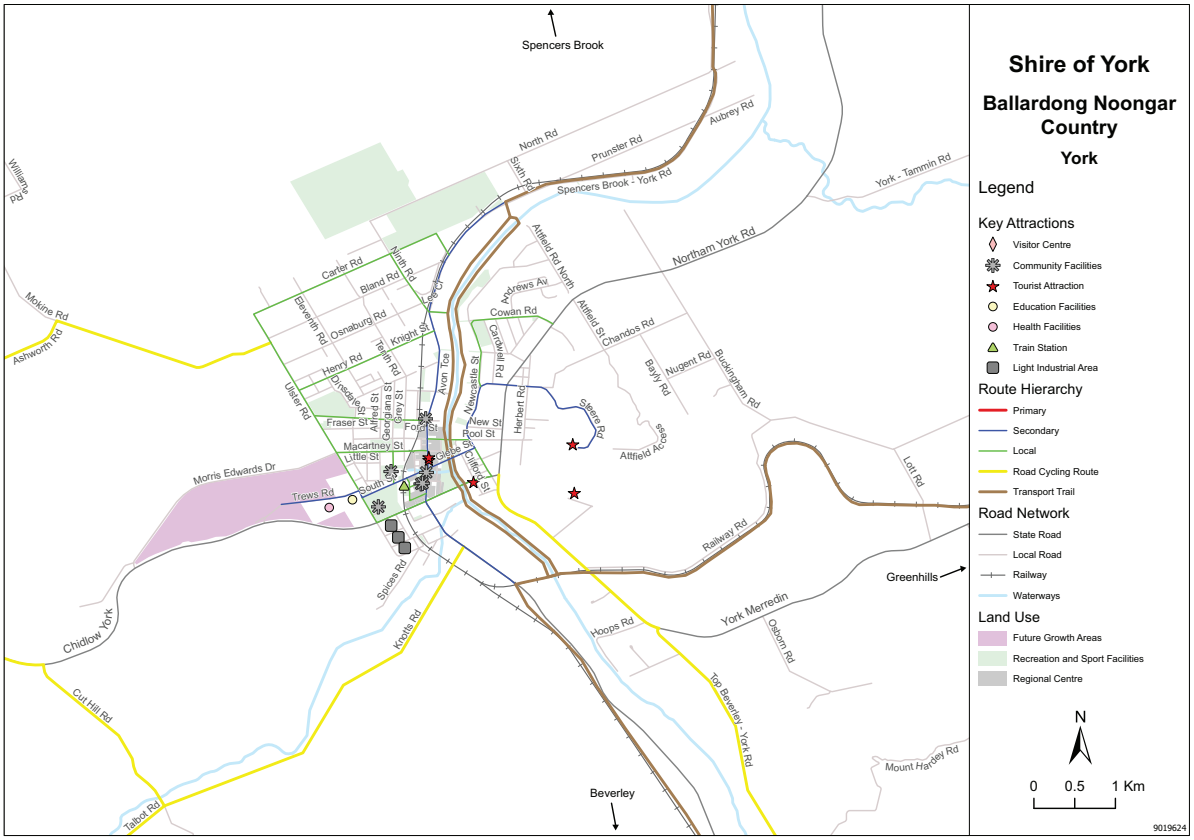


Shire of York (Ballardong, Noongar Country)

The routes proposed for York's 2050 LTCN are shown in Map 12. They contain opportunities and priority projects including:

- Extending the path along Trews Road from York District High School to the York Health Service facility and future growth area, providing residents and visitors safer access to medical services and providing cycle infrastructure to appeal to and cater for future residential and commercial growth;
- Extending the path along Forrest Street and Henrietta Street to improve connectivity to York Convention and Recreation Centre and alternate route to York District High School. These new paths would complete the missing links around the Centre, encouraging York's population residing north of the Centre, as well as east of the Avon River, to access the recreational destination by bicycle; and
- Constructing a path on Steere Road / Pioneer Road to Mount Brown Lookout. This will provide safe access to the numerous existing and proposed walking, mountain bike and equestrian trails throughout the reserve as well as BBQ, picnic and toilet facilities. Improving access to the reserve will encourage fitness, recreational and tourism uses.

Map 12: Shire of York (York) network map



4.3 Central Coast subregion

Maps 13 to 23 provide more detailed networks for the local centres of Badgingarra, Bindoon, Cervantes, Dandaragan, Gingin, Guilderton, Jurien Bay, Lancelin, Ledge Point, Muchea and Seabird.

The **primary routes** within the Central Coast region reflect the coastal connections between the towns within proximity to each other as well as recognising the key future coastal link between the Metropolitan area and the region. The completion of the Northlink primary route is also recognised.

Secondary routes reflect the intensity of local townsites providing connections to the primary route as well as connecting back to the bike friendly local networks.

Local routes highlight the local bike friendly streets that provide the best connections within townsites.

Transport trails provide opportunities to increase longer tourist rides that can be marketed as inclusive itineraries, individual journeys of discovery or providing connections between smaller locations.

Where appropriate, **road cycling routes** are identified to support cycling training and long-distance cycle touring.

4.3.1 Shire of Chittering (Yued Country)

The routes proposed for Chittering's 2050 LTCN are shown in Maps 13 and 14 and contain opportunities and priority projects including:

- Constructing a path on Granary Drive in Muchea between Tonkin Highway and Edwards Place to improve connection and create an 'anchor' between established Muchea town commercial area and Tonkin Highway / Great Northern Highway; and
- Connecting the Town Centre to the Bindoon Mountain Bike Trailhead and Caravan Park.

Map 13: Shire of Chittering (Bindoon) network map

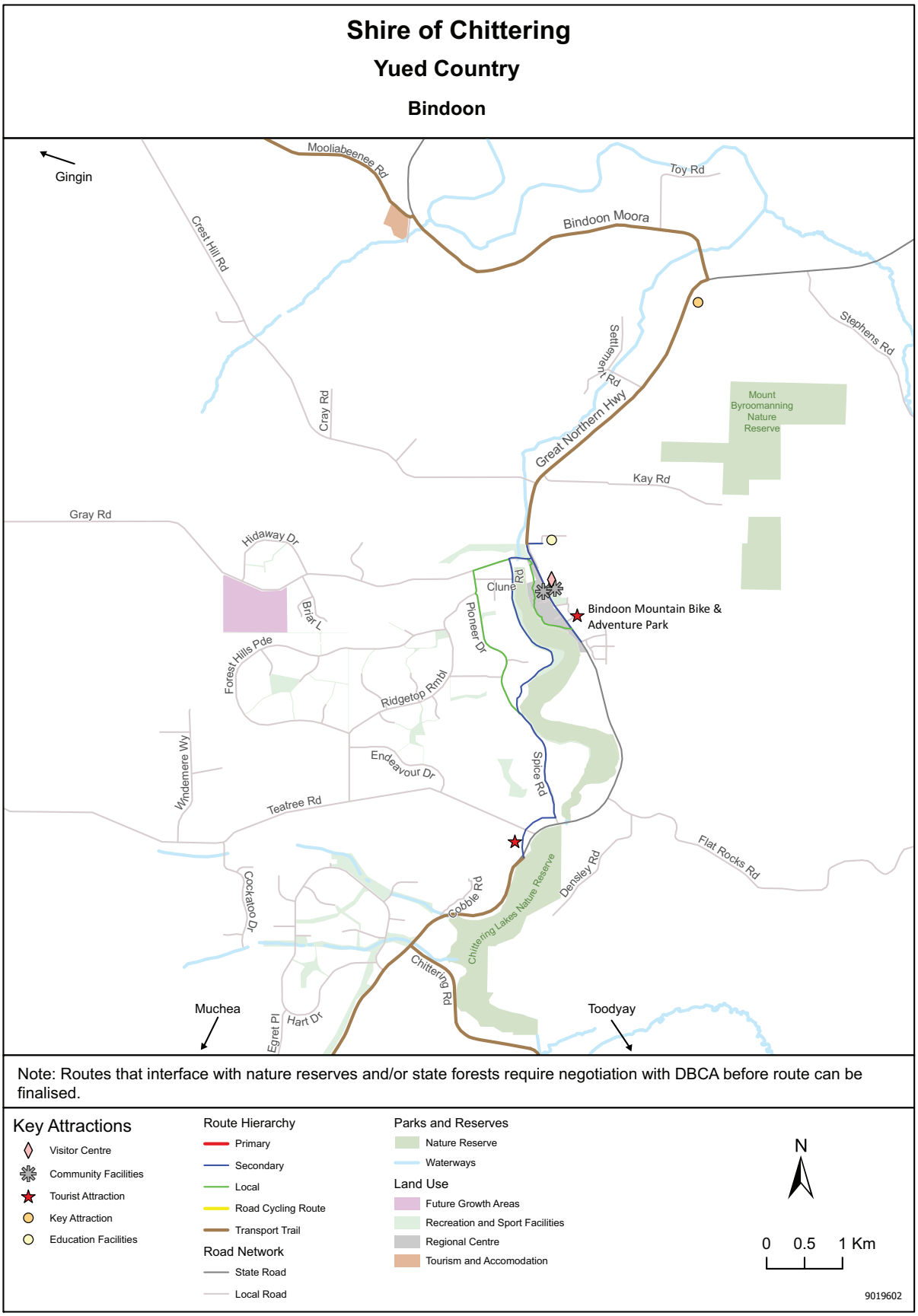


Figure 14: Shire of Chittering (Muchea) network map

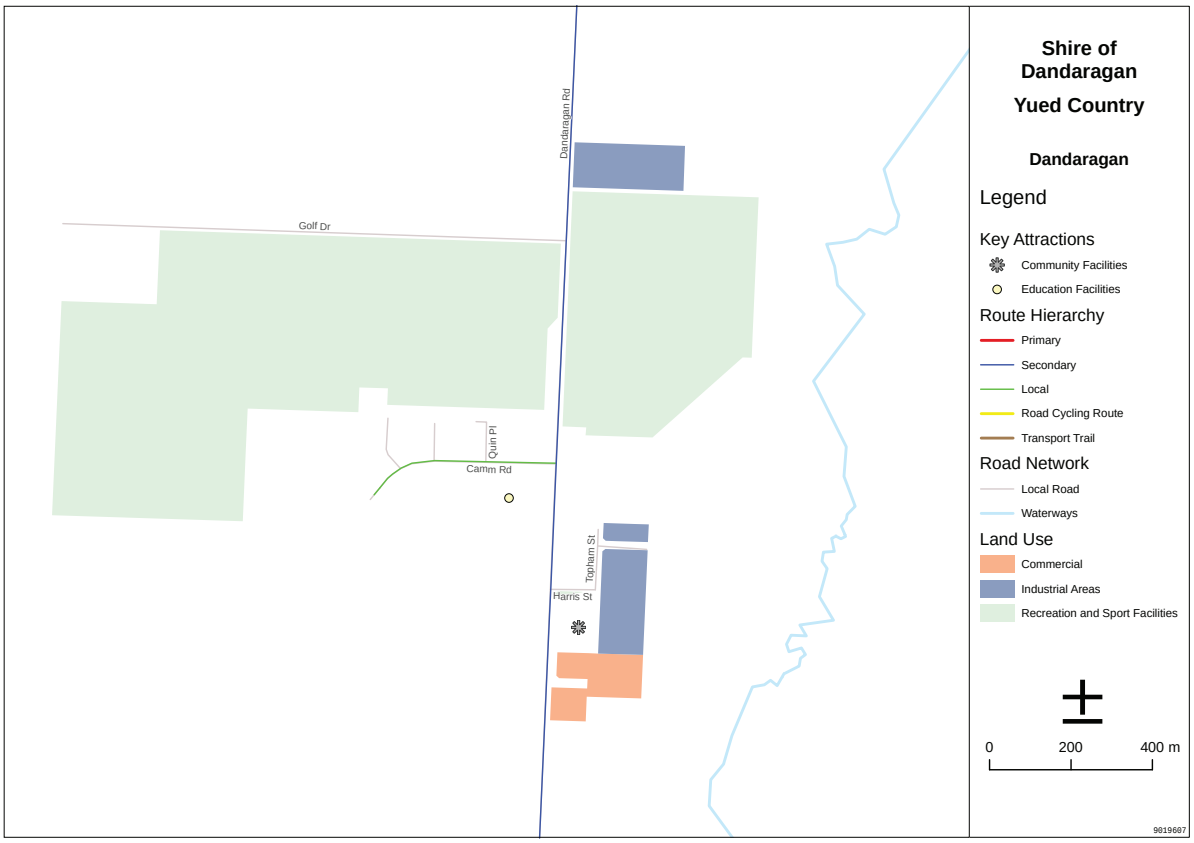
4.3.2 Shire of Dandaragan (Yued Country)

The routes proposed for Dandaragan's 2050 LTCN are shown in Maps 15 to 18 and contain opportunities and priority projects including:

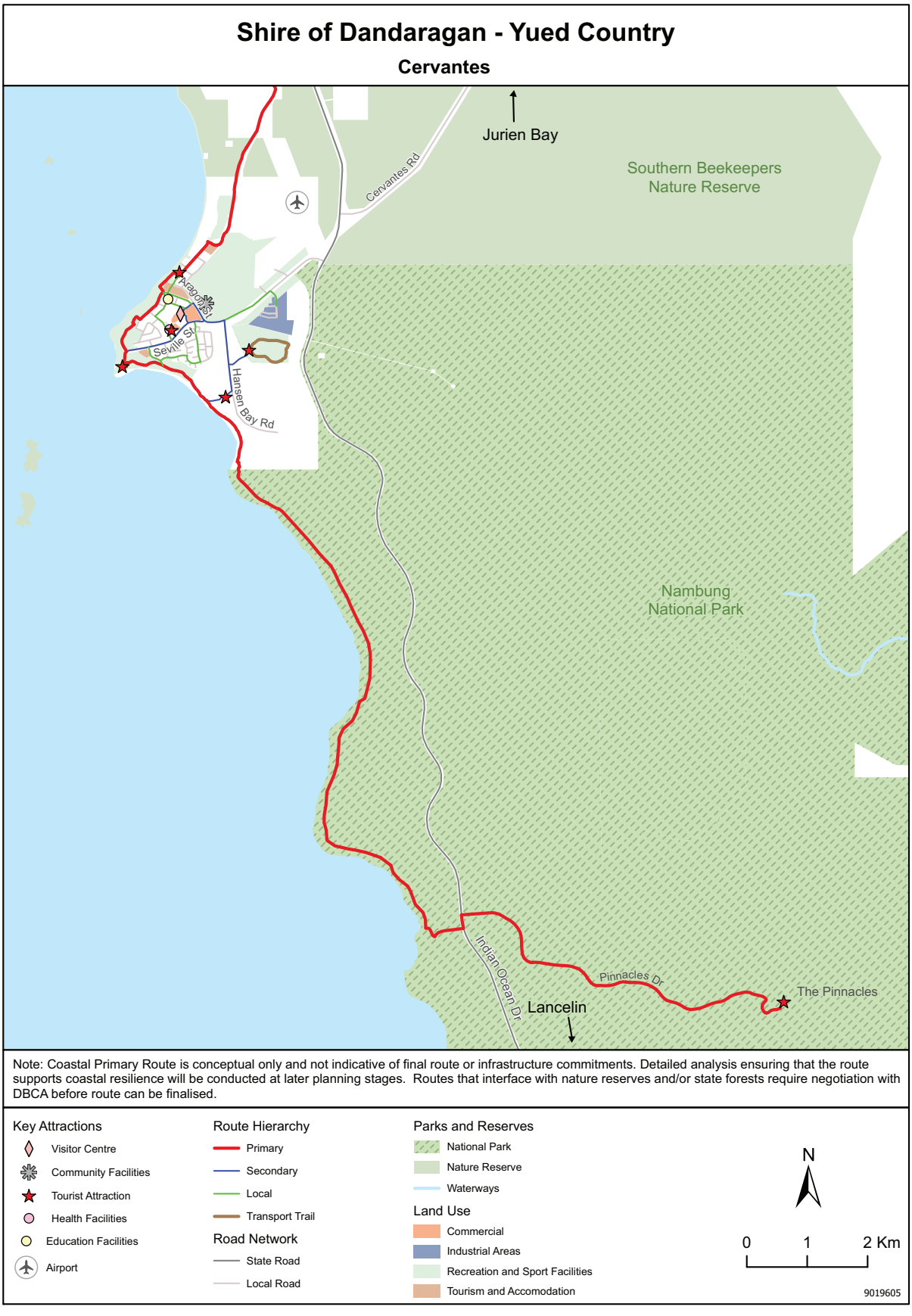
- Linking Jurien Bay townsite to surrounding residential estates Alta Mare and Jurien Heights, through the construction of new paths to create a loop within the estates as well as Jurien Road, Canover Road and Airstrip Road.
- Constructing a path along the unsealed Hansen Bay Road in Cervantes to provide a safe, direct cycle route to Lake Thetis loop trail, Hansen Bay Lookout and Hansen Bay Beach; and
- Extending the path north on Dandaragan Road to Kooringal Vale to provide a link to the Dandaragan Community Recreation Centre and south to Redgum Village Dandaragan which provides visitor accommodation.

Map 15: Shire of Dandaragan (Badgingarra) network map

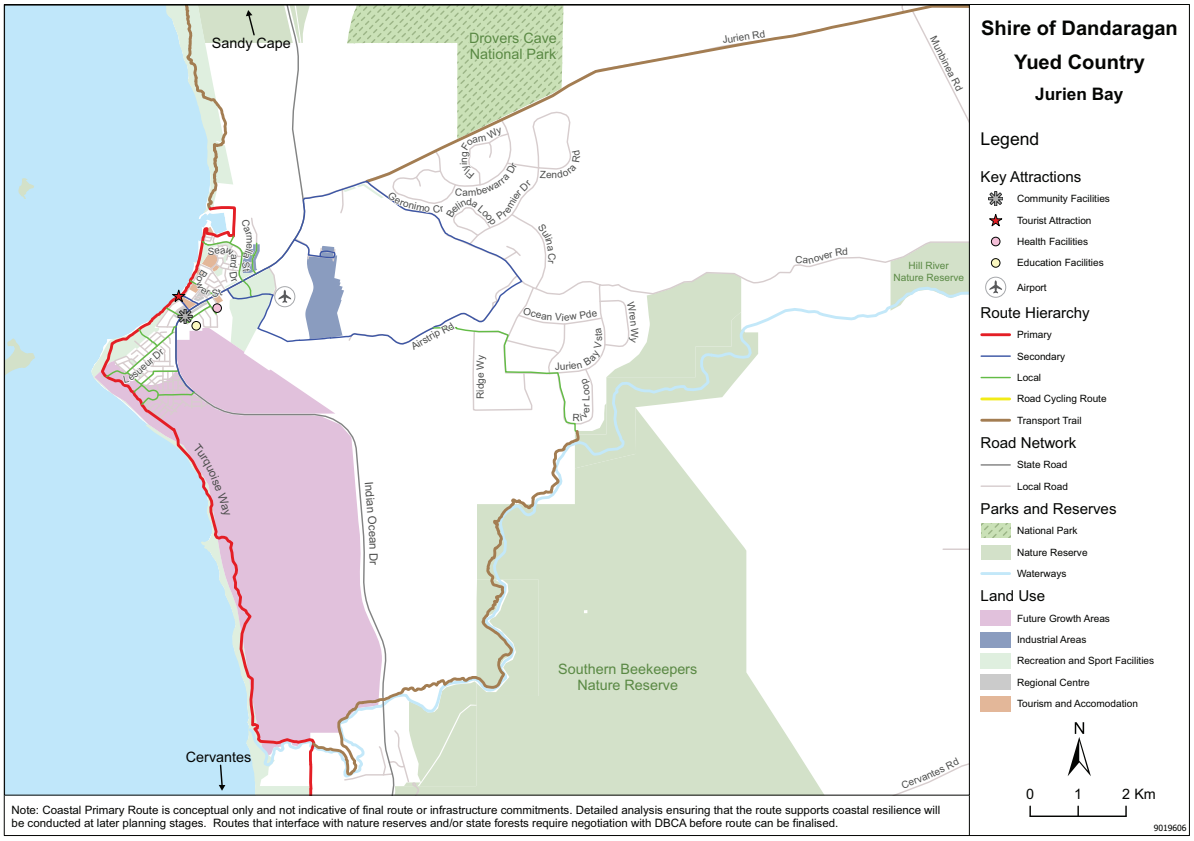
Map 16: Shire of Dandaragan (Dandaragan) Network Map



Map 17: Shire of Dandaragan (Cervantes) network map



Map 18: Shire of Dandaragan (Jurien Bay) network map



Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

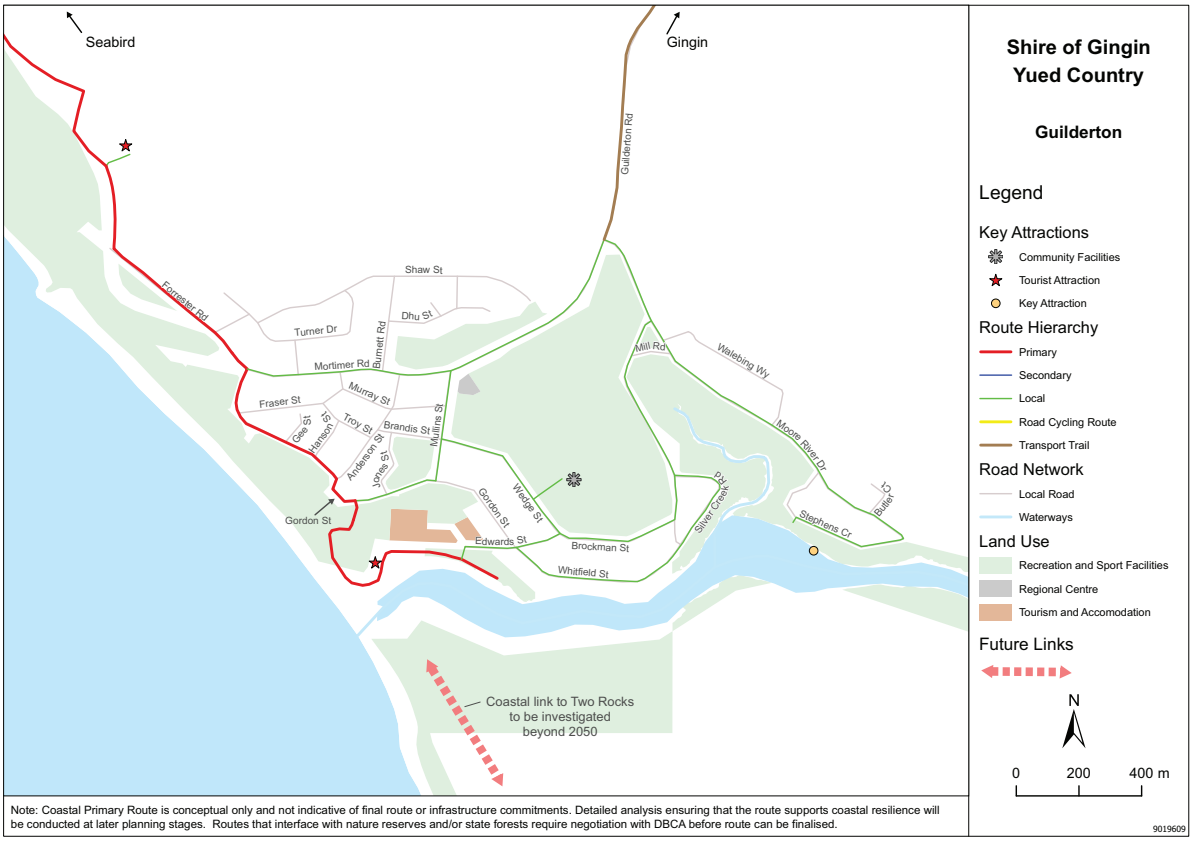
4.3.3 Shire of Gingin (Yued Country)

The routes proposed for Gingin's 2050 LTCN are shown in Maps 19 to 23 and contain opportunities and priority projects including:

- Constructing a new path on Guilderton Road / Moore River Drive / Stephens Crescent from Mortimer Road to providing access to the Moore River Estuary.
- Constructing a path on Lancelin Plaza in Lancelin, to improve access along the shopping area and to recreational destinations;
- Constructing a beach access cycle path in Ledge Point from Robertson Road to the beach; and
- Constructing a new path from McCormick Street to the beach passing Seabird Tavern and Caravan Park.

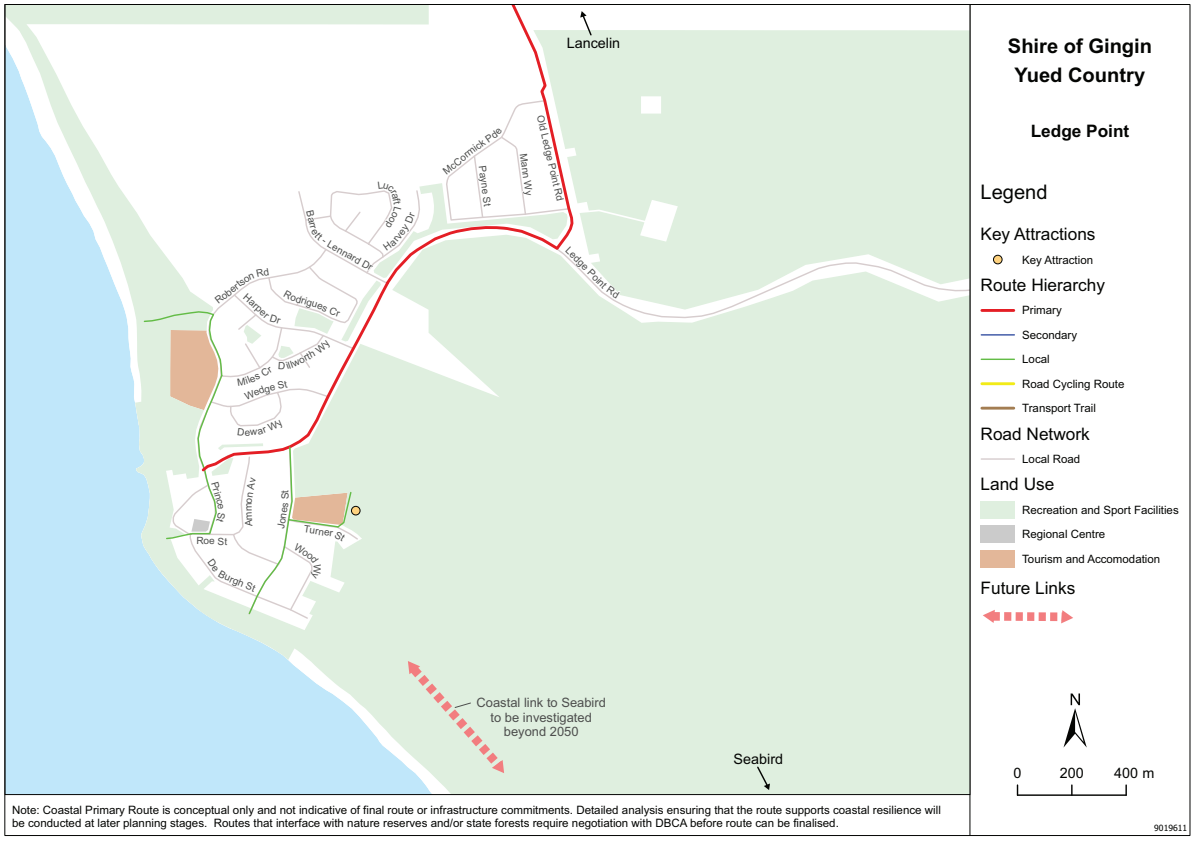
Map 19: Shire of Gingin (Gingin) network map

Map 20: Shire of Gingin (Guilderton) network map



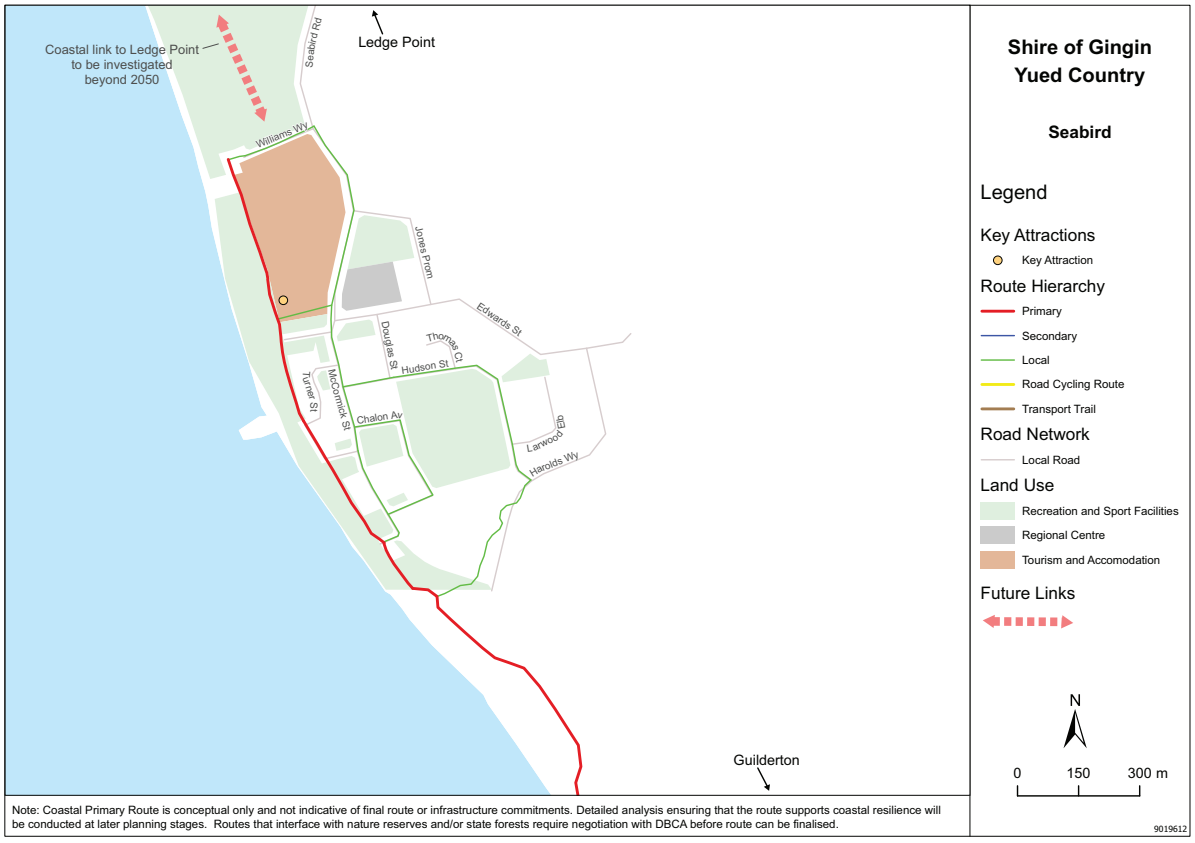
Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 21: Shire of Gingin (Ledge Point) network map



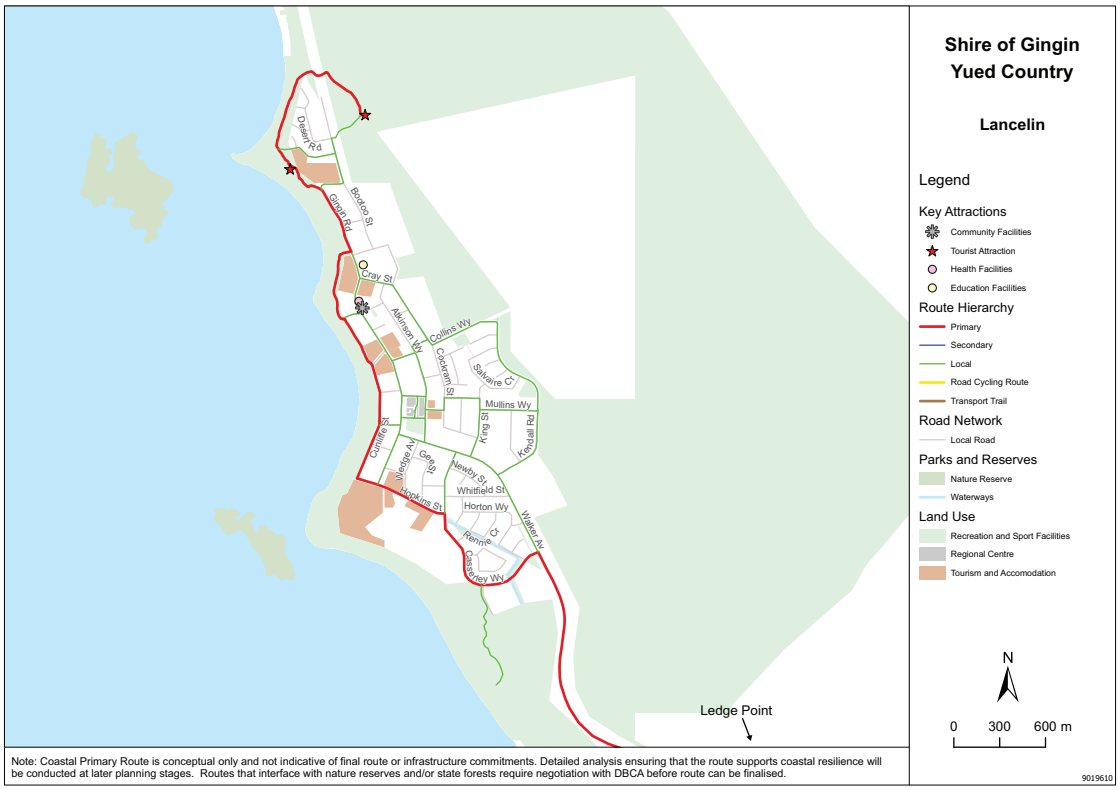
Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 22: Shire of Gingin (Seabird) network map



Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 23: Shire of Gingin (Lancelin) network map



Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

5. The Way Forward

This section outlines the way forward for the Avon Central Coast region through the identification of key themes and opportunities for bike riding throughout the region. Case studies are used to illustrate where similar outcomes have been achieved elsewhere.

5.1 Connecting people to where they live, work, learn and play

As the urban centres of the Avon Central Coast region grow, it is imperative to provide safe and direct cross-town bike riding routes connecting people to activity nodes such as shopping centres, schools, recreational facilities and industrial areas.

Supporting cross-town connections is particularly crucial in the region given the lack of public transport services. A convenient, safe and direct cycle network will allow people to move seamlessly throughout the region, creating opportunities to enable bike riding as a viable transport option.

Feedback from the community indicated the need to link key destinations such as town centres, shopping centres, beaches, parks and restaurants to encourage people to ride as part of their everyday journeys.

CASE STUDY: Busselton - Buayanyup Drain Shared Path

The Buayanyup Drain Shared Path provides a good example of cross-town connections in a regional setting. The path connects one of the new subdivisions in Busselton, the Vasse town centre to the coastal principal shared path giving access to the beaches of Geographe Bay as well as the town centres of Busselton and Dunsborough. The path was an integral part of the rejuvenation of a degraded Buayanyup Drain which was previously inaccessible. People who ride and walk can now soak up the scenery and the sounds of native wildlife. The community was involved in an innovative native bee workshop and tree planting as part of the opening of the path, with over 500 native plants being established. The path provides a safe and scenic connection for residents and attracts tourists and locals to explore the wider area.

Buayanyup Drain Path. Credit: City of Busselton

5.1.1 Opportunity: Creating convenient and easy cross-town connections

Some journeys within the Avon Central Coast region are currently seen as inaccessible by bike due to missing links and unsafe road conditions. Common stated barriers included a lack of adequate paths along heavily trafficked roads with high truck volumes, irregular or inconvenient crossing points and, in some cases, only informal tracks existing.

Opportunities exist to provide safer, more convenient ways for people to ride between and across towns.

Some key opportunities include:

- Linking Jurien Bay Town Centre to residential estates;
- Constructing a railway crossing on Hamersley Street to Stirling Street in Toodyay to improve safety; and
- Designing and constructing Stage 1 of the Avon River Trail in Toodyay to connect the Caravan Park to the Town Centre.

These and other opportunities are reflected in the priority projects Section 6.

CASE STUDY: Collie, Trail Town

The Shire of Collie and its surrounding area is recognised as a Trail Town providing a unique and local tourism experience using multiple trails. The town is a service centre for trails and the people who use them. Numerous high-quality trails, ranging from urban and bushwalking trails to mountain biking and equestrian trails can be found in and around the town.

Trail Towns such as Collie, facilitate numerous tourism opportunities accommodating for travellers, campers, casual or more fitness focused users. The Mural Trail is one such tourism attraction, providing an expansive outdoor art gallery with more than 40 murals, including the 8,000m^2 mega-mural located on the dam wall in Wellington National Park. Further opportunities through trail orientated events such as races, cinema nights or more iconic annual events are further drivers of tourism which help to enhance local industries.

Photos: Riders on the Collie Trail Town path. Credit: Collie PCYC

5.1.2 Opportunity: Linking to mountain biking trails

Mountain biking continues to be one of Western Australia's favourite recreational activities, with over 50 competitive events taking place in WA each year[31]. Feedback indicated a high demand for mountain biking experiences in the Avon Central Coast region.

The creation of mountain biking trails, tracks and experiences is out of the scope of this Strategy, however creating links from key rail heads and accommodation to popular mountain biking destinations will support the diversification of the region's recreation and tourism industry, as well as support social, leisure and fitness cycling.

A trail user survey administered by the Shire of York revealed that 41 per cent of survey responders chose to explore trails via mountain bike. Two reserves in York, Mount Brown, and Mount Bakewell, currently attract people for the purpose of mountain biking on sanctioned trails as well as attracting visitors to the views and natural bush environments.

The Shire of Chittering is also developing a tourism and recreation precinct at Red Hill in Bindoon with opportunities to link into the town. Both towns have opportunities to enhance themselves as trail friendly towns and attract cycle tourists. Although Trail Towns is a specific program, many of the shires can use the principles to inspire businesses and accommodation facilities to recognise the importance of bike riders to the region without having to sign up to the program.

5.2 Promoting a unique visitor experience by bicycle

Outdoor and adventure tourism has increased rapidly all over the world. Outdoor tourism disperses visitors to non-traditional destinations and exposes them to a wide range of unique natural environments including coastal, forest, riverine and farmland.

In 2018, WestCycle and Tourism WA developed the *Western Australian Cycle Tourism Strategy*[32] recognising recent cycle tourism growth and the potential economic benefits it has for the State.

The strategy classifies two main types of tourism bike riders:

- Destination cycle tourists who are motivated to travel to destinations primarily or solely because of the routes, trails and riding experience the destination has to offer; and
- People on holiday who ride when in a destination, however bike riding is not the primary reason for their holiday.

The Avon Central Coast region showcases some of the most unique and stunning natural landscapes in Western Australia, offering multiple opportunities to improve offerings for both cyclist types.

The region's proximity to the Perth metropolitan area allows for a strong potential to increase visitation for overnight/day/half-day/weekend bike riding experiences, as well as formalising popular road cycling routes.

Within the Central Coast, formalising and promoting transport trails to showcase the remarkable coastal landscapes as well as the renowned wildflowers, which characterise the area, can attract 'destination cycle tourists.' Completion of Turquoise Way path in Jurien Bay and extending this path to the Pinnacles is one example of how this could be achieved.

In the Avon, 'destination cycle tourists' could be attracted by re-purposing the existing network of non-operational railway corridors, such as Clackline to Toodyay in the Shire of Northam and Toodyay. This would allow cyclists to explore the unique topography and built heritage of the subregion.

'Cyclists whilst on holiday' offerings can typically involve recreational bike riding experiences that encourage visitors to extend their stay or even just use their car less while staying in the area. Making it easier to ride to the beach, the local shops or around town will allow people to explore what each of the subregions has to offer.

Whilst infrastructure plays an important role in attracting and retaining visitors to locations, marketing and activation also play a vital role, with resources like maps, digital resources, wayfinding, bike hire and events all encouraging people to get out and explore by bike.

CASE STUDY: Esperance Coastal Path

Esperance has developed a 14 km continuous shared path from Castletown Quays to Twilight Beach, providing users with a range of coastal experiences, from beaches alongside the Esplanade, to views of the jetty, marina and port, and dramatic cliff-lined vistas along the southern coast to the west of town. Opportunities and actions identified in the Esperance 2050 Cycling Strategy would see this path extended to Bandy Creek Harbour and Eleven Mile Beach.

Esperance Coastal path. Credit: Department of Transport

5.2.1 Opportunity: Creating a world-class coastal cycling route

The Central Coast subregion is situated in a prime location along Western Australia's pristine coastline. Opportunities abound to further enhance the existing cycle paths and consider both short-term and long-term improvements. Stakeholder feedback supported a good cycle connection between Seabird and Guilderton. Currently, cycle access is difficult as an unmarked track is all that exists. Cycle routes which follow waterfronts tend to achieve higher levels of ridership. Coastal paths are a major drawcard for tourists to WA and showcase some of the best natural landscapes on offer. Coastal routes along the western coastlines are a major drawcard, providing opportunities to experience rugged coastlines and spectacular sunsets.

An aspirational route for the long-term cycle network could include:

- Further expansion of the Turquoise Way path to connect Jurien Bay to Cervantes and then onto the Pinnacles National Park;
- Lancelin to Ledge Point, Seabird and Guilderton; and
- Cervantes to Lake Thetis.

Careful consideration is required for cycle routes along WA's coastline, with coastal erosion and inundation risks associated with rising sea levels. Measures need to be considered for cycle trails to adapt to change and rapidly recover from potential natural hazards.

5.2.2 Opportunity: Developing loop routes

Loop routes provide opportunities for bike riders to undertake trips, starting and finishing in the same location. These routes are generally more attractive, located away from motorised traffic and connecting to local destinations. Waterfronts are ideal locations for loop routes, as they provide locals and visitors with a route to showcase some special natural landscapes.

Over 40 per cent of survey respondents indicated they felt the most comfortable riding on off-road shared paths. Feedback also supported connections using waterways, separation from higher traffic routes and locations with reduced traffic speed and low traffic volumes.

The loop routes in this Strategy contribute to a complete, connected and comfortable network providing access to local destinations and recreational opportunities.

Opportunities for loop routes within the Avon subregion include loops identified along the Avon River in the Shires of Beverley, Northam, Toodyay and York. The Avon River is an important natural asset in these shires. Utilising routes around the river provides a means of linking the towns within the subregion with a unique tourism experience. Stakeholder feedback supported the opportunity to develop experiences, which embrace the river and the subregion's natural built heritage.

Opportunities in the Central Coast subregion include developing a high-quality loop from Jurien Bay along the coast towards Hill River estuary and looping back by following the river or Indian Ocean Drive, providing an experience of the natural heritage including wildflowers with glimpses of coast and hinterland. Another opportunity identified is a recreational loop around Lake Thetis near Cervantes. This shorter loop providing an experience of the natural features of the coast combined with the stromatolites and inland lake environment.

Shorter tourism cycle routes within towns such as 'York Cycle Rides' and 'The Herons Highway' provided unique opportunities to explore the local attractions.

5.2.3 Opportunity: Enhancing transport trails throughout Avon Valley

Cycle tourism has been identified as a key growth adventure tourism activity, giving cyclists a range of unique trail experiences and supporting local economies in areas traditionally not visited.

The Avon Valley is relatively close to Perth and offers bike riders and visitors with a unique opportunity to develop longer, multi-day riding experiences allowing them to explore some impressive natural landscapes, food and wine locations and heritage sites while staying in local accommodation.

Having a selection of settlements within a relatively short distance, and accessible by generally flat terrain along the river, Avon Valley provides opportunity for an assortment of loops centred on Northam, Toodyay and York. These can provide a variety of landscapes and attractions including rolling farms, natural bush and heritage sites.

Longer distance trails can also be a popular choice for people bike riding for training, exercise or recreational purposes. In most instances, this type of bike riding caters to more experienced or adventurous riders, travelling distances of 100 km or more. The Avon Central Coast region provides a range of existing and proposed long distance trails, which include:

- Mundaring/Northam via Kep Track;
- Beverley to York (Beverley Heroic);
- York to Mundaring (Talbot West Road); and
- Bindoon to Guilderton (via Gingin).

Coordinated wayfinding, promotion and trail friendly towns and businesses can all contribute to the attractiveness of long and short distance trails. Providing linking infrastructure opens the possibilities of promoting an integrated trail from the coast (Guilderton) to Beverley.

CASE STUDY: Eudunda Southern Ridge Loop Trail – Lavender Cycling Trail

The Lavender Cycling Trail Loop Ride is a 31 km trail located within Eudunda, South Australia. Being of moderate difficulty with mostly dirt and some bitumen surfaces, the ride provides stunning views, especially when descending the trail. The trail provides a loop linking several tourism attractions showcasing the heritage of the area. The trail provides an enhanced cycle tourism opportunity for varied abilities of riders.

Riders on the Eudunda Trail in South Australia. Credit: Uncool Cycling Club

5.2.4 Opportunity: Harnessing the potential for rail corridors

Providing cycle infrastructure along rail corridors can increase the profile of a region and open tourism opportunities by providing users with continuous and uninterrupted routes that showcase natural, cultural and local heritage.

Community consultation highlighted anticipation for rail trails developed for tourism, recreational and event use. This enthusiasm is shared by many stakeholders, particularly along alignments where there are no ongoing rail operations.

Across the Avon subregion, there is potential to re-purpose many of the existing network of non-operational railways. Closed, disused and dormant railways within the subregion currently include:

- Clackline to Toodyay;
- Clackline to Spencers Brook (road is following old rail alignment trail); and
- York to Greenhills (rail bridge reuse town loop).

The characteristics of rail corridors make them especially appealing for bike riding infrastructure. They often provide continuous and uninterrupted rights-of-way. Rail corridors also tend to have relatively gentle gradients, making for more comfortable bike riding experiences, particularly over long distances.

Rider on the Tumbarumba to Rosewood Rail Trail in NSW. Credit: VisitNSW

CASE STUDY: Tumbarumba to Rosewood Rail Trail (NSW)

The Tumbarumba to Rosewood Rail Trail is a 21 km long sealed trail connecting the New South Wales country to the Australian Capital Territory. Officially opening in April 2020, the trail supports a gentle gradient which makes it suitable for walking, bike riding, scooters, prams, wheelchairs and mobility scooters.

Following a former railway extending from East Wagga Wagga that ceased service in 1974, initial plans were to convert the entire 130 km railway line to the trail. Though only one section within the Tumbarumba Shire is currently completed, the trail is a great driver of tourism for the area. Providing incredible countryside and farmland views and begins in the foothills of the snowy mountains, the trail also provides interpretative signage to explain the history of the region and rail.

5.2.5 Opportunity: Promoting the region's cycling events

Bike riding events can be a key driver of travel motivation. They attract high numbers of visitors who usually would not have travelled to a location for cycling[33]. The profile of the Avon Central Coast region as a prime cycle tourism destination can be enhanced by raising awareness of popular and regular bike riding events.

Some popular events across the Avon Central Coast region include:

- The Beverley Heroic, now an informal event which celebrates the history of bike riding in WA;
- The York Cycling Festival, which aims to involve more people in racing and creating positive bike riding experiences; and
- The York Canola Classic, a picturesque mass-participation recreational ride hosted in the Shire of York. Riders choose either a 93 km or 52 km distance option that takes them on a scenic journey from the heart of the town of York, through to the striking yellow canola fields of the Avon Valley.

The promotion of local events can support local businesses through increased tourism and can encourage healthy and active communities that support bike riding. These events can include road races, track cycling, BMX and mountain biking competitions, all of which can be promoted across towns throughout the region. They also attract riders who follow the routes for training and/or recreational bike riding.

Riders on the Ballarat Tweed Ride. Credit: Ballarat Tweed Ride

CASE STUDY: The Tweed Ride - Ballarat

The Ballarat Tweed Ride is an annual event that has been growing in popularity since its inception in 2012. The event began as an unofficial activity. Because of the attention it attracted the City Council asked for it to become an official event the following year. The event encourages participants to dress in classical tweed outfits to participate in a casual social ride through the town. The event is part of the Ballarat Heritage festival and finishes at the fair at one of the local landmarks. Prizes are awarded for costumes as part of a fashion parade. The event promotes the town and its festival and has received growing support and publicity locally, as well as drawing people to the town.

5.2.6 Opportunity: E-bike tourism

E-bike tours are a growing category of cycle tourism worldwide. The interest in e-bike tourism in the region was evident during the community consultation, particularly as an opportunity to engage seniors and 'grey nomads' in bike riding.

The appeal of e-bikes is related to enabling people to ride greater distances, with less effort. They enable people of different fitness levels to cycle together and give confidence to tackle steeper gradients and routes that otherwise would be outside of their comfort zone or capability.

Opportunities identified to support e-bike riders and tourism include:

- Conveniently located e-bike charging stations at rest spots and trailheads;
- First aid stations in remote areas; and
- Support for e-bike hire providers.

Avon Central Coast 2050 bike networks aim to recognise the potential of e-bikes as well as ensuring the facilities provided cater for all ages and abilities.

CASE STUDY: E-bike tourism – Mornington Peninsula, Victoria

Located within Victoria, just 85 km southeast of Melbourne's CBD, Arthurs Seat is a small mountainous locality on the Mornington Peninsula. Guided e-bike tours operate within this Peninsula, allowing for an exploration of Arthurs Seat Skate Park, Merricks Village and the serene Red-Hill Rail trail.

E-bikes allow for tour riders to quickly traverse hills, conserving their energy whilst being shown the best ways to visit the spots on the tour.

e-Bike riders in the Mornington Peninsula. Credit: Viator

5.3 Supporting healthy, active, and safe communities

Regular bike riding is a great way to help improve physical and mental health, reduce risks of heart disease, and decrease stress and anxiety levels. It is a low impact exercise and can be enjoyed by all ages and socio-economic groups. Encouraging more bike riding within local communities can also improve air quality and reduce traffic noise as well as private vehicle dependence.

5.3.1 Opportunity: Encouraging travel behaviour change

Targeting behaviour change by encouraging people to choose to cycle requires that the existing bike riding facilities and routes appeal to riders. To enable potential cyclists to choose to positively adopt changes, routes need to be safe, accessible and convenient.

Opportunities exist for schools and communities to educate children, youth and less experienced riders in simple ways to improve their skills and confidence, increase their mobility and reduce private vehicle use.

The Your Move[34] program run by DoT assists people finding simple ways to get active and connected. The program is free and provides information to individuals, schools and workplaces to support more active and healthy transportation through planned activities. Although the program is concentrated in the metropolitan area, there is an appetite to expand to the regions. Many of the principles and initiatives from the program can be adapted to the local environment.

Resources range from specific online information regarding how to get more people riding to the workplace, to bike safety workshops at schools where students can learn about road rules for bike users. In addition, there is the ability to earn points and redeem awards such as bike promotion packs or bike racks.

5.3.2 Opportunity: Mid-trip facilities and heat stress management

The term 'mid-trip facilities' describes facilities and infrastructure such as water fountains, rest spots, seating, shelter and camping facilities provided along a route to support users undertaking their journey and aiding in creating a pleasant and comfortable riding experience.

Many of the trails potentially involve journeys of significant distance with limited supporting infrastructure[35]. Access to public drinking water on transport trails and paths in the Avon Central Coast region is particularly relevant as the region can experience extreme heat and sun exposure conditions[36]. For this reason, many residents prefer to exercise and recreate during the cooler conditions in the early morning and early evening.

Feedback revealed Avon and Central Coast residents would like to see:

- vegetation and built shelters to provide shade, buffer winds and help manage heat stress;
- water stations with drinking fountains to ensure riders remain hydrated and limit heat stress;

- electric bike charging stations and bike maintenance stands to allow riders to safely maintain their bike;
- rest spots, including benches, tables, picnic facilities and public restrooms so riders can take a break and can shelter from the sun, essential for long-distance trips;
- camping and shelter locations that encourage use for overnight stays to reduce incidents of incidental camping that can be destructive to forest areas;
- lighting of paths to improve safety and comfort of bike riding outside daylight hours;
- wayfinding signage and interpretation signs with tourism and heritage points of interest to contribute to the trail use experience; and
- bicycle parking racks at trailheads and rest spots so riders can temporarily secure their bikes.

CASE STUDY: Dandaragan's Cervantes Sculptures

Construction of a shared path along the foreshore increased accessibility within the Cervantes townsite. Sculptures along the path encourage visitors to explore the path.

Rest stops to support those using the path have been installed along the path. These range from simple bike racks, shelters, and one incorporating a unique shark bike rack, shelter and repair station. Solar lighting along the path allows for travel in cooler conditions in the evening to effectively manage heat stress.

Shark design bike rack and repair station in Cervantes. Credit: Department of Transport

CASE STUDY: Fleet and loan bike facilities and programs

It is becoming more and more popular for organisations to provide their staff with fleet bicycles for use for business trips and on work campuses. Some of the most prominent tech companies in the world, including Apple, Facebook, Google and LinkedIn, have provided employees with campus bikes for years, and closer to home, a growing number of WA-based organisations and government agencies are providing bikes for staff to use. The City of Vincent provides staff pool electric bicycles as well as a Community Bike Library that includes a wide range of well-maintained bikes for the community to access on a short-term basis. The City's view is that these resources greatly reduce the barriers for people to try cycling. The Bike Library includes a ZAP electric cargo bike with seats, Zap step through electric bikes, standard adult and kids bikes, a cargo trailer and a kiddie trailer with seats and seatbelts for two children. Many commercial accommodations now also provide bicycles and bike equipment as standard amenities for guests, promoting local paths, trails and destinations to visitors.[37]

Fleet and loan bikes in the City of Vincent. Credit: Department of Transport

5.3.3 Opportunity: Improving maintenance of infrastructure

The overall maintenance of infrastructure can significantly impact on a person's perceptions, with isolated issues such as broken glass, broken edges, fallen vegetation or washaways along a key route causing them to change their view on the entire network[38].

It is important to provide cyclists with an environment which is attractive for bike riding. Opportunities across key and popular routes within the Avon Central Coast region could include better maintenance and cleaning of roads and paths to ensure that the overall user-experience is of the highest quality.

Whilst the maintenance of routes is the responsibility of the asset owner, this is mainly managed by local governments or Main Roads WA. Discussions could look at introducing maintenance programs along popular key routes across both the subregions.

5.4 Family friendly bicycle routes and experiences

Bike riding is a great way to experience the outdoors and is highly accessible, fun, cheap and easy for people of all ages and abilities[39]. Bike riding promotes healthier lifestyles and provides a range of diverse experiences for all user groups.

To promote bike riding for all ages and abilities, it is important to understand a person's motivation for change. Behaviour change programs are a powerful tool in reducing car use and encouraging more active forms of travel such as bike riding.

To motivate people to adapt to change and choose to cycle, bike routes need appropriate bike riding infrastructure that caters to a range of users such as new and experienced riders, those with disability, seniors and recreational riders. For example, installing protected bike lanes and safe intersections could see an increase in children choosing to cycle to school or the aging population choosing to travel by bike within a town. Implementing inclusive designs will ultimately deliver a range of social and health benefits for communities.

5.4.1 Opportunity: Creating safe routes to school

Over the past 40 years the national rate of active travel to school has declined from 75 to 25 per cent[40]. Getting more kids walking and riding to school has many benefits including improving overall heath, reducing congestion during peak school pick-up and drop-off times, and will help to establish lifelong healthy habits.

Safe cycle routes for children are essential, especially within towns where local schools are located along major roads, with regular heavy vehicles travelling through. Protected and separated infrastructure makes riding to and from schools more appealing in encouraging parents to allow children to cycle. Community consultation highlighted the importance of providing dedicated crossing opportunities and slower speeds through towns, especially around school sites.

Whilst schools across the Avon Central Coast region are relatively accessible within the existing network, there are opportunities to enhance routes for children to use. These include:

- Linking Northam Senior High school with Northam Primary School;
- Constructing a path on Trews Road between York District High School to Trews Court; and
- Encouraging local governments in the region to apply for grants to improve local riding infrastructure.

Regular ridership will see higher levels of active, healthy, independent and resilient children. Programs such as Your Move can educate children and explore ways in which they can be motivated and supported when choosing to cycle to and from school.

5.4.2 Opportunity: Linking to skill-building facilities

Learning the basics of riding a bike is important for a rider to feel safe and confident. In most instances, new or first-time riders, such as children, are not taught the fundamentals of owning a bike, including upkeep, servicing and maintenance.

To assist in gaining more physical experience, there are opportunities to extend the range of the existing skill building facilities across the Avon Central Coast region to teach skills which would assist them in on-road bike riding. Small skills parks at local park areas can provide opportunities for younger inexperienced riders to learn and gain confidence in a safe fun environment away from traffic.

Bike skills track in Shepherd's Bush Park in Kingsley. Credit: Department of Transport

CASE STUDY: Bike skills tracks

Shepherd's Bush Park in Kingsley is an example of an all ages and abilities bike skills facility. It provides a track for smaller and less experienced riders to get a feel for riding with line markings and sign postings to educate riders to the road environment. This is a popular outing for children in Perth's northern suburbs. There are also pump track facilities for beginners and more experienced riders to learn how to ride in all environments.

5.4.3 Opportunity: Considering mobility options for the ageing population

The ageing population is one of the most vulnerable user groups. In many instances they have different travel and mobility needs and aspirations to other age groups.

Feedback revealed that several respondents were discouraged from riding due to their age, and that supporting infrastructure was needed to encourage them to cycle to keep fit and healthy. Providing good facilities that enhance bike riding also improves the environment for other mobility devices and walking.

Across the Avon and Central Coast region, there are many opportunities to cater to the needs of residents living within existing retirement and lifestyle villages by creating easily accessible, safe and well-connected travel routes.

Catering for all ages and abilities encourages multi-user options including gophers, tricycles, bike riding and other forms of active travel. It provides a sense of independence and can encourage healthy and social lifestyles. Community consultation revealed that seniors aged 65 and over were more interested in bike riding for social reasons than any other age group[41]. Routes from retirement villages can be more appealing if they connect residents to key locations they like to visit such as local shops, parks and coastal paths.

There are also opportunities to support local programs that allow people with limited coordination or mobility to experience the joy of bike riding through programs such as Cycling Without Age[42].

CASE STUDY: Cycling Without Age

Cycling Without Age is a global not-for-profit charity founded in Copenhagen, Denmark. It has been active in Australia since 2016. Piloted by volunteers, elderly people and those with disability are taken out for bike rides in specially made trishaw bikes. Bikes are free of charge with the overall mission of Cycling Without Age being to prevent loneliness and social isolation, allowing elderly to remain active within their community. It's estimated that within Australia there are 500 volunteers within 25 chapters, with six chapters in WA. This program is easily transferrable. It operates in a variety of riverside and coastal routes within metropolitan and regional centres. York is currently one of the locations this service operates.

A group of Cycling Without Age riders. Credit: Cycling Without Age

5.5 Planning for resilient communities

Climate change is putting immense pressure on the natural environment and is causing adverse effects such as greenhouse gas release, warming global temperature, rising sea level, coastal erosion and inundation. Motor vehicle transportation contributes to a large portion of human-generated greenhouse gas emissions. On the other hand, bike riding is a low impact, pollution-free and energy-efficient transport option with a range of environmental benefits including reduced air and noise pollution, greenhouse gas emissions and land use efficiency[43].

To mitigate against the effects of climate change, and to ensure future cycle infrastructure is sustainable and durable, the Strategy aims to identify opportunities to develop infrastructure that is appropriately designed and constructed.

5.5.1 Opportunity: Develop durable cycle infrastructure along coastal routes

A basic understanding of coastal processes is important for understanding the issues and constraints associated with managing the hazards of sea level rise and coastal erosion. The coastal shires within the Avon Central Coast region have addressed their concerns by developing Coastal Hazard Risk Management and Adaption Plans . These identify risks and propose short, medium and long-term measures to reduce the risks associated with coastal processes impacted by climate change.

The approach proposes triggers for relocating threatened infrastructure which include:

- Distance of the asset from the Horizontal Shore Datum being less than the 100 year storm event level (S1) (i.e. 41 m for CE 31[44]);
- Loss of legal access to property; or
- Loss of essential services.

These factors should be considered in the planning for infrastructure associated with coastal bike riding routes, so that triggers that may impact on replacement or repair are enhancing regional connectivity.

5.5.2 Opportunity: Connecting towns within the region

Due to the relative proximity of towns and settlements in the Avon Central Coast region, it is well suited to long-distance inter-regional bike riding. As the economy and population continues to grow, it is imperative that significant locations of employment, education, health, major activity centres and metropolitan areas are adequately connected.

Community feedback indicated that a major deterrent to bike riding within and to the region is a lack of safe, legible and direct routes connecting regional centres and communities. Some preferred links have been identified as having non-existent infrastructure or being unsuitable or unsafe for cyclists, due to potential risks associated with people riding on-road along routes where there are combinations of high speed and Restricted Access Vehicle traffic.

Improving regional connectivity will have a range of benefits including:

- boosting economic resilience in local towns with more people visiting the region and supporting local businesses;
- encouraging recreational family and friend cycle trips;
- reduction in motor vehicle dependency and greenhouse gas emissions; and
- promotion of physical activity and improving health and wellbeing through active transport.

Creating direct and continuous connections between towns within the region will enable people to cycle between towns as a way of visiting popular destinations for events, weekend getaways, accessing rail trails and for fitness, social and recreational purposes. This will have a range of benefits such as boosting tourism and attracting cycle touring visitors.

Generally, the most practical way to connect people between towns is along major urban roads. Secondary routes are typically located within these corridors and can take the form of either on-road (protected) bike lanes or off-road shared paths.

Opportunities which have been identified for creating connections between towns include:

- Linking West Toodyay to Spencers Brook and York via Northam along a primary route (74 km) will provide an attractive route along the Avon River, allowing exploration of the Valley as well as creating a longer ride for connecting key towns and attractions. Shorter portions of the primary route will encourage local commuting.
- Creating a connection from York to Beverley via a transport trail (30 km). This will create a tourist attraction allowing for day trips to experience both the riverine attractions as well as the heritage of the area and farming hinterland. This will also provide opportunities to enhance the knowledge of Aboriginal history, culture and heritage through showcasing seasons and song lines, and recognising important aspects of the area.
- Extending the Turquoise Way path to connect Jurien Bay to Cervantes and the Pinnacles (44 km). As well as providing the base for loop rides around Jurien Bay and Cervantes, this will provide a link between towns and tourist hot spots.
- Linking Clackline to Toodyay via the rail corridor (21 km), providing a connection between the small locality and the larger regional town and capitalising on the potential of cycle-tourism. Creating this connection within the region will also encourage inter-regional connectivity to the Perth metropolitan area. People could choose to cycle from Perth along the future Eastlink route and existing Kep Track trail to Clackline and then continue to cycle north along the unique rail trail into Toodyay.

CASE STUDY: Brookfield to Margaret River via the Wadandi Track

The Wadandi Tack is a trail situated on the alignment of the former Busselton-Flinders Bay railway. The track has become increasingly popular with both locals and visitors, providing opportunities for recreational rides as well as scenic food and wine tours with several wineries located within easy reach of the track. Other than recreational benefits, the trail also aims to showcase the area's cultural and heritage significance ranging from the history of local industries to Indigenous values. The long-term vision is for the Wadandi Track to connect Busselton to Augusta, a total distance of 110 kilometres, providing a link between communities and further supporting spur trail developments.

Riders on the Wadandi Track, Margaret River. Credit: K. Stevens

5.5.3 Opportunity: Linking Perth metro to the Central Coast

Long distance bike riding routes cater for the needs and aspirations of experienced riders cycling long distances for recreational and fitness purposes. For this user group, distances of 100 km or more are achievable. This type of bike riding is often carried out on rural and semi-rural roads as a way of minimising the number of disruptions, with sections that may follow busier roads and end up in built-up areas.

Whilst already being popular with a range of bike riding groups, longer distance inter-regional routes also have the potential to attract tourists, given the picturesque scenery encompassing a diverse range of landscapes and numerous connections to accommodation and small local businesses throughout the region.

Inter-regional routes which have been identified include:

- Creating a connection from Perth to Guilderton up to Lancelin via coastal route (122 km). With the current coastal path finishing at Two Rocks, there is an opportunity to continue the path to connect to Guilderton. Another 40 km will connect to Lancelin and include towns of Seabird and Ledge Point. The connection to Guilderton also opens the possibility of longer tourist links through Bindoon and the Avon, ultimately providing a coastal link from Augusta to Jurien Bay and an inland link from Guilderton to Beverley.
- Linking Perth metro to Muchea and Bindoon via a transport trail (33 km). The Northlink Principal Shared Path (PSP) from Ellenbrook in Perth metro currently terminates at Muchea in the Shire of Chittering. Feedback revealed strong interest in extending this route. A transport trail from Muchea to Bindoon would open the opportunity for cycle tourism highlighting the history of the area, as well as linking up with the transport trails linking Toodyay to the east and Gingin and Guilderton to the west. These links will provide potential longer multi-day itineraries that could encourage local stays and promote local stopovers.
- Linking Perth to Northam via Eastlink and the Kep Track (95 km). The proposed new section of the Eastlink, Perth Adelaide National Highway, will provide a direct link between Roe Highway / Toodyay Road intersection and Great Eastern Highway in the Shire of Northam.

This section of the Eastlink will provide a safe, direct route for cyclists to travel from Perth to Northam, replacing a series of existing local distributor routes with little to no cycle infrastructure. Developing Eastlink will require the Kep Track to be upgraded and partially realigned.

CASE STUDY: Munda Biddi Trail

The Munda Biddi Trail is a 1,000 km long track connecting Mundaring to Albany, providing an off-road bike riding experience through an undeveloped natural habitat. Being one of the longest trails in the world, the entire trail can take anywhere from a few days to a few weeks to complete end to end.

The trail connects numerous south-western towns including Collie, Denmark, Nannup, Pemberton and Walpole. The Bunbury-Wellington and Leeuwin-Naturaliste 2050 Cycling Strategies both identify ongoing opportunities to improve connectivity of towns within close proximity to the Munda Biddi Trail, either through new connections (e.g. to Busselton), or through realignments to include towns such as Donnybrook.

Frequently mentioned in the top 10 bike riding holidays globally, the trail is growing in popularity, attracting cycle tourists from both interstate and overseas. The trail features a 'Sea to Summit End 2 End' club as well as hall of fame, providing a further competitive and rewarding incentive to fitness and off-road enthusiasts. Alternatively, the route also provides shorter family friendly and beginner rides, as well as opportunities to learn about the regions and Aboriginal culture and history.

Rider on the Munda Biddi Trail.
Credit: Department of Transport

Map 24: Inter Regional Cycling Connections

Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

5.6 Broader consideration of active transport

The provision of infrastructure and programs to enhance bike riding inherently relate to increasing active transport and urban mobility for all ages and abilities. All urban design, planning and construction of transport infrastructure should consider all forms of transport including walking, bike riding, e-rideables, wheelchairs, prams and gophers, as well as private vehicles, public transport and freight. Transport to and planning for the location of and access to activities, attractions, jobs, services and accommodation is key to the provision of accessibility. A connected and safe environment will lead to increased confidence and use by all active transport users.

5.6.1 Opportunity: Considering links with major transport projects

This Strategy contributes to making WA a place where riding is a safe, connected, convenient and widely accepted form of transport. Appropriate infrastructure is vital to encouraging the community to give riding a go. Paths along major road or rail routes can be used for long trips, but they are also suitable for less experienced riders, pedestrians and short trips connecting communities.

The expansion of the long-term cycling network will be delivered as part of State-wide major transport infrastructure projects, such as Northlink, Eastlink and other major regional projects. Planning and construction of these and other regional projects should consider the overall transport needs including active transport.

5.6.2 Opportunity: Considering links with new development

Retrofitting bike riding infrastructure to existing urban areas can be slow and expensive. Therefore, it is critical that new urban growth areas incorporate dense and interconnected networks of bike riding facilities from the outset. When planning the street networks of urban developments, consideration should be given to providing:

- primary routes alongside all main roads, railways and water courses;
- secondary routes along all urban arterials to provide access to local shops, schools and community facilities; and
- local routes along all local access streets.

There are opportunities throughout the Avon Central Coast region to ensure planning for greenfield developments considers appropriate local and regional connections within the LTCN.

5.7 Developing road cycling routes

There is an opportunity to develop road cycling routes for local and visiting road cyclists within the Avon Central Coast region. Road cycling routes are typically conducive to rural and semi-rural roads which have low traffic volumes, scenic landscapes and changes in elevation. The road cycling user group does not typically require (or use) dedicated or protected bike riding infrastructure along these routes, such as shared paths. There is an opportunity to review the key routes being used by road cyclists to improve safety and the overall user experience, as identified in the action plan[45].

Potential safety enhancements along popular routes could include advisory signage and shoulder widening (particularly on uphill sections).

Further consideration is required to identify the location and preferred treatments for road cycling routes throughout the Avon Central Coast region, as outlined in Section 6 of this Strategy.

5.7.1 Opportunity: Sealing shoulders program

There are several popular road cycling routes in the Avon Central Coast region which have sections of narrow shoulder or no shoulders at all. This can cause the potential for conflict between different road user groups, particularly on heavy vehicle haulage routes and where speed differentials are greatest, such as uphill sections.

Sealed shoulders provide significant safety benefits to all road users by reducing ‘run off road’ crashes. They also offer maintenance benefits to asset owners. There was a significant input to sealing shoulders on major roads within the region including Brookton Highway, Northam to Toodyay Road, Northam to York Road, Toodyay Road, Great Northern Highway and Indian Ocean Drive.

There is still an opportunity for the Shires of Beverley, Chittering, Dandaragan, Gingin, Northam, Toodyay and York along with Main Roads WA to target the provision of sealed shoulders on road cycling routes in a manner that also reduces conflicts between cyclists and other road users.

5.7.2 Opportunity: Increasing awareness of road cycling routes through signage and delineation

Clear signage and delineation of popular road cycling routes can help to reduce actual and perceived levels of conflict between road users. The Shire of Busselton installed static and interactive roadside signage to trial its effectiveness in spreading the message that the road is a shared asset and that cyclists are a legitimate road user[46].

Signage and delineation can be used to highlight known conflict areas (for example, where bike riding routes cross major haulage routes) as well as informing motorists that they are likely to encounter cyclists along these routes. Delineating road cycling routes is also helpful for visitors and could be tied to a promotional campaign to attract more road cyclists to the area, or to encourage them to stay longer.

Several initiatives can be introduced including:

- Installing 'share the road' or 'road cycling route' type signage along popular bike riding routes;
- Installing warning signs where cycle groups regularly cross or join major haulage routes; and
- Trialling activated warning lights or signs at pinch points.

Such initiatives would need to be progressed by the Shires of Beverley, York, Chittering, Gingin, York, Dandaragan and Northam with Main Roads WA and the Road Safety Commission.

Case Study: The Wolf Pack Route, Geraldton

The Road Safety Commission worked with the City of Greater Geraldton and Shire of Chapman Valley to improve outcomes for sports cyclists along the Wolf Pack Route. The initiative has involved installing static 'share the road' signage along sections of the route to help raise awareness of cyclists and prevent and reduce conflict between cyclists and drivers.

Outcomes of the initiative will be evaluated by the Road Safety Commission and may result in the signage being installed along the entire route. There may also be opportunities to install more sophisticated measures in the future, such as shoulder widening (particularly on uphill sections) and activated warning lights.

Wolf Pack riders in Geraldton.
Credit: City of Greater Geraldton

6. Action Plan

This section outlines the strategic priorities that are proposed to be progressed over the next five years. This approach will help enable the Avon Central Coast region to realise its long-term bike riding potential over time. The priorities have been informed by community and stakeholder consultation throughout the project, as summarised in Appendix C.

A key consideration for new paths and trails in this region is the location of public drinking water source areas. Appropriate consultation should be undertaken with DWER prior to development. Similarly transport trails and new routes through reserve areas should be referred to the DBCA at an early stage of the design process.

The Action Plan outlined is aspirational. In many cases, local governments may have limited funds or internal capacity to progress projects. The intent of the Action Plan is to highlight the opportunities in the region so as if and when finances and capacity permits, or when alternative funding opportunities arise, readily identified projects may be able to be progressed. In addition, the ongoing maintenance of new infrastructure which is regional in nature, may be a burden on a small local government. Consideration of future funding sources for regional assets to be maintained needs to be explored.

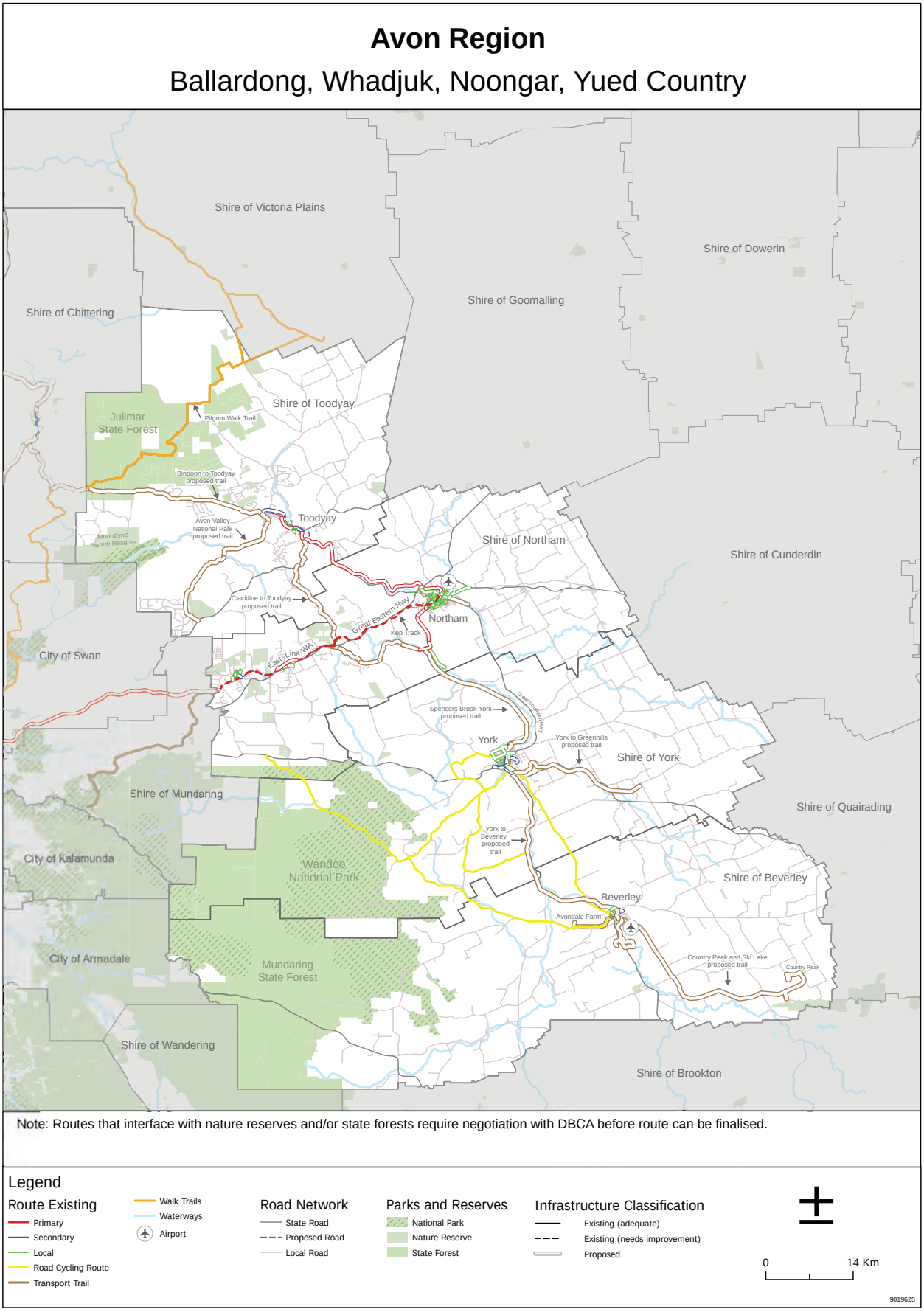
6.1 The existing cycling networks

To inform the action plan's strategic priorities, each route within the 2050 cycling network was classified as one of the following:

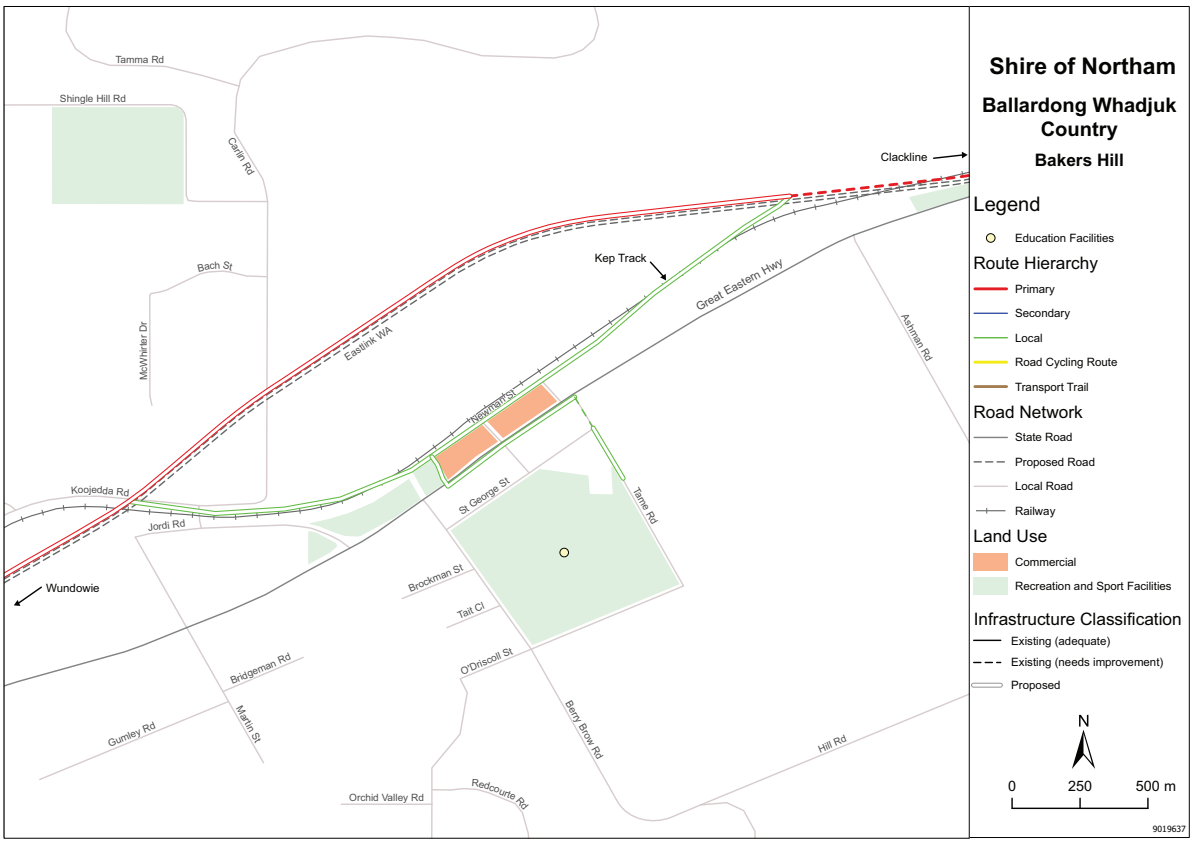
- **Existing (adequate)** – the level of service reflects current best practice for this type of bike riding route (as defined in the route hierarchy);
- **Existing (needs improving)** – although possible to cycle along this corridor, the level of service provided does not reflect current best practice for this type of bike riding route (as defined in the route hierarchy); or
- **Non-existent (proposed)** – it is either not possible to cycle along this route due to the corridor being non-existent, or, because of existing road conditions, most people are unable to cycle comfortably.

These classifications are reflected in the maps on the following pages, with each route classified as either existing (adequate), existing (substandard) or non-existent (proposed), and considered in the context of the five-year timeframe of this action plan.

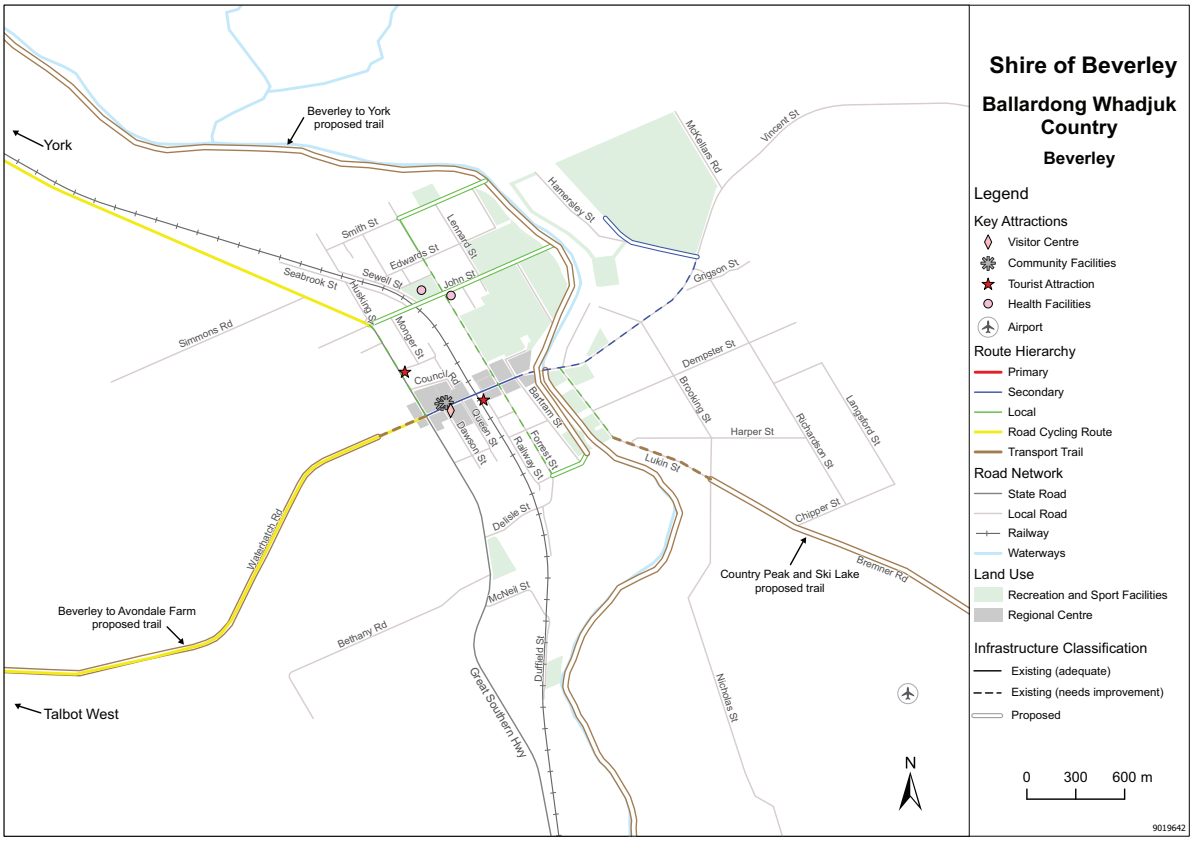
Map 25: Infrastructure Classification – Avon Region



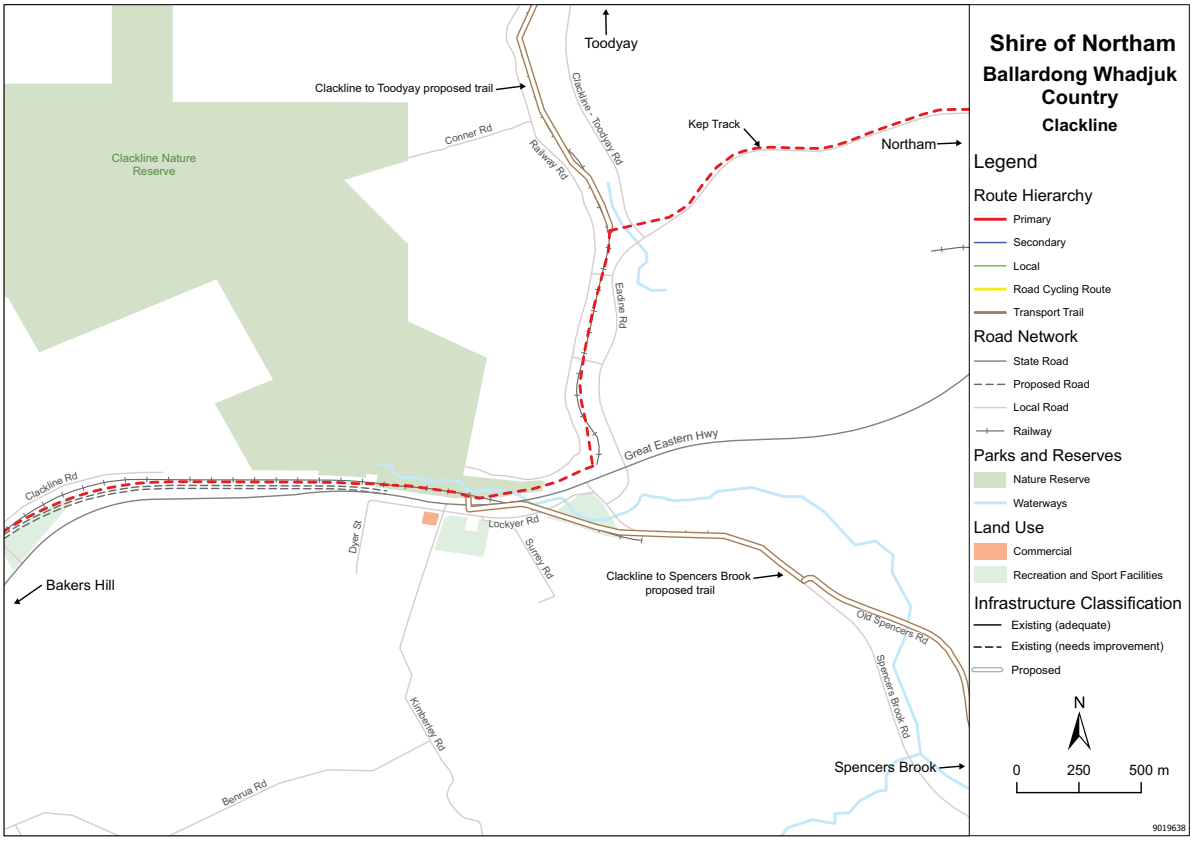
Map 26: Infrastructure Classification – Bakers Hill (Ballardong, Whadjuk Country)



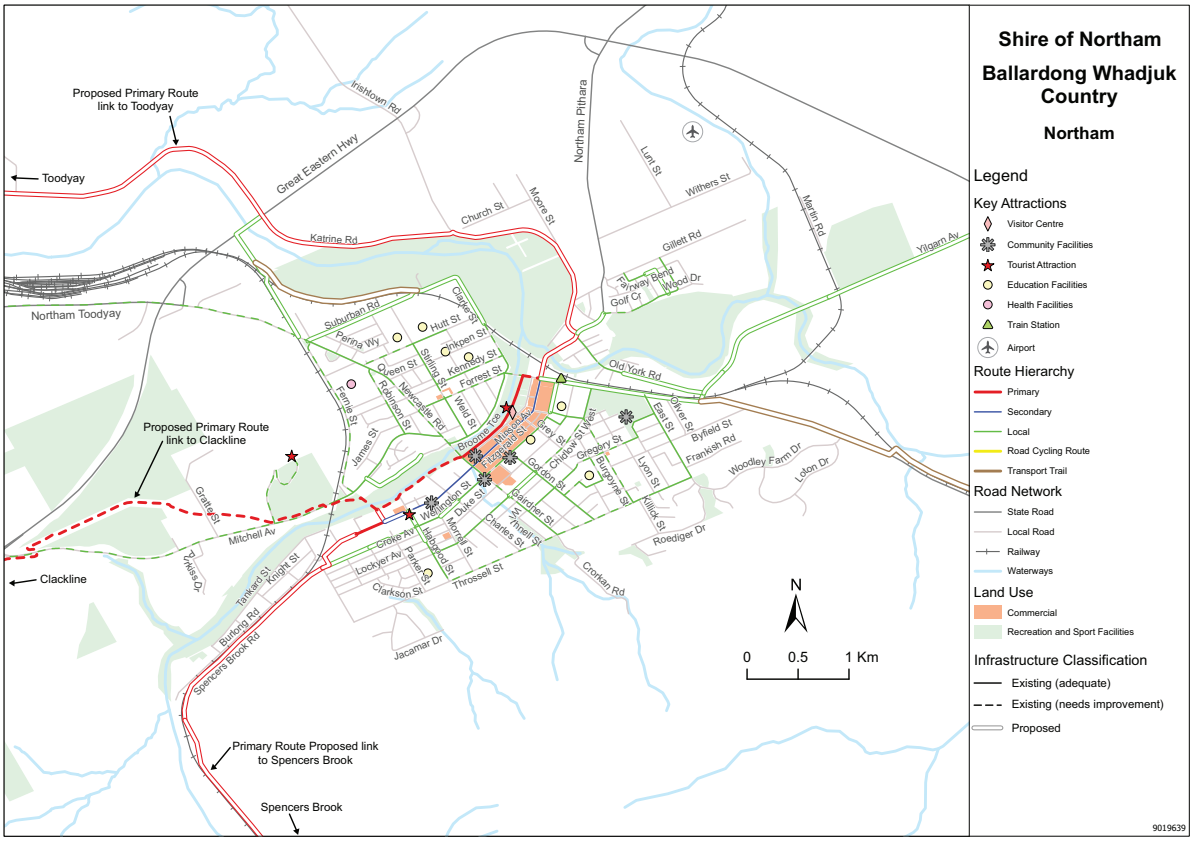
Map 27: Infrastructure Classification – Beverley (Ballardong, Noongar Country)



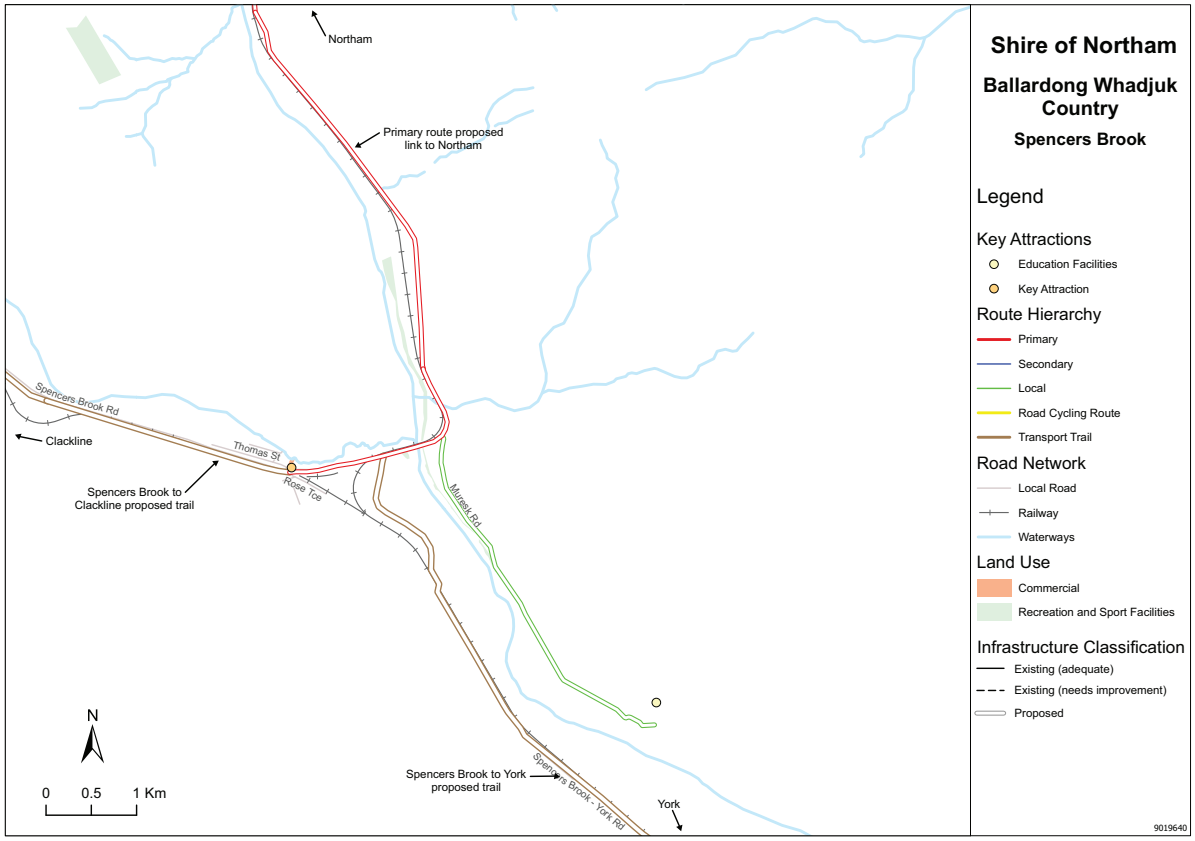
Map 28: Infrastructure Classification – Clackline (Ballardong, Whadjuk Country)



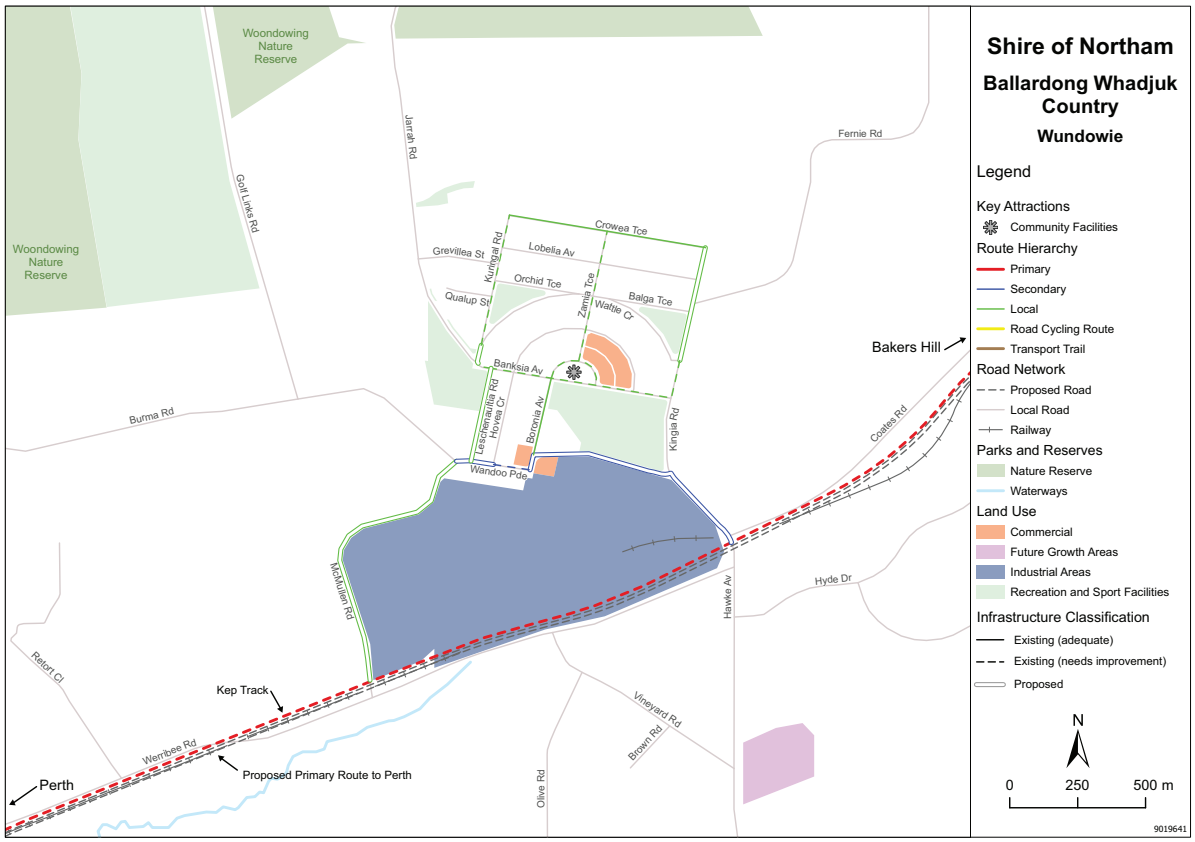
Map 29: Infrastructure Classification – Northam (Ballardong, Whadjuk Country)



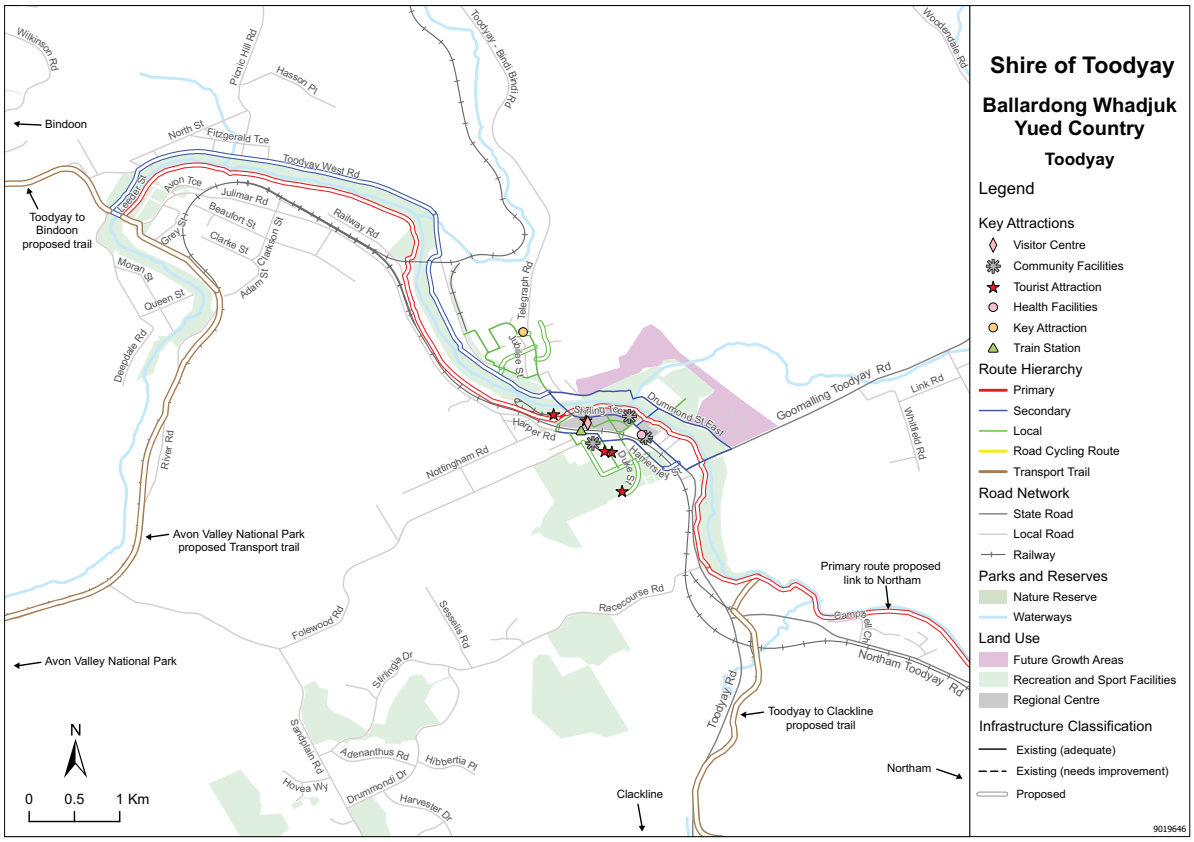
Map 30: Infrastructure Classification – Spencers Brook (Ballardong, Whadjuk Country)



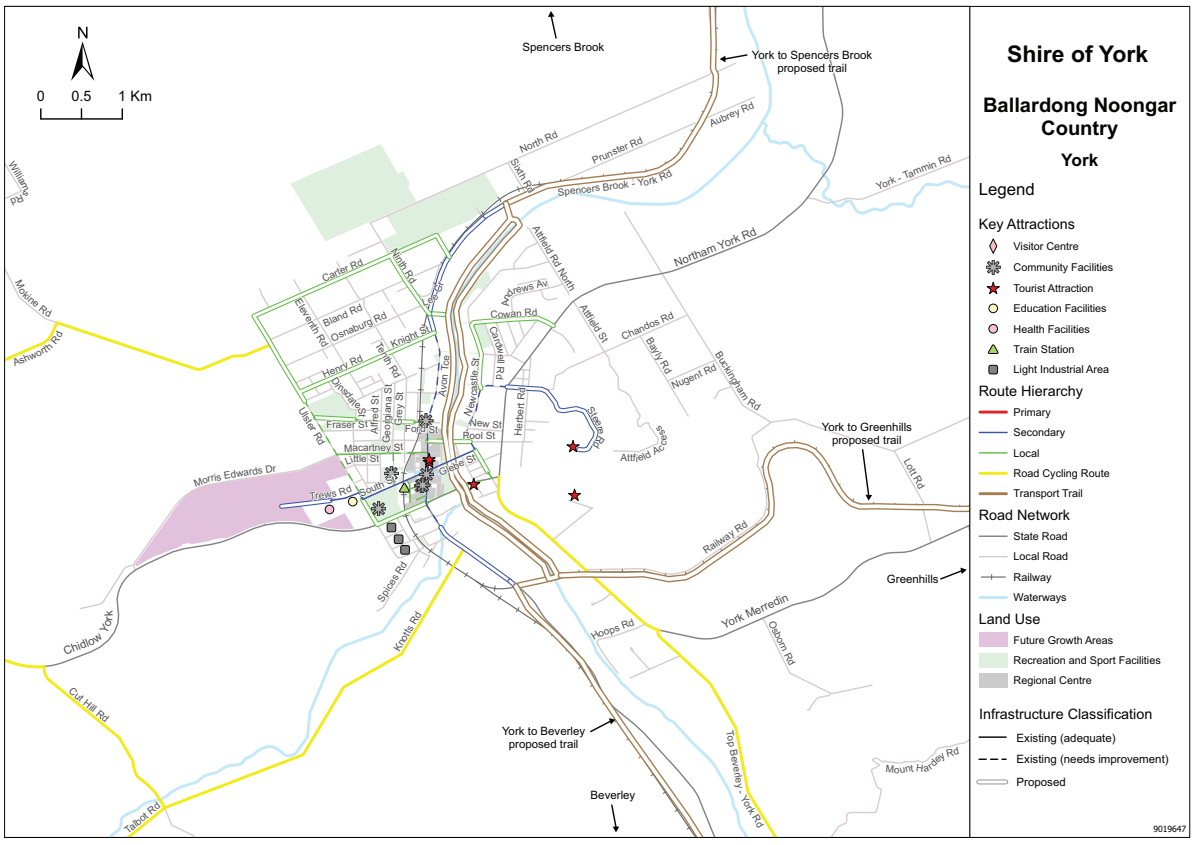
Map 31: Infrastructure Classification – Wundowie (Ballardong, Whadjuk Country)



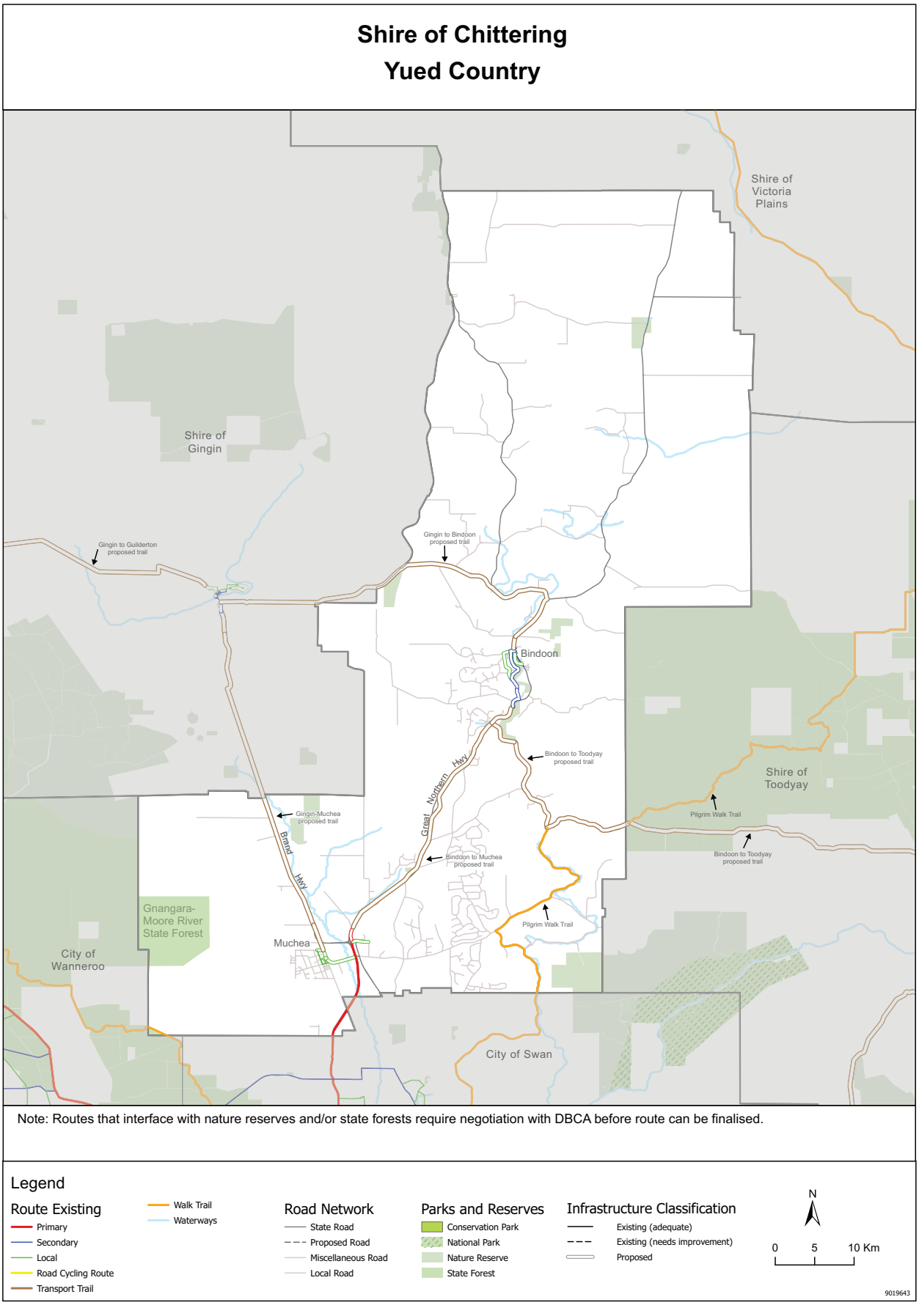
Map 32: Infrastructure Classification – Toodyay, (Ballardon, Yued, Whadjuk Country)



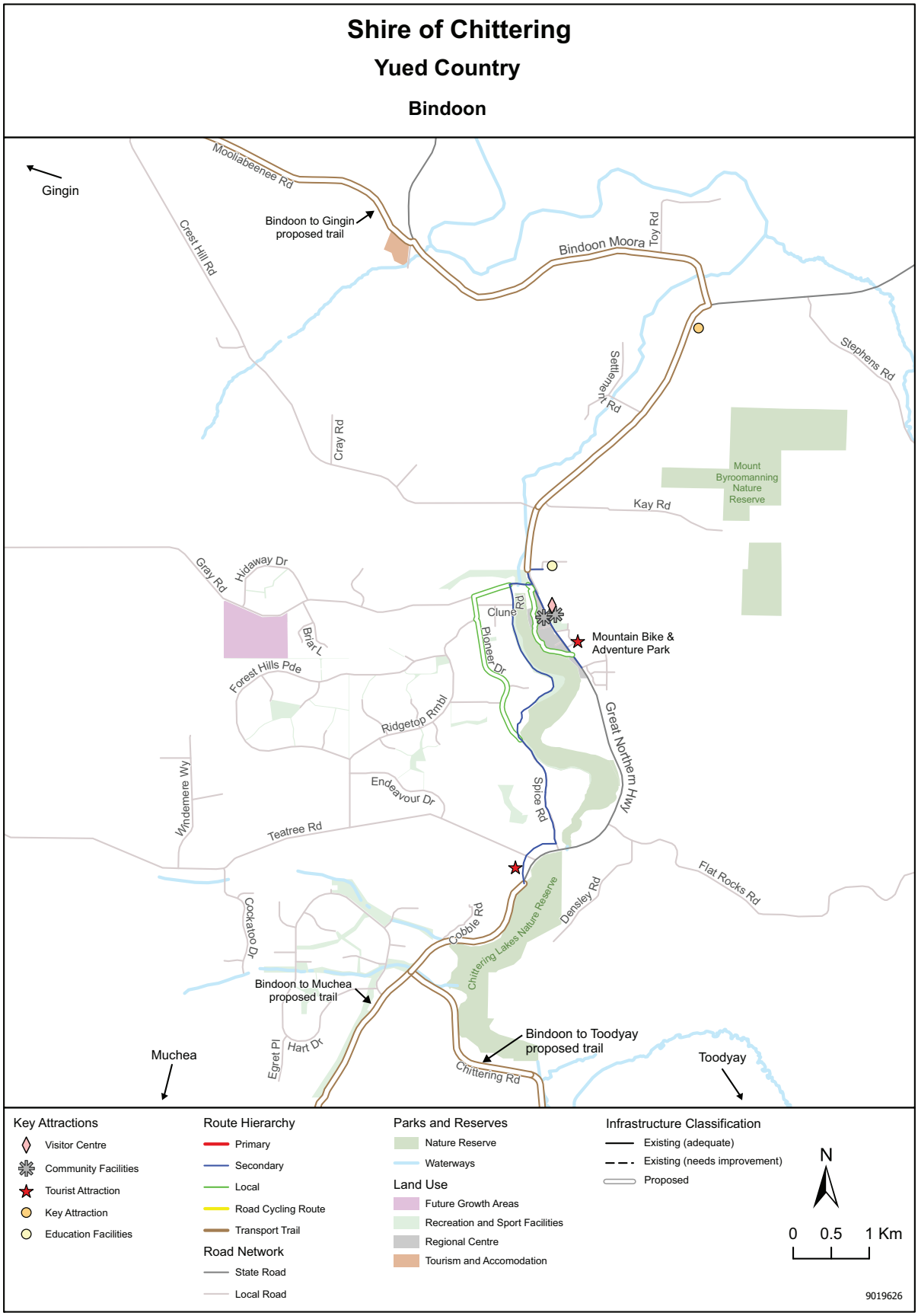
Map 33: Infrastructure Classification – York (Ballardong, Noongar Country)



Map 34: Infrastructure Classification – Shire of Chittering (Yued Country)

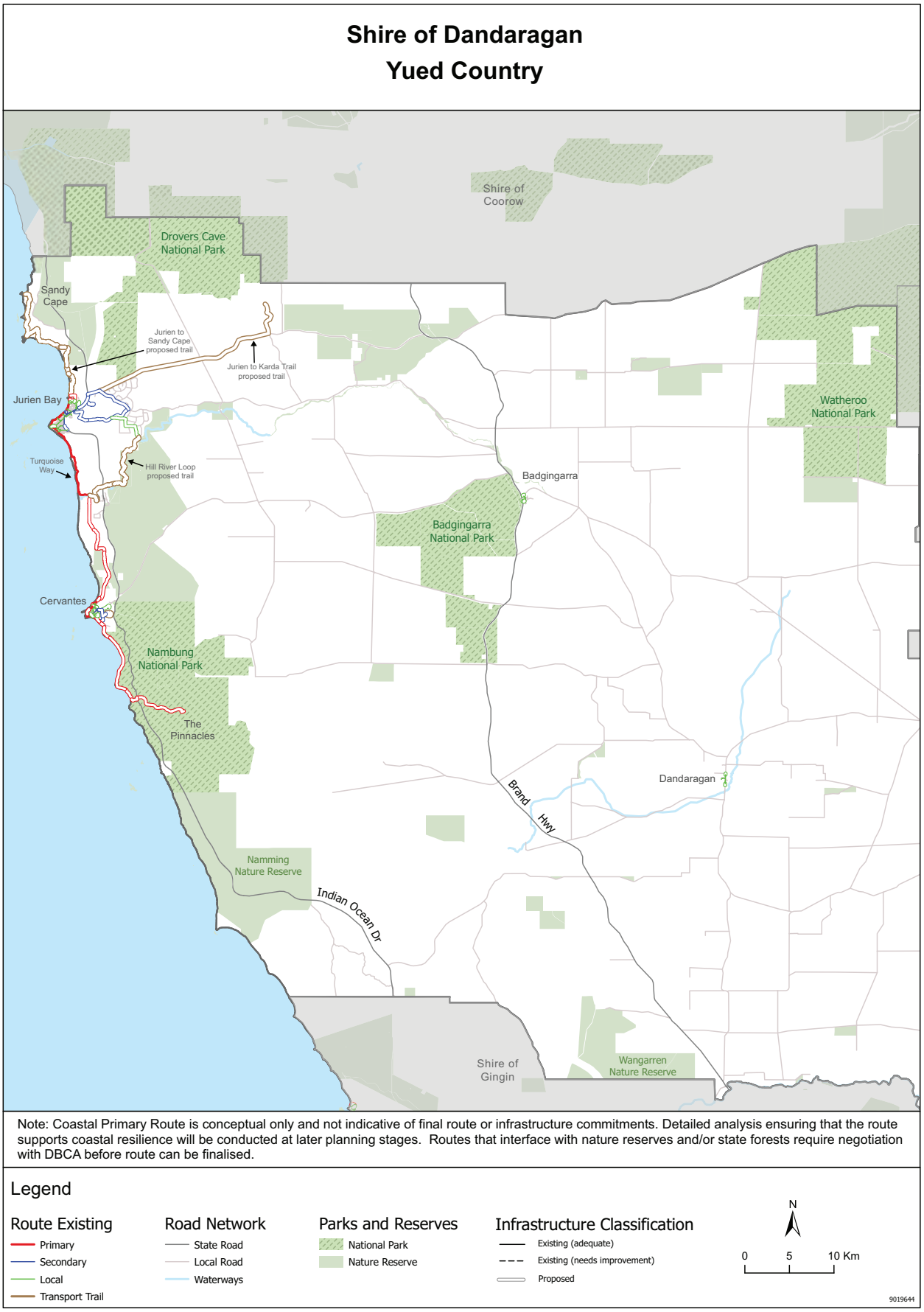


Map 35: Infrastructure Classification – Bindoon (Yued Country)

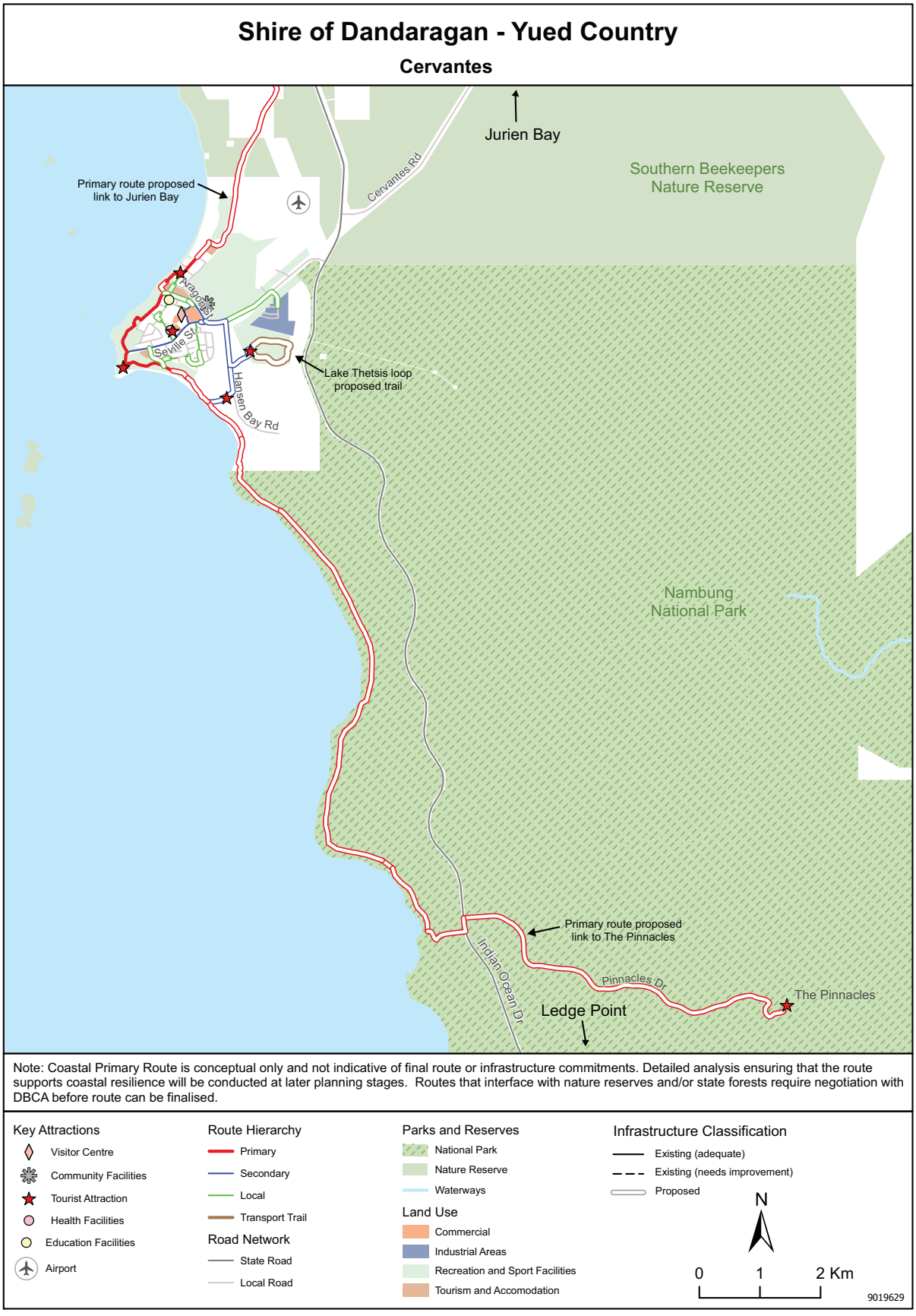


Map 36: Infrastructure Classification – Muchea (Yued Country)

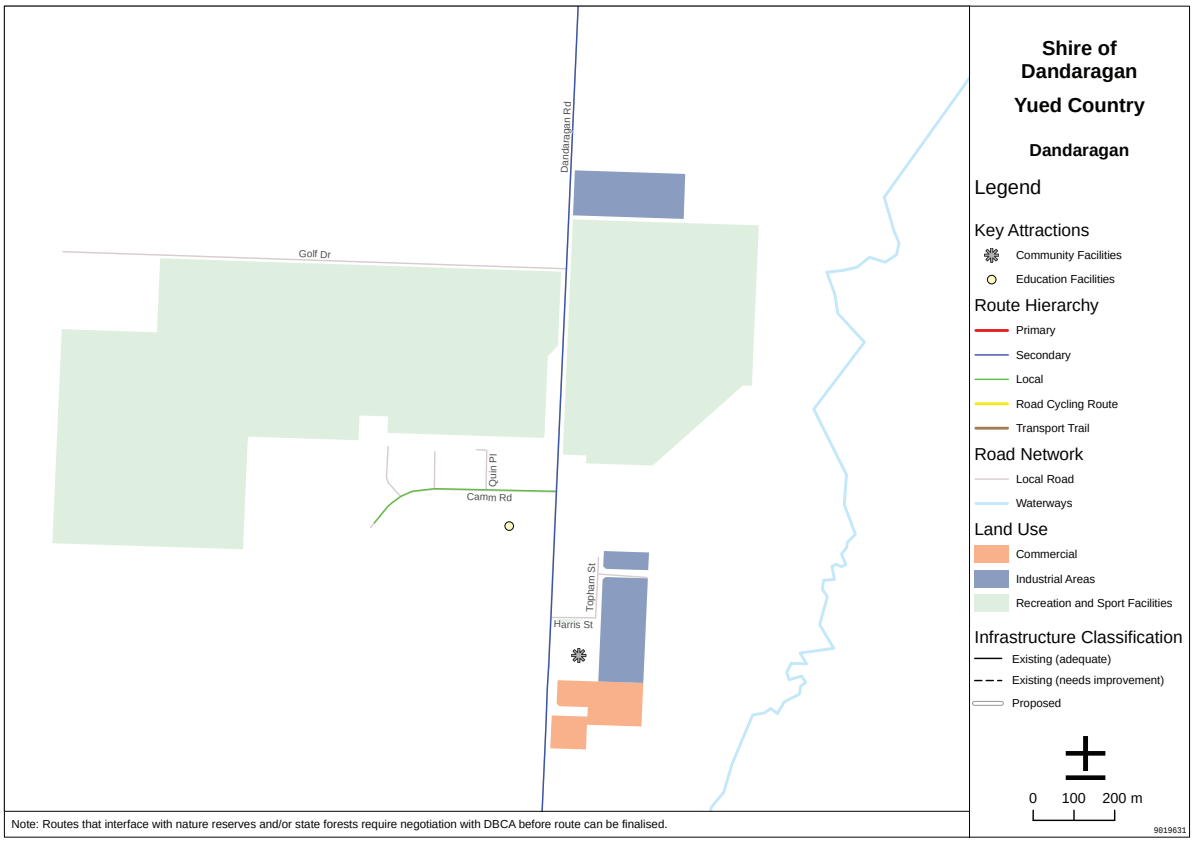
Map 37: Infrastructure Classification – Shire of Dandaragan (Yued Country)



Map 38: Infrastructure Classification – Cervantes (Yued Country)

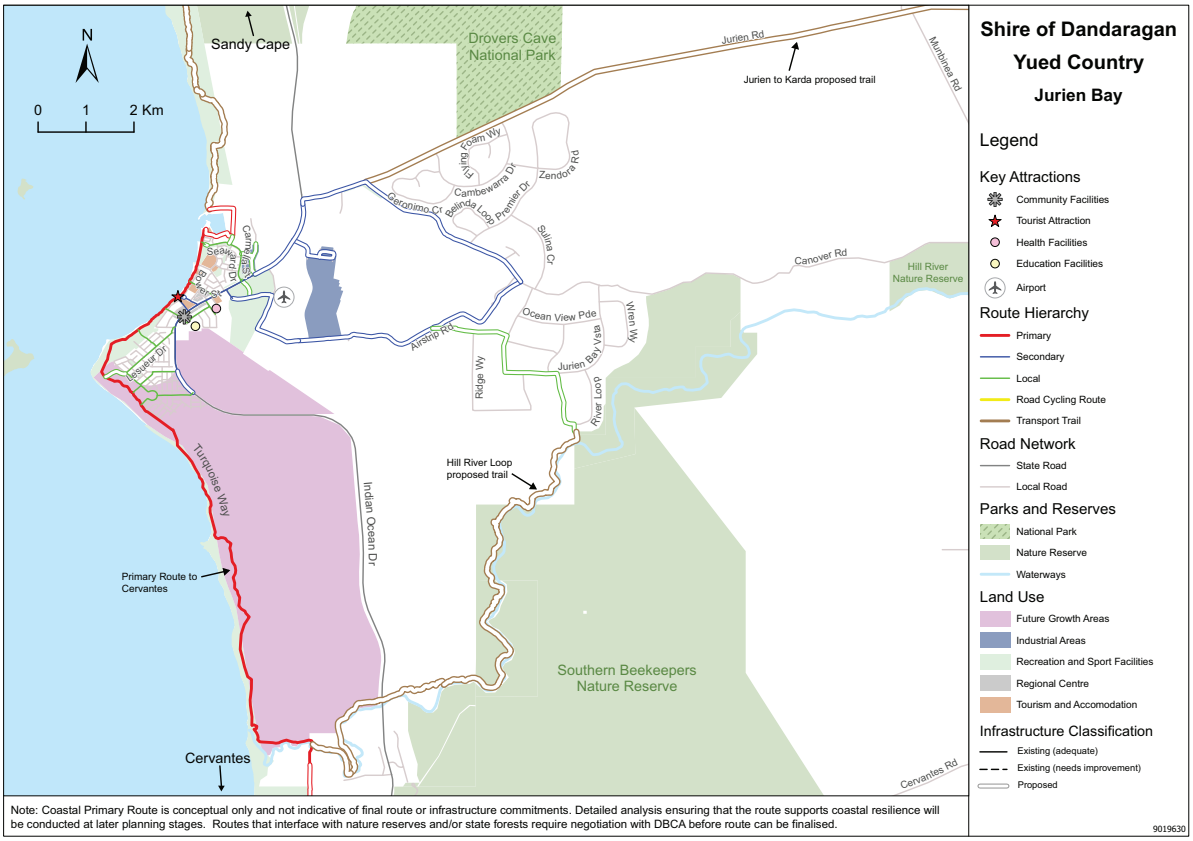


Map 39: Infrastructure Classification – Dandaragan (Yued Country)



Note: Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

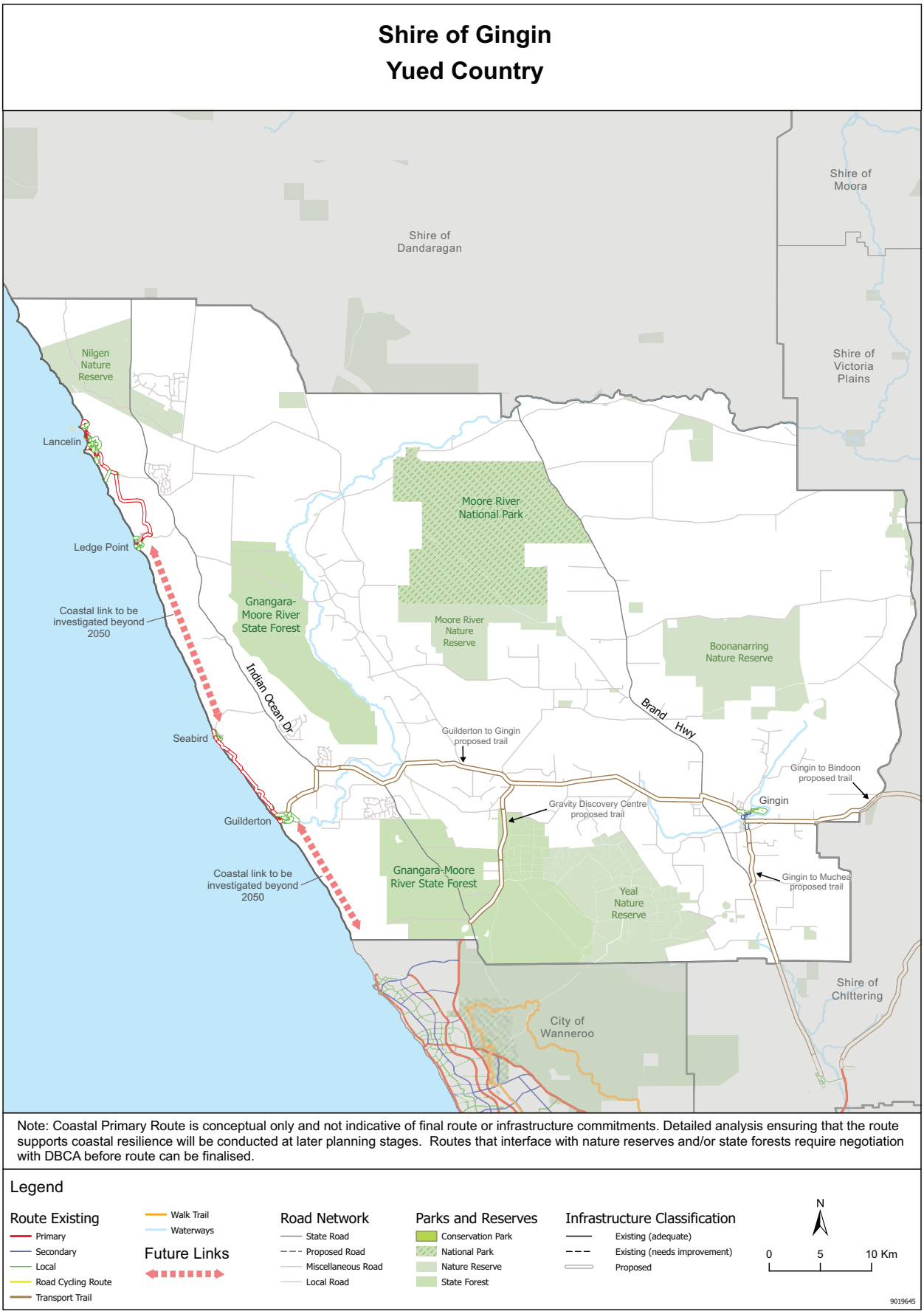
Map 40: Infrastructure Classification – Jurien Bay (Yued Country)



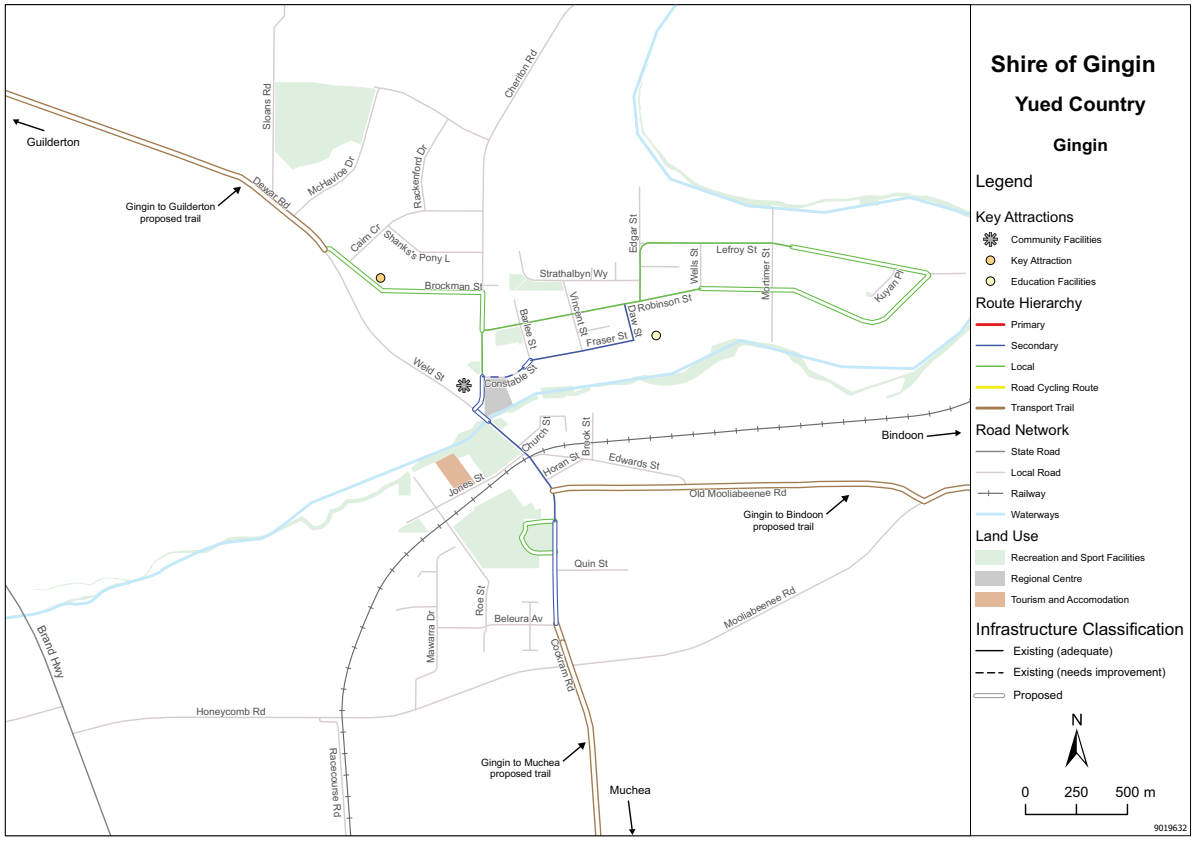
Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 41: Infrastructure Classification – Badgingarra (Yued Country)

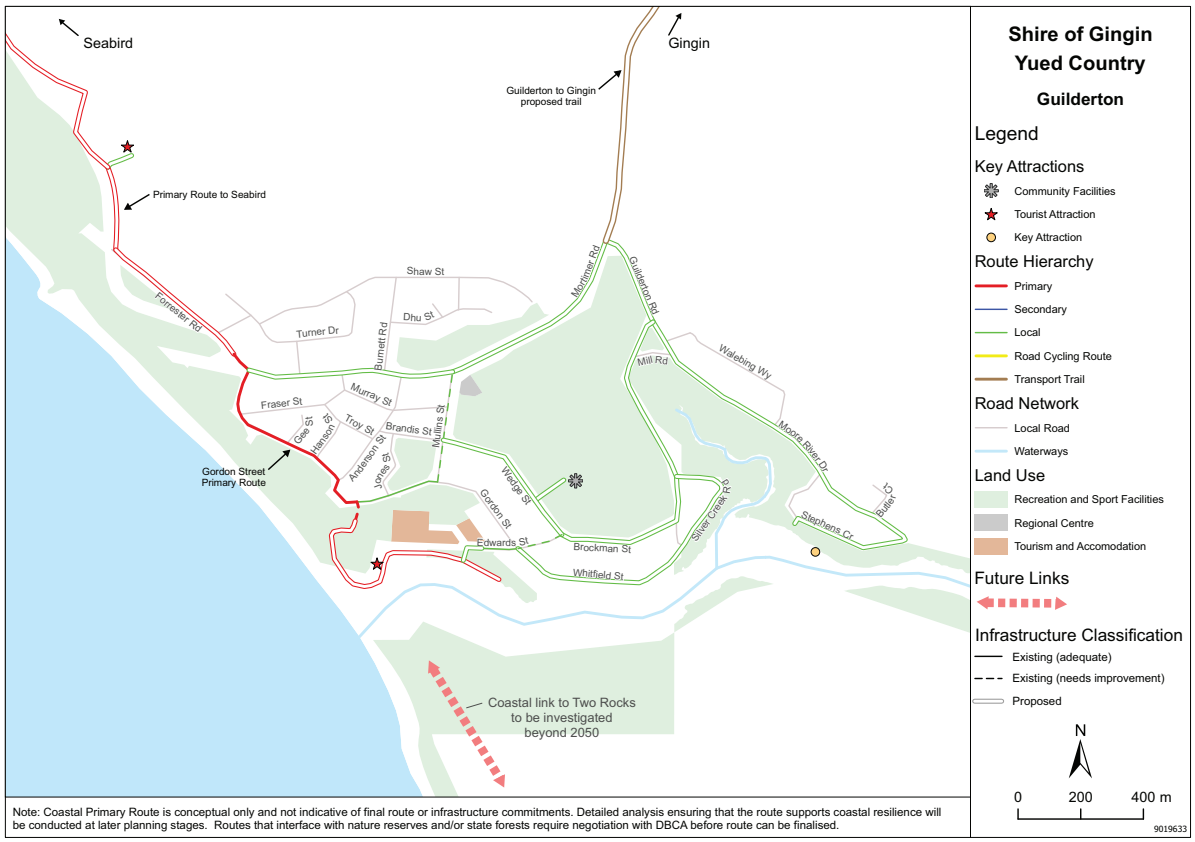
Map 42: Infrastructure Classification – Shire of Gingin (Yued Country)



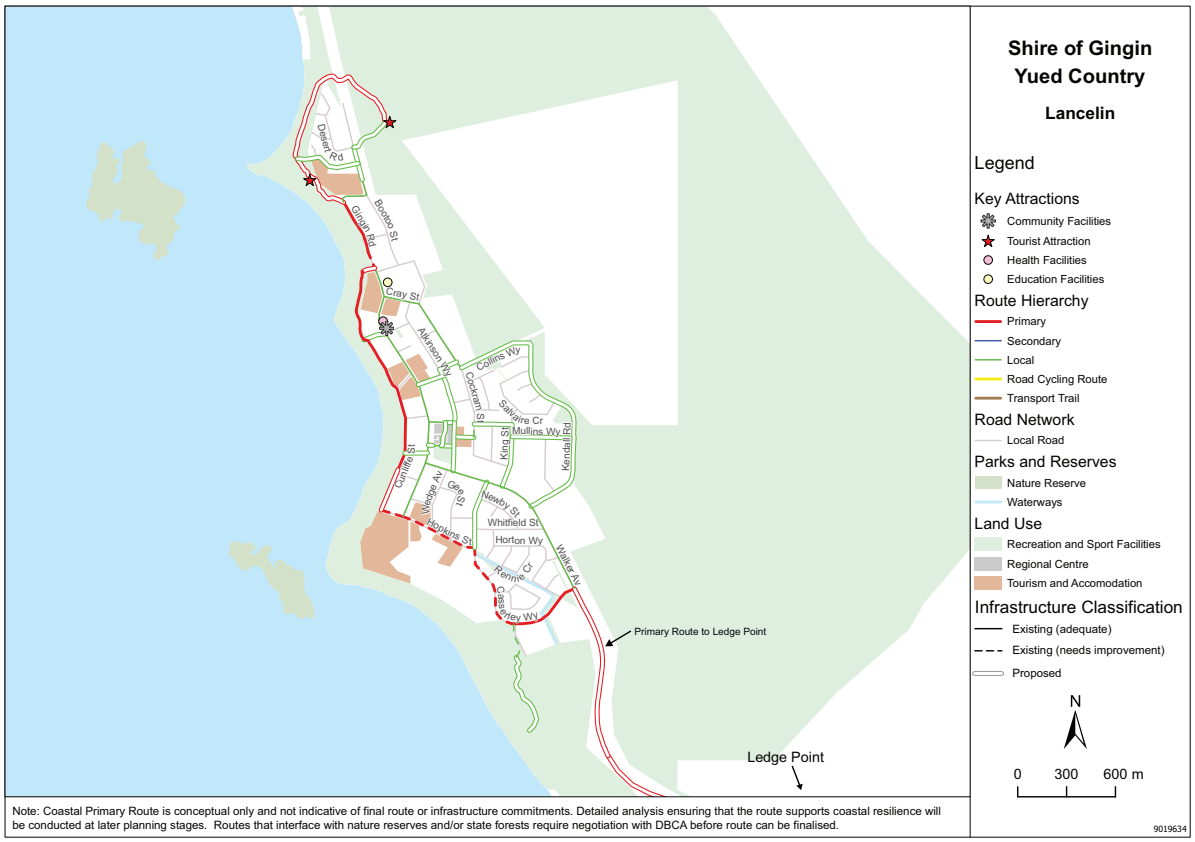
Map 43: Infrastructure Classification – Gingin (Yued Country)



Map 44: Infrastructure Classification – Guilderton (Yued Country)

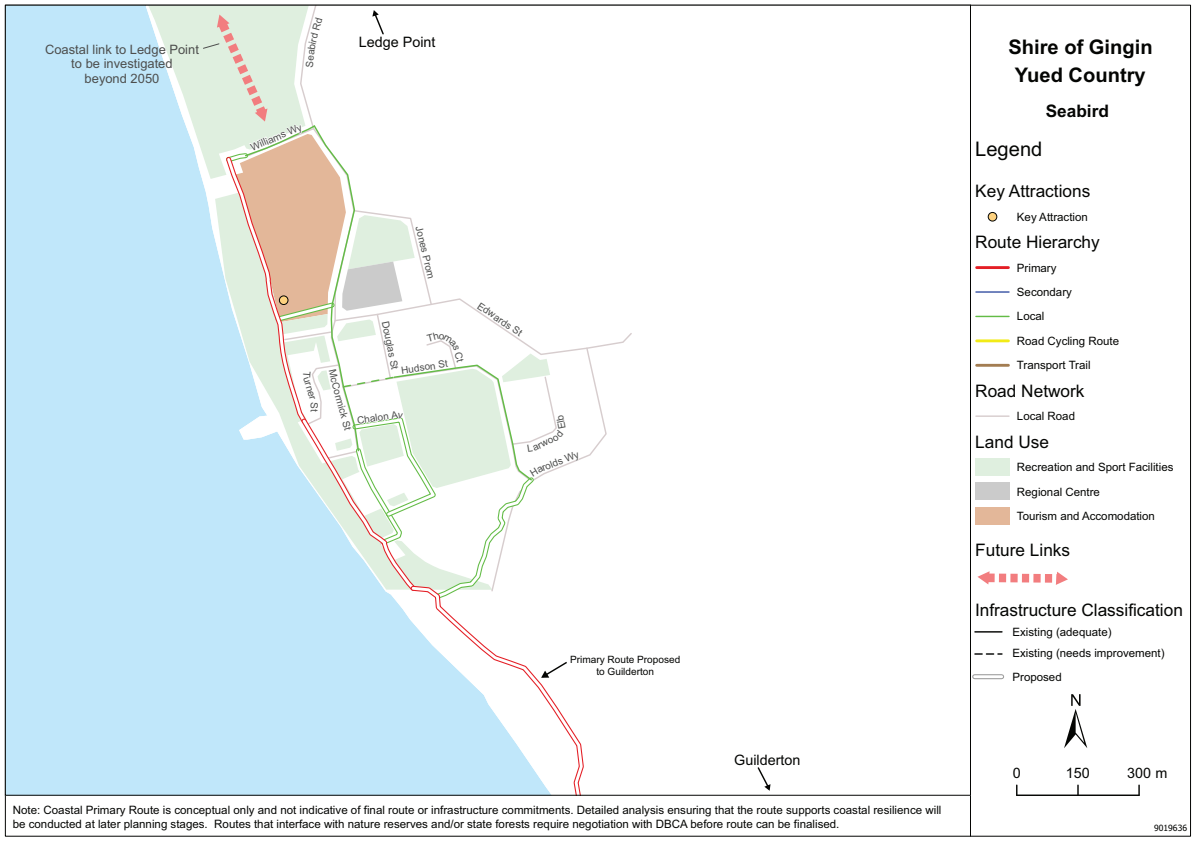


Map 45: Infrastructure Classification – Lancelin (Yued Country)



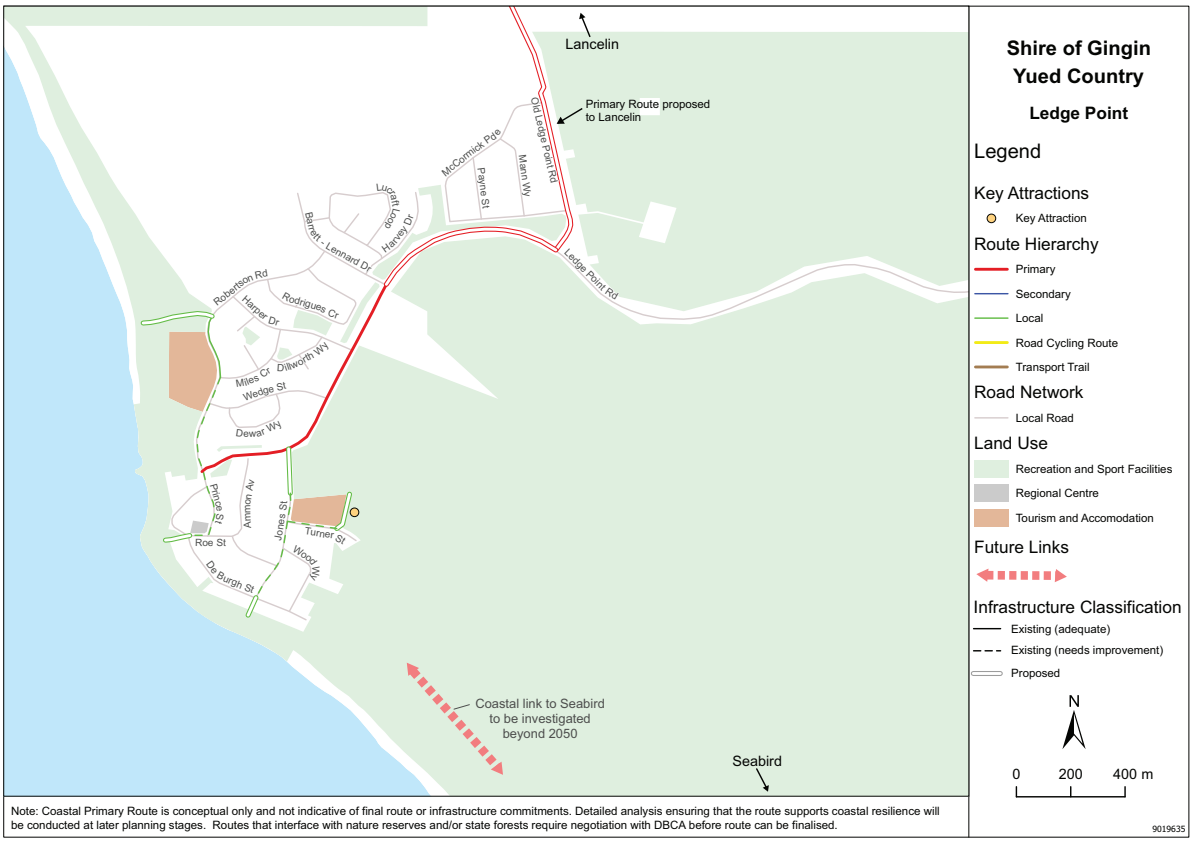
Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 46: Infrastructure Classification – Seabird (Yued Country)



Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

Map 47: Infrastructure Classification – Ledge Point (Yued Country)



Note: Coastal Primary Route is conceptual only and not indicative of final route or infrastructure commitments. Detailed analysis ensuring that the route supports coastal resilience will be conducted at later planning stages. Routes that interface with nature reserves and/or state forests require negotiation with DBCA before route can be finalised.

6.2 Priority projects

The following tables identify the strategic priorities for bike riding in the Avon Central Coast region, if and when organisational and funding capacity permits. Broadly categorised as:

- Short term (to commence within 1-3years);
- Medium term (to commence within 4-5 years); and
- Long term (to commence in 5+ years).

6.2.1 Shire of Beverley (Ballardong, Noongar Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	B1	York – Bruce Rock Rail Trail	Feasibility	Collaborate with DoT and Shires of York, Quairading and Bruce Rock to support the feasibility study of a transport trail between York and Bruce Rock.	Transport trail
Short term	B2	Beverley Trails Study	Feasibility	Undertake a feasibility study to determine route staging and priorities across all trails in the Shire.	Transport trails
Short term	B3	Beverley Heroics Road Cycling Route	Feasibility	Collaborate with DoT and WestCycle to undertake feasibility to provide warning signage and wayfinding to show road cycling route and consider options to provide increased safety.	Road cycling route
Short term	B4	Commonage Hill Trail	Design	Design of Commonage Hill to connect historical precinct to Commonage Hill recreation trails via river side trail.	Transport trails
Short term	B5	Beverley Trails Network Stage 1	Design	Design Stage 1 of 3 of transport trails.	Transport trail
Short term	B6	Commonage Hill Trail	Construct	Construct Commonage Hill Trail.	Transport trails
Short term	B7	Beverley Trails Network Stage 1	Construct	Construct Stage 1 of 3 of transport trails.	Transport trails
Short term	B8	Beverley to Mundaring Road Cycling Route	Feasibility / Design / Construct	Collaborate with DoT to provide warning signage and wayfinding to show road cycling route along Talbot Road West and consider options to provide increased safety.	Road cycling route
Medium term	B9	Beverley Trails Network Stage 2	Design	Design Stage 2 of 3 of transport trails.	Transport trails
Medium term	B10	Beverley Trails Network Stage 2	Construct	Construct Stage 2 of 3 of transport trails.	Transport trails

Shire of Beverley (Ballardong, Noongar Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Long term	B11	Beverley Trails Network Stage 3	Design and construct	Design and construct Stage 3 of 3 of transport trails.	Transport trails
Long term	B12	Toodyay to Beverley Avon River Trail	Feasibility, design and construct	Collaborate with DoT and the Shires of Northam, Toodyay and York to conduct feasibility, design and construct a transport trail between York and Beverley.	Transport trail
Long term	B13	Upgrading Hunt Road (John Street to Vincent Street)	Design and construct	Design and construct path infrastructure upgrades on Hunt Road between John Street and Vincent Street to improve access to shopping areas and caravan parks and accommodation.	Local
Long term	B14	Smith Street (Forrest Street to York to Beverley Trail)	Design and construct	Design and construct path on Smith Street between Forrest Street and Beverley Trail to improve local residential connectivity and provide access to recreational trail.	Local
Long term	B15	Taylor Street (Forrest Street to York to Beverley Trail)	Design and construct	Design and construct path on Taylor Street between Forrest Street to provide access to recreational trail.	Local
Long term	B16	Hamersley Street (Vincent Street to Beverley Racecourse)	Design and construct	Design and construct path on Hamersley Street between Vincent Street and Beverley Racecourse to provide access to recreational destination.	Secondary

6.2.2 Shire of Chittering (Yued Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	C1	Muchea to Bindoon	Feasibility	Conduct a feasibility study of a trail between Muchea and Bindoon.	Primary, Transport trail
Short term	C2	Muchea to Bindoon Stage 1	Design	Design Stage 1 of 3 of Muchea to Bindoon trail.	Primary, Transport trail
Short term	C3	Granary Drive (Tonkin Highway to Edwards Place)	Construct	Collaborate with Main Roads WA to construct a path on Granary Drive between Tonkin Highway and Edwards Place to improve connection and create an 'anchor' between established Muchea town commercial area and Tonkin Highway / Great Northern Highway.	Local
Short term	C4	Muchea to Bindoon Stage 1	Construct	Construct Stage 1 of 3 of Muchea to Bindoon trail.	Transport trail
Short term	C5	Muchea to Bindoon Stage 2	Design	Design Stage 2 of 3 of Muchea to Bindoon trail.	Transport trail
Short term	C6	East Lake Needoonga Path (Gray Road to Great Northern Highway after Casuarina Close)	Design and construct	Design and construct a path, east of Lake Needoonga between Gray Road and Great Northern Highway after Casuarina Close. This link will provide a link between the shopping area, health facility and Lake Needoonga.	Local
Medium term	C7	Muchea to Bindoon Stage 2	Construct	Construct Stage 2 of 3 of Muchea to Bindoon trail.	Transport trail
Medium term	C8	Muchea to Bindoon Stage 3	Design	Design Stage 3 of 3 of Muchea to Bindoon trail.	Transport trail
Medium term	C9	Great Northern Highway (Binda Place to Learners Way)	Design and construct	Design and construct a path on Great Northern Highway between Binda Place and Learners Way to complete the missing link along the route and improving access between key destinations.	Secondary
Medium term	C10	Muchea to Bindoon Stage 3	Construct	Construct Stage 3 of 3 of Muchea to Bindoon trail.	Transport trail

Shire of Chittering (Yued Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Long term	C11	Muchea PSP to Muchea Bike Path	Design and construct	Construct a path from the PSP on Tonkin Highway / Great Northern Highway to Muchea BP stop and future growth area.	Local
Long term	C12	Chittering Street (Granary Drive to Carl Street)	Design and construct	Design and construct a path on Chittering Street between Granary Drive and Carl Street to improve access to recreational destination.	Local

6.2.3 Shire of Dandaragan (Yued Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	D1	Turquoise Way Path Extension	Feasibility	Conduct feasibility study to extend coastal path from Hill River to Cervantes.	Primary
Short term	D2	Turquoise Way Path Extension Stage 1	Design	Design Stage 1 of 2 of coastal route between Jurien Bay to Cervantes.	Primary
Short term	D3	Linking Jurien Bay town centre to residential estates, Alta Mare and Jurien Heights	Design	Design paths linking Jurien Bay town centre to residential estates.	Secondary, Local
Short term	D4	Cervantes to the Pinnacles	Feasibility	Undertake feasibility study of coastal route between Cervantes and the Pinnacles.	Primary
Short term	D5	Turquoise Way Path Extension Stage 2	Design	Design Stage 2 of 2 of coastal route between Hill River to Cervantes.	Primary
Short term	D6	Dandaragan Road Path Extension	Design and construct	Design and construct path to complete missing link between last house and recreational facility.	Local
Medium term	D7	Hansen Bay Road (Cervantes Road to Hansen Bay Lookout)	Design and construct	Design and construct path to Hansen Bay Lookout and connect to proposed coastal route.	Secondary
Medium term	D8	Linking Jurien Bay town centre to residential estates, Alta Mare and Jurien Heights	Construct	Construct paths linking Jurien Bay town centre to residential estates.	Secondary, Local
Medium term	D9	Cervantes to the Pinnacles	Design	Design coastal route between Cervantes and the Pinnacles.	Primary
Long term	D10	Turquoise Way Path Extension Stage 1	Construct	Construct Stage 1 of 2 of coastal route between Hill River to Cervantes.	Primary
Long term	D11	Turquoise Way Path Extension Stage 2	Construct	Construct Stage 2 of 2 of coastal route between Hill River to Cervantes.	Primary
Long term	D12	Cervantes to the Pinnacles	Construct	Construct coastal route between Cervantes and the Pinnacles.	Primary

Shire of Dandaragan (Yued Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Long term	D13	Jurien Bay to North Head and Sandy Cape	Feasibility	Conduct feasibility, of coastal route between Jurien Bay and Sandy Cape.	Transport trail
Long term	D14	Hill River Trail	Feasibility	Conduct feasibility of a transport trail along Hill River linking to Turquoise Trail and Jurien Bay residential estates.	Transport trail
Long term	D15	Lake Thetis loop	Feasibility, design and construct	Conduct feasibility of a tourist loop trail around Lake Thetis.	Transport trail
Long term	D16	Jurien Road Karda Trail	Feasibility	Conduct feasibility of route from Jurien Bay town centre to Karda	Transport trail

6.2.4 Shire of Gingin (Yued Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	G1	Coastal Route Guilderton to Seabird	Feasibility	Undertake a feasibility study on coastal route between Guilderton to Seabird.	Primary
Short term	G2	Coastal Route Ledge Point to Lancelin	Feasibility	Undertake a feasibility study on coastal route between Ledge Point and Lancelin.	Primary
Short term	G3	Lancelin Town to Lancelin Recreational Centre	Feasibility	Undertake feasibility of route between Lancelin Town centre and Lancelin Recreation Centre/Lancelin South	Primary, Local
Short term	G4	Guilderton Road / Moore River Drive / Stephens Crescent Shared Path	Feasibility	Undertake feasibility of a shared path in Guilderton to improve local residential access and connection to Moore River Estuary access.	Local
Medium term	G5	Robertson Road, Ledge Point beach access	Feasibility	Undertake feasibility of path on Robertson Road to provide access to the beach.	Local
Medium term	G6	Lancelin Plaza	Feasibility	Undertake feasibility of path on Lancelin Plaza to improve access along shopping area and to recreational destinations.	Local
Long term	G7	Chalon Avenue, Seabird	Feasibility	Undertake feasibility of path on Chalon Avenue to improve connectivity to recreational facilities.	Local

6.2.5 Shire of Northam (Ballardong, Whadjuk Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	N1	Clackline to Toodyay Rail Trail	Feasibility	Collaborate with DoT and Shire of Toodyay to conduct a feasibility study of the potential to use disused Clackline to Toodyay Rail for the purposes of a tourist trail.	Transport trail
Short term	N2	Northam Recreational Shared Path	Feasibility	Conduct a feasibility study of a recreational shared path as recommended in the Long-Term Network Plan in the Shire of Northam's Local Bike Plan.	Primary, Local
Short term	N3	Mitchell Avenue between Mount Ommanney Road and Keating Street	Design and construct	Design and construct a shared path to connect the Eco Village, Lookout and mountain bike tracks on Mount Ommanney to Recreational Shared Path.	Primary, Local
Short term	N4	East Street between Frankish Road and Throssell Street	Design and construct	Design and construct a shared path to connect the suburban network.	Local
Short term	N5	Kennedy Street between Hampton Street and Clarke Street	Design and construct	Design and construct a shared path to connect the education facilities to the suburban network.	Local
Short term	N6	Avon River Trail (West Toodyay to Beverley)	Feasibility	Collaborate with DoT, DBCA and Shires of Beverley, Toodyay and York to conduct a feasibility study of trail along Avon River from West Toodyay to York.	Primary, Transport trail
Short term	N7	Northam Recreational Shared Path Design Stage 1	Design	Design Stage 1 of 3 of recreational shared path as recommended in the Long- Term Network Plan in the Shire of Northam's Local Bike Plan.	Primary, Local
Short term	N8	Clarke Street, Inkpen Street to Forrest Street.	Design and construct	Design and construct a shared path to connect the Northam residential College to the suburban network.	Local
Short term	N9	Clarke Street, Suburban Road to Inkpen Street.	Design and construct	Design and construct a shared path to connect the recreation facilities to the suburban network.	Local

Shire of Northam (Ballardong, Whadjuk Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	N10	Suburban Road Rail Line to Clarke	Design and construct	Design and construct a shared path to connect the recreation facilities to the suburban network.	Local
Short term	N11	Suburban Rd, NewcastleRd to Mudulla Rd	Design and construct	Design and construct a shared path to connect the recreation facilities to the suburban network.	Local
Short term	N12	Fitzgerald Street between Gordon Street and Grey Street	Design and construct	Design and construct a shared path to connect missing links.	Secondary
Short term	N13	Linking Wundowie to Eastlink	Design and construct	Design and construct paths on McMullen Road and Hawke Avenue to connect Wundowie townsite to Eastlink.	Secondary, Local
Short term	N14	Avon River Trail (West Toodyay to Beverley) – N3 Stage 1	Design	Design Stage 4 of 9 of trail along Avon River in Shire of Northam.	Primary, Transport trail
Short term	N15	Northam Recreational Shared Path Design Stage 1	Construct	Construct Stage 1 of 3 recreational shared path as recommended in the Long- Term Network Plan in the Shire of Northam's Local Bike Plan.	Primary, Local
Short term	N16	Clackline to Toodyay Rail Trail – N1	Design	Collaborate with the Shire of Toodyay to design rail trail between Clackline and Toodyay.	Transport trail
Medium term	N16	Northam Recreational Shared Path Design Stage 2	Design	Design Stage 2 of 3 recreational shared path as recommended in the Long- Term Network Plan in the Shire of Northam's Local Bike Plan.	Primary, Local
Medium term	N17	Avon River Trail (West Toodyay to Beverley) – N3 Stage 1	Construct	Construct Stage 4 of 9 of trail along Avon River in Shire of Northam.	Primary, Transport trail
Medium term	N20	Avon River Trail (West Toodyay to Beverley) – N3 Stage 2	Design	Design Stage 2 of 3 of trail along Avon River in Shire of Northam.	Primary, Transport trail
Medium term	N21	Clackline to Toodyay Rail Trail – N1	Construct	Collaborate with the Shire of Toodyay to construct the Clackline to Toodyay Rail Trail.	Transport trail

Shire of Northam (Ballardong, Whadjuk Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Medium term	N22	Fermoy Avenue from Gregory Street to Lance Street	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N23	Goomalling Road, Old York Road to Wood Drive	Design and construct	Design and construct a shared path to connect missing links.	Primary, Local
Medium term	N24	East Street from Byfield Street to Frankish Road	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N26	Gordon Street, between Burnside Avenue and Selby Street	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N27	Boronia Avenue Wundowie from Banksia Avenue (West) to Banksia Avenue (East)	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N28	Wellington Street between Morell Street and Charles Street	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N30	Wellington Street, Grey Street to Peel Street	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N31	Wellington Street, Gordon to Gairdner	Design and construct	Design and construct a shared path to connect missing links.	Local
Medium term	N32	Wellington Street (Gairdner Street to Charles Street)	Design and construct	Design and construct recommended 'Priority Works' project listed in Northam Bike Plan on Wellington Street between Gairdner Street and Charles Street to improve access to recreation and sport facilities.	Local
Medium term	N33	Taylor Street, from Old York Road to Peel Terrace	Design and construct	Design and construct a shared path to connect missing links.	Primary

6.2.6 Shire of Toodyay (Ballardong, Yued, Whadjuk Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	T1	Clackline to Toodyay Rail Trail	Feasibility	Collaborate with the Shire of Northam to conduct a feasibility study of the potential to use the disused Clackline to Toodyay rail corridor for a transport trail.	Transport trail
Short term	T2	Jubilee Street (Reserve Street to Toodyay Old Newcastle Public Cemetery) and Connor Street Shared Path	Design and construct	Design and construct shared paths to improve local residential connectivity.	Local
Short term	T3	Avon River Trail (West Toodyay to Beverley)	Feasibility	Collaborate with DBCA, DoT and the shires of Beverley, Northam and York to conduct a feasibility study of a trail along Avon River from West Toodyay to Beverley.	Primary, Transport trail
Short term	T4	Settlers Ridge	Design and construct	Design and construct a shared path on Settlers Ridge to improve local residential connectivity.	Local
Short term	T5	Clackline to Toodyay Rail Trail – T1	Design	Collaborate with the Shire of Northam to design rail trail between Clackline and Toodyay.	Transport trail
Short term	T6	Avon River Trail (West Toodyay to Beverley) – T3 Stage 1	Design	Design Stage 1 of 9 of trail along Avon River from West Toodyay to Beverley within the Shire of Toodyay.	Primary
Medium term	T7	Avon River Trail (West Toodyay to Beverley) – T3 Stage 1	Construct	Construct Stage 1 of 9 of trail along Avon River from West Toodyay to Beverley within the Shire of Toodyay.	Primary
Medium term	T8	Avon River Trail (West Toodyay to Beverley) – T3 Stage 2	Design	Design Stage 2 of 9 of trail along Avon River from West Toodyay to Beverley within the Shire of Toodyay.	Primary

Shire of Toodyay (Ballardong, Yued, Whadjuk Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Medium term	T9	Railway Crossing Hamersley Street (Hamersley Street to Stirling Terrace)	Design and construct	Design and construct a railway crossing (standard maze crossing) on Hamersley Street as recommended in Shire of Toodyay Bike Plan, to improve safety and access across railway (east – west connection).	Secondary
Medium term	T10	Clackline to Toodyay Rail Trail – T1	Construct	Collaborate with the Shire of Northam construct rail trail between Clackline and Toodyay.	Transport trail
Long term	T11	Avon River Trail (West Toodyay to Beverley) – T3 Stage 2	Construct	Construct Stage 2 of 3 of Avon River Trail within the Shire of Toodyay.	Primary
Long term	T12	Avon River Trail (West Toodyay to Beverley) – T3 Stage 3	Design and construct	Design and construct Stage 3 of 3 of Avon River Trail within the Shire of Toodyay.	Primary
Long term	T13	Avon River Trail (West Toodyay to Swan Valley)	Feasibility, design and construct	Conduct feasibility, design and construct transport trail along Avon River from West Toodyay to Swan Valley via Avon National Park.	Transport trail

6.2.7 Shire of York (Ballardong, Noongar Country)

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	Y1	Forrest Street (South Street to Great Southern Highway) and Henrietta Street (Forrest Street to Avon Terrace) Shared Use Path Project	Design	Design completing missing local links and providing access to recreational and educational facilities.	Local
Short term	Y2	Beverley Heroics Road Cycling Route	Feasibility	Collaborate with DoT and WestCycle to undertake feasibility to provide warning signage and wayfinding to show the road cycling route and consider options to provide increased safety.	Road cycling route
Short term	Y3	Avon River Trail (West Toodyay to Beverley)	Feasibility	Collaborate with DoT, DBCA and shires of Beverley, Toodyay and Northam to conduct a feasibility study of trail along Avon River from West Toodyay to York.	Primary, Transport trail
Short term	Y4	Trews Road (York District High School to Trews Court)	Design	Design shared path to complete the missing link between York town site and educational facility and future growth area.	Secondary
Short term	Y5	Suburban Road (Glebe Street to Balladong Street)	Design and construct	Design and construct shared path to complete missing link on Suburban Road.	Local
Short term	Y6	Avon River Trail (West Toodyay to Beverley) – Y3 Stage 7	Design	Design Stage 7 of 9 of trail along Avon River from West Toodyay to York within the Shire of York.	Primary, Transport trail
Short term	Y7	Trews Road (York District High School to Trews Court)	Construct	Construct shared path to complete the missing link between York town site and educational facility and future growth area. (Designed Year 2 (Y3))	Secondary
Short term	Y8	Beverley to Mundaring Road Cycling Route	Feasibility / Design / construct	Collaborate with DoT and Shire of Beverley to provide warning signage and wayfinding to show route Road Cycling Route along Talbot Road West and consider options to provide increased safety.	Road cycling route

Shire of York (Ballardong, Noongar Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Short term	Y9	York – Bruce Rock Rail Trail	Feasibility	Collaborate with DoT and Shires of Beverley, Quairading and Bruce Rock to conduct feasibility study of transport rail trail between York and Bruce Rock.	Transport trail
Medium term	Y10	Avon River Trail (West Toodyay to Beverley)	Construct	Construct Stage 7 of 9 of trail along Avon River from West Toodyay to York.	Transport trail
Medium term	Y11	Steere Road (Pioneer Road to Mount Brown Lookout)	Design and construct	Design and construct shared path to provide access to Mount Brown Lookout and recreational and mountain biking trails.	Secondary
Medium term	Y12	York – Bruce Rock Rail Trail Stage 1	Design	Design Stage 1 of the rail trail between York and Bruce Rock.	Transport trail
Medium term	Y13	Knight Street / Henry Road	Design and construct	Design and construct path on Knight Street / Henry Road to improve local residential connectivity.	Local
Long term	Y14	Avon River Trail (West Toodyay to Beverley) Stage 8 and 9	Design and construct	Design and construct Stages 8 and 9 of trail along Avon River from West Toodyay to Beverley within the Shire of York.	Transport trail
Long term	Y15	York to Beverley Trail	Feasibility, design and construct	Shire of York in collaboration with DoT and the Shire of Beverley to conduct feasibility, design and construct a transport trail between York and Beverley.	Transport trail
Long term	Y16	Christie Retreat (Avon Terrace to Avon Suspension Bridge) and Pool Street (Avon Suspension Bridge to Suburban Road) Shared Paths	Design and construct	Design and construct shared paths to provide access to the Avon Suspension Bridge and improve east-west connectivity.	Local

Shire of York (Ballardong, Noongar Country) continued

Year	Reference	Project	Project type	Objective / Justification	Hierarchy
Long term	**Y17**	Great Southern Highway Path extension and upgrade	Feasibility, design and construct	Conduct feasibility, design and construct Great Southern Highway path extension and upgrade to connect to future York to Beverley Transport trail.	Secondary
Long term	**Y18**	Forrest Street (South Street to Great Southern Highway) and Henrietta Street (Forrest Street to Avon Terrace) Shared Use Path Project	Construct	Construct completing missing local links and providing access to recreational and educational facilities.	Local
Long term	**Y19**	York – Bruce Rock Rail Trail	Construct	Construct rail trail between York and Bruce Rock.	Transport trail

6.3 Plan maintenance

Progress on the priority actions identified in Section 6 of this Strategy will be reported to DoT on an annual basis by the region's local governments, using a DoT issued reporting form.

The strategic priorities will be reviewed every five years to ensure current conditions are reflected and relevant projects are prioritised. This review will include reassessing each route's classification as either existing (adequate), existing (needs improving), or non-existent (proposed) and updating the existing network maps.

The Avon Central Coast 2050 cycling network should remain consistent over the medium term. A review of the overarching strategy document every 8-10 years will allow new opportunities to be identified and incorporated into a revised document.

Appendix A: Route hierarchy summary

Western Australian Cycling Network Hierarchy

The Western Australian Cycling Network Hierarchy designates routes by their function, rather than built form. Function considers the type of activities that take palce along a route, and the level of demand (existing and potential). the build form of a route is based on the characteristics of the environment, incuding space availability, topography, traffic conditions (speed, volumes), primary users and so on.

When considering appropriate built forms for primary, secondary and local routes, an all ages and abilities design philosophy should be adopted.

	1. PRIMARY ROUTE	2. SECONDARY ROUTE	3. LOCAL ROUTE
Function	Primary routes are high demand corridors that connect major destinations of regional importance. They form the spine of the cycle network and are often located adjacent to major roads, rail corridors, rivers and ocean foreshores. Primary routes are vital to all sorts of bike riding, including medium or longdistance commuting / utility, recreational, training and tourism trips	Secondary routes have a moderate level of demand, providing connectivity between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities. Secondary routes support a large proportion of commuting and utility type trips, but are used by all types of bike riders, including children and novice riders.	Local routes experience a lower level of demand than primary and secondary routes, but provide critical access to higher order routes, local amenities and recreational spaces. Predominantly located in local residential areas, local routes often support the start or end of each trip, and as such need to cater for the needs of users of all ages and abilities.
Design Philosophy	An all ages and abilities design philosophy is about creating places and facilities that are safe, convenient for as many people as possible. By planning for and designing infrastructure that caters for the youngest and most vunerable users, we create a walking and bike riding network that everyone can use. At the heart of this approach is fairness and enabling all people to use the network regardless of age physical ability or the wheels they use.		
Form	All routes can take a number of different forms and are designed to suit the environment in which they are located. These forms include: • Bicycle only, shared and/or separated paths; • Protected bicycle lanes (uni or bi-directional, depending on the environment; and • Safe active streets. Principal Shared Paths (PSPs) are often built along primary routes. A PSP is a high quality shared path built to MRWA PSP standard which generally means the path will be 4 m wide, have adequate lighting and be grade separated at intersections (where possible). In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes.		

Road Cycling Routes and Transport Trails form part of the complementary network, supporting more select user groups, primarily for recreational, sport and/or tourism purposes.

	ROAD CYCLING ROUTE	TRANSPORT TRAIL
Function	Road cycling routes are designated routes for bike riders undertaking long distance rides in (predominantly) on-road environments, for training, sports, or recreational purposes.	Transport trails provide long-distance, off-road (predominantly unsealed) riding experiences through natural settings, away from motorised traffic. They often support recreational and tourism trips between towns and regions.
Form	Road cycling routes are predominantly located on lower order rural or semi-rural roads on the outskirts of cities and towns. Sections may follow busier roads, particularly as road cycling routes typically begin and end in built up areas and often follow scenic roads popular with other road users. These routes support bike riders undertaking challengin longer distance rides by raising awareness and encouraging safe behaviour by all road users. This is achieved through advisory signage, warning technology and other road safety initiatives.	Transport trails are typically located within underutilised transport and service corridors in rural areas. Due to their relatively gentle gradients, former railways and certain utility corridors make excellent candidates for these trails. Transport trails should be constructed from materials appropriate to the environment and level of service required. Well drained, compacted gravel with supporting infrastructure such as wayfinding signage is a common form. In some instances transport trails will be sealed, such as where they intersect with busy roads or run through town sites, They will often change classification to a primary or secondary route when they pass through a town, reflecting the more holistic role they perform in the transport network in these situations.

Appendix B: Desktop analysis

B1. Analysis of pedestrian and cyclist crash data (2018-2022)

Figure B1.1 illustrates the breakdown in severity of pedestrian and cyclist crashes occurring across the Avon and Central Coast between January 2018 and December 2022. Figure B1.1 provides a breakdown of the crashes by severity:

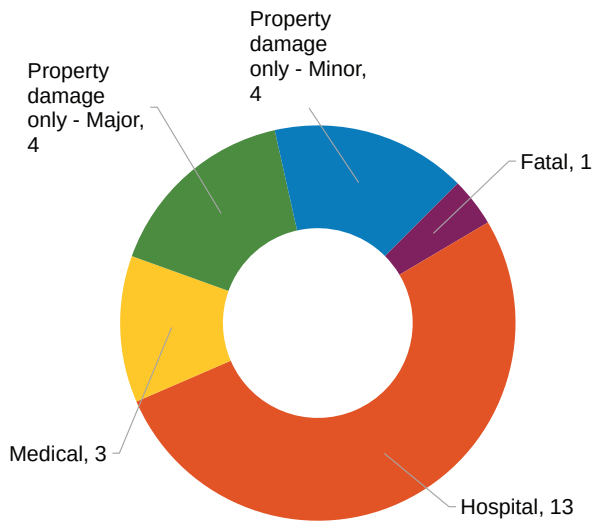
On reviewing the crash data, the following findings were noted:

- One fatal crash involving a pedestrian was recorded in Gingin over the five-year period.
- There was a higher number of recorded pedestrian crashes (20) than cyclist crashes (5).
- Northam and Gingin had the overall highest number of identified pedestrian and cyclist crashes.
- The Shires of Toodyay and York are the only two locations which had no records of crashes over the five-year period.
- Across the Avon Central Coast region the total recorded pedestrian and cyclist crashes were relatively low (25).

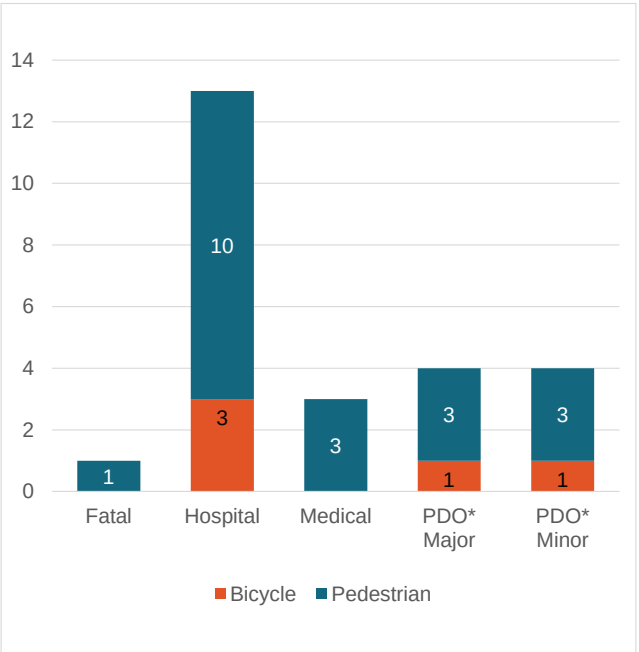
As mentioned above, the available data set covers the period between 2018 and 2022 only. It also captures reported incidents. Currently there is no reliable data available on near misses, accidents between cyclists and pedestrians, or single cyclist crashes in the Avon and Central Coast. It has been estimated that bike riding incidents reported to WA Police make up only 20 per cent of all bike riding related incidents that result in hospitalisation.

Figure 71: Avon and Central Coast cyclist and pedestrian crashes by severity (2018-2022). Note "PDO" refers to "Property Damage Only".

Total crashes involving people walking and riding bicycles showing severity.



Crashes involving people walking and riding bicycles



B2. Analysis of GPS travel data

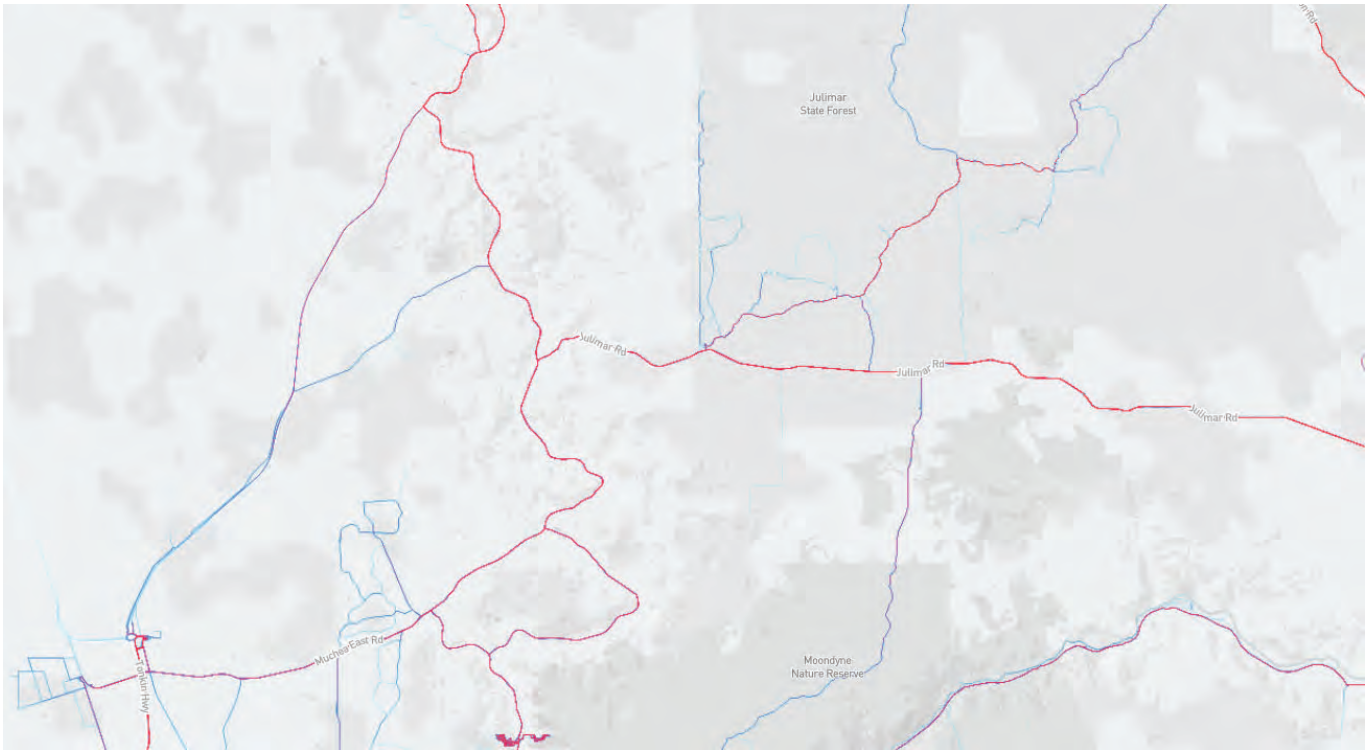
The GPS mapping tool, Strava Labs, was employed to better understand which parts of the Avon and Central Coast roads and path networks are the most heavily utilised by cyclists. The maps shown below highlight popular bike riding routes throughout the Avon Central Coast region.

Strava is a website and mobile app used to track athletic activity via GPS. Despite the usefulness of this information, it should be noted that GPS travel data is typically representative of people who cycle for training or high-intensity recreational purposes.

The following trends/generalisations were noted with respect to the GPS travel data:

- Bike riding in Gingin appeared to not be a popular choice amongst residents, with the only cycle routes used being Dewar Road and Weld Street.
- York, Dandaragan, Northam, Chittering and Toodyay were the most popular locations for long distance bike riding.
- Julimar Road, Muchea-East Road and Chittering Road in Chittering were the most used.
- Toodyay West Road, Telegraph Road, Toodyay Road and Northam-Toodyay Road in Toodyay were the most used.
- Great Eastern Highway, Yilgarn Avenue, Northam Toodyay Road and Katrines Road in Northam were the most used.
- Dandaragan Road and Midlands Road in Dandaragan were the most used.
- Spencers Brook York Road, Great Southern Highway and Knotts Road in York were the most used.
- Cycle routes were popular along the Avon River (George Street) and Steere Road, Northam Cranbrook and York Merredin.
- Northam appears to be the most popular location for in-town bike riding.
- Significant long distance travel to and from townsites is evident.

Map 48: Chittering Strava

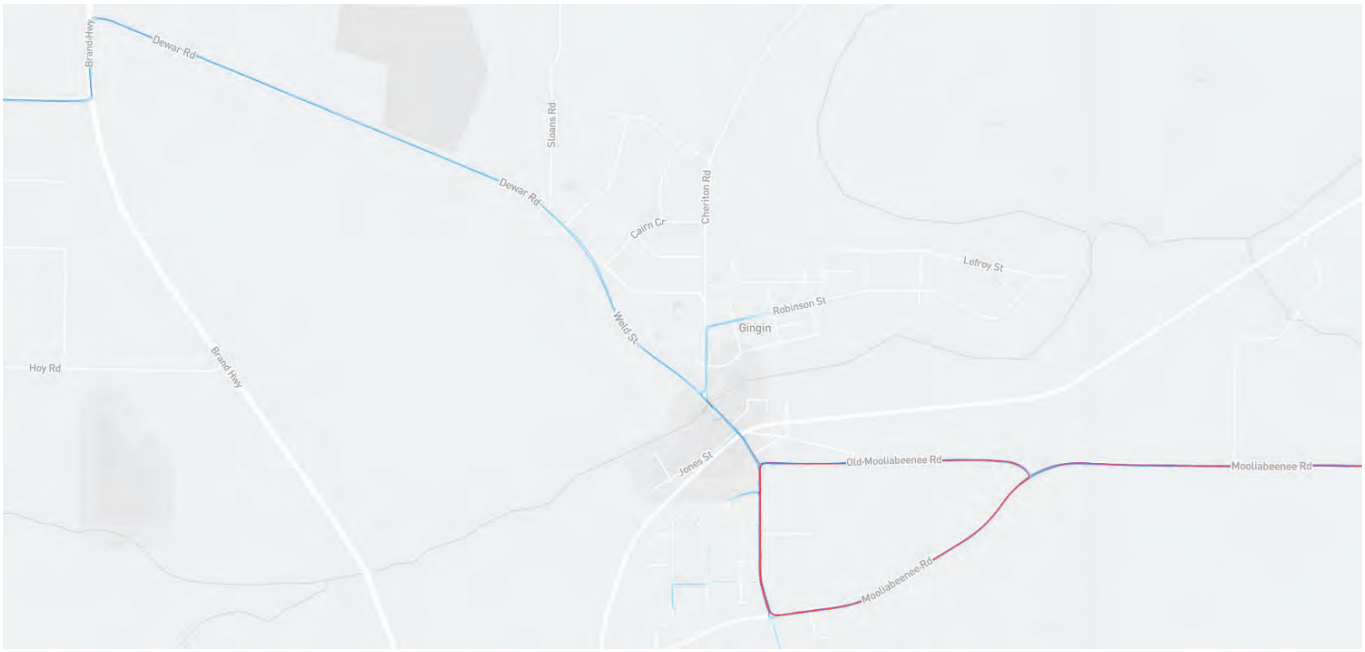


Map 49: Beverley Strava

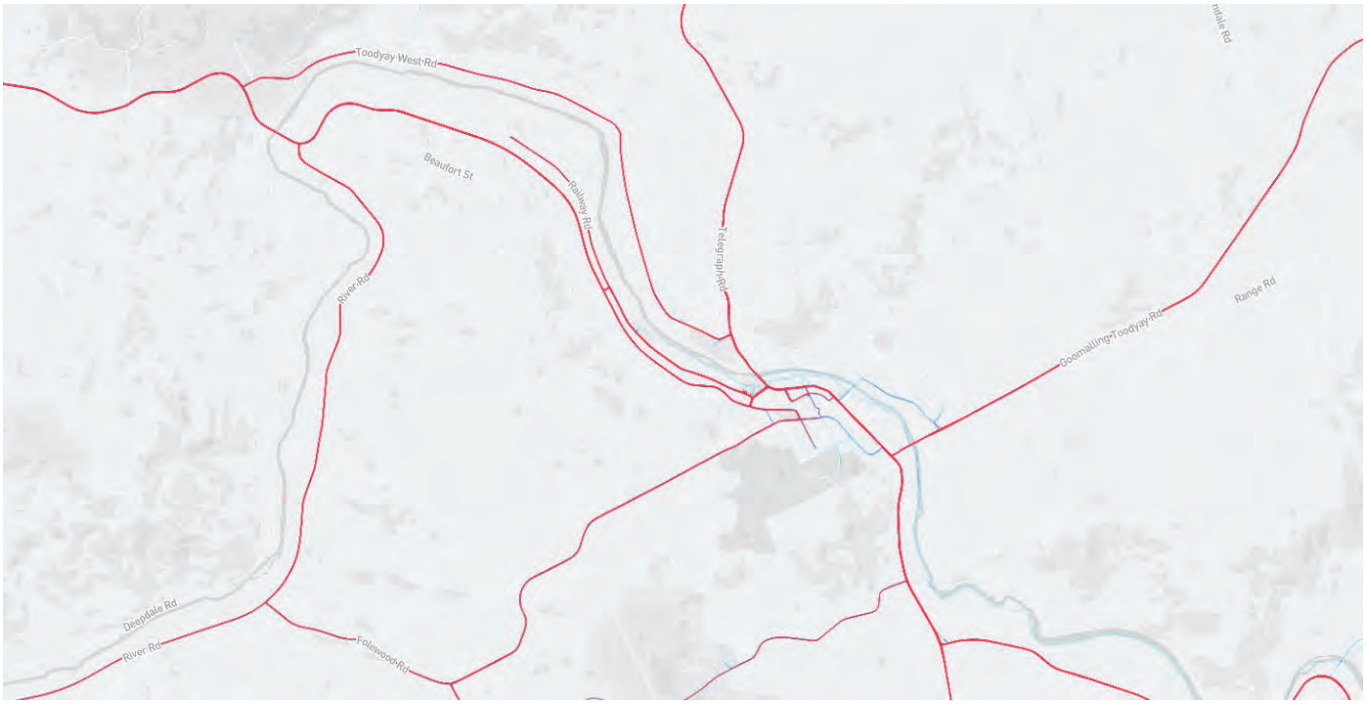
Map 50: Dandaragan Strava

Map 51: Northam Strava

Map 52: Gingin Strava



Map 53: Toodyay Strava



Map 54: York Strava

B3. Document review

A number of documents have been considered as part of the background review. This includes, but is not limited to the following:

Shire of Beverley (Ballardong, Noongar Country)

- Local Planning Strategy (2014)
- Trails Master Plan (2014)
- Tourism Plan (2016)
- Strategic Community Plan 2017-2027 (2017) (Updated 2021)

Shire of Chittering (Yued Country)

- Trails Network Master Plan 2013-2023 (2013)
- Mountain Bike Trials Master Plan (2016)
- Muchea Employment Node Local Structure Plan (2016)
- Strategic Community Plan 2017-2027 (2017) (Updated 2022)
- Local Planning Strategy (2019)

Shire of Dandaragan (Yued Country)

- Jurien Bay Regional Centre Strategy Plan (2012)
- Local Tourism Strategy (2012) (Updated 2020)
- Jurien Bay Regional Centre Growth Plan (2014)
- Bike Network Plan (2015)
- Envision 2029 Strategic Community Plan (2019) (Updated 2020)
- Local Planning Strategy (2019) (Updated 2021)

Shire of Gingin (Yued Country)

- Local Planning Strategy (2012)
- Strategic Community Plan 2017-2027 (2017) (Updated 2022)
- Trails Master Plan (2018)

Shire of Northam (Ballardong and Whadjuk Country)

- Northam Regional Growth Centre Plan (2012) (Strategy replaced in 2018)
- Local Planning Strategy (2013)
- Strategic Community Plan 2017-2019 (2017) (New Community Plans created 2020)

Shire of Toodyay (Ballardong, Yued and Whadjuk Country)

Bike Plan (2013)

Corporate Business Plan (2016) (Updated 2019)

Strategic Community Plan – Toodyay 2028 (2018)

Local Planning Strategy (2018)

Shire of York (Ballardong, Noongar Country)

- Road Development Standards 2005-2015 (2005)
- Local Planning Strategy (2007) (Updated 2020)
- Integrated Bike & Trails Master Plan Volume I (2014)
- Integrated Bike & Trails Master Plan Volume II (2014)
- Integrated Bike & Trails Master Plan Volume III (2014)
- Strategic Community Plan 2016-2026 (2016) (Updated 2020)
- Markyt Community Scorecard (2018) (Updated 2023)
- Trails Master Plan Draft (2019)

State and regional planning documents

- Main Roads WA Policy for Cycling Infrastructure (2000)
- State Planning Policy 2.6 – Coastal Planning (2013)
- State Planning Strategy 2050 (2014)
- Western Australian Mountain Bike Strategy 2022-2032 (2020)
- Regional Development Strategy 2016-2025 (2016)
- Cycling Aspects of Austroads Guides (2017)
- Western Australian Strategic Trails Blueprint 2017-2021 (2017) (Updated 2022)
- Western Australian Cycle Tourism Strategy (2018)

Wheatbelt Development Commission

- Avon Sub-Regional Economic Strategy (2013)
- Central Midlands Sub-Regional Economic Strategy (2014)
- Central Coast Sub-Regional Economic Strategy (2014)
- Wheatbelt Snapshot Series: Land Based Transport (2014)
- Wheatbelt Snapshot Series: Tourism (2014)
- Wheatbelt Blueprint (2015)

Appendix C: Community and stakeholder consultation

C1 Engagement overview

An engagement strategy was developed in partnership with the seven local governments of the Avon Central Coast region.

The strategy was designed to maximise input from the local community and stakeholders and seek feedback on the preliminary cycle networks, key features, and opportunities identified through scoping.

Engagement objectives and methods:

1. Disseminate information to stakeholders, residents and visitors to raise their **awareness** of the project. Information was made available online via DoT and local government social media, DoT's My Say Transport platform, and in hard copy at shire administration offices. Promotion of the engagement was supported by local industry, community groups, schools and local advocates.
2. Increase **understanding** of the regional cycling strategy, including its context, aims, opportunities and constraints. Outreach methods included community drop-in sessions, informational materials, My Say Transport project page, social and local media articles and meetings with key stakeholders.
3. **Collect feedback** from stakeholders, residents and other impacted groups to inform project development and ensure that outcomes meet the needs of the people impacted. Feedback requested specifically sought to:
   (a) identify any existing barriers and constraints to the uptake of bike riding as a transport mode;
   (b) discover initiatives that would support people to cycle more frequently;
   (c) establish the themes, opportunities and projects that are most prioritised by the community; and
   (d) develop aspirational, big picture ideas for the future of bike riding across the region.
4. **Provide updates** about the community consultation outcomes, to keep stakeholders informed.
5. Demonstrate that the Project Team has obtained equitable **levels of feedback** from residents and organisations across the region through;
   - three drop-in sessions;
   - widespread distribution of the two consultation information sheets (Avon subregion and Central Coast subregion) and associated preliminary network maps;
   - 800 total visits to the My Say Transport project page;
   - a series of social and local media articles; and
   - a series of stakeholder meetings.

Participants were encouraged to identify their existing bike riding routes, as well as any constraints they faced bike riding in the region, and ideas for expanding or improving the existing network.

The engagement was promoted through various DoT and local government media, and via direct contact with a wide range of local stakeholder groups who promoted the sessions and online engagement platform to their internal networks. Over 800 people engaged online and in-person.

Note that initial community and stakeholder consultation was undertaken between 2019 and 2020. The impacts of COVID-19 and DoT staff resourcing resulted in a hiatus in the finalisation of the Strategy. The preparation of the Strategy was reignited with an outreach to key stakeholders, undertaken in 2022, to ensure information was still relevant and to update status of key projects.

C2 Community comment summary

Survey results summary

How often do you ride a bike?

Frequency	Percentage of respondents
3-6 times per week	28.2%
A few times a month	24.4%
1-2 times per week	19.1%
Daily	12.2%
Less than once a month	11.5%
Rarely/never	4.6%

Reflections:

- A majority of respondents reported riding 2-3 times per week. This is above the average (use data from WA Participation Survey). This should inform the 'Avon Central Coast in context' / 'Need for a long-term strategy' sections. This should also inform future discussions with Main Roads WA and other agencies (to demonstrate existing demand).
- There is clearly an appetite for bike riding across the region just based on how many times respondents are cycling per week/month.

Why do you ride a bike?
Please select all that apply.

Reason	Percentage of respondents
Leisure/recreation	27.0%
Fitness	25.8%
Social	14.8%
Environmental sustainability	11.2%
Tourism	10.0%
Commute	8.1%
Competition	3.1%

Reflections/response:

- Recreation (27%), closely followed by fitness (25%) were the most selected reasons respondents selected for 'why they ride a bike'. This aligns with an overall indication that many people ride for leisure and training across the region and should inform central themes and opportunities i.e., we have altered 'Developing unique cycling tourism experiences' theme to 'Promoting a unique visitor experience by bicycle' and 'Developing multi-user trails' to 'Developing multi-user trails and recreation experiences'. Also need to highlight that many people stated postcodes outside of the area –this indicates that many people are visiting the region to participate in bike riding and will ultimately need to shape the final strategy themes and opportunities
- Almost 15% of respondents selected 'social' reasons for riding a bike, which will be supported by connecting people to where they live, work, learn and play as well encouraging healthy, active and safe communities and planning for resilient communities (focusing on the social infrastructure element also).
- Competition was selected by 3% of respondents. Consideration should be given to identifying opportunities to encourage competitive events in collaboration with WestCycle and other organisers.
- Consideration needs to be given to expanding a theme or creating a new theme to emphasise the recreation, fitness and competition elements e.g. expand 'Developing multi-user trails' to 'Developing multi-user trails and recreation experiences'.

What type of cycle facilities do you feel most comfortable riding on?

Type of cycle facility	Percentage of respondents
Off-road shared paths	29.2%
Off-road cycle-only paths	41.6%
On-road protected bike lanes	15.7%
On-road painted lanes	9.0%
On the road in a shared space	3.6%
Other (please specify)	0.9%

Reflections/responses:

- It is well reported one of the main barriers to increasing participation in cycling is lack of safe, connected, convenient cycle networks. This is reinforced by the comments received on the survey regarding factors that prevent people from riding a bike more often, and factors that would encourage them to ride a bike more often.
- Historically, marginalisation of cycling in many urban and regional centres – as well as between them – has resulted in significant challenges to governments seeking to realise increases in bike riding by different users and for different transport, recreation, and tourism purposes.
- Attitudes vary amongst experienced bike riders and inexperienced bike riders, and an individual's attitude and comfort can also vary based on the types of trips they are undertaking and/or who they are travelling with. An experienced rider may, for example, be comfortable cycling alone with traffic, but may not be comfortable riding the same route if accompanied by a friend or family member.
- The WA Cycling Network Hierarchy is based on an all ages and abilities philosophy across the primary, secondary and local routes. While these routes are function over form, in order to cater for a wide range of ages and abilities, many routes will be off-road.

Who do you most regularly ride with?

Who they ride with	Percentage of respondents
By myself	36.6%
As a duo with a partner/ spouse, friend, or child	29.8%
In a group with friends and/or family (including children)	12.2%
In a group with friends and/or family (not including children)	11.7%
In a cycle club/group	5.4%
With a colleague or colleagues	3.9%
Other (please specify)	
(only one respondent selected 'other' and listed 'racing' as comment; covered by 'club/ group')	0.5%

Reflections:

- Over a third of respondents indicated they most regularly ride by themselves. This can be considered in the themes and opportunities providing for people riding for recreation, fitness, etc.
- Need to ensure emphasis on 'family' is reflected in themes e.g. expand 'Safe routes to school' to 'Family friendly bicycles routes and experiences'.
- There is a clear need to support clubs – include in opportunities under 'Developing multi-user trails and recreation experiences' and 'Linking Perth metro to the Central Coast'. Could potentially ask WestCycle for input.

Comment	Response/action
Several specific links were recognised or requested by survey participants, including: - Completing the link between Jurien Bay and Cervantes, which was one of the most-mentioned specific routes. - Extending the Northlink PSP to connect with towns of Muchea, Lower Chittering, Bindoon and Gingin, which could support local businesses and tourism destinations in the area. - Linking Jurien Bay town centre and surrounding residential estates (Alta Mare and Jurien Heights). - Connecting Toodyay, Northam and York, as well as Spencers Brook, and connecting towns to the Avon River. - Utilising the Kep Track to connect Perth and Northam. - Developing a trail north of Jurien Bay to North Head and Sandy Cape. - Connecting Perth metropolitan area to Lancelin. - Connecting Lancelin and Sea View Park. - Developing the path network in Badgingarra. - Promoting connectivity in Bindoon by providing dedicated crossing opportunities at Great Northern Highway, and slower speeds through the town. - Extending the path network in Bindoon, including Gray Road.	Many of these locations or routes are features of the preliminary network map.
The bulk of comments received related to the path infrastructure throughout the region as being either non-existent, particularly off the coast, or disconnected, with existing networks having gaps that make people feel unsafe when riding or walking. Without paths, people reported discomfort when sharing the road while riding due to cramped environments, road conditions, number and frequency of heavy vehicles and driver behaviour. People also reported some discomfort at using crowded shared paths.	Network gap analysis Share the road campaign Keep left/respectful path usage signage on paths
Respondents specified the type of trip facilities that would encourage them to ride more. Suggestions included path lighting, water taps, bike parking, shelters and dedicated stopping points along routes, electric bike charging opportunities, bike repair stations, public art and incorporation of Aboriginal heritage along routes, as well as wayfinding.	Recommend network expansion initiatives incorporate activation principles
Survey respondents noted that destinations to ride to were also important, commenting that they would love to ride to cafés, pump tracks and picnic spots.	Local destination mapping Kids and skills building (pump track comment – pony club fire break for local kids?)
A number of responses highlighted the potential for cycling tourism in the region, including developing rail trails, cycling events, and connections to unique locations including agritourism locations and renewable energy farms, developing ‘bed and bike’ accommodation or cycle camping spots. Several participants raised the opportunity that e-bikes bring to riding generally, including for tourism.	Local governments to empower local business

Comment	Response/action
Survey participants were enthusiastic about the potential for trails throughout the region, particularly rail trails throughout the Avon area, to support recreation and longer transport trips, as well as tourism. Some participants expressed support for gravel trails in particular.	Several trails have been identified in the Strategy
Several respondents expressed their disappointment that public transport serving the region does not adequately cater for their demand to transport their bikes via train.	Liaison with Perth Transport Authority to explore solutions.
A few responses from people riding horses, roller blading and walking highlighted the mutli-use demand for trails.	Noted and recognised that many trail opportunities cater for several mobility options.
Some people responding indicated they would be more likely to ride if there were more community-organised, social bike riding events (similar to park run), in particular women-specific events, as well as more bike education opportunities, especially for children.	Support. Your Move for schools and WestCycle opportunities recognised.
A number of responses requested more dedicated areas of mountain biking. While this is outside the scope of this Strategy, there may be opportunities to provide links to mountain biking destinations.	Icon at identified trail heads? Local/recreation destination
A few comments indicated dissatisfaction with upkeep and maintenance of existing routes, including sweeping for debris.	Noted in Strategy and encouraging the need for maintenance to be included in the lifecycle planning of projects.
Several participants expressed concern regarding coastal hazard and the planning of coastal paths.	DoT is working to ensure future planning of built assets for the cycling strategy is in alignment with both the State Planning Policy 2.6 – State Coastal Planning Policy, and Shire of Gingin's Coastal Hazard Risk Management and Adaptation Plan.
Several respondents indicated that, in general, they were discouraged from riding by their age, and that infrastructure is needed so that seniors can keep fit and healthy.	The network is designed to support mobility for all ages and abilities.

Endnotes

1 National Native Title Tribunal 2014 Ballardong Native Title Claimant Applications and Determination Areas as per the Federal Court 20/08/2014). Available at: Layout (www.wa.gov.au)

2 National Native Title Tribunal 2014 Yued Native Title Claimant Applications and Determination Areas as per the Federal Court 29/10/2014). Available at: Layout (www.wa.gov.au)

3 National Native Title Tribunal 2014 Whadjuk Native Title Claimant Applications and Determination Areas as per the Federal Court 20/08/2014). Available at: Layout (www.wa.gov.au)

4 AIATSIS 1996 Map of Indigenous Australia Available at: https://aiatsis.gov.au/explore/map-indigenous-australia

5 Evaluating Active Transport Benefits and Costs (vtpi.org)

6 Cycling RACWA https://rac.com.au/about-rac/advocating-change/cycling

7 The climate change mitigation effects of daily active travel in cities - ScienceDirect https://www.sciencedirect.com/science/article/pii/S1361920921000687#ab010

8 Rural & remote Australians Overview - Australian Institute of Health and Welfare (aihw.gov.au)

9 Regional and rural health is suffering - James Cook University Australia

10 Evaluating Active Transport Benefits and Costs (vtpi.org)

11 The (very good) economic case for riding a bike in 2023 | Bicycle Network

12 The Australian Cycling and e-Scooter Economy in 2022. Available at weride.org.au

13 Longitudinal associations of active commuting with wellbeing and sickness absence - ScienceDirect

14 The relationship between transport and disadvantage in Australia | Australian Institute of Family Studies (aifs.gov.au)

15 Transport Disadvantage, Car Dependence and Urban Form | SpringerLink

16 The climate change mitigation effects of daily active travel in cities - ScienceDirect

17 Wheatbelt Development Commission Central Coast Sub Regional Economic Strategy 2014: Report Master Template (wheatbelt.wa.gov.au)

18 ABS 2021 Census data Search Census data | Australian Bureau of Statistics (abs.gov.au).

19 Shire of Dandaragan Strategic Community Plan https://www.dandaragan.wa.gov.au/Profiles/dandaragan/Assets/ClientData/Documents/Strategies_and_Plans/20220131_SoD_Community_Strategic_Plan_-_Draft_8pdf.pdf accessed July 2022

20 Refer to the Strategic Community Plan published by each local government.

21 Australian Bureau of Statistics estimated residential population https://dbr.abs.gov.au/ accessed July 2022

22 Shire of Dandaragan Strategic Community Plan https://www.dandaragan.wa.gov.au/Profiles/dandaragan/Assets/ClientData/Documents/Strategies_and_Plans/20220131_SoD_Community_Strategic_Plan_-_Draft_8pdf.pdf accessed July 2022

23 Shire of Chittering Strategic Community Plan strategic-community-plan-2022-2032 (chittering.wa.gov.au) accessed July 2022

24 Wheatbelt Development Commission: Wheatbelt Blueprint 2015

25 Wheatbelt Development Commission: Wheatbelt Blueprint 2015

26 Western Australian Bicycle Network Plan - 2017 update (transport.wa.gov.au)

27 Strengthening the Human Infrastructure of Cycling: White Paper 2019, BYCS SFGelderland_210929web-2.pdf (bycs.org) accessed July 2022

28 Sharrows are a wayfinding tool that also assist cyclists in road positioning and alert motorists to the presence of people on bikes.

29 Road Traffic Code 2000 Part 11 Division 3 r124A *A driver of a motor vehicle must pass a bicycle travelling in the same direction at a safe distance (1 m on roads with a posted speed limit of ≤60 km/h and 1.5 m on roads >60 km/h.) While legislation for passing safely has always existed in WA, these amendments to the Road Traffic Code 2000 clarify the minimum distance a driver must keep between their vehicle and a bicycle when overtaking.*

30 Toodyay Bike Plan Priority 6/7/8

31 WA Mountain Bike Strategy 2022-32

32 2018 Westcycle - Western Australian Tourism Strategy

33 *Western Australian Cycle Tourism Strategy*

34 Your Move: More Ways to Get There - Department of Transport

35 Tourism WA

36 The Department of Water and Environment

37 City of Vincent staff e-bicycle Source: www.yourmove.org.au/city-of-vincent/staff-e-bikes/

38 WA Bike Network Plan 2012

39 Tourism WA

40 https://www.transport.wa.gov.au/mediaFiles/active-transport/AT_P_Declining_Rate_walking_cycling_to_school_in_Perth.pdf

41 Appendix B

42 Welcome - Cycling Without Age

43 Department of Transport, 2012, WA Bicycle Network Plan 2017

44 Cardno, Coastal Hazard Risk Management and Adaption Plan (CHARMAP) Shire of Dandaragan 21 June 2018

45 refer to Section 6

46 https://yoursay.busselton.wa.gov.au/sharing-rural-roads/survey_tools/sharing-rural-roads

Contact

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