Department of Transport

WARREN-BLACKWOOD 2050 CYCLING STRATEGY

SHIRE OF BOYUP BROOK

Shire of Bridgetown-Greenbushes .... simply beautiful

Shire of Nannup rest • connect • grow

SHIRE OF MANJIMUP

EXECUTIVE SUMMARY

Towns and regions that support cycling can enjoy a range of economic, environmental and social benefits. In addition to creating more vibrant and welcoming communities, cycling can help families save money and facilitate new industries such as cycle-tourism. Fundamentally, increasing cycling mode share is about improving quality of life – something that is critical for attracting and retaining people in regional areas.

Key to increasing cycling mode share is providing infrastructure that is not only safe and convenient, but also competitive against other modes of transport. To achieve this, cycling needs to be prioritised ahead of other modes in appropriate locations and integrated with adjoining land use. If we are serious about reducing car dependency and helping people make better transport choices, particularly for short trips, these priorities need to be reflected in the way our communities are planned.

The *Warren-Blackwood 2050 Cycling Strategy* has been developed by the Department of Transport (DoT) in collaboration with the South West Development Commission (SWDC) and the shires of Boyup Brook, Bridgetown-Greenbushes, Manjimup and Nannup. Consultation was also undertaken with key stakeholders and the local community. In addition to refining the overarching aims and objectives of the strategy, this process also clarified the needs and expectations of different user groups.

This long-term aspirational strategy reflects the priorities shared by local and State governments. It includes a short-term action plan which will help to inform future investment through the Regional Bike Network Grants Program, as well as other funding sources.

The strategy sets out a blueprint for making cycling an attractive mode of transport within the subregion's towns, through the development of an interconnected network of off-road shared paths, protected on-road bike lanes and low-stress residential streets. The growing popularity, practicality and affordability of electric bicycles (e-bikes) is also documented, which has the potential to revolutionise how people undertake short urban trips in hilly towns such as Bridgetown, Nannup, Pemberton and Boyup Brook.

This document also outlines how best to capitalise on the growing popularity of long-distance cycle touring. While the existing Munda Biddi Trail caters to experienced riders who enjoy remote adventures, there are several opportunities to develop less demanding trails, catering for people with a wider range of abilities and fitness levels.

One opportunity is repurposing the extensive network of inactive rail lines that exist throughout the subregion, while also providing connections to Bunbury, Busselton, Kojonup and Katanning. A similar opportunity exists in linking the towns located along the Blackwood River, through the formalisation and promotion of a cycle-tourism route which follows quiet rural roads and forestry tracks.

Figure 1.1 highlights various opportunities for inter-town and inter-regional cycling routes which could be developed to connect towns across the South West region.

Finally, this strategy outlines measures that can be used to enhance the safety of road cyclists. With the Tour of Margaret River recently relocating to Nannup, road cyclists are increasingly travelling to the Warren-Blackwood subregion for its steep climbs, beautiful scenery and welcoming hospitality.

In developing paths and trails, it is important to consider the potential environmental impact of development and ensure that the unique characteristics of the area are maintained. Some locations may be limited by legislation and policy which could result in alignments changing as further feasibility and planning are undertaken.

The *Warren-Blackwood 2050 Cycling Strategy* outlines how the subregion can realise its cycling potential, leading to a happier, healthier and more engaged community.

Figure 1.1 The south west corner of WA is well positioned to become one of Australia's best regions for long-distance cycling.

CONTENTS

WHY WE WANT MORE PEOPLE CYCLING

TO ENABLE PEOPLE TO ENJOY HEALTHIER AND MORE ACTIVE LIVES

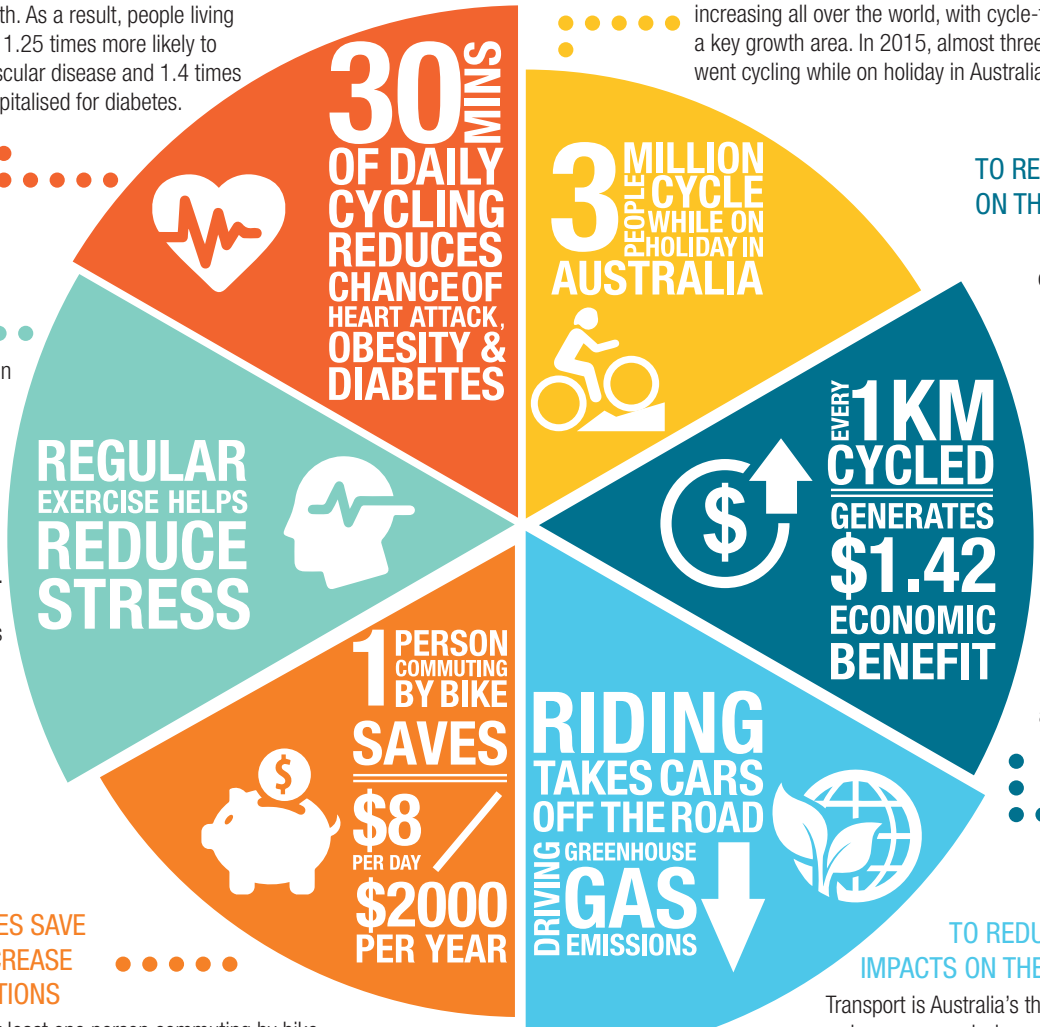
Obesity rates are 10 per cent higher in regional WA compared to Perth. As a result, people living in regional areas are 1.25 times more likely to suffer from cardiovascular disease and 1.4 times more likely to be hospitalised for diabetes.

TO IMPROVE MENTAL HEALTH AND SOCIAL INCLUSION

People who engage in regular exercise experience reduced stress, improved sleeping patterns, improved concentration and a better outlook on life. More people riding and walking provides greater opportunities for incidental interaction on the streets, enhancing a sense of community.

TO HELP FAMILIES SAVE MONEY AND INCREASE TRANSPORT OPTIONS

Families who have at least one person commuting by bike (instead of car) save on average $8 per day, which equates to nearly $2,000 per year. Cycling provides an economic and independent travel option for those who might otherwise have their travel options restricted.



TO IMPROVE THE STRENGTH AND RESILIENCE OF OUR REGIONAL COMMUNITIES

The popularity of outdoor and adventure tourism is increasing all over the world, with cycle-tourism identified as a key growth area. In 2015, almost three million people went cycling while on holiday in Australia.

TO REDUCE PRESSURE ON THE PUBLIC PURSE

A study commissioned by the RAC found the economic, social, health and environmental benefits attributed to cycling infrastructure outweigh their costs incurred by between 3.4 and 5.4 times. In dollar terms, it is estimated that for every kilometre cycled, $1.42 of economic benefits are generated for the community.

TO REDUCE TRANSPORT IMPACTS ON THE ENVIRONMENT

Transport is Australia's third largest source of greenhouse gas emissions, with emissions from transport increasing nearly 60 per cent since 1990 – more than any other sector. In Australia, cars are responsible for roughly half of all transport emissions.

1. INTRODUCTION

1.1 Guiding principles

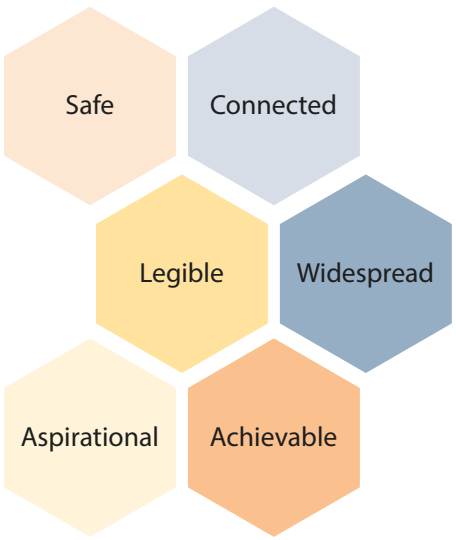
This strategy sets out a long-term vision to create a comfortable, direct and integrated cycling network for the Warren-Blackwood subregion, connecting people to activity centres, key attractions and destinations.

The proposed network has been developed to facilitate cycling for transport, recreation and tourism purposes. Cycling disciplines dependent on purpose-built recreational facilities (such as BMX parks, downhill mountain bike trails and velodromes for track cycling) typically perform non-transport related functions, and therefore fall outside the scope of this strategy.

This document is one of three 2050 cycling strategies covering the South West region. These strategies are:

- the Warren-Blackwood subregion, comprising the shires of Boyup Brook, Bridgetown-Greenbushes, Manjimup and Nannup (this document);
- the Bunbury-Wellington subregion, comprising the City of Bunbury and the shires of Capel, Collie, Dardanup, Donnybrook-Balingup and Harvey; and
- the Leeuwin-Naturaliste subregion, comprising the City of Busselton and Shire of Augusta Margaret River.

While separate, these three documents have been developed simultaneously and should be considered together.



The "8 to 80" design philosophy is about creating people-oriented towns and cities which are suitable for everyone. For example, if you design a cycle path that caters for the needs of an 8 or 80 year old, it is likely to be suitable for everyone.

The networks proposed in each of the strategies have been developed based on the following principles:

Safe: The 2050 cycling network should be built to a standard which reflects the "8 to 80" design philosophy. People of all ages should be able to cycle safely to the places they need and want to go to. Unprotected cycling facilities located on busy roads are not considered suitable for vulnerable road users, and will not encourage more people to cycle, more often.

Connected: Like a road network, all cycling routes should connect to something at each end – whether that be a destination, or another cycling route.

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

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

Aspirational: Given the long-term nature of this strategy, several ambitious ideas have been put forward to help position the Warren-Blackwood subregion as one of Australia's best regions for cycling. This includes several long-distance cycle-touring routes as shown in Figure 1.1.

Achievable: For the most part, the ideas proposed in this strategy adopt tried-and-tested planning principles. The case studies found in Section 4 provide local, interstate and international examples of similar projects undertaken in recent years.

1.2 Warren-Blackwood in context

The Warren-Blackwood subregion, comprising the shires of Boyup Brook, Bridgetown-Greenbushes, Manjimup and Nannup, is home to approximately 17,000 people. The subregion is bordered by the Leeuwin-Naturaliste subregion to the west, the Bunbury-Wellington subregion to the north, the Wheatbelt region to the north east and the Great Southern region to the south east. Renowned for its tall jarrah and karri forests, rolling hills and rugged coastline, the area is highly productive in terms of agriculture, forestry and mining. These natural assets combined with proximity to the regional cities of Busselton, Bunbury and Albany have also made the Warren-Blackwood subregion a popular tourism and lifestyle destination.

The **Shire of Boyup Brook** is home to approximately 1,700 people. With an economy mainly focused on agriculture, Boyup Brook plays host to several major events throughout the year including the Boyup Brook Country Music Festival, the Blackwood River Marathon and Harvey Dickson's Country Music Show and Rodeo.

The town offers a range of services and amenities for residents including a high school, hospital and a variety of recreation and sporting facilities. Areas of remnant bushland (such as Kura Kartaga Langa Nature Reserve) attract visitors to the region aspiring to see rare native animals including numbats and ringtail possums.

The **Shire of Bridgetown-Greenbushes** is located in the centre of the Warren-Blackwood subregion and features some of the most spectacular and rugged countryside in the South West. Bridgetown is the second largest town in the subregion and the primary administrative and service hub for the Shire of Bridgetown-Greenbushes.

The Shire has a population of around 4,600 (with 2,800 in Bridgetown itself) and covers an area of approximately 1,340 square kilometres. The town is linked to Bunbury via the South Western Highway. Being an accessible distance from Perth, the Shire has seen an increase in tourism and visitor numbers in recent years, as well as new residents seeking a laidback rural lifestyle.
The town of Greenbushes, located approximately 17 kilometres north of Bridgetown has recently experienced an economic resurgence due to a major expansion of the Talison Lithium mine.

The **Shire of Manjimup** has the largest population of the four shires, being home to approximately 9,300 people. The Shire's four townsites of Manjimup, Pemberton, Northcliffe and Walpole are connected by the Munda Biddi Trail, while the Bibbulmun Track also passes through the latter three towns, making them attractive destinations for adventure tourists.

Figure 1.2 Landscapes comprising undulating farmland and tall forests are typical of the Warren-Blackwood subregion.[1]

[1] *LH Image courtesy of* Tour of Margaret River

Manjimup is the primary commercial and administrative centre for the Shire, servicing the surrounding agricultural and forestry industries. The smaller towns of Pemberton, Northcliffe and Walpole have an international reputation for their outstanding forests and biodiversity. Key attractions within the Shire of Manjimup include several giant tree climbs, many sporting (including cycling) and cultural events, the D'Entrecasteaux and Walpole-Nornalup national parks, as well as a range of local food and wine producers.

The **Shire of Nannup** has the smallest population of the four Warren-Blackwood shires, with approximately 1,300 people. Nestled in the heart of the Blackwood River Valley, residents of Nannup enjoy a relaxed rural lifestyle while being within commuting distance of the nearby centres of Busselton and Margaret River. Nannup, which was originally developed as a timber milling town, now has a diverse economy including agriculture, horticulture and tourism. Despite its small population, the town regularly plays host to major events such as the Nannup Music Festival and the Tour of Margaret River road cycling race.
Also located in the Shire of Nannup is the Donnelly River Village, a former timber mill town that has been transformed into short stay accommodation suitable for families and school groups, as well as people undertaking the Munda Biddi Trail and Bibbulmun Track.

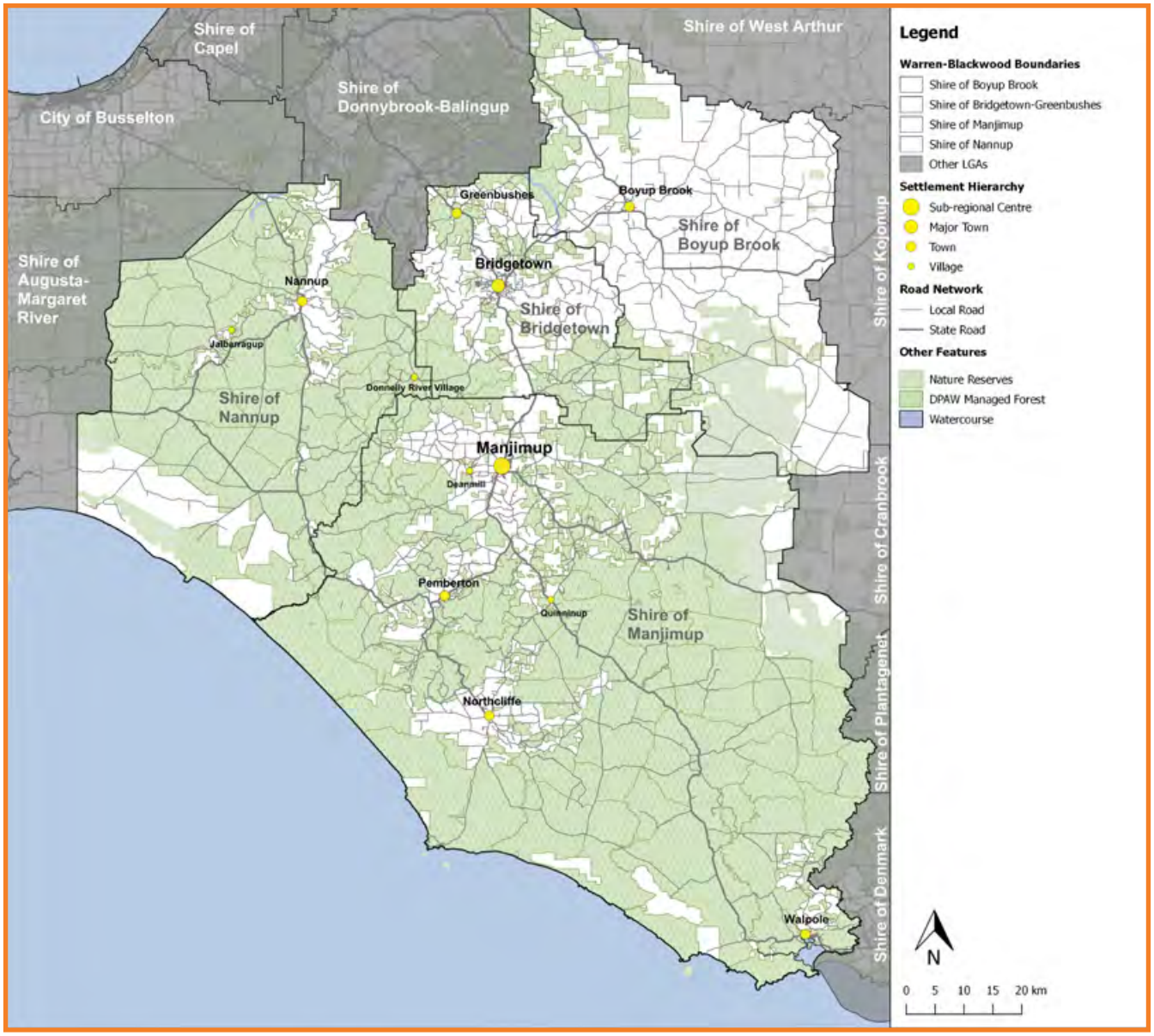


Figure 1.3 Warren-Blackwood subregion and settlement hierarchy.

1.3 The need for a long-term regional cycling strategy

This strategy is designed to help guide investment in cycling in the Warren-Blackwood subregion over the coming three decades. Other important reasons for preparing this cycling strategy include:

- To address key opportunities that may have previously been overlooked, particularly in relation to future land use and transport developments;
- To help guide investment between neighbouring local governments, and between local and State governments;
- To facilitate the planning and development of long-distance or inter-regional cycling routes, especially those that connect with other regions and subregions;
- To ensure the standard of future cycling facilities meets current best practice; and
- To adopt a consistent approach with other 2050 cycling strategies being developed across WA.

1.4 Expected changes in population, land use and transport

Over the past decade the Warren-Blackwood subregion's population has remained relatively stable. The Shire of Bridgetown-Greenbushes recorded the highest increase over this period, growing by approximately 12 per cent. While it is difficult to accurately forecast the subregion's population over the long-term, the relative stability seen over the past 10 years is anticipated to continue.

That said, several sub-divisions are underway in Manjimup, Bridgetown and Nannup to accommodate future increases in population. Additional land is also earmarked for residential development on the eastern side of the Blackwood River in Boyup Brook.

When it comes to the subregion's transport network, there are several potential projects that may be delivered prior to 2050.

These include further upgrades and realignments to the South Western Highway between Donnybrook and Walpole, upgrading of the Muir Highway from Manjimup to Nyamup, upgrading of passing lanes along Brockman Highway between Augusta and Nannup, and improvements to Manjimup Airport.

The future of the subregion's primary rail connection, the Bunbury-Northcliffe rail corridor, remains uncertain. While the section between Bunbury and Greenbushes is being maintained for potential future haulage purposes, there may be less economic justification for maintaining the segment between Greenbushes and Northcliffe. Section 4.1.2 explores potential options regarding the use of this corridor for rail trail development, either with or without train services.

1.5 Relationship with other documents

The *Western Australian Bicycle Network (WABN) Plan* identifies the need to review cycling facilities in WA's regional areas. Although many regional local governments have their own local bike plans, it is recognised that there is a need to develop long-term regional strategies which span across entire regions or subregions. Key objectives of this process include improving connections to activity centres and schools, identifying inter-regional routes and harnessing the potential of cycle-tourism.

Funding applications for the development of key strategic projects within these areas are often made through the Regional Bike Network (RBN) grants program. This program makes State Government funds available for the planning, design and construction of cycling infrastructure by local governments in regional WA, matched on a dollar-for-dollar basis.

Long-term regional cycling strategies such as this do not preclude local governments from preparing and implementing their own local bike plans. While the purpose of this strategy is to set out a blueprint for Warren-Blackwood's 2050 cycling network, local bike plans are still valuable in terms of identifying short-term priorities such as new local facilities, upgrades to existing infrastructure and maintenance requirements. Local bike plans are also important for outlining strategies around the activation of cycling infrastructure, behaviour change and education.

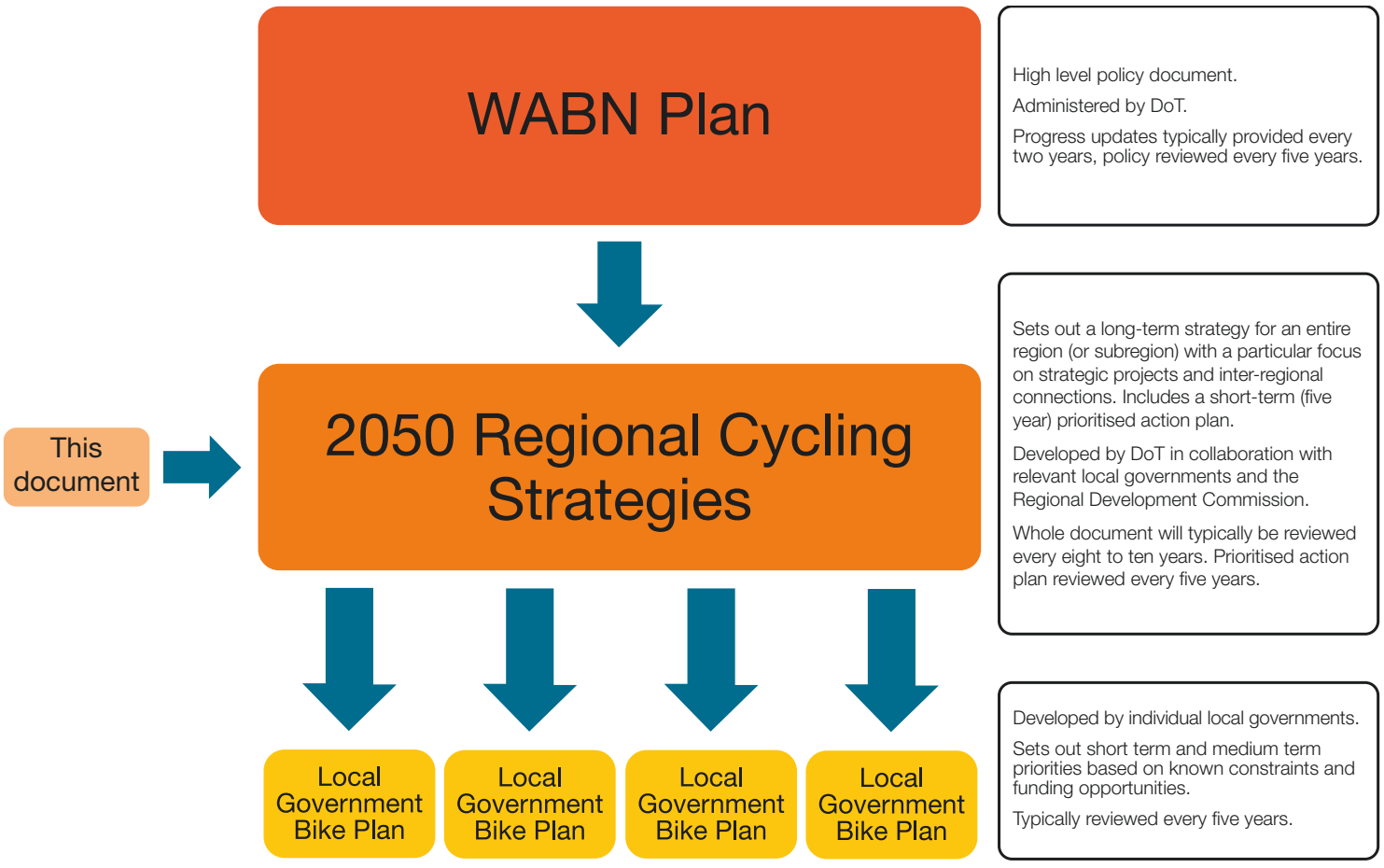


Figure 1.4 Flow chart illustrating the relationship between the *WABN Plan*, this document and local government bike plans.

1.6 Background research and analysis

1.6.1 Document review

In preparing this strategy several documents were reviewed pertaining to land use and transport in the Warren-Blackwood subregion. Combined with extensive stakeholder engagement, these documents were critical to understanding each local government's current approach to bike planning. A list of these documents is contained in Appendix B.

1.6.2 Mapping of current and future trip generators

Before commencing the development of the network, a mapping exercise was undertaken where all existing and known future trip attractors were mapped. Trip attractors are defined as any place someone could reasonably be expected to need or want to cycle to – these include places such as schools, shopping centres, industrial areas, health campuses and sporting precincts. The trip attractors for the Warren-Blackwood subregion are shown in the figures contained in Section 3.

1.6.3 Review of the existing cycling network

While there are some good examples of cycling infrastructure in the Warren-Blackwood subregion, most townsite cycling networks are not mature enough (in terms of their coverage, connectivity and separation from motorised traffic) to enable cycling to be a preferable transport mode for most people. There are some good examples of high-quality shared path infrastructure throughout the subregion, including the Linear Park, Deanmill and Perup Road paths in Manjimup, the Gloucester Tree Walk in Pemberton and the Coalmine Beach Shared Path in Walpole.

In terms of inter-town and inter-regional connections, most cycling currently takes place on low volume rural roads, with little to no dedicated cycling infrastructure or way-finding. The exception is the Munda Biddi Trail, a predominantly unsealed trail running from Mundaring (near Perth) to Albany. The trail links together various towns in the subregion, including Nannup, Manjimup, Pemberton, Northcliffe and Walpole. The Sidings Rail Trail forms part of the Munda Biddi and links Nannup to Jarrahwood.

Figure 1.5 A recently sealed section of the Deanmill Heritage Trail in Manjimup forms part of the Munda Biddi Trail.

1.6.4 Analysis of crash data

The most recent (2013-2017) five-year crash statistics were obtained from Main Roads Western Australia's (MRWA) Crash Analysis Reporting System. Both pedestrian and cyclist crash data was reviewed, noting pedestrians and cyclists often share infrastructure and dangerous areas for pedestrians are often also dangerous for cyclists. An analysis of this data is provided in Appendix B.

1.6.5 Analysis of GPS travel data

GPS mapping tool Strava Labs was employed to better understand which parts of the subregion's road and path networks are most heavily used by cyclists. 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. An analysis of this data is contained in Appendix B.

1.6.6 Stakeholder and community consultation

This strategy was developed in collaboration with the South West Development Commission and the shires of Boyup Brook, Bridgetown-Greenbushes, Manjimup and Nannup. As part of its development, consultation was undertaken with various government and non-government agencies.

Consultation with the local community was central to the development of the *Warren-Blackwood 2050 Cycling 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 cycling infrastructure, as well as the needs of different user groups;
- Reveal the major issues and missing links associated with the subregion's existing cycling network;
- Provide the community the opportunity to share their ideas; and
- Seek local buy-in and ongoing community support for the strategy.

The community consultation was carried out in two distinct phases. Phase 1 was undertaken shortly after project commencement and involved informal drop-in sessions at the shires of Nannup and Bridgetown-Greenbushes. Drop-in sessions were not held in the Shire of Manjimup due to the recent consultation undertaken as part of the *Shire of Manjimup Local Bicycle and Footpath Plan 2017-2027,* which also informed this document. In Boyup Brook, targeted meetings were held with interested residents and stakeholders.

Phase 2 consisted of a public comment period. A detailed analysis of the community consultation undertaken is contained in Appendix C.

2. REGIONAL ROUTE HIERARCHY

A hierarchy comprising five types of cycling route has been used to illustrate Warren-Blackwood's 2050 cycling network. This hierarchy will be adopted for all future cycling strategies in WA. An important aspect of the hierarchy is that unlike many traditional cycling infrastructure plans, routes are defined primarily by function, rather than built form.
The key differences between the five types of route are explained in Sections 2.1 to 2.5, with additional detail provided in Appendix A.

2.1 Primary routes

Primary routes generally form the backbone of a cycling network. Sometimes referred to as freeways for bikes, primary routes afford cyclists 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 and ideally, are at least three metres wide. To ensure high levels of rideability and legibility, red asphalt is usually the preferred surface treatment.

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 walking and cycling facilities.

Shared path parallel to a major road

Shared path along former rail corridor

Shared path along river foreshore

Shared path along coastal foreshore

Figure 2.1 Primary routes form the backbone of a cycling networks and allow cyclists to safely undertake long, uninterrupted journeys.

2.2 Secondary routes

Secondary routes are typically located within urban or built-up environments. The aim of these routes is to provide users with access to and from important trip attractors such as shopping centres, industrial areas, as well as education, health and sporting precincts.

In most cases, secondary routes are located adjacent to arterial roads and take the form of protected on-road bike lanes. Going forward, it is important the design of all new cycling infrastructure (including secondary routes) incorporates the “8 to 80” design philosophy.

To ensure on-road cycling infrastructure is safe and attractive to a wide range of users, separation in the form of concrete kerbing is desirable to minimise the interaction between cyclists and motorised traffic – 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. Due to this, 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 cycle route at intersecting minor roads and driveways.

Bike lane protected by concrete kerb

Bi-directional bike lane separated with bollards

Bike lane separated by mountable plastic kerbing

Shared path with priority over minor road

Figure 2.2 Secondary routes are typically found in busier, built-up environments and can consist of either on-road or off-road cycling infrastructure.

2.3 Local routes

The objective of local routes is to collect cycling traffic from local residential areas and distribute it to the secondary and primary networks. Local routes are used by cyclists to access a range of lower-order destinations such as local shops and parks. The look and feel of these types of route is distinctively different from primary and secondary routes and may include:

- 30 km/h safe active streets which adopt "self-explaining street" and "filtered permeability" urban design principles;
- very quiet suburban streets, communicated using way-finding and other signage;
- sections of shared path (normally linking two or more quiet streets together); or
- 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.

30 km/h safe active street

Residential street with sharrows[2]

Shared path linking two quiet streets together

One-way slow point with bicycle-bypass facilities[3]

Figure 2.3 Local routes are typically used to connect residential areas with higher-order cycling facilities.

[2]*Sharrows are a wayfinding tool that assist cyclists with on road positioning and also alert motorists to the likely presence of people on bikes.*

[3]*Image courtesy of Malcolm Daff*

2.4 Tourist trails

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

In some cases, tourist trails cater for other types of user including bushwalkers, horse-riders and motorbike-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, tourist 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 extensive way-finding signage is used to direct users to, from and along the route.

Tourist trails are often constructed along the alignments of disused or closed railways, commonly referred to as rail trails. Other potential corridors for tourist trails include 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 tourist trails is typically led by local government or the Department of Biodiversity, Conservation and Attractions. Funding is often sought through the Department of Local Government, Sport and Cultural Industries or Lotterywest. Other government agencies such as the DoT and Tourism WA can assist in the planning, design and promotion of these facilities.

Trail along river foreshore

Trail along closed railway

Trail within utility corridor

Trail along firebreak adjacent to property boundary

Figure 2.4 Unsealed tourist trails play an important role in connecting towns. They can also be used in areas where higher standard facilities cannot be justified or where they would spoil the natural environment.

2.5 Road cycling routes

Cycling is one of the most popular forms of recreation in WA, ranking third for males and fifth for females. There are two broad types of recreational cyclist in WA – leisure cyclists and sports cyclists. While investment has traditionally been directed towards providing infrastructure that supports leisure cycling, there is an emerging need to provide road cycling routes that cater for the needs and aspirations of people cycling long distances for training, sport or recreational purposes. For this user group, distances of 100 kilometres or more are achievable.

This type of cycling, 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.

Initiatives may include shoulder widening, pull-off bays, advisory signage and electronic flashing warning signage that detects when groups of cyclists are using certain sections of road. A detailed assessment is required in partnership with cycling bodies to determine appropriate locations and preferred safety measures, which will likely differ on each route.

Further supporting the safety of road cyclists in WA is the introduction of safe passing legislation. From 30 November 2017, a driver of a motor vehicle must pass a bicycle travelling in the same direction at a safe distance (one metre on roads with a posted speed limit of 60 km/h or less and 1.5 metres on roads greater than 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 is required to keep between their vehicle and a bicycle when overtaking. The results of the two-year trial will be evaluated by the Road Safety Commission in 2020.

Road cycling is often undertaken by groups or clubs

Advisory signage (WA)

Advisory signage (Victoria)

Dynamic flashing warning lights (Victoria)

Figure 2.5 Road cycling routes are predominantly used by people riding for training, sport or recreational purposes over longer distances and consist of advisory measures, such as signage and electronic flashing warning lights.

3. PROPOSED NETWORK

3.1 Overall network

Figure 3.1 provides an overview of the proposed 2050 Warren-Blackwood cycling network. The network features a dense core of primary, secondary and local routes in the main population centres of Boyup Brook, Bridgetown, Greenbushes, Manjimup, Nannup, Northcliffe, Pemberton and Walpole, connected by a series of inter-regional routes providing the following links:

- Boyup Brook to Donnybrook and Katanning via the Donnybrook-Katanning rail corridor;
- Bridgetown to Northcliffe and Bunbury via the Bunbury-Northcliffe rail corridor;
- Nannup to Busselton via an extension of the Sidings Rail Trail;
- Bridgetown to Nannup and Boyup Brook via a tourist trail along the Blackwood River Valley; and
- Nannup to the Leeuwin-Naturaliste subregion via the informal Coast to Nannup Track.

The exact alignment of some routes may change following further feasibility assessment and consideration of local environmental, heritage and engineering constraints. Of particular relevance to the South West region are public drinking water source areas. Prior to the development of paths or trails in these areas, it is critical that consultation is undertaken with the Department of Water and Environmental Regulation.

Figure 3.1 Proposed 2050 cycling network for the Warren-Blackwood subregion.

3.2 Northern towns

Figure 3.2 illustrates the cycling routes proposed for the northern towns of Nannup, Boyup Brook, Greenbushes and Bridgetown. Key features include:

→ **Nannup:**

- A primary route following the Blackwood River from Nannup Caravan Park to the creek near the intersection of Brockman Highway and Vasse Highway;
- Secondary routes that run along major arterial roads including the main street (from Brockman Street to the Cockatoo Valley subdivision), Brockman Street and Kearney Street;
- A series of local routes linking residential areas to higher-order cycling facilities; and
- Several inter-town tourist trails linking Nannup to Jarrahwood and Busselton (via the existing Sidings and Old Timberline rail trails), Donnelly River Village (via the existing Munda Biddi Trail), the Margaret River region (via the Coast to Nannup Track) and Bridgetown (via a formalised/signposted trail following the Blackwood River Valley).

→ **Boyup Brook:**

- A primary route alongside the railway (from Jayes Road to the Flaxmill Caravan Park);
- A number of secondary routes around town including Railway Parade and Abel, Beatty, Bridge and Jackson streets;
- A series of local routes connecting residential areas to secondary routes; and
- Several inter-town tourist trails linking Boyup Brook to Donnybrook and Katanning (via a future potential rail trail) and Bridgetown (via a formalised/signposted trail following the Blackwood River Valley).

→ **Bridgetown:**

- Two primary routes, one along the Blackwood River (between Mattamattup Street and South West Highway) and one along the railway corridor (between William Street and the Blackwood River);
- Secondary routes along key corridors including Nelson Street, Hampton Street, Roe Street, Steere Street, Gifford Road and Bridgetown-Boyup Brook Road (providing a link to the sporting complex);
- Numerous local routes linking residential areas to higher-order cycling facilities; and
- Two inter-regional tourist trails including a trail along the Blackwood River Valley (connecting Bridgetown to Nannup and Boyup Brook) and a trail following the Bunbury-Northcliffe rail corridor (connecting Bridgetown to Greenbushes and Manjimup).

→ **Greenbushes:**

- A secondary route along Blackwood Road extending from Greenbushes Primary School to Greenbushes Sports Complex;
- A handful of local routes connecting residential areas to high-order cycling facilities; and
- Two tourist trails including a trail following the Bunbury-Northcliffe rail corridor (connecting North Greenbushes to Balingup and Bridgetown) and an extension of the Greenbushes Link Trail connecting Greenbushes to the proposed Bunbury-Northcliffe trail.

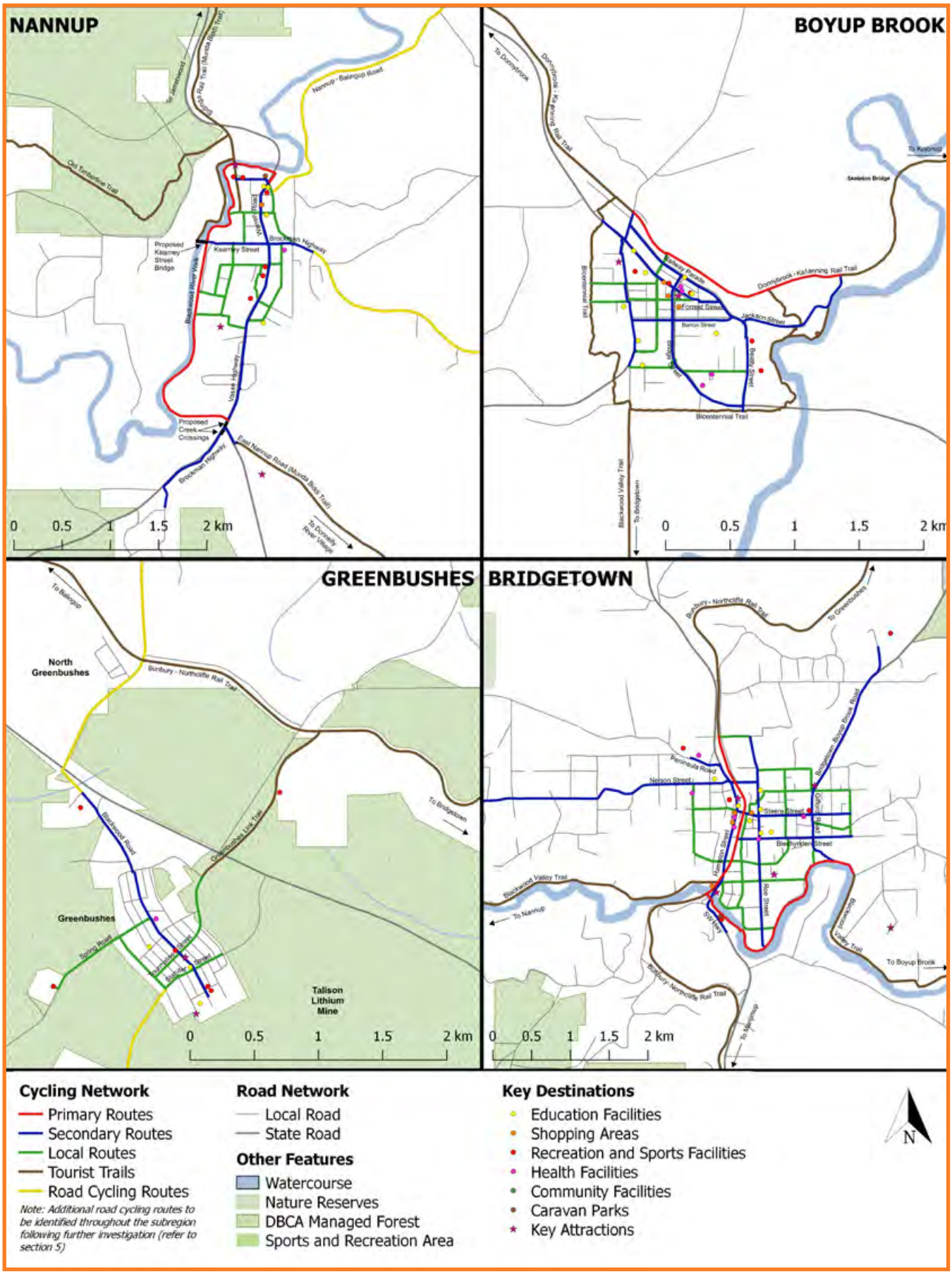


Figure 3.2 Proposed 2050 cycling networks for Nannup, Boyup Brook, Greenbushes and Bridgetown.

3.3 Southern towns

Figure 3.2 illustrates the cycling routes proposed for the southern towns of Manjimup, Pemberton, Northcliffe and Walpole. Key features include:

→ **Manjimup:**

- A series of secondary routes along key corridors including Graphite Road, Mount Street, Rutherford Street, Brockman Street, Ipsen Street, Rose Street, Somerville Street, O'Connor Street, Wetherell Street, Blechynden Road and Pritchard Street;
- Various local routes linking residential areas to higher-order cycling facilities; and
- Inter-town tourist trails linking Manjimup to Donnelly River Village and Quinninup (via the existing Munda Biddi Trail) and Bridgetown and Pemberton (via a trail along the Bunbury-Northcliffe rail corridor).

→ **Pemberton:**

- A primary route running parallel to the railway between Golf Links Road and Vasse Highway/Brockman Street;
- A series of secondary routes across the Pemberton township including the main street (Vasse Highway/Brockman Street), Widdeson Street, Ellis Street and Kennedy Street;
- Several local routes connecting residential areas to higher-order cycling facilities; and
- Inter-regional tourist trails connecting Pemberton to surrounding townships including Quinninup and Northcliffe (via the Munda Biddi Trail) and Manjimup and Northcliffe (via a future trail along the Bunbury-Northcliffe rail corridor).

→ **Northcliffe:**

- A primary route running parallel to Wheatley Coast Road (between the sports ground and Old Mill Road);
- Secondary routes along Zamia Street and Main Road;
- A handful of local routes connecting residential areas to higher-order cycling facilities; and
- Two inter-town tourist trails including a trail along the Bunbury-Northcliffe rail corridor (providing a connection to Pemberton) and the existing Munda Biddi Trail (providing connections to Pemberton and Walpole).

→ **Walpole:**

- A primary route that encircles the Walpole townsite, including a future potential bridge across the channel linking the Walpole and Nornalup inlets (refer to Section 4.2.5);
- Secondary routes along several key corridors including Walpole Street, Boronia Street, Vista Street, Swarbrick Street and Karri Street;
- A network of local roads forming connections between primary and secondary routes; and
- The existing Munda Biddi Trail connecting Walpole to Northcliffe and Denmark.

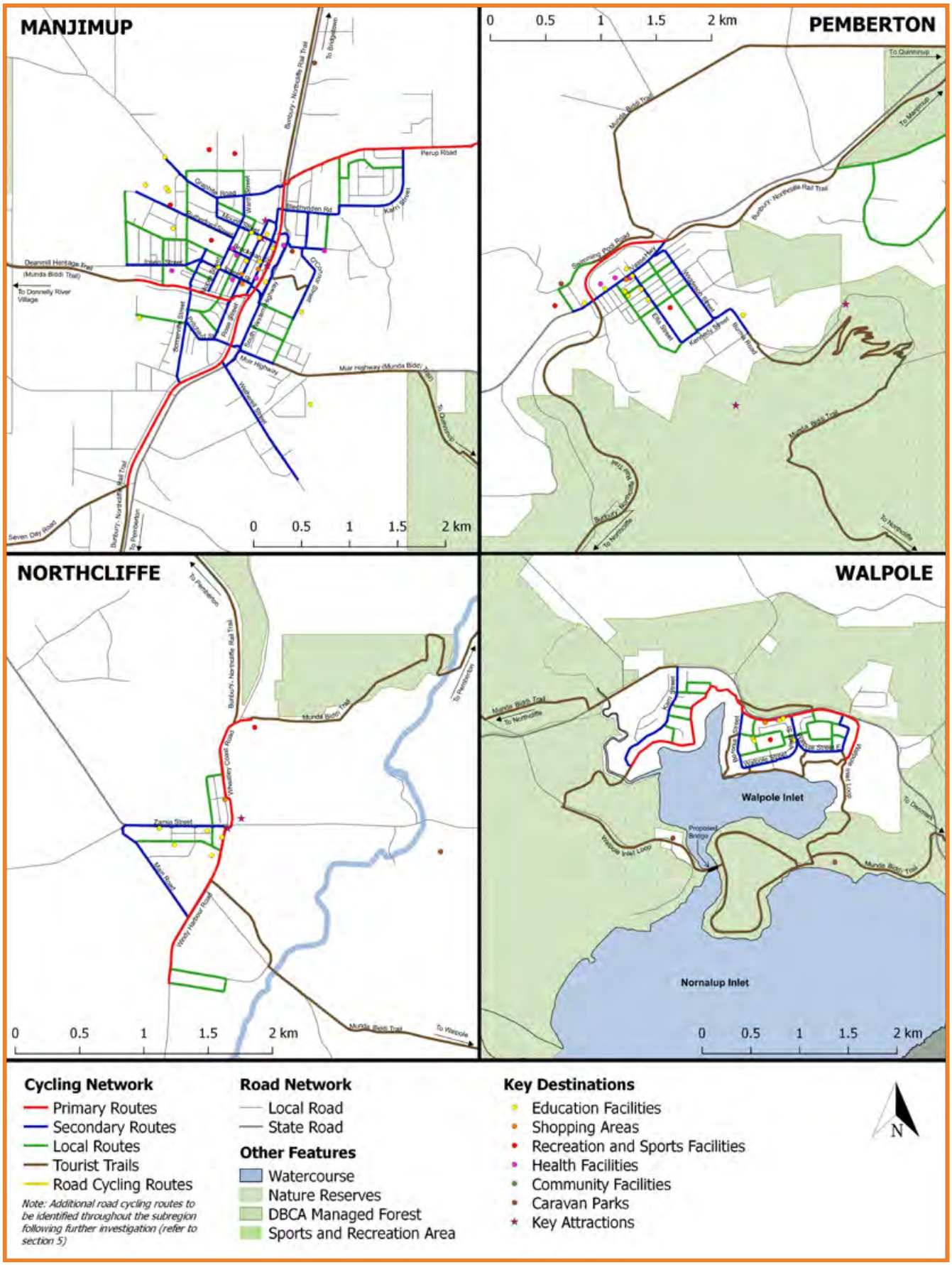


Figure 3.3 Proposed 2050 cycling networks for Manjimup, Pemberton, Northcliffe and Walpole.

4. THE WAY FORWARD

This section outlines the way forward for Warren-Blackwood through the identification of key themes and opportunities for cycling throughout the subregion. Case studies are used to illustrate where similar outcomes have been achieved elsewhere.

4.1 Harnessing the potential of rail corridors

The intrinsic characteristics of rail corridors make them especially appealing for cycling infrastructure. Not only do they provide continuous and uninterrupted rights-of-way, rail corridors also tend to have relatively gentle gradients, making for more comfortable cycling experiences, particularly over long distances.

Other benefits associated with co-locating cycling infrastructure within rail corridors include:

- Highlighting the natural, cultural and heritage values of a local area;
- Providing additional connections between towns and suburbs;
- Increasing the profile of a region and opening up tourism opportunities (refer to Section 4.1.5); and
- Preserving rail corridors for future use, also known as railbanking (refer to Section 4.1.7).

4.1.1 Summary of rail trail opportunities

Within the south west corner of WA there is significant potential to re-purpose the region's extensive network of non-operational railways as a world-class network of walking, cycling and (potentially) horse-riding trails. Connecting virtually every town in the region, there are over 500 kilometres of closed, disused and dormant railways.

Table 4.1 summarises the status, management and opportunities associated with the three rail corridors which pass through the Warren-Blackwood subregion.

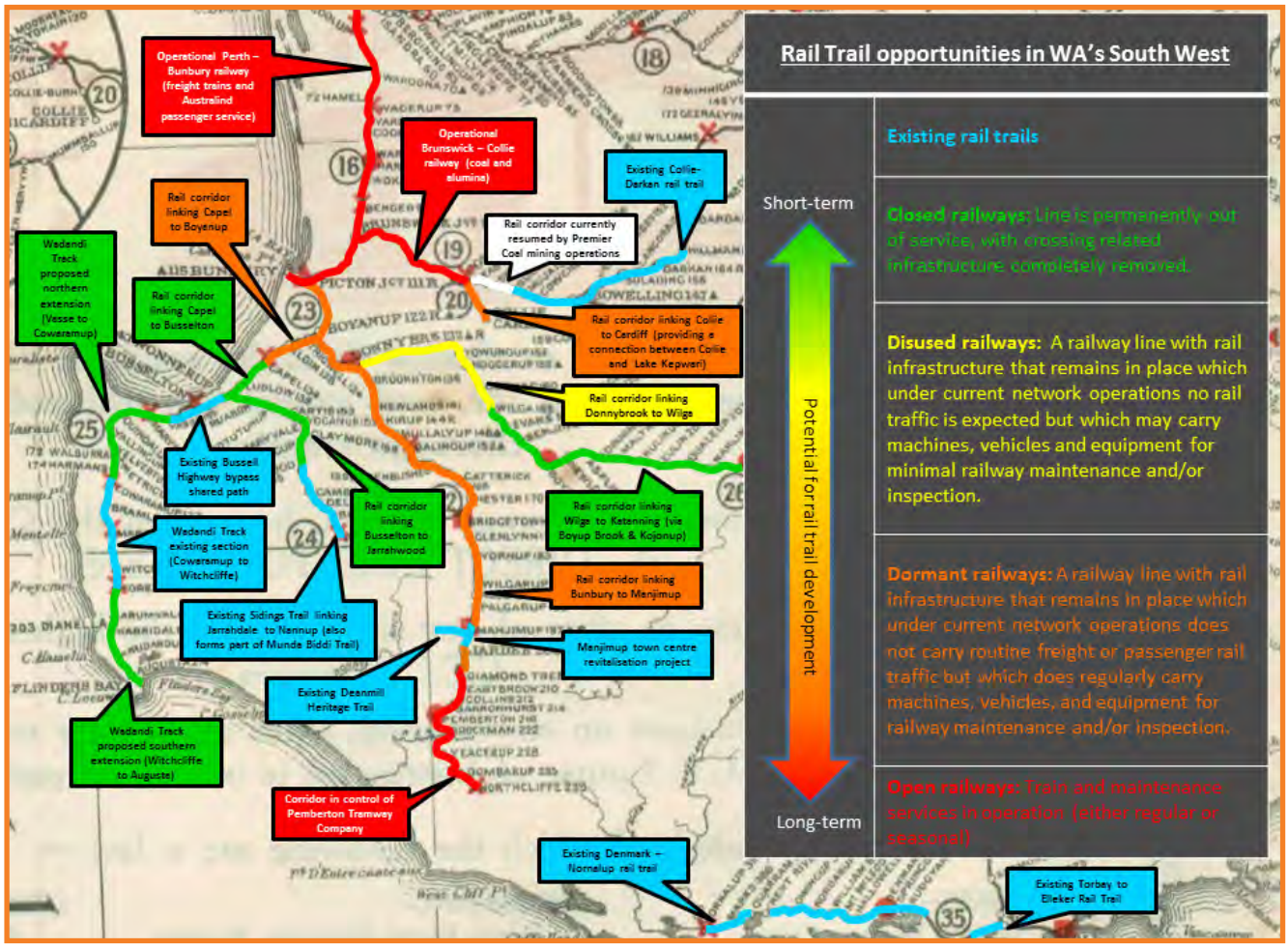


Figure 4.1 There are more than 500 km of dormant, disused and closed railways located in the south west corner of WA.

Line	Section / Status	Managed by	Length	Potential opportunities
Bunbury – Northcliffe Railway	**Open** between Bunbury and Picton	Arc Infrastructure	~4 km	• Arguably one of the best rail trail candidates in WA, linking together many towns and traversing a range of unique and diverse landscapes • Provides a much safer (and flatter) alternative to the South Western Highway • Complements the Munda Biddi Trail, providing the opportunity to create "figure 8" loops
	Dormant between Picton and Bunbury	Arc Infrastructure	~133 km	
	Dormant between Graphite Road and 100 m south of Seven Day Road (Manjimup)	Shire of Manjimup	~3 km	
	Dormant between Ipsen Street and Lambert	Arc Infrastructure	~9 km	
	Open between Lambert and Northcliffe	Pemberton Tramway Company	~56 km	
Donnybrook – Katanning Railway	**Disused** between Donnybrook and Wilga	Arc Infrastructure	~53 km	• Section between Donnybrook and Boyup Brook provides food and wine tourism opportunities for horticulture businesses located in the Preston Valley • Provides linkages to small communities at Lowden, Yabberup and Mumballup • Opportunity for potential inter-regional connection to Kojonup, Katanning and other towns located in the Great Southern region
	Closed between Wilga and Katanning (excluding a short section operating by Kojonup Tourist Railway)	Public Transport Authority	~159 km	
Busselton – Nannup Railway	**Closed** between Busselton and Jarrahwood (also known as the Ruabon – Tutunup rail reserve)	Public Transport Authority Existing Sidings Trail between Jarrahwood and Nannup	~35 km	• Provides link between Leeuwin-Naturaliste and Warren-Blackwood subregions • Links together the Wadandi Track and Munda Biddi Trail
	Existing Rail Trail between Jarrahwood and Nannup (known as the Sidings Trail)	Public Transport Authority, but leased to Department of Biodiversity, Conservation and Attractions	~27 km	

Table 4.1 Summary of rail trail opportunities in the Warren-Blackwood subregion.

4.1.2 Opportunity: Developing a rail trail between Bunbury and Northcliffe

This strategy, together with the *Bunbury-Wellington 2050 Cycling Strategy*, recognises the significant potential surrounding transforming the Bunbury-Northcliffe rail corridor into a world-class multiuse rail trail.

In addition to creating a north-south cycling link through the Warren-Blackwood subregion, this corridor provides an opportunity to create an inter-regional link to the Bunbury-Wellington subregion.

A number of factors make this corridor particularly conducive to rail trail development, including:

- The corridor's gentle gradient (generally less than two per cent) making it a far easier undertaking than the Munda Biddi Trail;
- Complete separation from motorised traffic (making it an attractive riding environment for children and families);
- A diverse range of scenery ranging from the flat Swan Coastal Plain and undulating farmland to the tall jarrah and karri forests;
- Short distances between settlements (approximately one town every 15 to 20 kilometres, which is unique for WA) providing many points of interest;
- Easy access to food, water and accommodation, mitigating the need for users to carry heavy supplies and camping equipment;
- The ability to provide synergies with the Munda Biddi Trail, enabling the creation of a "figure 8" loop linking Manjimup, Pemberton and Northcliffe which is suitable for day-trippers and families; and
- The potential to repurpose heritage station buildings and other rail-related infrastructure.

Figure 4.2 The Bunbury-Northcliffe rail corridor has the right ingredients to become one of Australia's best multiuse rail trails.

Issues preventing the immediate transformation of this corridor into a rail trail pertain mainly to asset management, funding and land tenure. As shown in Figure 4.3, the majority of the Bunbury-Northcliffe rail corridor is managed by Arc Infrastructure through a lease agreement set to expire in 2049. Although out of operation since the early 2000s, certain sections could become operational again with the Talison Lithium mine commencing operations at Greenbushes.

Due to the deteriorated state of the railway, it is understood that significant works are required to return it to a condition capable of supporting freight services. If this were to occur, it may be possible to leverage this investment as a way of establishing a parallel multiuse trail. Section 4.1.7 explores the concept of railbanking. Railbanking involves using rail corridors for trail development until such time as rail operations become economically feasible again.

In addition to the above, the section between Lambert and Northcliffe is currently managed by the Pemberton Tramway Company. While this may further complicate potential future trail development, it should be noted that the tourist tramway only operates along a 10 kilometre section between Pemberton and the Warren River Bridge, for which there are several parallel alternatives.

Figure 4.3 The Bunbury-Northcliffe rail corridor links together 11 population centres, which are collectively home to over 90,000 people.

4.1.3 Opportunity: Developing a rail trail between Donnybrook and Katanning

The disused railway between Donnybrook and Katanning represents another significant rail trail opportunity for the subregion. As shown in Figure 4.4, the corridor connects a number of towns and settlements, including Donnybrook, Boyup Brook, Kojonup and Katanning. Of relevance to this strategy is the section extending from Wilga to Qualeup, which falls within the Shire of Boyup Brook. The remainder of this corridor is located in the shires of Donnybrook-Balingup, Kojonup and Katanning.

The Boyup Brook section, which is approximately 70 kilometres in length, remains under management of the Public Transport Authority. In addition to creating an east-west link across the Warren-Blackwood subregion, this rail trail would also provide connectivity to the Great Southern region and the Bunbury-Wellington subregion.

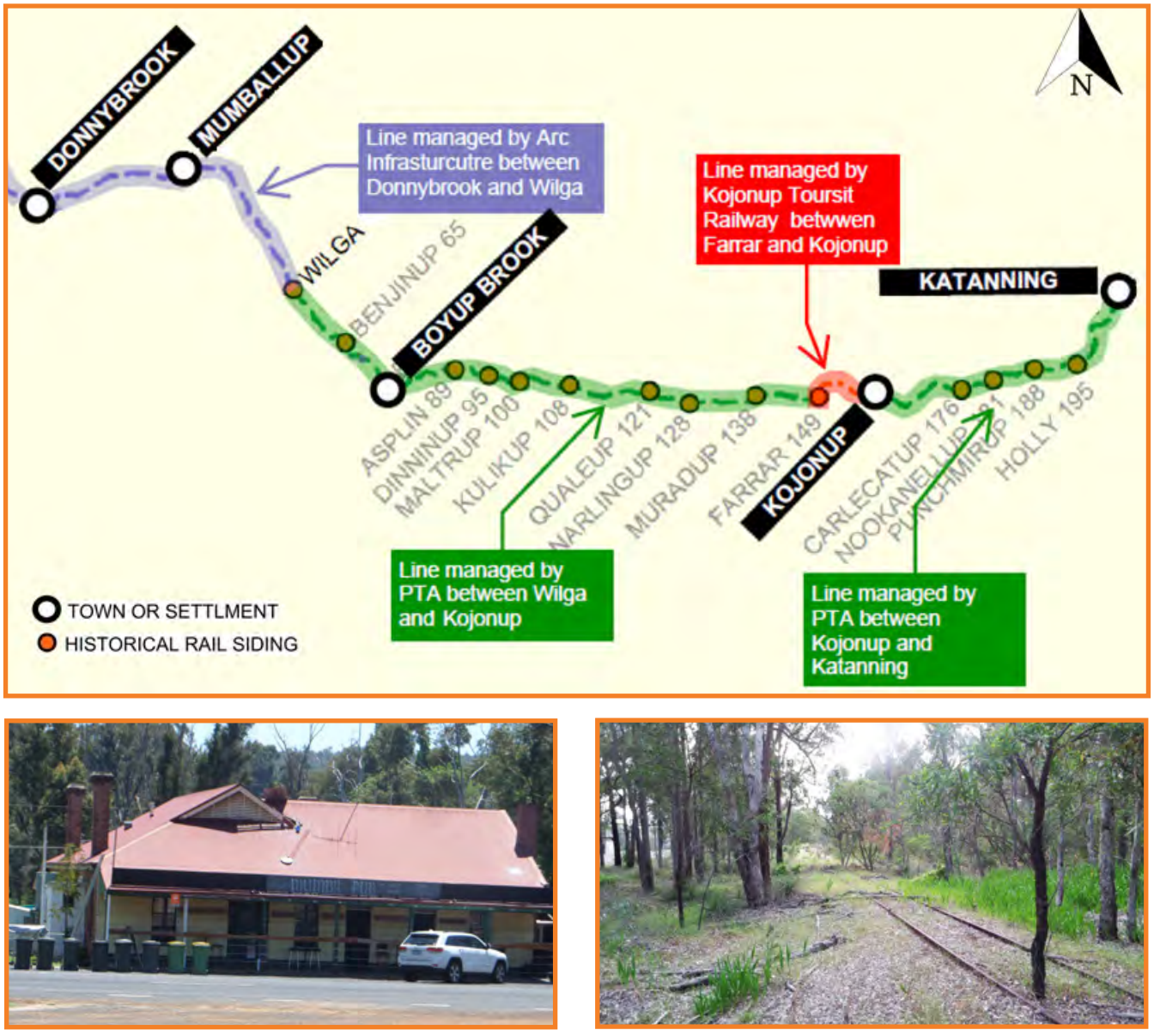


Figure 4.4 Inoperational since 1982, the Donnybrook-Katanning rail corridor has great potential to be reimagined as a 244 kilometre long tourist trail, connecting several towns and settlements.

Attributes that make this corridor particularly conducive to the development of a rail trail include:

- A diverse range of scenery including vineyards, orchards, broadacre farmland and remnant bushland;
- The corridor remains largely intact (unlike many other railway reserves around Australia where sections have been sold or claimed by adjacent land owners);
- The existence of a number of impressive timber bridges, many of which remain in serviceable condition (including the imposing Skeleton Bridge shown in Figure 4.5, located just east of Boyup Brook);
- Several accommodation and service providers already exist along the route; and
- The possibility of staging the development over a number of years (most likely starting in Donnybrook and working east).

Supporting the development of this rail trail are the *Shire of Donnybrook-Balingup Trails Master Plan (2011)*, the *Bunbury-Wellington and Boyup Brook Regional Tourism Development Strategy (2015)* and the *Bunbury-Wellington 2050 Cycling Strategy (2018).*

Figure 4.5 Skeleton Bridge, located about 2 km east of Boyup Brook, is one of several imposing bridges which would feature along the Donnybrook-Katanning rail trail[4].

[4]*Top image courtesy of Boyup Brook Tourism Association*

4.1.4 Opportunity: Extending the Sidings Rail Trail to Busselton

Jarrahwood, located approximately 27 kilometres north of Nannup, is a small historical timber mill community located within the City of Busselton. Until the mill's closure in 1984, the town was connected to Busselton and Nannup via the Nannup Branch Railway. In 2007, the section of railway located between Nannup and Jarrahwood was transformed into the popular Sidings Rail Trail (which now also forms part of the Munda Biddi Trail).

The section of railway north of Jarrahwood is yet to be formally designated as a trail. Known as the Ruabon-Tutunup rail corridor, this thin strip of remnant bushland is a significant biodiversity hotspot. The corridor provides an important environmental link between the jarrah forests of the Whicher Scarp and the internationally recognised (and Ramsar listed) Vasse-Wonnerup Wetlands System.

The development of a rail trail along the Ruabon-Tutunup rail corridor would create an important cycle link between the Leeuwin-Naturaliste and Warren-Blackwood subregions. It would also connect Busselton to the Munda Biddi Trail, helping the Jarrahwood community realise its potential as a cycle-tourism hub, and create additional cycle-tourism related opportunities for the South West more generally.

While issues around environmental sensitivity may present some challenges, the corridor's recreational potential has been recognised in the *Ruabon Tutunup Management Plan (2007)*. The plan highlights how any such development would need to be appropriately planned and managed to ensure access does not degrade the conservation values of the reserve.

While this opportunity sits outside the subregion, it is important the Shire of Nannup works with the City of Busselton in putting steps in place to see this link realised, particularly given the significant potential benefits for the Warren-Blackwood subregion.

Figure 4.6 The Ruabon-Tutunup rail corridor could be used to connect the Leeuwin-Naturaliste and Warren-Blackwood subregions, via Jarrahwood.

4.1.5 CASE STUDY: THE TOURISM POTENTIAL OF RAIL TRAILS

There is strong evidence supporting the economic and social benefits generated by rail trails for regional Australia. Although it is uncommon to charge access fees, users of rail trails contribute to the local economy in several other ways. In addition to food and hospitality industries, other businesses such as bike shops or those providing transport to and from trail heads can also benefit from the development of rail trails.

Rail trails also support slow travel – a term used to describe travellers who explore destinations more thoroughly, taking time to acquaint themselves with the local people, culture and food.

People who adopt the slow travel philosophy tend to report higher rates of spending compared to the average population.

As identified in the *Western Australian Cycle Tourism Strategy*, cycle-tourists are a highly valuable visitor due to their propensity to stay longer, travel outside of urban centres and spend more. In Australia, the average daily spend of a cycle-tourist is approximately $124 per day[5].

Some usage and economic statistics for a selection of Australia and New Zealand rail trails are provided in Table 4.2.

Rail trail example	Usage and economic statistics
Hauraki Rail Trail, New Zealand (opened in 2013)[6]	- Nearly 30,000 riders pass through Paeroa (a town on the trail) per annum. - It has been estimated that visitors spend an average of $172 per trip, up from $105 in 2012, with net expenditure between $2.1 and $3.3 million per annum. - Approximately 50 full time jobs have been created because of the trail. - 85 per cent of users are visitors to the region, with most being domestic visitors. - 80 per cent of users indicated that the rail trail was their main purpose of visit. - At least 50 per cent of users are in the 45 to 65 age bracket.
Otago Central Rail Trail, New Zealand (opened in 1994)[7]	- Nearly 15,000 people ride the trail end-to-end every year. In addition to this, it is estimated that 80,000 people use sections of the trail to commute or undertake short recreational rides. - The average age of riders is 45 for domestic and 37 for international. There is no significant difference between the number of male and female riders. - Most end-to-end users are first-time visitors to the area and spend an average of 3.8 nights in the region. - The largest international visitor market is from Australia, followed by Europe. Two thirds of domestic visitors are from the North Island of New Zealand. - In 2012 it was estimated that the trail created 120 full time jobs and contributed $12 million to the Central Otago economy per annum, creating business opportunities and energising small communities.
Murray to the Mountains Rail Trail, Victoria (opened in 2002)[8]	- Construction of the trail between Bright, Wangaratta and Beechworth was completed in 2002, with subsequent sections from Rutherglen to Wahgunyah and Wangaratta to Oxley completed in 2009 and 2011 respectively. - The trail attracts approximately 45,000 users per annum including walkers, with most people spending two or three days on the trail. - For the majority of visitors (59 per cent), cycling is the main reason for undertaking their trip to the region. - In 2011 it was estimated that the trail contributed $26.2 million per annum in economic output to the region and created 23 full time jobs.

Table 4.2 Usage and economic statistics of regional rail trails from around Australia and New Zealand.

[5] *Western Australian Cycle Tourism Strategy (2018)*
[6] *Information on the HRT sourced from https://haurakirailtrail.co.nz/, https://www.tcdc.govt.nz, http://www.hauraki-dc.govt.nz*
[7] *Information on the OCRT sourced from http://www.otagocentralrailtrail.co.nz, http://www.northernriversrailtrail.org.au*
[8] *Information on the M2MRT sourced from https://www.railtrails.org.au, North East Victorian Tourism Gap Analysis (2012), North East Rail Trail Preliminary Demand and Economic Benefit Assessment (2014)*

4.1.6 CASE STUDY: THE WADANDI TRACK

A leading example of a rail trail in WA is the Wadandi Track located in the Shire of Augusta Margaret River. The track, which utilises the former Busselton-Flinders Bay Railway, currently extends approximately 23 kilometres from Cowaramup to Witchcliffe. Although unsealed, the trail has a compacted gravel surface and good drainage, making it suitable for a wide variety of bikes.

In addition to being used for tourism and recreational purposes, the trail also forms an important transport link between the various towns in the Capes region. Over time, the rail trail will be extended south to Augusta and north to Busselton, further enhancing cycle-tourism opportunities in the region.

Figure 4.7 The Wadandi Track, located on the alignment of the former Busselton-Flinders Bay Railway is popular with both tourists and locals in the Margaret River region.[9]

[9] *Top image courtesy of the Uncool Cycling Blog; bottom images courtesy of Transplan Pty Ltd*

4.1.7 CASE STUDY: RAILBANKING INACTIVE RAIL CORRIDORS FOR FUTURE GENERATIONS

Railbanking is the concept of preserving inactive rail corridors for possible future use. Allowing these corridors to be used for trail development enables bridges, culverts and other infrastructure to remain intact, while simultaneously preserving the corridor for future use should rail transport become economically feasible again. Depending on agreements between parties, railbanking can potentially relieve the asset owners from trespassing issues and ongoing maintenance costs.

Figure 4.8 Repurposing closed, disused or dormant railways for trail development can help preserve these corridors for future use, should rail operations become economically feasible again.

The Bunbury-Northcliffe rail corridor, discussed in Section 4.1.2, is one such railway that is a potentially good candidate for railbanking. Disused for nearly two decades, it is unlikely train operations will resume in the short-term, particularly south of Greenbushes.

Railbanking is a voluntary agreement between a railway asset owner and another agency to establish a trail within an out-of-service rail corridor until such time that the corridor is needed again for rail service. It works under the evidence that if a public asset is not used, it is eventually lost.

4.2 Capitalising on watercourses

Like rail corridors, cycling routes that follow watercourses tend provide a high-level of amenity to the people who use them. In addition to being peaceful and relatively flat, these cycling routes tend to be located well away from motorised traffic, making them attractive to a broad range of users. Key opportunities for the Warren-Blackwood subregion include:

- Enhancing local townsite river trails (refer to Section 4.2.1);
- Developing a long-distance cycle-touring trail following the Blackwood River Valley all the way from Nannup to Boyup Brook (refer to Section 4.2.3); and
- Creating a loop around the Walpole Inlet (refer to Section 4.2.5).

4.2.1 Opportunity: Enhancing local river trails within townsites

As illustrated in Figure 4.9, the townsites of Nannup, Bridgetown and Boyup Brook all have existing trails following the Blackwood River. Already popular with recreational users, these kinds of routes (in the right location) can also enable people to ride for transport purposes, such as to work or school, when designed appropriately.

It should be noted that informal tracks have been established along some sections where there is no existing trail, indicating strong desire lines for both pedestrians and cyclists.

River Walk, Nannup

Bicentennial Trail, Boyup Brook

Blackwood River Trail, Bridgetown

Old Rectory Trail, Bridgetown

Figure 4.9 There is scope to improve the river trails in the Nannup, Boyup Brook and Bridgetown townsites to provide better connectivity for people on bikes.

Within each of these townsites there is significant scope to extend or enhance these trails through a range of measures, including:

- Extending the trails further upstream, downstream or developing additional routes on the opposite river banks connected by footbridges to facilitate loops (like that shown in Figure 4.10);
- Widening paths, where appropriate, to enable people walking and riding to share the trails more comfortably;
- Sealing trails, where appropriate, as a way of mitigating erosion issues and providing universal access for people with disability; and
- Formalising and promoting trails through improved way-finding and promotional material.

The Shire of Nannup has undertaken some preliminary feasibility work surrounding the development of a second footbridge across the Blackwood River. The proposed bridge would be located at the western end of Kearney Street, providing a link to existing trails located on the western bank of the Blackwood River, as well as the North Nannup subdivision. Construction of the bridge would create a loop, complementing the Shire of Nannup's recent improvements to the River Walk Trail which includes a significant boardwalk structure.

Going forward, it is envisaged similar types of projects may be feasible for the Bridgetown and Boyup Brook townsites. In developing such routes, careful consideration needs to be given to potential issues such as land tenure, environmental sensitivity, as well as each river's indigenous and non-indigenous heritage.

Figure 4.10 This footbridge in Bridgetown enables pedestrians and cyclists to experience both sides of the Blackwood River.

4.2.2 CASE STUDY: COLLIE RIVER PATHS AND TRAILS

To achieve its vision of becoming a Trails Town, the Shire of Collie recently published the *Collie River Valley Trails Strategy 2018-2021*, which outlines a plan to formalise trails for walking, cycling (on and off-road), horse riding, paddling and diving. Part of this plan includes progressively upgrading and extending the network of paths and trails that run along the banks of the Collie River.

When complete, the Collie River Trail will connect the township of Collie to Minninup Pool via a 6.5 kilometre long, high-quality shared path. Additional sections of trail will ultimately form part of a 29 kilometre walking and cycling loop, much of which follows the Collie River Valley. A smaller river loop between the Coombes Street and East End Bridges has also been created close to the town centre. Once complete, these trails will enable the realignment of the Munda Biddi Trail and Bibbulmun Track, improving access into Collie for visiting tourists.

These projects are a significant step towards achieving the Shire of Collie's goal of developing a network of trails to provide new economic opportunities for the region through tourism, improved amenity for residents and connection with places of natural and cultural interest.

The Collie River Trail upgrades have been largely funded through a combination of local, State and federal government grants, including through the RBN grants program, as well as funding provided by private enterprise.

Figure 4.11 The Shire of Collie is progressively upgrading and extending the network of paths and trails that run along the banks of the Collie River.[10]

[10] *Image courtesy of Trails WA*

4.2.3 Opportunity: Developing a Blackwood River Valley tourist trail

In the Warren-Blackwood subregion there is a significant long-term opportunity to formalise a 130 kilometre long cycling route following the Blackwood River Valley. The proposed trail would link together Nannup, Bridgetown and Boyup Brook, as highlighted in Figure 4.12.

Primarily using existing back roads, forestry tracks and firebreaks, this trail would offer a scenic (and relatively flat) means of travelling east-west throughout the Warren-Blackwood subregion. In addition to its gentle gradients, the route would provide a safer and more comfortable option by avoiding main roads such as Nannup-Balingup Road and Brockman Highway.

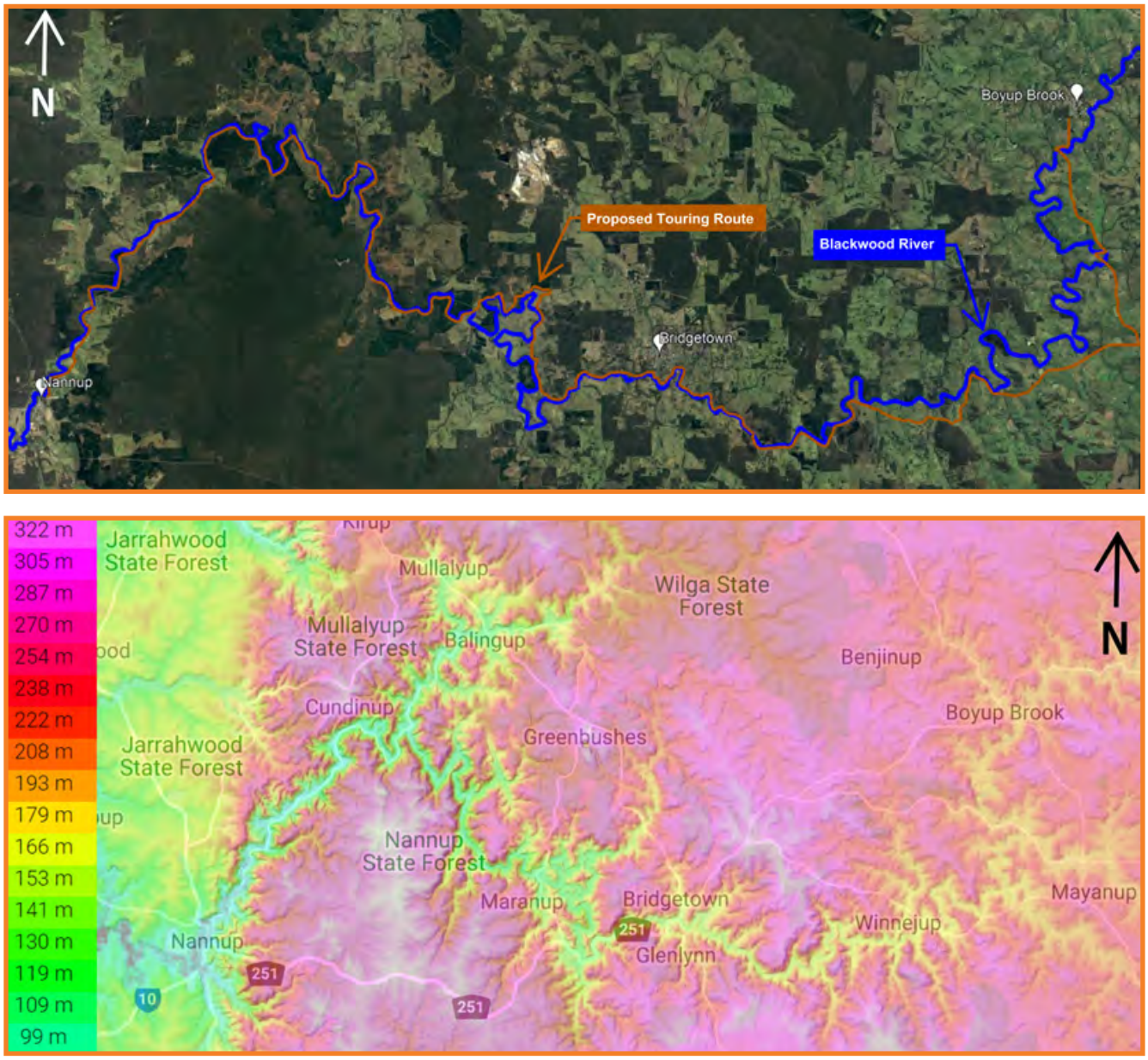


Figure 4.12 There is an opportunity to create a picturesque and relatively flat cycle-touring trail following the Blackwood River Valley linking together Nannup, Bridgetown and Boyup Brook.

The existing (but unformalised) Coast to Nannup Track could also be rebranded as part of this trail, enabling the creation of a Blackwood River Valley tourist trail extending all the way from Boyup Brook to the coast. Linking into the southern section of the Wadandi Track between Witchcliffe and Boranup (refer to the *Leeuwin Naturaliste 2050 Cycling Strategy)*, users could also continue through to Augusta on a facility completely separated from vehicle traffic.

There may also be an opportunity to create a spur link to Balingup, using forestry tracks which run parallel to the Nannup-Balingup Road. Such a route would provide an additional connection between the Warren-Blackwood and Bunbury-Wellington subregions.

Before developing such a route, it is important to undertake a detailed constraints analysis. This would consider potential issues in more detail, such as land tenure, environmental sensitivity as well as indigenous and non-indigenous heritage.

Figure 4.13 A Blackwood Valley cycle-touring route could be achieved by signposting existing low-volume rural roads, firebreaks and forestry tracks.[11]

[11]*Images courtesy of Tour of Margaret River*

4.2.4 CASE STUDY: CYCLING THE MURRAY RIVER

One of Australia's best known river touring trails follows the Murray River between New South Wales, Victoria and South Australia. Commencing near Mount Kosciuszko in the Australian Alps, the cycling route follows Australia's longest river downstream for approximately 1,850 kilometres.

Consisting of river tracks, gravel roads and low-volume bitumen roads, the route meanders its way through the border towns of Albury-Wodonga, Echuca and Mildura before entering the South Australian fruit growing regions centred around Renmark, Berri and Murray Bridge.

Taking approximately three to four weeks to complete, the route is attractive to touring cyclists due its gentle gradients, diverse landscapes and local history. Although quite remote in sections (especially in South Australia), the relatively close spacing of towns enables people to undertake the trail without needing to carry extensive food or water supplies. While not officially signposted, the route is promoted by several tour operators.

It should be noted that similar, albeit more developed cycle-touring routes exist along several major rivers in Europe, including the Rhine, Ruhr and Danube. These routes, which are improving all the time, normally begin as a combination of tow paths, unsealed trails and low traffic rural roads. As infrastructure is improved or new alignments are provided, the routes are updated with new way-finding signage and promotional material.

Figure 4.14 The Murray River Cycling Trail links a number of important population centres located throughout regional New South Wales, South Australia and Victoria.[12]

[12]*Map courtesy of Cycle Trails Australia; LH image courtesy of Yarrawonga Mulwala; RH image courtesy of Swaggies Capes*

4.2.5 Opportunity: Creating a loop around the Walpole Inlet

Possibly the most ambitious proposal mentioned in this strategy is the creation of a world-class walking and cycling trail around the picturesque Walpole Inlet. While most paths and trails are already existing, the development of this loop would require the construction of a 120 metre long footbridge to span the narrow channel linking the Walpole and Nornalup inlets. In addition to creating an outstanding recreational loop for residents, the development of this bridge would enable the realignment of the Bibbulmun Track and Munda Biddi Trail to pass across The Knolls – a unique piece of WA coastline where the native Tingle forest extends down to the waterline.

If funding became available for such a bridge, careful consideration would be required during planning, design and construction. In addition to managing the area's environmental sensitivity, the bridge would require sufficient clearance to allow for the free passage of yachts and houseboats (as this channel is the only access/egress route linking the Walpole and Nornalup inlets).

While aspirational, it is important to note similar tourism-driven initiatives have been undertaken in other parts of regional WA in recent decades. These include the Granite Skywalk in the Porongurup Ranges, the recently re-constructed Gap Lookout in Albany and the Valley of the Giants Tree Top Walk in nearby Denmark – all of which are valuable contributors to their local economies.

Figure 4.15 A bridge over the Walpole Inlet channel would enable the creation of a spectacular 9 kilometre walking and cycling loop.

4.3 Making cycling an attractive choice for short urban trips

All townsites within the Warren-Blackwood subregion are well positioned to make cycling a compelling mode choice for short, urban trips. To achieve this, it is imperative activity nodes such as shopping centres, schools and industrial areas are serviced by safe, direct and legible cycling facilities. As discussed in Section 2, all cycling facilities should be planned with the "8 to 80" design philosophy in mind.

There are a number of reasons why cycling has the potential to be a genuine transport mode for people living in towns throughout the Warren-Blackwood subregion. These include:

- **Small footprints:** The subregion's largest town, Manjimup, has an urban area of less than eight square kilometres. This means virtually all residents are located within a 10-minute bike ride from the town centre. For other towns, average distances between key origins and destinations tend to be even shorter.
- **Cool climates:** Like much of the South West, maximum daytime temperatures in the Warren-Blackwood subregion are generally quite cool, even in summer. This, combined with the short distances mentioned above, makes cycling an attractive choice for short trips all year round.
- **Benign traffic conditions:** While there are certainly some busy streets within the subregion (and particularly in the bigger towns of Manjimup and Bridgetown) the vast majority are quiet enough for most people to ride comfortably and confidently.
- **Terrain is becoming less of a barrier:** While Manjimup, Northcliffe, Greenbushes and Walpole are generally quite flat, other towns such as Pemberton, Nannup, Boyup Brook and especially Bridgetown have many streets with steep gradients. The recent emergence of e-bike technology has the potential to make cycling a much easier proposition (refer to section 4.3.3 which highlights the growing affordability and practicality of e-bikes).

4.3.1 Opportunity: Improving the bike-friendliness of main streets

Increasing the bike-friendliness of main streets is paramount to making cycling an attractive transport choice for people living in the Warren-Blackwood subregion. In addition to being where many shops, community and recreational facilities are located, these corridors often perform an important transport function as well.

The exact type of treatment for each main street depends greatly on local context. Factors such as road widths, traffic volumes, vehicle speeds, heavy vehicle volumes and on-street parking requirements all need to be considered when determining the most appropriate type of cycling facility for a given corridor.

While some main streets (such as Vasse Highway in Nannup or South Western Highway in Bridgetown) may lend themselves to dedicated cycling infrastructure, others (such as Giblett Street in Manjimup or Nockolds Street in Walpole) may be more suitable to low speed shared space type treatments. Section 4.3.2 provides an example of a shared space environment within a regional area.

One main street where it will be particularly advantageous to improve bike-friendliness is Vasse Highway in Nannup (known as Warren Road between Forrest Street and Brockman Highway). Providing better cycling conditions along this important corridor has the potential to improve safety for cyclists of all ages and experience levels, reduce conflicts between different groups of road users and improve the overall amenity of the town centre. Improving conditions along this corridor would also support users of the Munda Biddi Trail.

Figure 4.16 There is an opportunity to improve the bike-friendliness of Nannup's main street, improving safety outcomes for both local cyclists as well as Munda Biddi Trail users passing through the town.

4.3.2 CASE STUDY: WARRNAMBOOL CITY CENTRE RENEWAL

Recently the City of Warrnambool in regional Victoria undertook a city centre renewal project aimed at improving the safety and amenity of several streets in the town's central business district. The City Centre Renewal Project involved a suite of measures including traffic calming, streetscape improvements and improved pedestrian and cycling facilities. In terms of cycling, this involved reducing the posted speed limit to 40 km/h, improving safety at roundabouts, and installing shared-lane markings and additional bike parking facilities.

Key to this project's success was ensuring the city centre remained a thriving centre for business, before, during and after construction.

It should be noted that similar shared space type cycling environments can be found on York Street in Albany and Marine Terrace in Geraldton, the latter of which has a 20 km/h advisory speed limit. Low speed limits are an essential element of improving safety and ensuring an adequate level of comfort among people riding in shared road environments.

Figure 4.17 Shared-lane markings, traffic calming and lower posted speed limits have improved cycling safety through Warrnambool's town centre in regional Victoria.

4.3.3 CASE STUDY:
THE EMERGENCE OF E-BIKE TECHNOLOGY

Until recently, cycling has relied solely on human power. This has limited the distance and type of terrain most people are prepared to travel on a bicycle, especially when commuting to work or school. E-bikes, or power-assisted bicycles, are fitted with small electric motors which provide mechanical assistance when pedalling. Under Australian road regulations, bikes sold for on-road use are limited to 250 watts, which enables them to travel at speeds of up to 25 km/h.

In recent years, the popularity of e-bikes has increased significantly, with many people finding them a quick, affordable and convenient way of getting to and from work or school.

What makes them especially appealing for commuting in Australia's warm climate is they are less strenuous to ride and may alleviate the need to carry an extra set of clothing.

E-bikes are also becoming an increasingly popular addition to the back of caravans and motorhomes. Providing families and older travellers with a different way to explore their holiday destination, and travel further afield with less effort, e-bikes have the potential to open up more experiences, something which holiday-makers are looking for more and more.

The Warren-Blackwood subregion's 2050 bike network aims to capitalise on the potential of e-bikes, while recognising that regular (human-powered) cycling will continue to remain popular.

Figure 4.18 E-bikes enable people to commute from further away, which is especially important for hilly towns such as Bridgetown and Boyup Brook.

4.4 Taking advantage of Warren-Blackwood's cycle-tourism potential

Globally, the popularity of outdoor and adventure tourism is increasing, with cycle-tourism accounting for a significant part of this growth.[13] In the year ending June 2016, 68 per cent of international visitors to Australia engaged in some form of nature-based activity, contributing $23 billion to the national economy.[14]

In recognition of cycle-tourism as a growing niche market, WestCycle and Tourism WA recently developed WA's first cycle-tourism strategy.

The *Western Australian Cycle Tourism Strategy* identifies two main segments within the cycle-tourism market:

Destination Cycle Tourists – cyclists who are motivated to travel to destinations primarily or solely because of the routes, trails and riding experience.

Cyclists While on Holiday – those who will ride while on holiday in a destination, although bike riding is not the primary reason for their holiday.

Research undertaken by Tourism WA has found:

- In the past three years, 29 per cent of Australians had a holiday that involved a cycling experience. Of these, 28 per cent were *Destination Cycle Tourists* while 72 per cent were *Cyclists While on Holiday*.
- In the past three years, seven per cent of Australians had a cycle holiday experience in WA. In addition, 26 per cent of Western Australians undertook a day trip in WA involving cycling.
- The South West region was identified as the most popular cycle-tourism destination in WA outside of Perth; and
- A lack of knowledge is the key barrier preventing more people from the eastern states and overseas visiting WA for a cycling experience.

There are several factors that make the Warren-Blackwood subregion particularly conducive to cycle-tourism, including:

- A mild climate, making outdoor recreation possible year-round;
- Picturesque scenery encompassing a diverse range of landscapes (including tall forests, rolling farmland and rugged coastline);
- Short distances between towns, enabling people to undertake cycle-touring without necessarily needing to carry camping equipment or food supplies;
- A selection of high-quality food and wine producers; and
- An existing program of regular mountain biking and road cycling events.

Figure 4.19 The Warren-Blackwood subregion has the right ingredients to become a world-class cycle-tourism destination.[13]

[13] Global Report on Adventure Tourism (2014)
[14] WA Strategic Trails Blueprint (2017-2021)
[15] LH image courtesy of Tour of Margaret River; RH image courtesy of Donnybrook-Bridgetown Mail

4.4.1 Opportunity: Capitalising on the Munda Biddi Trail

The Munda Biddi Trail is a 1000 kilometre long cycling trail linking Mundaring (near Perth) to Albany. The completed trail, which opened end-to-end in April 2013, is now one of the longest continuous cycle trails of its kind in the world. Frequently mentioned as one of the top 10 cycling holidays in the world, the trail is becoming increasingly popular with cycle-tourists from both interstate and overseas. Several towns in the Warren-Blackwood subregion are well placed to further capitalise on the growing popularity of the Munda Biddi Trail.

One such town is Nannup, situated approximately halfway between the Mundaring and Albany termini. While the southbound approach to Nannup already provides a high level of service, the northbound approach requires users to mix with heavy traffic along Vasse and Brockman highways due to a critical missing link in Nannup's path network as illustrated in Figure 4.21. Requiring approximately 350 metres of new path, as well as two short bridges, the completion of this link will not only improve safety and accessibility for Munda Biddi users, but also residents of the nearby Cockatoo Valley subdivision.

Figure 4.20 It is important certain towns within the Warren-Blackwood subregion work to capitalise on the growing popularity of the Munda Biddi Trail.

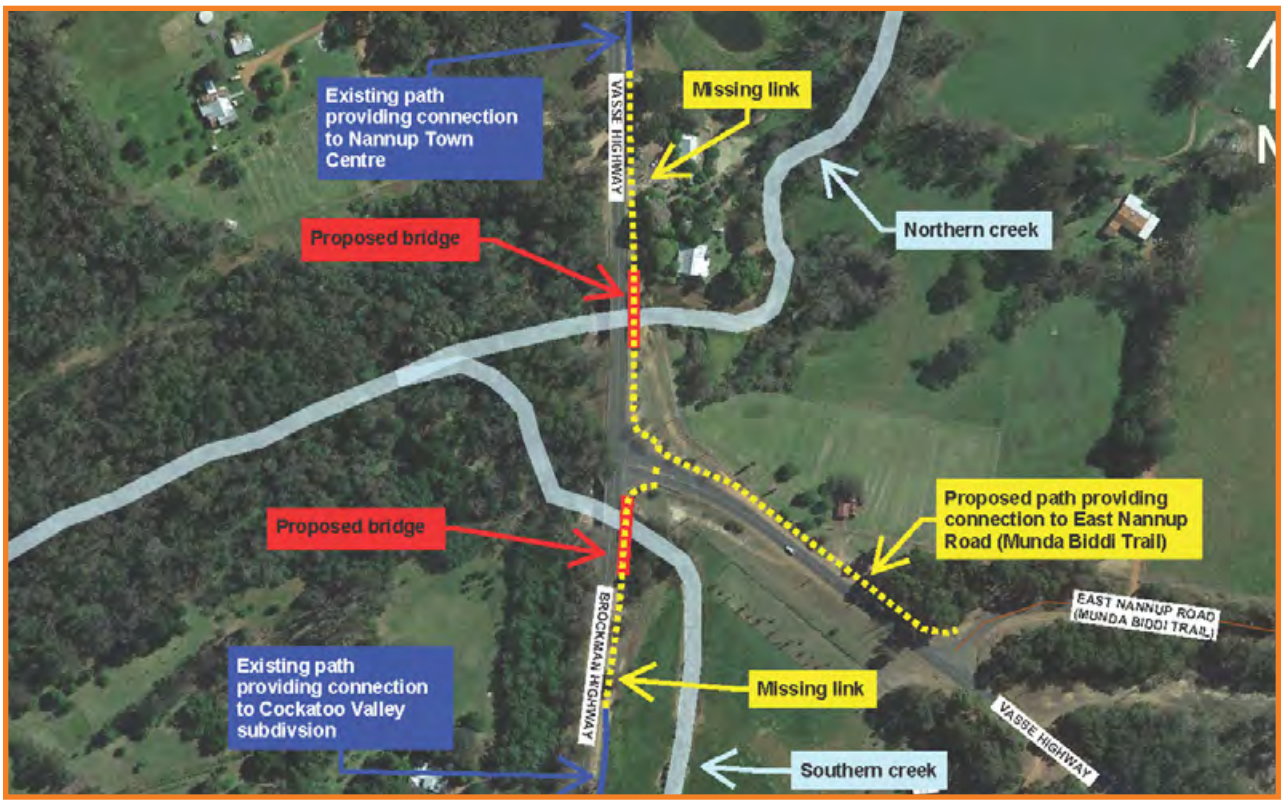


Figure 4.21 On the northbound approach to Nannup, people walking and cycling are required to mix with traffic on the Vasse and Brockman highways as there is no other way of crossing the two small creeks.

4.4.2 CASE STUDY: MANJIMUP AND THE MUNDA BIDDI TRAIL

Recent upgrades undertaken by the Shire of Manjimup have improved accessibility and safety for Munda Biddi Trail users entering the town. For the southbound approach, the unsealed Manjimup-Deanmill Heritage Trail (a former rail line) has been upgraded to red asphalt upon entry into the townsite. For the northbound approach into Manjimup, sealed shoulders have been provided along Muirs Highway – a busy 110 km/h rural highway.

Figure 4.22 Upgraded Deanmill Heritage Trail

Figure 4.23 Shoulder widening along Muirs Highway

4.4.3 Opportunity: Improving access to mountain biking trails

The popularity of mountain biking in WA has increased significantly in recent years. The *South West Mountain Bike Master Plan (2015)* identifies Pemberton as one of three nationally significant mountain biking areas in the South West, along with Margaret River and Collie. Other mountain bike trail networks in the Warren-Blackwood subregion include Nannup, Hester, Boyup Brook, Northcliffe and Linga Longa, which is privately owned. It is important that path and trail connections are provided between mountain biking trails and nearby townsites, where appropriate.

In Pemberton for example, a shared path connection is being provided between the townsite and the nearby Forest Park trail network. The new pathway along Swimming Pool and Pump Hill roads will enable people of all ages and abilities to ride comfortably to and from these trails. In addition to helping people access the mountain biking trails without needing a car, the development of these linkages will also help solidify Pemberton's reputation as one of WA's best mountain biking towns.

Figure 4.24 Cycling connectivity between the Pemberton townsite and nearby mountain bike trails is being improved.[16]

[16]*Above map courtesy of Pemberton Visitor Centre; image courtesy of Trails WA*

4.4.4 CASE STUDY: BIKE-FRIENDLY BUSINESS ACCREDITATION PROGRAMS

Bike-friendly business accreditation programs are another means of helping boost cycle-tourism in regional areas. In addition to reassuring cyclists that they are welcome, these programs mandate a minimum level of service and help create a recognisable brand for a local town or region.

Tasmania is the first state in Australia to establish a state-wide bike-friendly accreditation program. The program has three primary objectives:

- Creating a community of like-minded businesses who work together to share knowledge and promote or refer each other to cycle-tourists;
- Ensuring that participating businesses adopt a united and welcoming approach to cycle-tourists; and
- Creating a recognisable brand, which reassures cycle-tourists certain businesses are likely cater to their varying needs.[17]

With the growing popularity of cycle-tourism and cycling events throughout the Warren-Blackwood subregion, there may be an opportunity to establish a similar program. It should be noted that a bike-friendly business accreditation scheme is in the early stages of development in Collie.

[17]*Information courtesy of Tourism Industry Council Tasmania*

4.4.5 Opportunity: Formalising road cycling routes for more confident cyclists

There is an emerging need to develop formalised cycling routes for the subregion's local and visiting road cyclists. Road cycling (as described in Section 2.5) is popular on lower-order, rural and semi-rural roads which have lower traffic volumes, scenic landscapes and changes in elevation. Road cyclists do not typically require (or use) dedicated or protected cycling 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 user-experience.

The recent relocation of the Tour of Margaret River has highlighted Nannup and surrounding areas as road cycling destinations. Certain roads including the Nannup-Balingup Road, Brockman Highway and Maranup Ford Road have become increasingly popular with local and visiting cyclists throughout the year (shown in Figure 4.25).

Potential safety enhancements to such corridors could include shoulder widening (particularly on uphill sections) and advisory signage. There may also be opportunities to consider more sophisticated measures such as time and day activated warning lights (similar to school zone signage) and button activated warning lights, similar to those shown in Figure 4.26.

Further feasibility and consultation is required to identify additional road cycling routes throughout the Warren-Blackwood subregion, as outlined in Section 2.5 of this strategy.

Figure 4.25 A potential road cycling route linking Nannup, Balingup and Greenbushes.

Figure 4.26 Advisory measures such as warning lights could help to improve safety along routes frequently used by road cyclists.[18]

[18]*Right image courtesy of Cootamundra Herald*

5. ACTION PLAN AND MAINTENANCE

This section outlines the strategic priorities that are proposed to be progressed over the next five years. While it is not possible to implement a comprehensive "8-80" cycle network immediately, this approach will help the Warren-Blackwood subregion to realise its cycling potential over time. The priorities identified have been informed by community and stakeholder consultation throughout the project, as summarised in Appendix C.

5.1 The existing cycling network

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 cycling route (as defined in the route hierarchy);
- **Existing (needs improvement)** – although possible to cycle along this corridor, the level of service provided does not reflect current best practice for this type of cycling 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 considered in the context of the five-year timeframe of this action plan.

Figure 5.1 Overall 2050 cycling network for entire Warren-Blackwood subregion, with each route classified as either existing (adequate), existing (needs improving) or proposed.

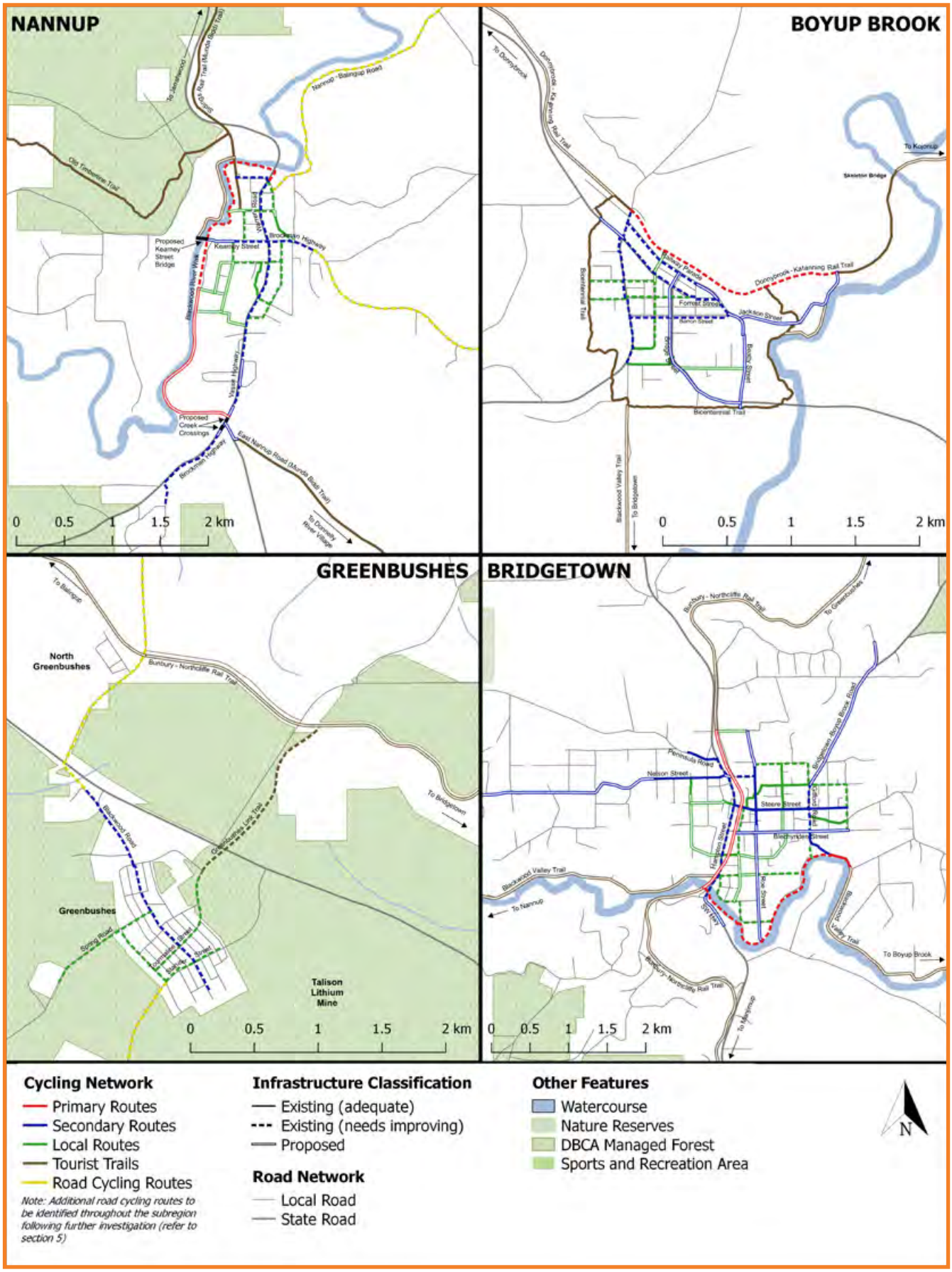


Figure 5.2 Proposed 2050 cycling network for northern towns, with each route classified as either existing (adequate), existing (needs improving) or proposed.

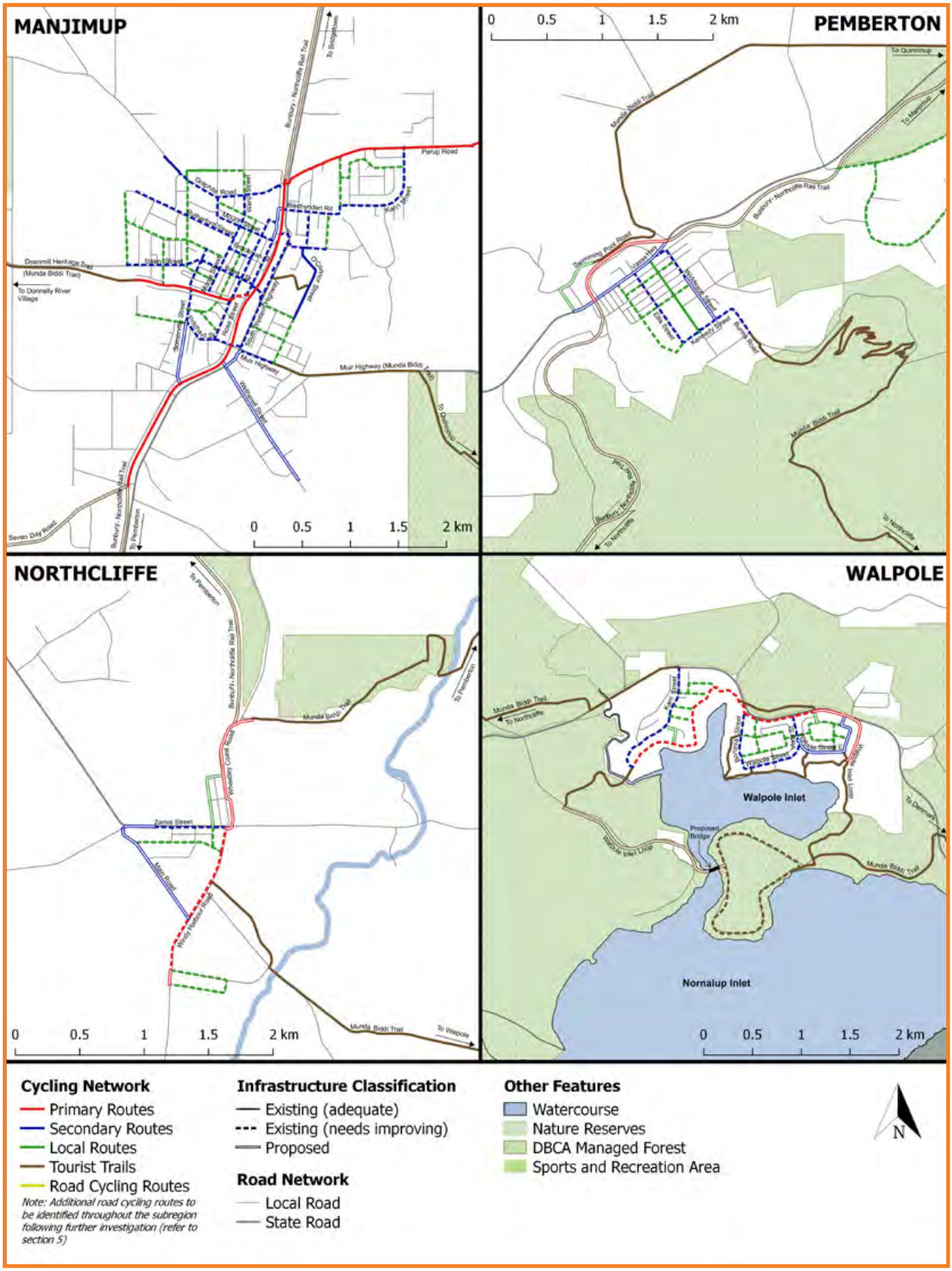


Figure 5.3 Proposed 2050 cycling network for southern towns, with each route classified as either existing (adequate), existing (needs improving) or proposed.

5.2 Priority projects

The following tables identify the strategic priorities for cycling in the Warren-Blackwood subregion over the next five years.

5.2.1 Developing the primary network

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
1	Bridgetown north-south primary route	Planning and feasibility	Shire of Bridgetown-Greenbushes to investigate developing a shared path along the dormant rail corridor through Bridgetown between Williams Street and the Blackwood River. The proposed path would form the primary north-south walking and cycling route through the Bridgetown townsite.	Shire of Bridgetown-Greenbushes	Within 3 years
2	Nannup River Walk (shared trail)	Planning and feasibility	Shire of Nannup to assess the feasibility of extending the riverside trail southwards from its existing trailhead at Ford Way, past Nannup Timber Processing, before linking back into the existing path which runs parallel to Vasse Highway. In the short term this facility would likely be developed as a tourist trail, and upgraded to primary route standard in the future.	Shire of Nannup	Within 5 years

5.2.2 Developing the secondary network

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
1	Beatty / Connolly Street, Boyup Brook	Construction	Shire of Boyup Brook to construct a 300m long shared path along Beatty and Connolly streets between Barron Street and the high school.	Shire of Boyup Brook	Within 2 years
2	Bridge Street, Boyup Brook	Construction	Shire of Boyup Brook to construct a secondary route on the western side of Bridge Street between Barron Street and the hospital.	Shire of Boyup Brook	Within 5 years
		Advocacy	Shire of Boyup Brook to commence discussions with Main Roads about developing a path along Bridge Street between the hospital and Beatty Street.		
3	Jackson Street, Boyup Brook	Construction	Shire of Boyup Brook to provide a secondary route along Jackson Street, providing a connection to the caravan park, Music Park and the Bicentennial Trail along the Blackwood River.	Shire of Boyup Brook	Within 5 years
4	Beatty Street, Boyup Brook	Construction	Shire of Boyup Brook to develop a secondary route along Beatty Street, linking the high school to Bridge Street (and Bicentennial Walk). Planned widening works for the southern half of Beatty Street are required to enable this linkage.	Shire of Boyup Brook	Within 5 years
5	Blechynden / Rowley Street, Bridgetown	Construction	Shire of Bridgetown-Greenbushes to develop a secondary route along Blechynden and Rowley streets (from Spencer Street to Giblett Road), improving cycling access to Bridgetown High School.	Shire of Bridgetown-Greenbushes	Within 3 years
6	Connection to Bridgetown Sports Ground	Construction	Shire of Bridgetown-Greenbushes to develop a secondary route along Bridgetown-Boyup Brook road (from Forrest Street to Les Woodhead Avenue) creating a walking and cycling link to the Bridgetown Sports Ground.	Shire of Bridgetown-Greenbushes	Within 5 years
7	Widdeson and Kennedy Streets, Pemberton	Construction	Shire of Manjimup to complete and upgrade the secondary cycling route along Widdeson and Kennedy Streets, providing a connection to Pemberton District High School, and a more intuitive and direct link to the Munda Biddi Trail.	Shire of Manjimup	Within 3 years

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
8	Main Road and Zamia Street, Northcliffe	Construction	Shire of Manjimup to construct a secondary route along Main Road and Zamia Street providing improved access to the Northcliffe District High School. When combined with the existing path along Wheatley Coast Road, this will form a loop around the southern half of the Northcliffe townsite.	Shire of Manjimup	Within 3 years
9	Hospital Avenue, Manjimup	Construction	Shire of Manjimup to upgrade the path along Hospital Avenue (between Mottram Avenue and the Warren District Hospital) to secondary route standard.	Shire of Manjimup	Within 5 years
10	Nannup southern approach to town	Planning and feasibility	Shire of Nannup to assess the feasibility of completing the missing section of path linking the Vasse and Brockman Highways on the southern edge of town. The proposed connection will require two small bridges (necessitating external funding to proceed to construction). A short section of path will also connect users to East Nannup Road (current alignment of the Munda Biddi Trail). In addition to improving access to the Cockatoo Valley subdivision, completion of this link will improve safety for Munda Biddi Trail users.	Shire of Nannup, Munda Biddi Foundation	Within 3 years
11	Sexton Way, Nannup	Construction	Shire of Nannup to complete the missing link parallel to Sexton Way in the Nannup light industrial area. When combined with the above project this will complete the path network between the Cockatoo Valley subdivision and the Nannup town centre.	Shire of Nannup	Within 3 years

5.2.3 Developing the local network

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
1	Spencer Street, Bridgetown	Construction	Shire of Bridgetown-Greenbushes to extend the Spencer Street shared path south to Layman Street, providing an additional connection to the Blackwood River trail circuit.	Shire of Bridgetown-Greenbushes	Within 5 years
2	Spring Gully Road, Greenbushes	Construction	Shire of Bridgetown-Greenbushes to develop a local route along Mica Street and Spring Gully Road, linking the town centre to Greenbushes Pool.	Shire of Bridgetown-Greenbushes	Within 5 years
3	Club, Pumphill and Swimming Pool Roads, Pemberton	Construction	Shire of Manjimup to construct a shared path along Club, Pumphill and Swimming Pool roads, linking the Pemberton skate park, swimming pool and mountain bike trails, including the Munda Biddi Trail.	Shire of Manjimup	Within 1 year
4	Latham Avenue and Jones Road, Walpole	Construction	Shire of Manjimup to construct a shared path along Latham Avenue and Jones Road, creating a link between the existing path along Boronia Avenue and the Walpole Recreation Centre.	Shire of Manjimup	Within 2 years
5	Wilson Street and Higgins Street, Nannup	Construction	Shire of Nannup to construct a local route along Wilson and Higgins Street, linking the existing path on Higgins Street to Ford Way.	Shire of Nannup	Within 2 years
6	North Street and Ford Way, Nannup	Construction	Shire of Nannup to develop a local route on North Street (between Higgins Street and Ford Way) and Ford Way (between North Street and the Blackwood River), providing access to Nannup River Walk's existing southern trailhead.	Shire of Nannup	Within 5 years

5.2.4 Developing tourist trails

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
1	Potential Donnybrook - Boyup Brook tourist trail	Preliminary discussions	Shires of Donnybrook-Balingup and Boyup Brook to undertake preliminary discussions with rail custodians to determine the feasibility of using the Donnybrook-Katanning rail corridor as a tourist trail. The section between Boyup Brook and Donnybrook is likely to be the initial priority.	Shire of Boyup Brook, Shire of Donnybrook-Balingup, SWDC, DoT	Within 5 years
2	Potential Blackwood Valley tourist trail	Planning and feasibility	Shires of Boyup Brook, Bridgetown-Greenbushes and Nannup to assess the feasibility of establishing a signposted Blackwood Valley Cycle Touring Route using back roads, firebreaks and forestry tracks linking Boyup Brook, Bridgetown and Nannup. A small section of the proposed route also goes through the Shire of Donnybrook-Balingup.	Shires of Boyup Brook, Bridgetown-Greenbushes and Nannup	Within 3 years
3	Potential Bunbury - Northcliffe tourist trail	Preliminary discussions	Local governments along the Bunbury-Northcliffe rail corridor to undertake preliminary discussions with rail custodians to determine the feasibility of using the rail corridor as a long-distance tourist trail. Certain sections between Greenbushes and Pemberton are likely to be the most feasible in the short and medium terms.	Shires of Dardanup, Donnybrook-Balingup, Bridgetown-Greenbushes and Manjimup, SWDC, DoT	Within 2 years
4	Extension of Linear Park path to Diamond Tree	Planning and liaison	Shire of Manjimup to work with relevant authorities in assessing the feasibility of extending the recently completed linear park shared path from Seven Day Road to Diamond Tree. If progressed, the proposed extension will likely consist of an unsealed gravel surface, rather than asphalt, as per the Manjimup Linear Park.	Shire of Manjimup	Within 5 years
5	Seven Day Road, Manjimup	Planning and feasibility	Shire of Manjimup to undertake a feasibility study investigating the creation of a safe cycling link on Seven Day Road, from South Western Highway to Appadene Road or Paling Roads. A potential link back to Deanmill and/or the Munda Biddi Trail will also be considered.	Shire of Manjimup	Within 3 years

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
6	Kearney Street Bridge, Nannup	Planning and feasibility	Shire of Nannup to undertake planning for a new footbridge over the Blackwood River at the western end of Kearney Street. This project will also include a new trail on the western side of the Blackwood River, forming a loop between Kearney Street and the existing footbridge near the Nannup Arboretum.	Shire of Nannup, DBCA	Within 5 years
7	Sidings Rail Trail Extension	Planning and liaison	Shire of Nannup to work with the City of Busselton and DoT in determining the feasibility of extending the Sidings Rail Trail north from Jarrahwood to Busselton.	Shire of Nannup, City of Busselton, DoT	Within 2 years
8	Coast to Nannup track	Planning	Shire of Nannup to work with the Shire of Augusta Margaret River in formalising the Coast to Nannup Track – a logical extension of the Blackwood Valley Cycle Touring Route mentioned above.	Shires of Nannup and Augusta-Margaret River, DBCA	Within 5 years

5.2.5 Developing road cycling routes

Ref	Project	Project type	Project Description	Lead agency (or agencies)	Time-frame
1	Nannup-Balingup-Greenbushes road cycling route	Planning and liaison	Shires of Nannup and Bridgetown-Greenbushes to formalise a road cycling route along Brockman Highway, Nannup-Balingup Road, Jayes Road, Grimwade-Greenbushes Road and Maranup Ford Road. Already popular with local and visiting road cyclists, this 105km long route also forms one of the stages of the Tour of Margaret River cycling race.	Shires of Bridgetown-Greenbushes, Nannup and Donnybrook-Balingup, MRWA Road Safety Commission, DoT	Within 3 years
2	Other road cycling routes	Planning and liaison	Additional road cycling routes to be considered following implementation of the above trial. Routes to be identified both within the Warren-Blackwood subregion and linking to adjoining subregions.	All LGAs, SWDC, MRWA, Road Safety Commission, DoT	Within 5 years

5.3 Activation, consultation and evaluation (ACE)

This strategy outlines how new cycling infrastructure can support greater participation in cycling in the Warren-Blackwood subregion. 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 local communities 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.

Ongoing engagement and evaluation starts by incorporating three essential elements into project delivery - activation, consultation and evaluation. This approach is outlined in the following framework:

Activation includes promotions and programs designed to encourage people onto the infrastructure by raising awareness and appeal. This can be anything from highlighting the new facilities in media releases and creating local maps, to making cycling 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 cycling 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 informed by a local government's community engagement policy.

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 cycling 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.

5.4 Plan maintenance

Progress on the priority actions identified in Section 5 of this strategy will be reported to DoT on an annual basis by local government and other lead agencies.

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

APPENDIX A
ROUTE HIERARCHY

A1. ROUTE HIERARCHY SUMMARY

NETWORK PRINCIPLES

The Cycling Network Hierarchy is arranged by route function. The function pertains to the type of activities that take place on the route. A route's built form is based on the physical characteristics of the location. Each form, apart from those supporting road cycling routes, is designed with the "8 to 80" design philosophy in mind.

1 PRIMARY ROUTE

Function

Primary routes are high demand corridors that connect to major destinations. They provide high-quality, safe, convenient and, where possible uninterrupted routes that form the spine of the cycle network.

These routes are conducive to medium or long distance commuting, recreational, training and tourism trips.

Form

Primary routes are high-quality cycle-only or shared paths, located adjacent to major roads, rail corridors, rivers and ocean foreshores.

Where the environment allows, these are in the form of a Principal Shared Path (PSP). A PSP is a fully lit and separated facility. In locations where vehicles have been grade separated the cycle route will also be grade separated. PSPs are to be designed in accordance with the WA Transport Portfolio's PSP Policy.

2 SECONDARY ROUTE

Function

Secondary routes have a lower demand than primary routes, but provide similar levels of quality, safety and convenience.

These routes provide connections between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities.

Form

Secondary routes can take on a number of forms and are designed to suit the environment in which they are located.

These forms include:

- High-quality shared paths;
- Bi-directional protected bike lanes;
- Protected on-road bike lanes; and
- Safe Active Streets (Bicycle Boulevards).

3 LOCAL ROUTE

Function

Local routes are low demand and are predominantly located in local residential areas.

They provide access to higher-order routes and local amenities and recreational spaces.

Form

Local routes can take on various forms depending on the environment in which they are located.

These forms include:

- Shared paths;
- Bi-directional protected bike lanes;
- Protected on-road bike lanes; and
- Safe Active Streets (Bicycle Boulevards).

In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes.

COMPLEMENTARY NETWORK

While not all areas will include Road Cycling Routes and Tourist Trails, they play an important part in the overall network.

These routes are typically used by smaller and more select user groups for recreational purposes.

ROAD CYCLING ROUTE

Function

Road cycling routes are designated routes for training, sports or recreational cyclists to undertake long distance rides in on-road environments.

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 cyclists undertaking challenging 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.

TOURIST TRAIL

Function

Tourist 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 regions.

Form

Trails are typically located within underutilised transport and service corridors in rural areas. Due to their relatively gentle gradients, former railways make excellent candidates for trails. Purpose built trails may be constructed to connect existing corridors.

Trails should be constructed from well-drained, compacted gravel with supporting infrastructure such as way-finding signage. They may be sealed when they run through towns, busy road crossings or in special circumstances.

Dedicated cycling infrastructure - five typologies of route						
		Primary Routes	Secondary Routes	Local Routes	Tourist Trails	Road Cycling Routes
Type of trips	Commuting	✓	✓	✓	×	×
	Utility	✓	✓	✓	×	×
	Recreation	✓	×	×	✓	×
	Touring	✓	×	×	✓	✓
	Training	✓	×	×	×	✓
Responsible agencies (planning, delivery and support):		DoT MRWA Public Transport Authority (PTA) Local government	DoT MRWA Local government	DoT MRWA Local government	Department of Biodiversity, Conservation and Attractions Local government PTA Department of Water & Environmental Regulation DoT Department of Local Government, Sport and Cultural Industries Lotterywest MRWA	Department of Local Government, Sport and Cultural Industries Road Safety Commission DoT MRWA Local government
Infrastructure should be designed for:		8 to 80 design philosophy	8 to 80 design philosophy	8 to 80 design philosophy	8 to 80 design philosophy	Confident cyclists

Other supporting cycling infrastructure – footpaths	
Footpaths	Since April 2016 all cyclists, irrespective of age, are permitted to ride on footpaths in WA (unless signposted). Footpaths support low-speed, low-volume cycling, and are particularly important for young and inexperienced user groups. However there are some reasons why people choose not to ride on footpaths. These include: - Speed: Because footpaths are rarely afforded priority across intersecting side roads, riding on footpaths is slow, and stop-start. The geometric design of footpaths at many intersections often results in cyclists needing to deviate from their intended desire lines. - Ride quality: As footpaths are typically constructed from concrete slabs or bricks, the ride quality is lower than that of parallel roadways, or purpose-built (asphalt) shared paths. - Conflict with pedestrians: In many cases footpaths are insufficient width for pedestrians and cyclists to pass each other safely and comfortably. - Blind driveways: Riding on footpaths can be dangerous, particularly on streets which contain large numbers of driveways. At walking speed this isn't normally a problem; however, for cyclists it is often impossible to see reversing vehicles until the last minute, particularly where paths butt-up against property boundaries. Despite footpaths not forming part of the official cycling network, it is important developers and local governments design, construct and maintain footpaths that provide a safe alternative for people who prefer to ride at low speeds and away from motorised traffic.

Figure A.1 Poor ride quality, parked vehicles, blind driveways and unfavourable intersection designs make riding on footpaths unattractive for many people.

Other supporting cycling infrastructure – roads without dedicated cycling infrastructure	
Roads without dedicated cycling facilities	Cyclists are, and will continue to remain, legitimate users of all roads in WA (with the exception of freeways and controlled access highways). It is important to remember that roads without purpose-built cycling facilities serve an important function for some cycling journeys. Wayfinding signage can be a valuable tool to direct cyclists (particularly novice cyclists) to the most suitable streets or corridors.

APPENDIX B
DESKTOP ANALYSIS SUMMARY

B1. ANALYSIS OF PEDESTRIAN AND CYCLIST CRASH DATA (2013-2017)

A breakdown of pedestrian and cyclist crashes by severity for the Warren-Blackwood subregion is provided in Figure B1.1.

The key findings from the crash data are:

- Overall there were 10 reported crashes involving pedestrians and cyclists in Warren-Blackwood subregion in the period between 2013 and 2017;
- There have been no fatal crashes involving cyclists in the five years to 2017;
- No crashes were reported where a cyclist required hospitalisation and only one where a cyclist required medical treatment;
- In terms of location, all reported crashes were located either in, or near, townsites;
- Nannup did not record any crashes involving a pedestrian or a cyclist in the five years to 2017; and
- Manjimup registered 80 per cent of the represented crashes, reflecting the higher population of the Shire.

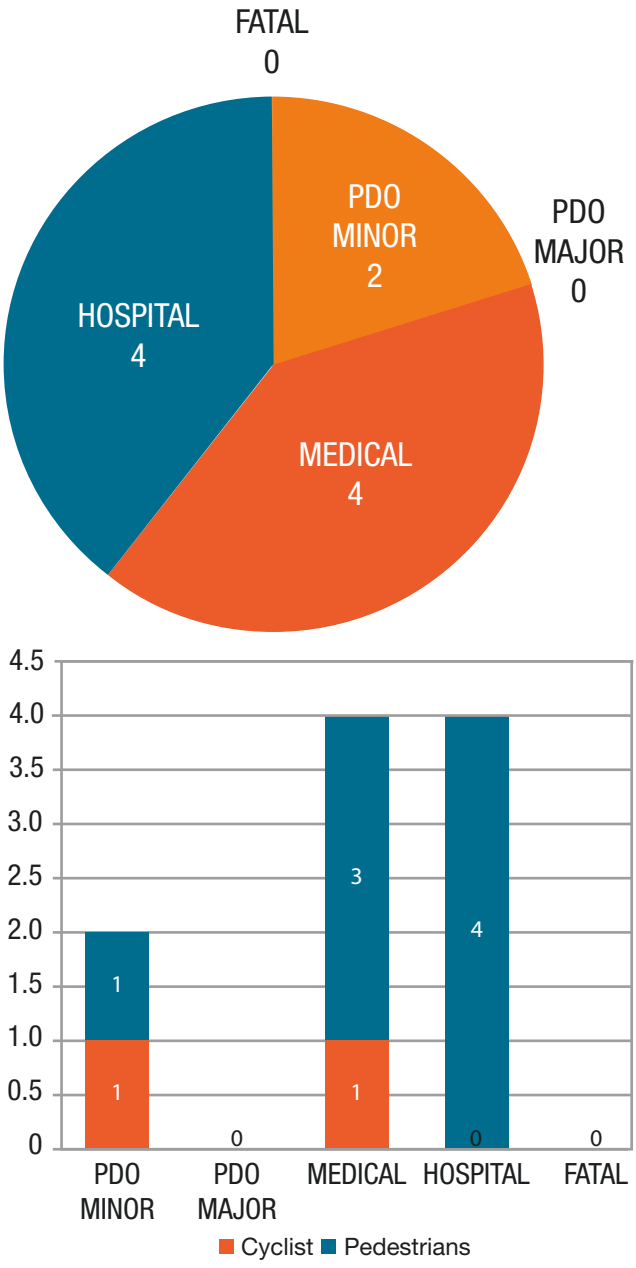


Figure B1.1 Warren-Blackwood subregion cyclist and pedestrian crashes by severity (2013-2017).

Note "PDO" refers to "Property Damage Only".

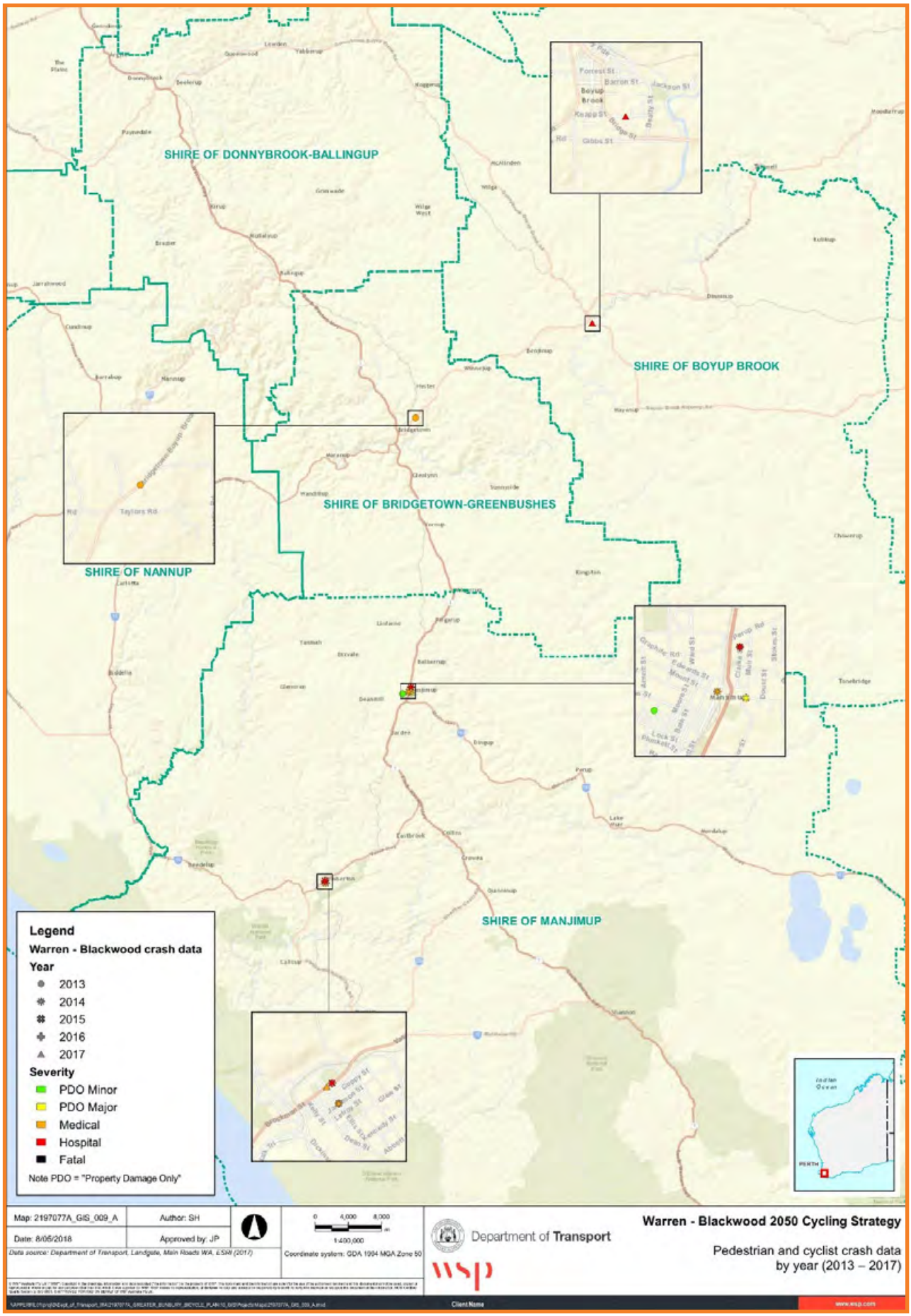


Figure B1.2 Warren-Blackwood subregion cyclist and pedestrian crashes by year (2013-2017).

Figure B1.3 Warren-Blackwood subregion cyclist and pedestrian crashes by type (2013-2017).

B2. ANALYSIS OF GPS TRAVEL DATA

GPS mapping tool Strava Labs was employed to better understand which of the Warren-Blackwood subregion's road, path and trail networks are most heavily utilised by cyclists. 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.

B2.1 Warren-Blackwood subregion

The heat map for the subregion is shown in Figure B2.1. The key points to note from this data are:

- Unsurprisingly, the major centres of Bridgetown, Manjimup, Pemberton and Nannup indicate high levels of cycling activity;
- The Munda Biddi Trail provides a popular off-road cycling connection between Nannup, Manjimup, Pemberton, Northcliffe and Walpole, which is clearly visible on the heatmap;
- Major hotspots outside of these town centres include the Pemberton, Hester and Linga Longa mountain bike trails; and
- The GPS data indicates several popular road cycling routes linking towns – most are along quiet bitumen roads (rather than the busy South Western, Vasse, Brockman and Muirs highways).

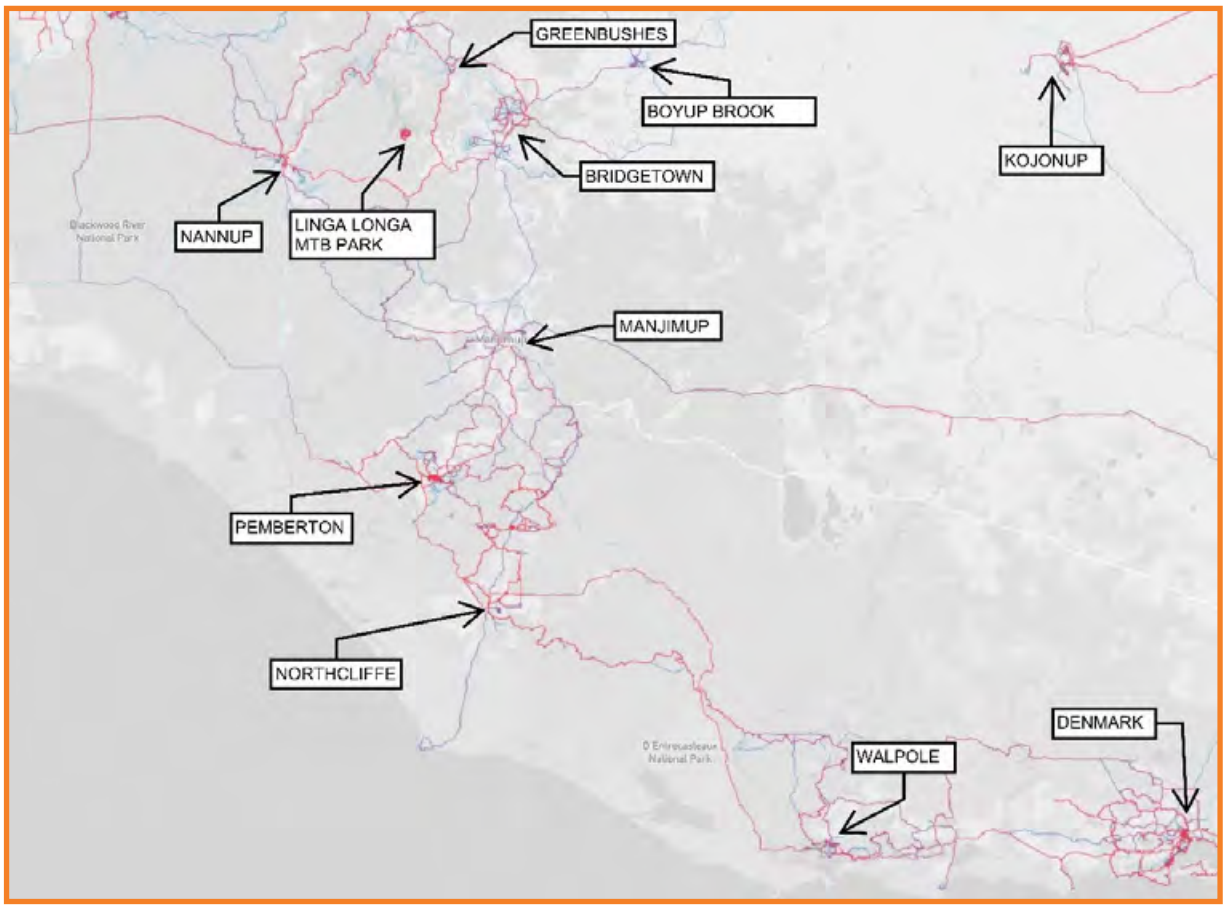


Figure B2.1 GPS heatmap for the Warren-Blackwood subregion.

B2.2 Boyup Brook

The GPS heat map for Boyup Brook is shown in Figure B2.2. The key points to note from this data are:

- Popular streets for cyclists in Boyup Brook include Williams Street, Barron Street, Forrest Street and Knapp Street;
- The Bicentennial Trail encircling Boyup Brook is a popular cycling route, as is the short rail trail extending to Skeleton Bridge;
- The four main roads connecting to neighbouring towns are also used frequently used by cyclists. These include the Donnybrook-Boyup Brook Road, Bridgetown-Boyup Brook Road, Boyup Brook-Arthur Road and Blackwood Road; and
- The network of mountain biking trails located at the south-west edge of town also appear well-utilised.

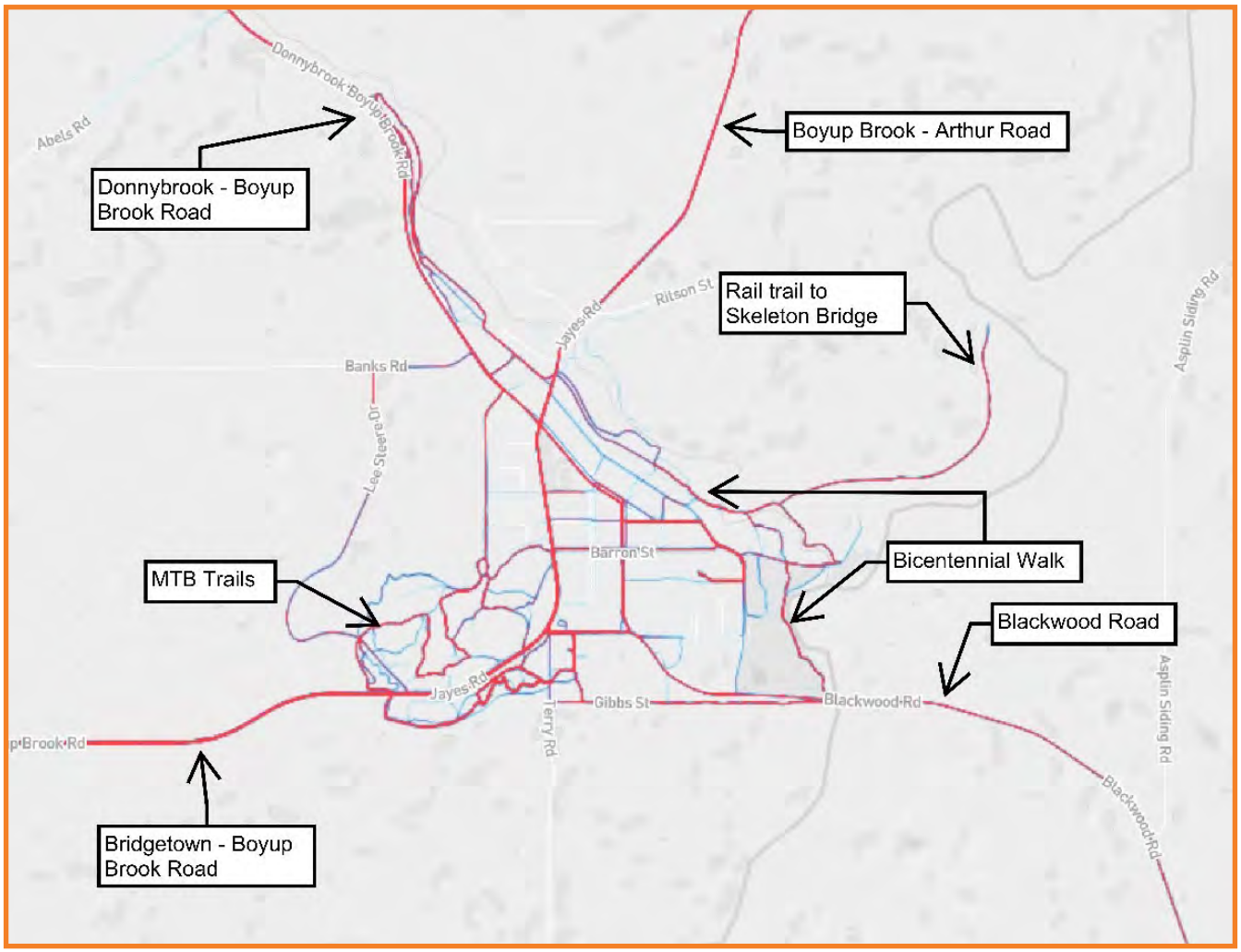


Figure B2.2 GPS heatmap for the Boyup Brook townsite and surrounds.

B2.3 Bridgetown and Greenbushes

The GPS heat map for the Bridgetown and Greenbushes area is shown in Figure B2.3. The map indicates:

- There are several popular cycling routes extending beyond the Bridgetown and Greenbushes townsites. Most of these tend to be along low-volume rural roads including the Greenbushes-Boyup Brook, Bridgetown-Boyup Brook, Winnejup, Mokerdillup, Maranup Ford and Glentulloch roads and Brockman Highway;
- The popularity of mountain biking in the shire is evidenced by the high level of activity present at the Hester Conservation Park and Linga Long mountain bike trails;
- Despite the steep terrain, there appears to be a strong desire line between Bridgetown and the Highlands Estate subdivision with high levels of cycling activity along both Peninsula Road and Nelson, Hackett and Argyll streets;
- It is apparent people are using the service track that runs parallel to Bunbury-Northcliffe Rail Corridor, as a means of safely cycling between Bridgetown and Hester (and to a lesser extent, between Hester and Greenbushes); and
- Despite the popularity of the privately owned Linga Longa Mountain Bike Park, very few people appear to be cycling to or from this facility.

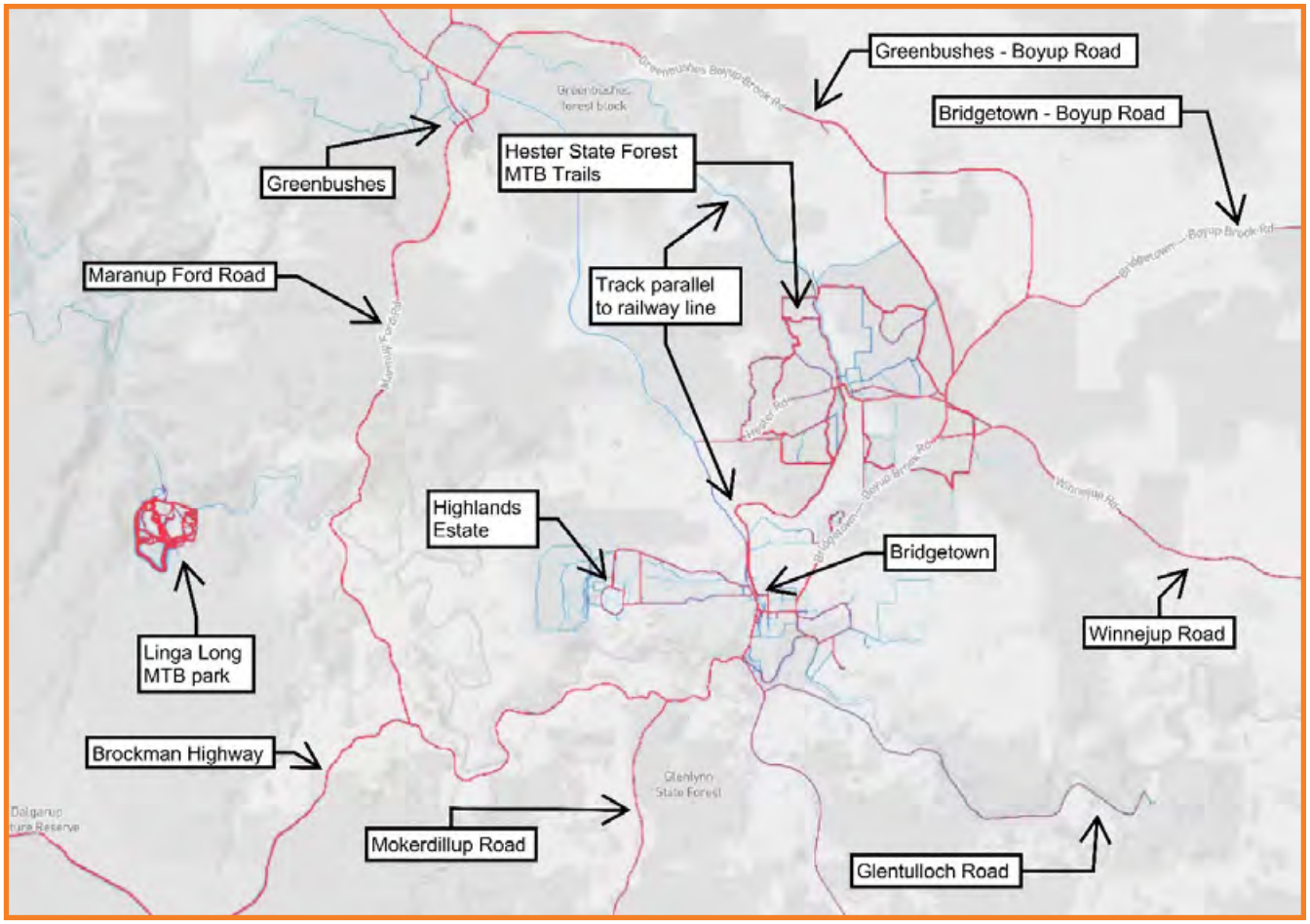


Figure B2.3 GPS heatmap for the Boyup Brook townsite and surrounds.

B2.4 Manjimup, Pemberton, Northcliffe and Walpole

GPS heat maps for Manjimup, Pemberton, Northcliffe and Walpole are shown in Figures B2.4 to B2.7. The maps indicate:

- There are several popular cycling routes extending beyond these four townsites, including:
  - Graphite Road, Ralston Road, Seven Day Road and Peerup Road, on the outskirts of Manjimup;
  - Golf Links Road, Burma Road, Stirling Road and Pemberton-Northcliffe Road, on the outskirts of Pemberton;
  - Middleton Road, Wheatley Coast Road, Pemberton-Northcliffe Road and Windy Harbour Road, on the outskirts of Northcliffe; and
  - South Western Highway, Angove Road and North Walpole Road, on the outskirts of Walpole;
- The network trails just north of the Pemberton townsite are the most popular in the area for mountain biking. Mountain biking also takes place at the Northcliffe Forest Trails, just east of the Northcliffe townsite;
- In the Pemberton, Northcliffe and Manjimup townsites, it is apparent people are riding along the service track that runs parallel to the Bunbury-Northcliffe rail corridor (presumably as an alternative to the busy South Western Highway); and
- The network of paths, trails and low volume roads around the Walpole Inlet generate high levels of cycling activity.

Figure B2.4 GPS heatmap for Manjimup.

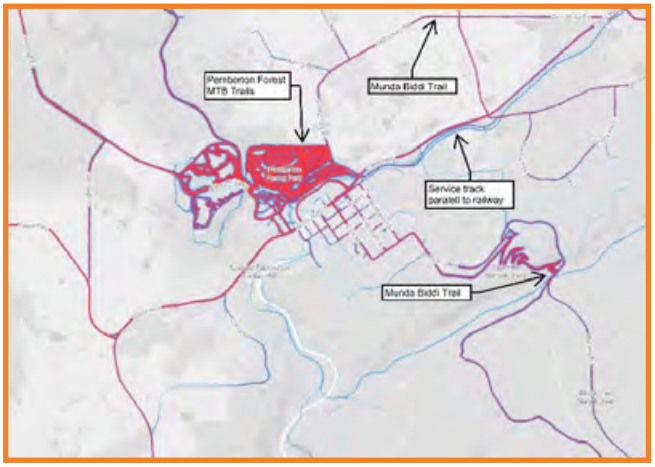


Figure B2.5 GPS heatmap for Pemberton.

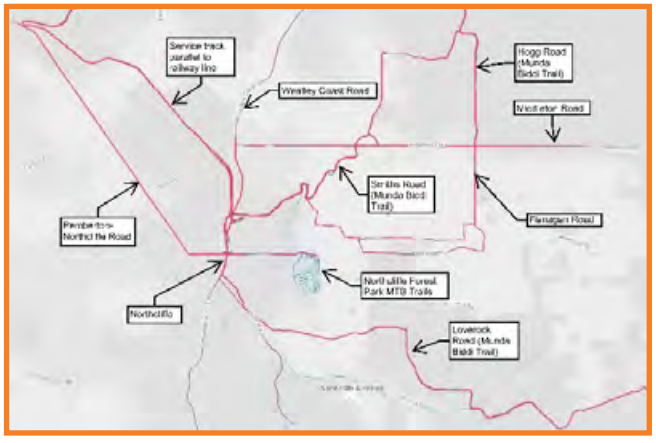


Figure B2.6 GPS heatmap for Northcliffe.

Figure B2.7 GPS heatmap for Walpole.

B2.5 Nannup

A GPS heat map for Nannup is shown in Figure B2.8. The map indicates:

- There are several popular cycling routes extending beyond the Nannup townsite, including Nannup-Balingup Road, Cundinup Road, Mowen Road and East Nannup Road, which forms part of the Munda Biddi Trail;
- The two rail trails connecting Nannup to Jarrahwood (The Sidings and Old Timberline rail trails) are also very popular;
- There is a comprehensive network of mountain bike trails located to the east of Nannup, with the Tank 7 and Tank 8 trails located between Brockman Highway and East Nannup Road the most popular;
- There are also unsanctioned mountain bike trails located off Asplin Road on land owned by the Forest Products Commission. The Shire of Nannup is currently investigating the potential of formalisation;
- The most popular routes for cycling within the Nannup townsite appear to be the main street Warren Road, Kearney Street, North Street and Grange Road; and
- The trail that extends along the Blackwood River from the Caravan Park to Ford Way is also well used.

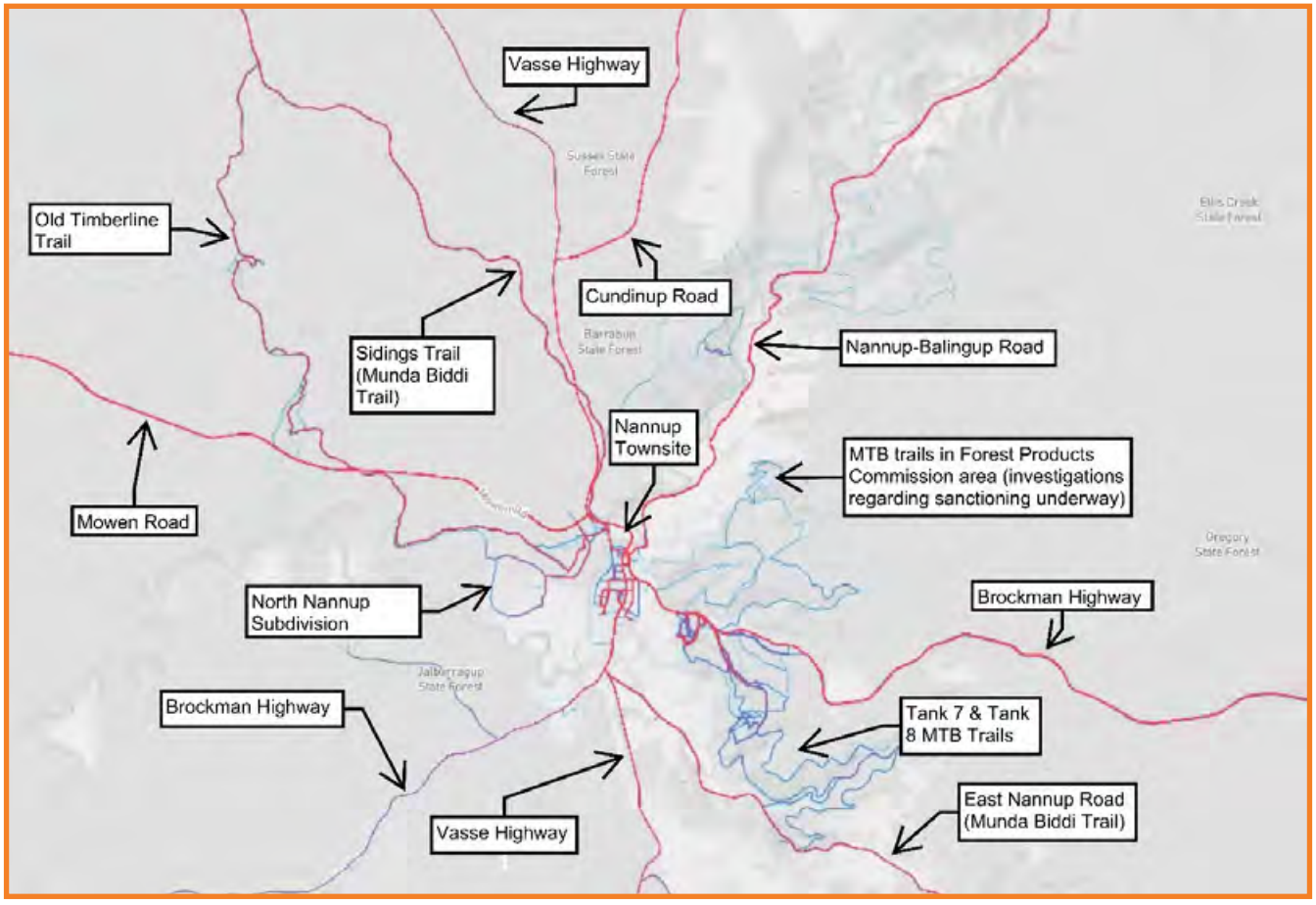


Figure B2.8 GPS heatmap for Shire of Nannup.

B3. DOCUMENT REVIEW

A number of documents have been considered as part of the background review. These include, but are not limited to the following:

- Austroads National Cycling Strategy (2010)
- Bunbury-Wellington and Boyup Brook Regional Tourism Development Strategy (2015-2019)
- Cycling Aspects of Austroads Guidelines (2017)
- Our Bike Path 2014 – 2020 – Westcycle
- Perth and Peel @ 3.5 Million – Transport Network (2018)
- Shire of Boyup Brook Bicycle Network Plan (2015)
- Shire of Bridgetown-Greenbushes Trails Plan (2017-2022)
- Shire of Manjimup Local Footpath and Bicycle Plan (2017-2027)
- Shire of Manjimup Strategic Community Plan 2017-2027 (draft)
- South West Mountain Bike Master Plan (2015)
- South West Regional Blue Print (2014)
- South West Region Economic and Employment Land Strategy (2014)
- South West Regional Planning and Infrastructure Framework (2015)
- Warren-Blackwood Alliance of Councils – Future of Tourism Strategy (2017)
- Warren-Blackwood Alliance of Councils Strategic Plan 2016-2019
- Warren-Blackwood Rural Strategy (2004)
- Western Australian Bicycle Network (WABN) Plan (2014)
- Western Australian Cycle Tourism Strategy (2018)
- Western Australian Strategic Trails Blueprint (2017-2021)

APPENDIX C
COMMUNITY CONSULTATION SUMMARY

C1. PHASE 1 (DROP-IN SESSIONS)

To help inform this strategy, community consultation was undertaken with residents from the Warren-Blackwood subregion.

Drop-in sessions across Nannup and Bridgetown-Greenbushes involved talking with community members in an informal, roundtable setting. Participants were encouraged to highlight routes they currently made by bike as well as ideas they had for expanding or improving the existing network.

Drop-in sessions specific to this strategy were not held in the Shire of Manjimup due to the recent consultation undertaken as part of the Shire's *Local Bicycle and Footpath Plan 2017-2027*. However, information gathered during this consultation process has informed this document. In Boyup Brook, targeted meetings were held with interested residents and stakeholders.

During Phase 1, local governments encouraged some members of the public to make written submissions. This ensured that people who were unable to attend the drop-in sessions could still voice their ideas, while also enabling people with particular areas of focus to provide structured written responses.

C1.1 Findings from Nannup

In May 2017, a drop-in session was undertaken at the Shire of Nannup council offices with approximately 20 community members in attendance. Key themes from this session included:

1. **Improving cycling safety along Vasse Highway:**
   The path that heads south along Vasse Highway towards the Cockatoo Valley subdivision is discontinuous with a significant gap located near two creek crossings. This missing link forces people (including Munda Biddi Trail users) to mix with cars and trucks on Vasse Highway.
2. **Providing better linkages to nearby mountain bike trails:**
   Mountain biking's popularity is rapidly growing in Nannup. There are several mountain bike trail networks located near the town including the Tank 7, Tank 8 and Folley trails. Improving linkages to these mountain biking trails will help boost the popularity of mountain biking, particularly for children and young people who may not have access to cars.
3. **Capitalising on the Blackwood River:**
   The Shire of Nannup is currently assessing the feasibility of improving or extending the trail located along the eastern bank of the Blackwood River (consisting of approximately 70 metres of new boardwalk). Several participants at the drop-in session mentioned that extending this trail to Ford Road would provide an important connection to the southern part of the Nannup townsite. Also suggested was a long-term proposal of another footbridge across the Blackwood River further downstream, enabling the creation of a loop.
4. **Creating a connection to Busselton:**
   It was noted at the drop-in session that the closed railway line on which the Sidings Rail Trail is situated originally extended all the way from Nannup to Busselton. Extending the rail trail north from Jarrahwood would help connect Nannup to the broader South West path and trail networks.
5. **Creating a connection to Margaret River:**
   Officers from the Shire of Nannup mentioned the existence of an informal trail linking Nannup to the Boranup area, known as the Coast to Nannup Track. The track, promoted on the Margaret River Find the Fun mobile app, uses a series of gravel roads, firebreaks and forestry tracks. The formalisation and promotion of this track would help better connect the Warren-Blackwood and Leeuwin-Naturaliste subregions.
6. **Developing and formalising a series of on-road training routes for sports cyclists:**
   Several participants at the drop-in session were representatives from the road cycling community. There was discussion around measures that could be taken to improve the safety of sports cyclists along certain routes, including the Nannup-Balingup Road, Mowen Road and East Nannup Road (which forms part of the Munda Biddi Trail).

C1.2 Findings from Bridgetown-Greenbushes

In November 2017, approximately 20 community members attended a drop-in session at the Greenbushes Community Resource Centre. Key themes from this session included:

1. **Harnessing the potential of the Shire's disused rail corridor:**

   It was evident from the drop-in session that there is strong community support to see the Shire's disused rail corridor transformed into a rail trail. The railway, which transverses the entire shire from north to south, follows the gentle contours of the land and links the main population centres of Greenbushes and Bridgetown, as well other towns in neighbouring shires such as Manjimup and Balingup.

   It was noted many locals are already using the service tracks that run alongside the railway tracks as a means of safely riding between towns. The tourism potential of these trails was also discussed. Maureen Murray, a local resident, brought along her proposal known as the *Southern Forest & Food Trail*. The proposal highlights the benefits of developing a rail trail that extends all the way from Bunbury to Northcliffe, opening up the region to cycle-touring.

2. **Developing and formalising a series of on-road training routes for sports cyclists:**

   Several participants at the drop-in session were representatives from the on-road cycling community. Discussion was had around what measures could be put in place to improve the safety of cyclists along certain routes, including:

   - Bridgetown to Donnelly River Village, via Mokerdillup Road and Brockman Highway;
   - Bridgetown to Boyup Brook, via the Bridgetown-Boyup Brook Road
   - Boyup Brook to Bridgetown, via Blackwood Road, the Boyup Brook-Cranbrook Road; and Winnejup Road
   - Donnelly River Village to Greenbushes - via Maranup Ford Road.

3. **Creating better cycling routes around Bridgetown townsite:**

   A number of suggestions were put forward by participants, including:

   - Enhancing or extending trails along the Blackwood River, which are some of the most popular in Bridgetown;
   - Creating a path along Geegeellup Brook linking the town centre (near Henry Street) to the Blackwood River. If coupled with a future trail along the railway these would form an easy loop to and from the river, while avoiding Bridgetown's steep hills. It was noted how a boardwalk could be used in a few locations that are particularly space constrained or environmentally sensitive;
   - Providing a better and safer connection to the town oval (located approximately 2.2 kilometres north east of town centre) along the Boyup Brook Road; and
   - Providing a better and safer connection to Highlands Estate (located approximately 3.3 kilometres west of the town centre) along either Peninsula Road or Nelson and Hackett streets.

4. **Creating better cycling routes around the Greenbushes townsite:**

   Although Greenbushes already has a number of existing trails (including the Greenbushes Loop, New Zealand Gully Trail, Mining Heritage Trail and Greenbushes Pool Trail) these could be enhanced through better way-finding signage and promotion. Additional input on cycle routes through the town site is required.

5. **Providing better connections to mountain biking hubs:**

   As in many other parts of the South West, the popularity of mountain biking in the Shire of Bridgetown-Greenbushes has grown significantly in recent years. Several participants represented the mountain biking community at the Greenbushes session and saw an opportunity for certain mountain bike trails to be better connected to residential areas. This would allow more people, and especially children, to use the trails without needing access to a car.

   Key mountain biking areas for the Shire include:

   - Hester (just north of Bridgetown);
   - Kangaroo Gully (just east of Bridgetown); and
   - Linga Longa (located on Cassia Road, just west of Maranup Ford Road).

C2. PHASE 2 (PUBLIC COMMENT PERIOD)

Local community members and key stakeholders were invited to provide feedback on the draft *Warren-Blackwood 2050 Cycling Strategy* over a three-week period commencing on 24 October 2018. The draft document was hosted on the DoT website, promoted through social media and circulated to all stakeholders and community members that had attended the initial drop-in sessions. A total of 20 submissions were received.

The submissions have been grouped into a number of themes and are listed below in the order of frequency with which they arose in the submissions.

Table C2.1 Summary of community consultation themes

Community consultation theme	Response	Relevant LGA(s)
General support for developing walking and cycling paths and trails within or alongside rail corridors and between towns. Acknowledgement of rail trails generally being suitable for people of all ages and abilities, for various reasons. Opportunities to create loops with the Munda Biddi Trail.	This opportunity is captured within the strategy. Specific actions are outlined in Table 5.2.4.	All
Specific support for establishing a rail trail along the Bunbury-Northcliffe rail corridor.	This opportunity is captured within the Section 4.1 of the strategy. Specific actions are outlined in Table 5.2.4.	Shires of Bridgetown-Greenbushes, Manjimup, (Capel, Dardanup and Donnybrook-Balingup)
Complete the Wadandi Track between Busselton and Augusta, including a link to Dunsborough. The inevitable success of this facility will create momentum to develop similar projects in the Warren-Blackwood subregion.	The Wadandi Track is identified as a priority project in the *Leeuwin-Naturaliste 2050 Cycling Strategy.*	N/A
Support for establishing road cycling routes in the subregion. Some specific ideas around providing wider shoulders, cycle lanes or paths on those roads commonly used by road cyclists.	The potential of formalising road cycling routes in the subregion are captured in Section 4.4.5. Specific actions are outlined in Table 5.2.5.	All
Support for connecting Nannup to Busselton via an extension of the Sidings Rail Trail. This could form part of a loop between Busselton, Boranup, Nannup and Jarrahwood.	This opportunity is captured within Section 4.1.4 of the strategy. An action has been included in the *Leeuwin-Naturaliste 2050 Cycling Strategy* given the extension falls largely within the City of Busselton.	(City of Busselton)
Support for formalising a connection between the Leeuwin-Naturaliste subregion and Nannup. This could form part of a loop between Busselton, Boranup, Nannup and Jarrahwood.	This opportunity is captured within Section 4.2.3 of the strategy. Specific actions are outlined in Table 5.2.4.	Shires of Nannup, (and Augusta-Margaret River)

Community consultation theme	Response	Relevant LGA(s)
General support for better linking trails to towns and recognising the potential economic benefits that cycling could generate in the region.	The potential of cycle-tourism in the Warren Blackwood subregion is captured within Section 4.4.3 of the strategy. Several actions have been identified in Section 5.2.	All
Clearly identify areas for mountain biking, trail hubs and tourism related opportunities. Consider using Derby in Tasmania as a case study to highlight how their mountain bike track establishment and maintenance program is based on providing employment for local government staff and work crews.	The development of technical mountain bike trails is outside the scope of this strategy, however the importance of linking such facilities to towns is captured in Section 4.4.3.	N/A
General support for providing more bicycle paths and off road facilities that the average person feels comfortable using.	This strategy focuses on providing cycling infrastructure that is suitable for people of all ages and abilities.	All
General support for using cycling as a means of attracting more tourists to the Warren-Blackwood subregion and the South West more broadly. Acknowledgement of cycle tourists being relatively high spending due to the slow nature of their travel.	The potential of cycle-tourism in the Warren-Blackwood subregion is captured within this strategy. Several actions have been identified in Section 5.2.	All
Concerns around the potential overlaps of proposed routes with public water source areas.	This issue will be addressed during detailed planning of individual routes, where applicable. Additional wording added to strategy to highlight the need for consultation with the Department of Water and Environmental Regulation.	All
Support for formalising a connection between Boyup Brook, Bridgetown, Nannup (and Augusta) via a trail along the Blackwood River Valley.	This opportunity is captured within Section 4.2.3 of the strategy. Specific actions are outlined in Table 5.2.4.	Shires of Boyup Brook, Bridgetown-Greenbushes, Nannup (and Augusta-Margaret River)
Support for creating more access points and/or realigning sections of the Munda Biddi Trail to or through towns.	This opportunity is captured within Section 4.4.1 of the strategy. Specific actions are outlined in Section 5.2.	Shires of Nannup and Manjimup (as well as Shires of Collie, Dardanup and Donnybrook-Balingup)
Donnelly River Village lies at the centre of the study area and has established accommodation where people could base themselves. Loops could be created to each of the towns and surrounding areas.	Donnelly River Village is identified as a key connection on the Munda Biddi Trail. The proposed rail trails and Blackwood Valley route would have the potential to create loops throughout the region, albeit not centred on Donnelly River Village. The tourist trails proposed would perform a transport as well as recreational function. Trails centred on Donnelly River Village would likely have a recreational focus and as such are not identified in this strategy.	Shire of Nannup

Community consultation theme	Response	Relevant LGA(s)
Materials that illustrate trails connecting towns should be published.	Mapping and other promotional materials would be developed alongside any new tourist trail routes activation opportunities are discussed in Section 5.3.	All
Link outlying subdivisions in Northcliffe to the town to make it safe to cycle into town.	The outlying subdivisions in Northcliffe are very low density and the population is unlikely to increase by any significant extent over the foreseeable future. The proposed rail trail along the Bunbury-Northcliffe corridor would pass through this area. Additional dedicated cycling infrastructure is not considered warranted.	Shire of Manjimup
Support for a cycling trail from Manjimup to Diamond Tree (Lambert).	This opportunity is captured within the strategy. It would form part of a potential tourist trail alignment along the rail corridor between Manjimup and Pemberton. Specific actions are outlined in Table 5.2.4.	Shire of Manjimup
Signage, wayfinding and maintenance on existing cycle routes (on and off-road) needs improving.	Guidance around specific signage, wayfinding and maintenance is outside the scope of this strategy. Overarching activation principles are discussed in Section 5.3.	All
Additional detail should be provided on improving facilities within townsites.	The purpose of this document is to provide a strategic vision for cycling across the subregion. Sections 3.2 and 3.3 provide detail on the proposed town centre cycling networks.	All
It should be acknowledged in the strategy that access to rail corridors (leased by Arc Infrastructure) for trails or other general-purpose activities will be assessed by Arc Infrastructure on a case by case basis. There are specific conditions which must be met to enable third party access to the rail corridor.	This strategy identifies several potential opportunities to provide tourist trails (and in some cases, primary routes) along rail corridors throughout the south west region. Detailed investigation is required and will be progressed in collaboration with Arc Infrastructure, the Public Transport Authority and other key stakeholders.	All
Ensure that transitions from a tourist trail to a primary route (e.g. through townsites) are appropriately considered. Suggested that the start/end point of primary routes occurs at either a key destination, the edge of a built-up area, or at an intersection with a secondary or local route. This will create a circuit and ensure that a primary route does not unexpectedly turn from asphalt to gravel (or other surface type) that may not be suitable for all bicycle types.	Transitions to/from tourist trails in each of the town centres has been reviewed and minor amendments made to the mapping.	All

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