Shire of Dardanup Local Bike Plan

CW1200114 / 304900256

Prepared for
Shire of Dardanup

13 March 2023

Cardno

now

Stantec

Contact Information

Cardno (WA) Pty Ltd
ABN 77 009 119 000

11 Harvest Terrace
West Perth WA 6005
PO Box 447

www.cardno.com
Phone +61 8 9273 3888
Fax +61 8 9486 8664

Document Information

Prepared for	Shire of Dardanup
Project Name	Local Bike Plan
File Reference	CW1200114_Dardanup Local Bike Plan_v5.docx
Job Reference	CW1200114 / 304900256
Date	13 March 2023
Version Number	E

Author(s):

Shannon Leigh
Principal Transport Planner

Effective Date 7/03/2023

Approved By:

Ray Cook
Business Leader – Traffic & Transport Planning

Date Approved 7/03/2023

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
A	14 June	Draft for Review	S_L	SGL
B	16 August	Final Draft for Review	S_L	SGL
C	25 October	Final Draft	S_L	SGL
D	21 December	Final	S_L	SGL
E	7 March	Final	S_L	SGL

Table of Contents

Appendices

Tables

Figures

1 Introduction

The Shire of Dardanup has identified the need to develop a local Bike Plan that provides an overview of existing cycling infrastructure and presents opportunities to improve and encourage cycling.

This work includes the following key components:

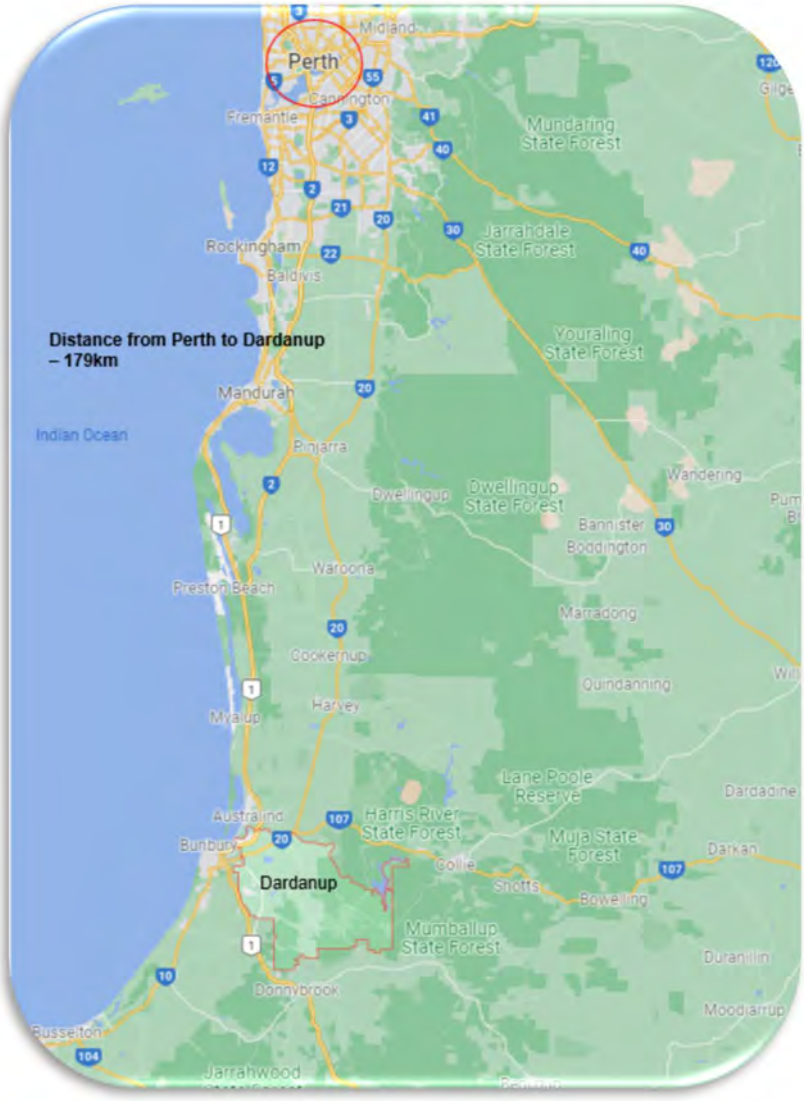
1. An action plan to deliver cycling infrastructure in order to maximise funding opportunities.
2. Planning for improved connections and access through the expansion of the bicycle network to link key attractors within the Shire.
3. Strategies to encourage cycling and to increase safety for people on bikes.

The Bike Plan has been part funded through the WA Bicycle Network Grants Program, which is administered by the Department of Transport (DoT) and is in line with State Government's *Perth Transport Plan for 3.5 million*.

1.1 Background

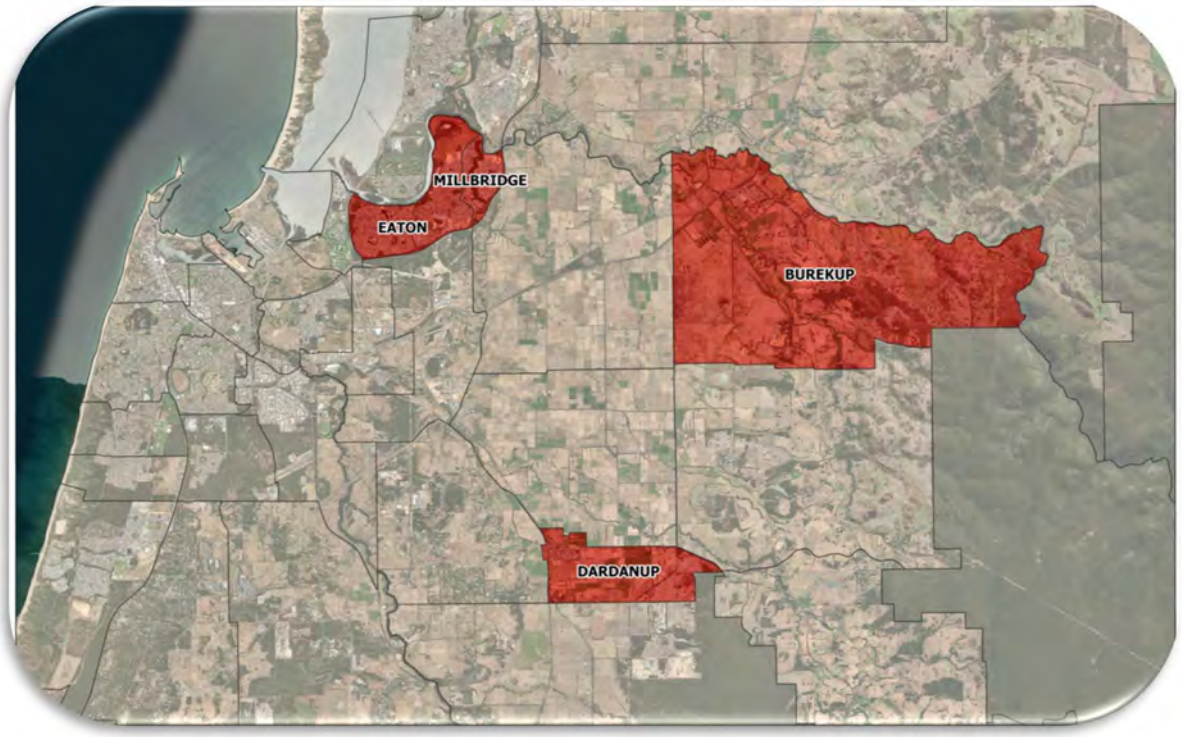
The Shire of Dardanup is located approximately 179kms from Perth and located immediately to the north and east of Bunbury (**Figure 1-1**). The three main townsites that were considered in this Plan are Burekup, Dardanup and Eaton/Millbridge (**Figure 1-2**).

Figure 1-1 Locational map



Source: MetroMap

Figure 1-2 Shire of Dardanup townsites

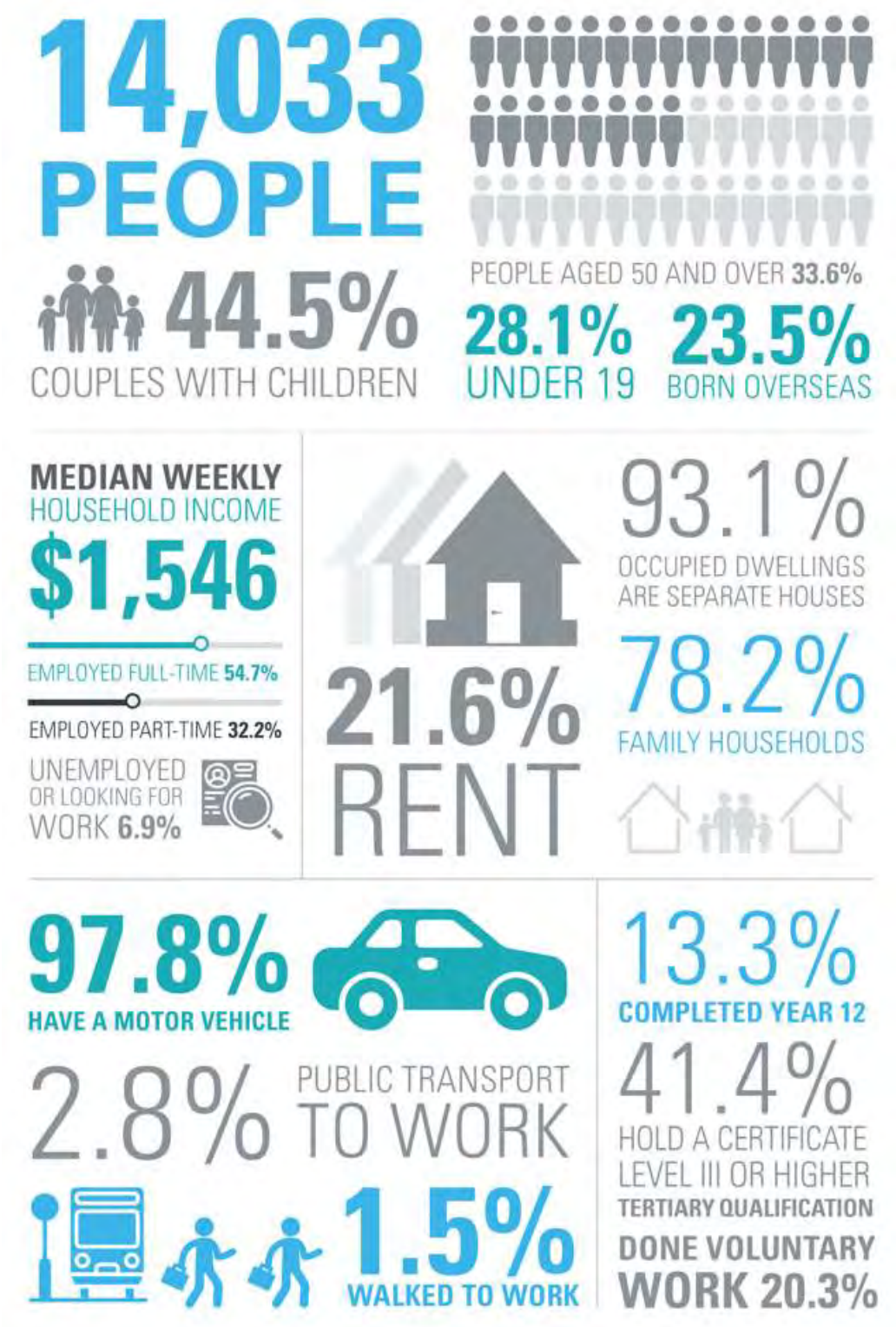


Source: Metromap

The population is expected to grow from 15,000 in 2022 to over 24,000 by 2041. This will provide several opportunities for economic development, which will need to be supported by safe and sustainable transport infrastructure.

As described in **Figure 1-3**, the population is relatively young, with a large proportion of households comprising families with children. This demographic tends to be concerned with both activity and safety – which can be compromised by limited pedestrian/cycling connectivity and major road crossings. These aspects have been specifically addressed and prioritised in the Action Plan, both in the context of local townsite improvements and regional connections.

Figure 1-3 Key demographic data



1.2 Burekup

Source: Metromap

Burekup was originally developed as a timber town in the early part of the 20th Century. More recently, Burekup has begun to attract more 'lifestyle' residents who commute to nearby employment centres.

Burekup's small townsite includes a busy store, town hall, a small school and is located adjacent to the Perth to Bunbury railway and South West Highway.

It has around 800 residents and an anticipated population of around 1,440 people.

1.3 Dardanup

Source: Metromap

The Dardanup Townsite contains two primary schools – a public school and a private Catholic school, along with a corner store, hardware store, post office, bakery, tavern, church and recreation facilities. The resident population of around 500 people is predicted to increase to around 4,000 with the townsite expansion strategy.

1.4 Eaton/Millbridge

Eaton forms the largest part of the Shire of Dardanup's rate base and functions as the local commercial hub, with a population of about 11,000 residents.

It has a diverse demographic mix made up of young people, couples, retirees, families and seniors. It is estimated that Eaton and Millbridge will have a population of 15,000 people when it is fully developed.

Source: Metromap

1.5 Vision and Objectives

The Shire of Dardanup's Bike Plan has been developed in accordance with the following:

- Department of Transport (DoT) guidelines to assist in the orderly planning of the walking and cycling network and assist the Shire to access Regional Bicycle Network (RBN) grants
- Austroads Standards
- *Western Australian Bicycle Network Plan 2014-2031*
- Department of Transport's *Long Term Cycling Network*

The purpose of the Bike Plan is to guide development of a safe, comfortable, attractive, direct and integrated route network connecting activity centres and regional attractions within the Shire of Dardanup.

The Bike Plan will also provide directions for future network expansions and potential connections to community and sports facilities such as the sporting ovals, and educational facilities in addition to the promotion and development of cycling tourism opportunities/activities/destinations.

The Bike Plan addresses the following areas and key objectives for the Shire of Dardanup:

- Increased safety for people on bikes

- Improved connections and access to strategic destinations such as local sporting, recreational and shopping facilities
- Connecting communities

In addition, the Bike Plan also explores the following:

- Cycling issues, opportunities and recommendations
- Encouraging a more active population through recreational walking and cycling options
- Encouragement and promotion of cycling
- Best practice examples and cycling initiatives

The Bike Plan will take into consideration the objectives and vision of the S*trategic Community Plan 2018-2028.* The vision for the Shire of Dardanup is to:

"Provide effective leadership in encouraging balanced growth and development of the shire while recognising the diverse needs of the community."

It will support the *Community Plan* to:

- Provide sustainable transport infrastructure;
- Provide a variety of places to live, work and play that meet the current and future needs of the community;
- Enable community safety and a sense of security; and
- Create connectivity: Support business success by efficient movement and exchange of people, business, goods, services and ideas.

By providing new cycling paths and links the Bike Plan supports the needs of the community; increasing mobility and independence for young people, creating recreational opportunities for residents and improving the safety and attractiveness of cycling as a viable and healthy transport mode.

It will also improve the environmental outcomes of the Shire by reducing the need for private vehicle modes and by creating sustainable alternatives for transport and recreation.

1.6 Methodology

The Shire of Dardanup has identified the need to develop a Local Bike Plan to guide the delivery of infrastructure and sustainability initiatives.

This Plan consists of an overview of existing cycling infrastructure and opportunities to improve the network throughout the townsite, which requires the development of a planning and action plan framework identifying opportunities and constraints associated with the existing infrastructure network and proposed expansion of this network in the future.

This framework is complemented by strategies to encourage the take-up of, or greater participation in, cycling within the Shire and connectivity to adjacent attractors.

To assist in identifying feasible, cost-effective solutions for the Shire of Dardanup, Cardno (now Stantec) completed a saddle survey of each townsite, as well as nearby attractors and generators. This site-based review of the existing cycling infrastructure is designed to identify potential routes for improvement, assess the feasibility of potential route alignments and upgrade recommendations and assess the likely increase in cycling demand expected to eventuate following improvements.

The following have also informed the evaluation process:

- Local Government policies and strategies
- Liaison with the Shire of Dardanup and relevant stakeholders
- Community consultation

These inputs have been used to evaluate the potential infrastructure requirements and provision for cycling facilities in the Shire of Dardanup and to prepare a summary of recommendations for improvement.

1.7 Policy and Strategic Context

Planning for cycling in the Shire of Dardanup takes place within the context of a number of national, state and local strategies and policies aimed at encouraging cycling as set out below (Refer **Table 1-1**). These have an impact in the formulation of the Bike Plan. To maximise the potential of the Bike Plan many of its initiatives follow the direction and ideals set out by these policies. For further information refer to **Appendix C**.

Table 1-1 National, State and Local policies

No.	Policy	Federal	State	Local
1	National Urban Policy: Smart Cities Plan (2016)	X		
2	Moving Australia 2030 (2013)	X		
3	National Cycling Strategy (2010)	X		
4	Walking, Riding and Access to Public Transport (2013)	X		
5	National Cycling Participation Survey (2021)	X		
6	Western Australian Bicycle Network (WABN) Plan 2014-2031		X	
7	Western Australian Planning Commission Development Control Policy 1.5 – Bicycle Planning (1998)		X	
8	Livable Neighborhoods (2015)		X	
9	South West Mountain Bike Master Plan		X	
10	Our Bike Path 2014-2020		X	
11	Western Australian Mountain Bike Strategy 2015 - 2020		X	
12	Town Planning Scheme No. 3			X
13	Place and Community Plan 2020 - 2030			X
14	Sport and Recreation Plan 2020 - 2030			X
15	Access & Inclusion Plan 2018 - 2023			X
16	Strategic Community Plan 2018 - 2028			X
17	Dardanup Community Facilities Plan (2021)			X
18	Eaton Millbridge Community Facilities Plan			X
19	Burekup Community Facilities Plan (2020)			X
20	Ferguson Valley and Surrounds Community Facilities Plan (2020)			X
21	Watson Reserve Master Plan (2021)			X
22	Dardanup West/Crooked Brook Structure Plan			X
23	Townsite Expansion Strategies – Dardanup and Burekup			X
24	Eaton Foreshore Master Plan			X
25	Dardanup Public Health Plan 2021 - 2025			X
26	Bunbury Wellington 2050 Cycling Strategy			X
27	Greater Bunbury Region Scheme			X
28	Joint Town Planning Scheme No. 1 Shire of Harvey & Shire of Dardanup			X
29	Shire of Dardanup Bike Plan Eaton (2001)			X

1.7.2 Shire of Dardanup Bike Plan Eaton (2001)

The Plan identifies existing and proposed concrete and bitumen Dual-Use Path (DUP) infrastructure in Eaton (**Figure 1-4)**. After two decades, some of the existing and proposed paths remain in the cycling network for Eaton (**Figure 4-18)**, while others do not.

There are several DUPs, now referred to as Shared Paths, that were existing infrastructure on the Plan and remain in the new bike plan for Eaton/Millbridge:

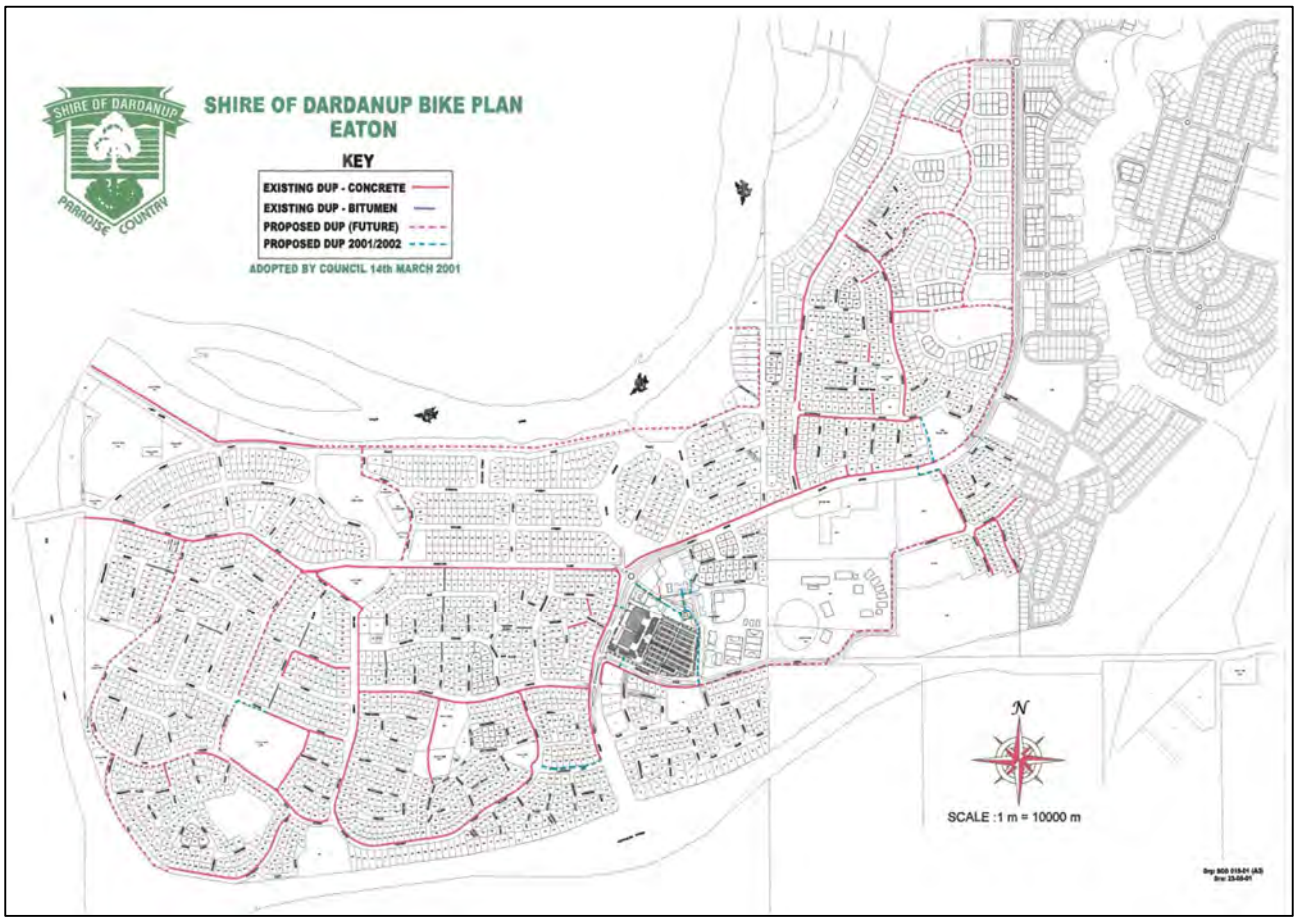
- The Primary path on Pratt Road from Old Coast Road to Foster Street.
- The Secondary paths on Eaton Drive from Hamilton Road to Edith Cowan Avenue and from Hamilton Road to Recreation Drive, Hamilton Road from Old Coast Road to Eaton Drive and Recreation Drive from Eaton Drive to Council Drive, though the latter two have been identified as needing improvement.
- The Local paths on Diadem Street from the Eaton Primary School entrance to Millard Street, Cleveland Bay Avenue from Lusitano Avenue to Polwarth Circuit, Millard Street from Hamilton Road to Hale Street, Glenhuon Boulevard from Eaton Drive to Leicester Ramble, Murdoch Crescent from La Trobe Street to Margaret Circuit, Cleveland Bay from Polwarth Circuit to Lusitano Avenue and continues on to a path through to Bradford Loop and an off-street path through Lofthouse Park to Malabor Retreat rather than to Mulberry Grove. There are also a series of cycling paths through residential cul-de-sacs from Hamilton Road to Lofthouse Avenue, from Hamilton Road to Diadem Street and another from Elaap Street through to Lucretia Street through to Diadem Street.

There are a few DUPs that were proposed in the Plan that have since been built and form part of the new bike plan for Eaton/Millbridge:

- The Primary path on Pratt Road from Foster Road to Leake Street, apart from a small section through Watson Reserve, the path instead continues along Pratt Road.
- The Secondary paths on Eaton Drive from Edith Cowan Avenue to Jindalee Way, Recreation Drive from Council Drive to Oswego Way and Council Drive, though the latter two have been identified as needing improvement.
- The Local paths on Bobin Street, Diadem Street from Casuarina Street to the existing path on Diadem Street, Cleveland Bay Avenue from Polwarth Circuit to Eaton Drive, Murdoch Crescent from La Trobe Street to Edith Cowan Avenue, Glenhuon Boulevard from Leicester Ramble to Peninsula Lakes Drive and Peninsula Lakes Drive from Glenhuon Boulevard to Holstein Drive.

The current plan for Eaton/Millbridge in **Figure 4-18** includes additional routes that were not initially considered in the 2001 plan.

Figure 1-4 Shire of Dardanup Bike Plan Eaton (2001)



1.7.3 Bunbury Wellington 2050 Cycling Strategy

The strategy sets out a blueprint for connecting, enhancing and extending the region's cycling routes through the development of an interconnected network of off-road shared paths, protected on-road bike lanes and low-stress residential streets. Key opportunities assessed at benefitting residents and visitors to the Shire of Dardanup include:

- Options to facilitate a coastal connection to Bunbury (defined by the objective "Connect Bunbury to Busselton").
- Options to facilitate a coastal connection to Mandurah (defined by the objective "Connect Bunbury to Mandurah").
- Inland connections from Burekup and Dardanup to other strategic routes (defined by the objective "Connect small towns along the South Western Highway corridor").

All of these have implications for the Shire and require partnership with the Department of Transport and neighbouring Shires. At present these opportunities are un-costed and unfunded and will need strong working relationships with all parties to realise the necessary grant funding to implement.

Relevant objectives to Shire of Dardanup from the priority projects are listed in **Table 1-2.** The table also shows the actions the Shire has taken since the original plan was released in 2018.

Table 1-2 Strategic Cycling Priorities from Bunbury Wellington 2050

Bunbury Wellington 2020 Cycling Strategy Priorities	Shire of Dardanup Actions - Updated
Developing the Primary Network	

#5	Bunbury Outer Ring Road Shared Path	Relevant local government authorities and the DoT to liaise with Main Roads to ensure that a primary cycling route is provided as part of the Bunbury Outer Ring Road. This will ultimately enable the creation of a cycling look around the Greater Bunbury urban area.	A Path Network Review assessment was carried out by South West Gateway Alliance (BORR) with a number of stakeholders: Main Roads, Department of Transport, WestCycle, Greater Bunbury Bicycle Users Group, South West Cycle Club, City of Bunbury, Shire of Dardanup, Shire of Harvey and Shire of Capel.
#13	Millars Creek (western path upgrade)	Shire of Dardanup to upgrade the shared path on the western side of Millars Creek to primary route standard (between Chamberlain Grove and Millbridge Boulevard).	Primary route standard is 3m, it is currently 2.2m. Upon review there are terrain limitations and a 3m path is not possible. The current 2.2m asphalt path will be renewed as part of the normal renewal planning already addressed in the path Strategy/Pathway Master Plan. Some sections are currently only accessible by stairs (including southern end). Path further north along creek is also 2.2m and has not been identified for upgrade in the cycling strategy. Not in the Shire's 22/23 10-yr program. or flagged in the Path Plan (Strategy)
#14	Collie River foreshore (south side)	Shire of Dardanup to develop a primary route along the Collie River's southern foreshore linking the bridges at Old Coast Road and Eaton Drive.	**Completed.** Construction of the Eaton foreshore heritage trail and Pratt Road/Wells Reserve path as well as path along Eaton Drive connecting to the Danjoo Koorliny Bridge.
Developing the Secondary Network			
#9	Ferguson Road Shared Path	Shire of Dardanup to construct a new Shared Path on the northern side of Ferguson Road linking Charlotte Street to Dardanup Oval.	The Pathway Master Plan had previously included this connection, but it was removed through the Dardanup Strategic Community Plan process and also a land issue that was later identified leaving insufficient room.
#10	Eaton Drive Shared Path (South end)	Shire of Dardanup to construct several sections of shared path along Eaton Drive (linking the Australind Bypass to the Eaton town centre).	Master plan proposes PTH252, PTH253, PTH254 & PTH321. Not in the Shire's 22/23 10-yr program. Concept level feasibility study completed into linking Lavender Way to Vittoria Rd (City of Bunbury) with a 3m dedicated cycleway.
#11	Eaton Drive shared paths (north end)	Shire of Dardanup to construct a shared path at the northern end of Eaton Drive linking Millbridge Boulevard to the new bridge over the Collie River.	Completed
#12	Hamilton Road cycling facilities	Shire of Dardanup to investigate the feasibility of including protected cycles lanes on Hamilton Road as part of a future major road upgrade project.	Not included in the Shire's 22/23 10-yr program.
Developing the Local Network			
#4	Chamberlain Grove Shared Path	Shire of Dardanup to construct a shared path on Chamberlain Grove in Millbridge (from Illawarra Drive), providing a connection to the Millars Creek path system.	Master plan proposes PTH258. Not included in the Shire's 22/23 10-yr program.
Developing Road Cycling Routes			
#1	Ferguson Valley road cycling routes	Shire of Dardanup to trial a formalised road cycling route through the Ferguson Valley utilising local roads including Ferguson Road, Pile Road, Wellington Forrest Road and Wellington Mill Road.	Not included in the Shire's 22/23 10-yr program.

1.7.4 Bunbury Outer Ring Road

The BORR alignment (2018) which was used in this Strategy is different to the current BORR alignment. This plan uses the current BORR alignment and sets it as 'Proposed Primary Route.'

1.8 Crash Data

Safety is a very important factor in developing a successful Bike Plan. The availability and quality of existing cycle facilities is a good way of determining the level of safety and performance within an area. Main Roads Western Australia (MRWA) crash data was used to identify the level of safety and approximately 408 crashes have occurred within the Shire from 1 January 2016 to 31 December 2020. Most of these crashes were not on local Shire roads, and the details of crash data are provided in **Appendix E**.

2 Bicycle Users and Facilities

2.1 Types of Bicycle Users

A range of cyclist trip types made within the Shire of Dardanup has been identified (**Table 2-1**). These different types of trips need different levels of infrastructure and facilities to support them.

Table 2-1 Types of Cyclists and their Requirements

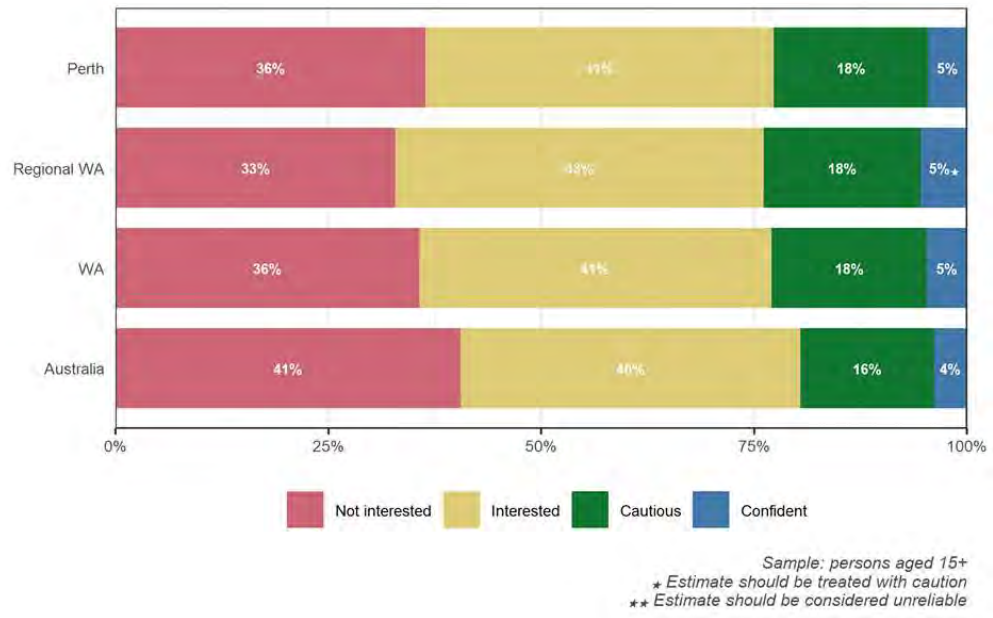
Cyclist Type	Cycling Profile
Utility Cycling	Ride for specific purposes (shopping), short length trips.
School Children	Skill varies, developing confidence.
Tourists Recreational	Their usual destinations would include recreational destinations. They prefer riding on attractive and scenic routes at a low speed. Time is often not a major consideration, and the skills and abilities of these cyclists vary quite a bit.
Commuter Cyclists	Most commuter trips are performed by students and adults commuting to either their education institution or place of work. Usually more experienced cyclists.
Touring	Long distance journeys, may be heavily equipped, some travelling in groups.
Neighborhood Cyclists	Neighbourhood cycling involve trips to local schools, shops. Most of these trips involve distances of less than 5km. Travel speeds typically less than 15km/h.
Sports Cyclists	Sports cyclists often travel at speeds greater than 30km/h. These cyclists often travel distances over 10km mainly along major urban arterial or regional roads.

The review of the townsite networks and aspirational route hierarchies have been developed with reference to these needs; the differences in separation from traffic and quality of provision necessary to accommodate the various groups.

2.2 National Cycling Participation Survey

The National Walking and cycling Participation Survey (2021) provides insight into walking and cycling activity across Australia. The survey is administered as a telephone survey and the numbers were drawn randomly. There were 621 households in Perth and 266 in regional WA. The survey showed a slightly higher percentage of people willing to consider bicycle riding in regional WA over Perth and Australia.

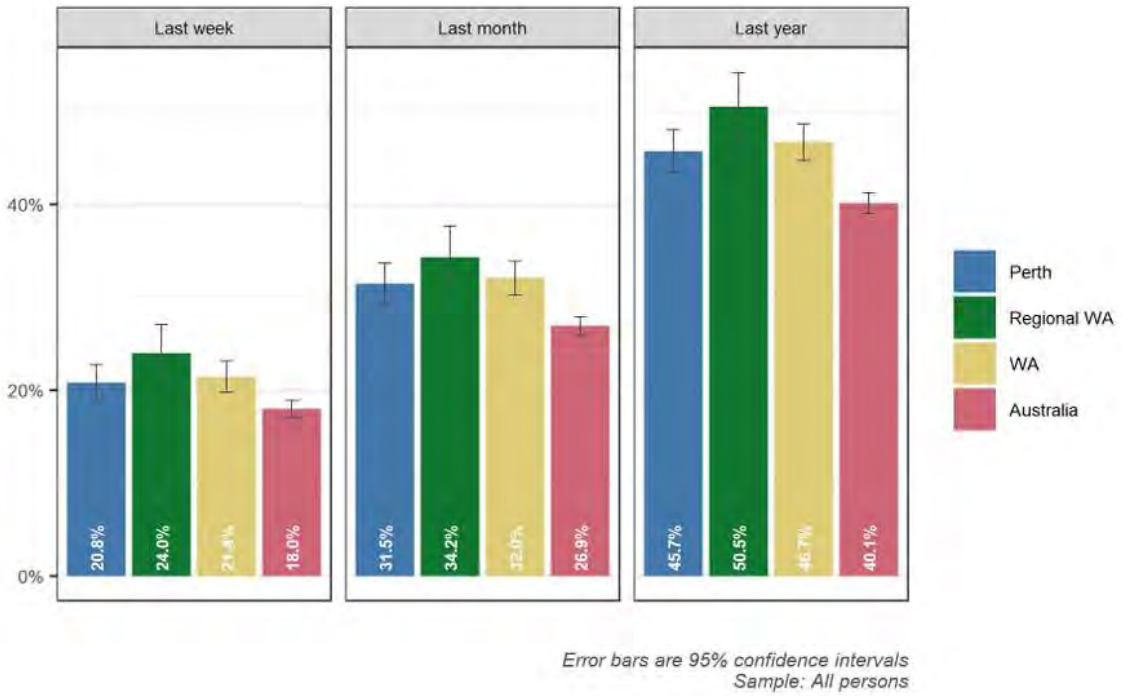
Figure 2-1 Willingness to Consider Bicycle Riding



Source: National Cycling Participation Survey 2021

It also shows that there is a higher proportion of people riding in regional WA than in Australia on average (**Figure 2-2**).

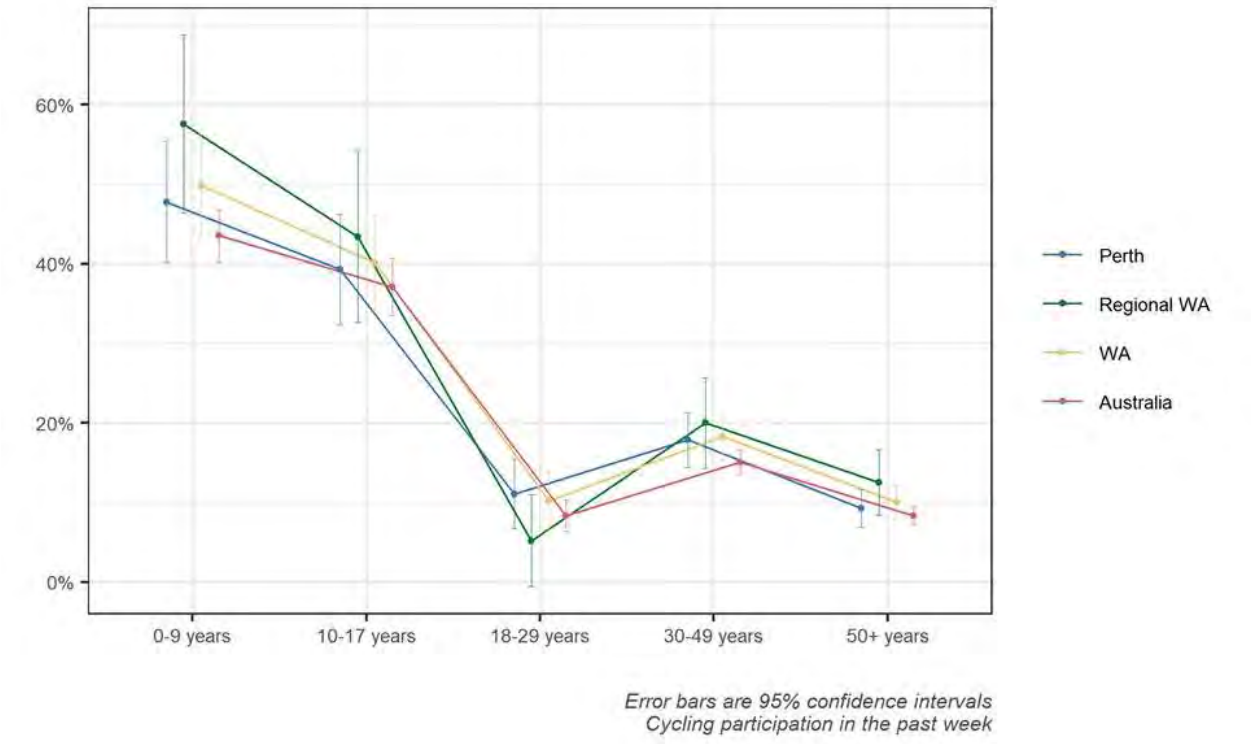
Figure 2-2 Cycling Participation by Region



Source: National Cycling Participation Survey 2021

The highest cycling participation rate (measured as those who had ridden in the past week) was among children aged under 10. The cycling participation rate deteriorates marginally among teenagers before dropping precipitously among young adults.

Figure 2-3 Cycling Participation by Age



Source: National Cycling Participation Survey 2021

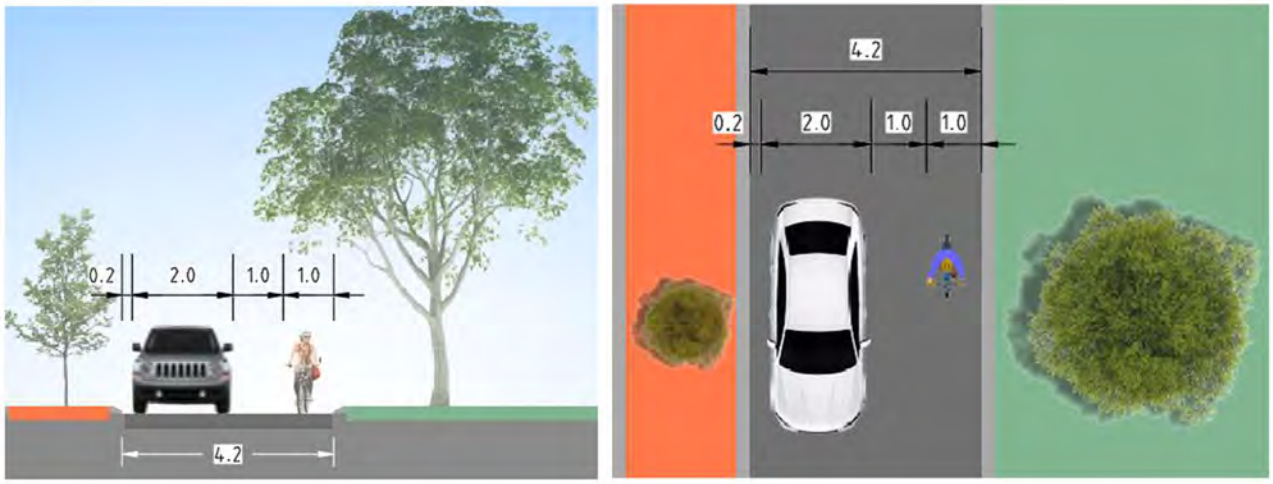
2.3 Types of Paths

2.3.1 No Bicycle Path

The minimum width of a traffic lane to accommodate a safe and legal overtaking manoeuvre when each side of the traffic lane has physical barriers is 4.2m as depicted in **Figure 2-4.** This accounts for a 0.2m shy line described below.

These revised guidelines represent an increase from 3.7m, which was previously identified in Austroads and Main Roads, to account for recent changes to safe passing rules. Where a vehicle can overtake a bike rider (when safe to do so) outside the traffic lane i.e., using the opposing traffic lane, the width of the traffic lane can be reduced, as long as the total constrained carriageway is more than 4.2m.

Figure 2-4 Impact of Safe Passing Laws on traffic lane width to accommodate overtaking



2.3.2 Shared Path

The formal definition of a shared path from the *WA Road Traffic Code 2000* is as follows:

*"**shared path"** means an area open to the public (except a separated footpath) that is designated for, or has as one of its main uses, use by both the riders of bicycles and pedestrians, and includes a length of path beginning at a "shared path" sign or "shared path" road marking and ending at the nearest of the following:*

- an "end shared path" sign or "end shared path" road marking;
- a "no bicycles" sign, or a "no bicycles" road marking;
- a "bicycle path" sign;
- a carriageway;
- the end of the path;"

Red asphalt is the preferred surface treatment for all "cycling-focussed" paths in Western Australia as shown in **Figure 2-5.**

Figure 2-5 Example of a Shared Path

Shared Paths provide direct connections between primary routes and major trip generators such as shopping centres, industrial areas, major health and educational institutions, sporting and civic facilities. The width of a path should correspond with its desired function, as well as the expected number of people walking and cycling on the path.

Source: Department of Transport Shared Path Guidelines

Other factors to consider when determining an appropriate path width include:

- Path function (the path's role in the cycling network route hierarchy);
- The types of users; and
- Catering for current needs and future growth.

The acceptable range for shared path width is presented in **Table 2-2.** It is acknowledged that there may be locations where this is not achievable, and that this should not exclude a vital, narrower path from the shared path network. However, every effort should be made so that new paths are constructed to the recommended standard. **Figure 2-6** shows additional guidance surrounding when to use different types of paths.

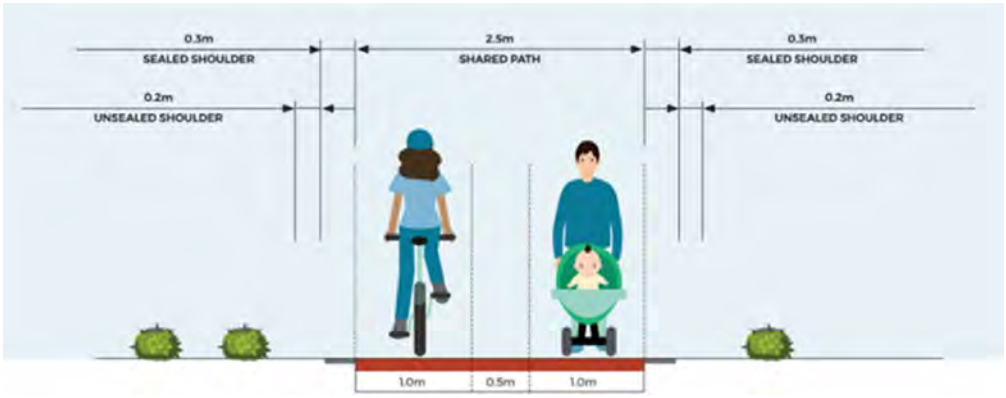
Table 2-2 Minimum and Desirable Widths for New Shared Paths

		Local Access Path	Regional Path	Recreational Path
Shared Path	**Desirable Minimum Width**	2.5	3.0	3.5
	Minimum Width – typical Maximum	2.0 – 3.0	2.5 – 4.0	3.0 – 4.0

Source: Austroads Part 6A

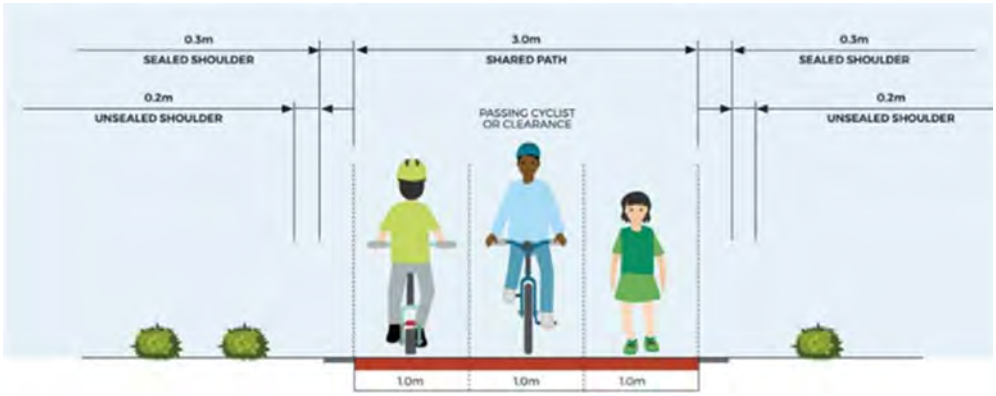
Figure 2-6 Additional guidance surrounding when to use different types of paths

2.5m shared path
▪ **Paths of this width provide only 0.5m of clearance when passings occur.** ▪ **If a passing and a meeting occur simultaneously, one of the users may be forced off the path.** ▪ **Paths of this width are only suitable for local and secondary routes, where volumes are low.**



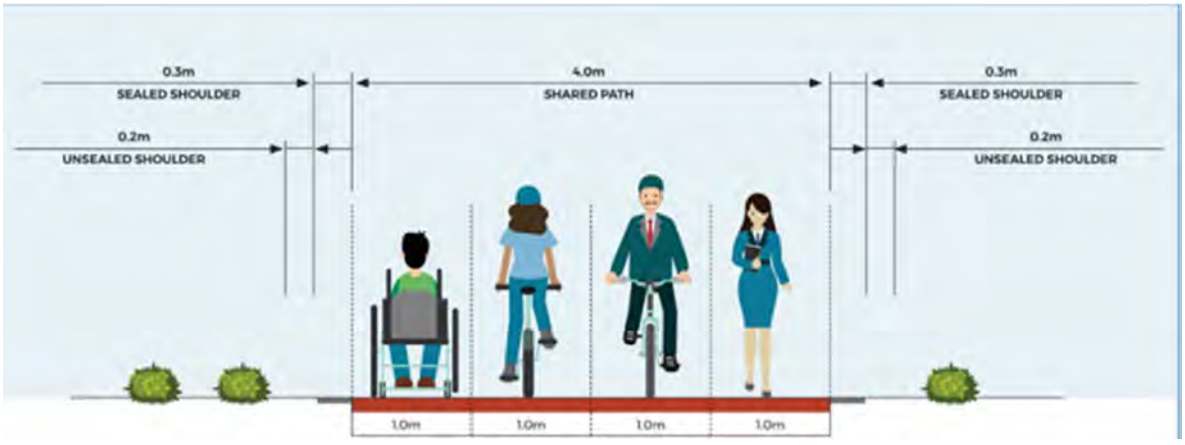
3.0m shared path

- **Providing 1.0m of clearance, allows both passings and meetings to occur simultaneously.**
- **This width is recommended for new local governments shared paths (suitable for most primary and secondary cycling routes), particularly those with a recreational function.**



4.0m shared path

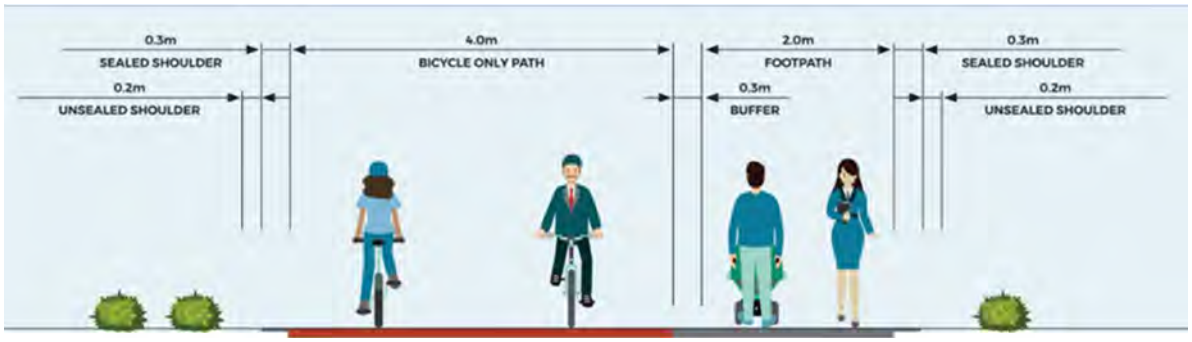
- **Standard width for all new principal shared paths (PSPs).**
- **Allows for simultaneous passing to occur in both directions.**
- **Enables comfortable side-by-side cycling, making it attractive for people who wish to ride with family/friends.**
- **Note that in some situations, a 1.8m + 2.2m separated path may be a more suitable use of available space.**



6.0m separated path

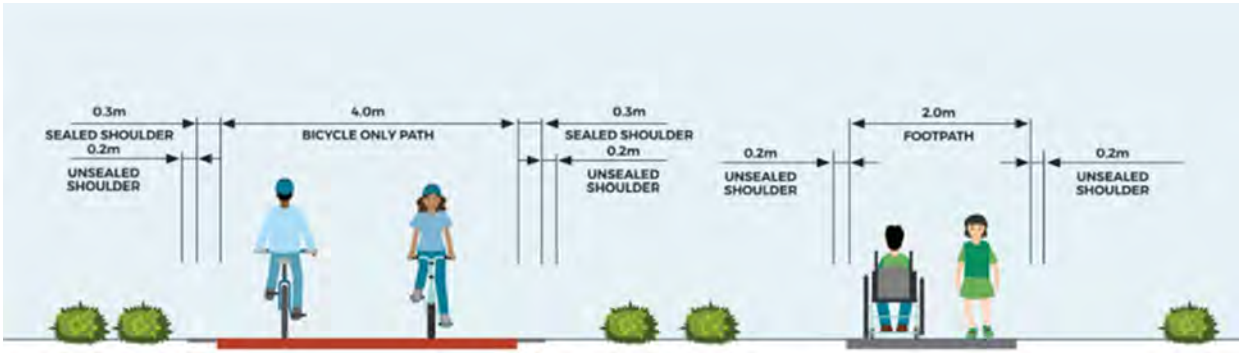
- **This type of path is warranted where there are very high volumes of pedestrians and bike riders (such as very busy inner-city commuter routes or popular waterfront locations).**

- **Requires consideration of how best to separate pedestrians and bike riders.**



6.0m split path

- **Split paths provide a higher level of service than separated paths and are typically constructed when there is adequate space available.**
- **They are typically only used in areas with high volumes of pedestrians and bike riders (such as popular waterfront locations).**



Source: Cycling Guidelines for Western Australia – Shared and Separated Paths

Figure 2-7 Shared Path – Shire of Dardanup WA

Source: MetroMap

2.3.3 Footpath

A footpath is defined in the RTC 2000 as “an area that is open to the public that is designated for, or has as one of its main uses, use by pedestrians. Footpaths are narrower and typically support low speed, low volume bicycle riding and, although legal to ride on, they are a less preferred alternative to well-designed bicycle, shared or separated paths as they are not designed to accommodate the safe and efficient movement of bike riders

In February 2021 Austroads provided the *Guide to Road Design Part 6A: Paths for Walking and Cycling* which suggests the minimum width requirements as shown in **Table 2-3.**

Table 2-3 Width Requirement for Pedestrian Paths

Situation	Suggested minimum width (m)
General Low Volume	1.2
High Pedestrian Volumes	2.4

Source: Austroads Guide to Road Design 6A

Figure 2-8 Footpath – Millbridge WA

Source: MetroMap

2.3.4 On Road Cycling Infrastructure

2.3.4.1 Separated Cycle Path

Protected or separated cycle paths are on-road cycling facility where bicycles are physically separated from main vehicular traffic in form of solid kerb barrier, on street parked cars, or painted chevrons. If the cycle lane is placed between parked cars and the road kerbing, a minimum of 1m gap would need to be provided to allow room for opening car doors without impeding the cycle lane. The cycle lanes can be configured as bidirectional cycle lanes on one side of the street, or one-way in each direction on both sides of the street. **Table 2-4** shows the standard width requirements.

The locations at which signs and/or pavement markings are required to designate a separated and/or bicycle-only path include:

- The beginning of the path;
- Immediately following road crossings and path connections; and
- The end of the path.
- Typically provided in areas of significant pedestrian and cycling demand.

Table 2-4 Minimum and Desirable Widths for New Separated Paths

		Bicycle Path	Pedestrian Path	Total
Separated One-Way Paths	**Desirable Minimum Width**	1.5	1.5	3.0
	Absolute Minimum Width	1.2	≥ 1.2	≥ 2.4
Separated Two-way Paths	**Desirable Minimum Width**	2.5	2.0	4.5
	Minimum Width – typical Max	2.0 – 3.0	≥ 1.5	≥ 4.5

Source: Austroads Part 6A

Figure 2-9 Scarborough Beach Road, Mt Hawthorn

Source: MetroMap

2.3.4.2 On-Road Cycle Lanes

On-street facilities describe any infrastructure that accommodates for, or encourages, cyclists to use the road Dedicated on-street cycling infrastructure is primarily provided in the form of a cycle lane, in which a sealed shoulder and edge line is installed to separate cycling and vehicular traffic. In these circumstances, bicycle symbols are marked to indicate the purpose of the lanes. Cycle lanes are located on-road on the outer edge of each direction of general traffic lane and few characteristics of cycle lanes are as follows:

- Red coloured surface treatment along the cycle lanes helps indicate priority to cyclists;
- Green coloured surface treatments are used to help indicate priority to cyclists at intersections. This should be used sparingly to maintain its effectiveness;
- DoT guidance indicates the requirement for some form of separation/protection by ‘soft’ measures such as painted hatching, plastic kerbing or armadillos which is necessary to provide high quality, but only fully separated lanes will be funded through the RBN Grant process; and
- Vertical signage and bicycle symbol pavement markings are required.

Figure 2-10 On-Road Cycle Lane Hackett Drive, Nedlands

Source: MetroMap

The desirable width of cycle lanes depends on the speed limit of the street. For roads with speed limit of 60km/h or less, the desired width is 1.5m. The acceptable range for cycle lane widths is summarised in **Table 2-5.**

Refer to *Austroads Guide to Road Design Part 3 A: Paths for Walking and Cycling* for summary of all Austroads guidelines related to cycling.

Table 2-5 Desirable Cycle Lane Width

	Cycle lane width (m)		
Speed limit (km/h)	**60**	**80**	**100**
Desirable width	1.5	2.0	2.5
Acceptable range	1.2 – 2.5	1.8 – 2.7	2.0 – 3.0

Source: Austroads: Part 6A

The overall road width needed for cycle lanes on both side of the street will depend on the characteristic of the road itself. Depending on whether the road would be used predominantly by passenger cars or trucks will dictate the required width of the traffic lane itself. *Austroads Guide to Road Design Part 3* recommended standard lane width of 3.5m to allow for larger vehicles and buses to comfortably pass through the road. Traffic lanes may be reduced to 3.3m subject to approval relevant road authority.

Table 2-6 provides guidance on traffic lane widths on urban arterial roads. Therefore, with a standard traffic lane width of 3.5m and minimum acceptable width of 1.2m for cycle lanes, the minimum total road width required is 9.4m.

Table 2-6 Urban Arterial Road Width

Element	Lane width (m)	Comments
General traffic	3.3 – 3.5	General traffic lane widths to be used for all roads
	3.0 – 3.3	For use on low-speed roads with low truck volumes
Service road lane	3.4 – 5.5	Range of lane widths on service roads (refer to Austroads Guide to Road Design Part 3 Section 4.11)
Wide kerbside lane	4.2	Locations where there are high truck volumes (additional width provided for trucks)
	4.2 – 4.5	Locations where motorists and cyclists use the same lane (refer Austroads Guide to Road Design Part 3 Section 4.8.11 and Commentary 7)
High Occupancy Vehicles (HOV) lane	3.5 – 4.5	Bus lane (refer Austroads Guide to Road Design Part 3 Section 4.9.2)
	3.3	Tram/light rail vehicle lane (refer Austroads Guide to Road Design Part 3 Section 4.9.3)
Minimum width between kerb and channel (to provide for passing of broken-down vehicles)	5.0	Width of a single lane suitable for use in a left turn slip lane, or two lanes, two-way divided road with a raised median
	2 × 4.0 (8.0)	Width of two lanes that provide for two lines of traffic to (slowly) pass a broken-down vehicle

2.3.5 Safe Active Streets (Bicycle Boulevards)

A bicycle boulevard is the name given to a range of treatments to quiet suburban streets to create a safe, low speed and low vehicular traffic environment for on-street cycling.

In Safe Active Streets speeds are reduced to 30 km/h to allow people in cars and on bikes to share the street safely. With lower traffic speeds, streets are also much safer for pedestrians and children, and additional tree planting and landscaping make them more attractive places to walk or ride.

Safe Active Streets are designed to create safe and comfortable riding environments for bike riders with all levels of experience. People on bikes can ride closer to the middle of the lane, with cars passing only if there is enough space to do so safely.

Along the routes, bike symbols and red asphalt are typically used to mark out bike boulevards and suggest where bikes should ride. Various measures may be used to slow traffic, discourage through-travel by cars, and improve bike flow, including, for example:

- Single-lane slow points, where approaching vehicles should give way to any car or bike already at or passing through the slow point;
- Raised platforms at intersections;
- Narrowing carriageway widths by introducing on-street parking and plantings;

Figure 2-11 Shakespeare Street Bicycle Boulevard – City of Vincent, WA

Source: Department of Transport

2.3.6 Lowered Speeds on Residential Streets

Lowering the posted speed limit within the townsites enables every street to become a Safe Active Street, making it safer to walk and cycle. Locations through the Perth Metropolitan area are beginning to implement speed limits of 40km/hr as part of moves to slow drivers down and make metropolitan roads safer. It is a gradual process to reinforce the behaviour change of a slower speed, as has been seen with the reduction from 60km/hr to 50km/hr residential speed reductions.

The City of Vincent will lower all residential street speed limits to 40km/h by 2023. In 2019, a trial of the southern suburban areas commenced on local residential streets.

Interventions to reinforce low-speeds on roads that were initially designed for 60km/hr can be achieved at a significantly lower cost than using traditional infrastructure. An example of this is the Self-Explaining Roads Trial in the City of Stirling. This project used horizontal and vertical frictions and interventions to change the visual characteristics of roads to influence driver behaviour.

Figure 2-12 Example Treatment for Self-Explaining Roads in City of Stirling

Figure 2-13 Mini Roundabout in North Perth (Partly Completed)

Main Roads WA have introduced the Urban Road Safety Program which implements low-cost road safety treatments on an are wide or whole-of-street basis to assist in the reduction of fatal and serious injury crashes on local roads that are ineligible for funding from other road safety programs. The pilot project in the City of Vincent involves installing mini roundabouts at nine intersections in North Perth.

2.3.7 Sealed Shoulders

Figure 2-14 Example of Sealed Shoulder

Sealed shoulders are similar to cycle lanes but without the necessary regulatory signage. The main difference for cyclists is that parking is not prohibited in sealed shoulders, unless otherwise signed. In areas with demand for on-street parking, this results in a facility with poor safety for cyclists as they must move into the traffic lane frequently to pass parked vehicles (Refer to **Figure 2-14**). However, a sealed shoulder may be preferable in areas without significant parking demand due to their capacity for use as a breakdown lane.

It is important to note that the Department of Transport Regional Bike Plan grants do not support seal shoulder infrastructure.

2.3.8 Bike Parking and Amenities

Bike parking and amenities help complement the cycle network by reducing inconveniences associated with cycling. End of trip (EoT) facilities are a critical, but often forgotten, component of the cycling network. Therefore, the provision of EoT facilities at workplace, shops, schools, and recreational places is important to encourage cycling trips. The Shire is responsible for providing EoT facilities on public land such as road reserves, parks, recreational facilities and Council buildings (e.g. community centres, libraries) while the provision of EoT facilities for students, commuters and shoppers are generally the responsibility of schools, businesses, and workplaces/employers.

The presence and/or quality of EoT facilities can often be the deciding factor for many cycling trips.

Different trip purposes would have different needs when it comes to EoT facilities. For example:

- A commuter may want a secure place to park their bicycle inside their workplace, along with showers, lockers and ironing facilities to enable them to freshen up before commencing work for the day.
- A shopper may only want a secure short stay place to park their bicycle, conveniently located to their destination (e.g. close to the entrance of a shopping centre, or on the footpath in a ‘main street’ environment) which is ideally protected from wet weather.
- A recreational rider generally has EoT facilities at their own home but may require a secure place to park their bicycle at an intermediate destination, such as a cafe or a park.

Long stay EoT facilities for commuters should generally be provided by the employer. Council’s involvement in the provision of end of trip facilities should be in the form of:

- Requiring, through its Town Planning Scheme, new developments to provide a certain standard of end of trip facilities for both employees and visitors.
- Providing suitable EoT facilities for employees and visitors at its offices, depots, library etc.

Figure 2-15 End of Trip Bike Parking, Cottesloe Beach

Short stay EoT facilities should generally be in the form of simple u-rails or other design, which facilitates the secure parking of a bicycle. In accordance with Austroads Guidelines, these should be located approximately every 30 metres along ‘main street’ type shopping strips and in small clusters at the entrances to shopping centres and other significant destinations.

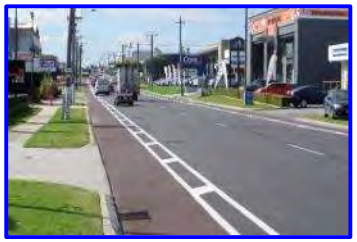
Mid trip facilities should be encouraged over longer routes and especially in the regions. These can include rest stops with shelter, bench, bike parking and in some cases a water fountain.

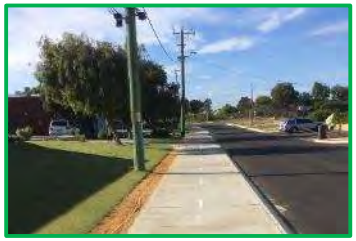
3 Aspirational Cycle Network

3.1 Regional Route Hierarchy

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

Table 3-1 Hierarchy

Hierarchy	Colour Coding	Function	Built Form	Examples
Primary Route	**RED**	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/utility, recreational, training and tourism trips. Designed for '8-80' Group	Primary routes are high quality cycle only or shared paths, located adjacent to major roads, rail corridors, rivers and ocean foreshores. Where the environment requires them, these tend to be constructed 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.	   
Secondary Route	**BLUE**	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. Designed for '8-80' group.	Secondary routes can take on different 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).	   

Hierarchy	Colour Coding	Function	Built Form	Examples
Local Routes	**GREEN**	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. Designed for '8-80' group.	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).	   
Training Route	**YELLOW**	Training routes are designated routes for training, sports or recreational cyclists to undertake long distance rides in on-road environments. Designed for Confident Cyclists.	Training routes are normally located on rural or semi-rural roads on the outskirts of cities and towns. 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.	   

Hierarchy	Colour Coding	Function	Built Form	Examples
Transport Trail	**BROWN**	Transport trails provide long-distance, off-road (unsealed) riding experiences through natural settings, away from motorised traffic. They often support recreational and tourism trips between regions. Designed for '8-80' group.	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 can be sealed when they run through towns, busy road crossings or in special circumstances.	   

The proposed network is based on this hierarchy to provide consistency in cycle planning across the State. In Western Australia cycling is permitted on all footpaths, but local routes are designated to collect cycling traffic from local roads within towns and distribute it to the secondary and primary network. Therefore, not all existing or proposed footpaths are shown on the cycling route infrastructure maps.

For the purpose of the Shire of Dardanup bicycle plans, the Primary, Secondary and Local routes were assessed based on widths to determine if it is an 'Existing Route', 'For Improvement' or 'Proposed'. The route width is not a requirement, and the form is dependent on its location. For example, a local route may be provided in the form of a low traffic neighbourhood street without a footpath. This metric was used as a guideline in the high-level analysis of the Shire's network.

The following parameters were used:

- Local Route: 2m width
- Secondary Route: 2.5m width
- Primary Route: 3m width

4 Townsite Network Analysis

4.1 Land Use Attractors and Generators

There are several key cycle trip attractors and generators in the Shire of Dardanup. The land uses and attractors have been used to determine the route destinations for cycling trips within the Shire.

It is important to note that the path network serves not only cycling trips, but also pedestrian movements and connectivity for mobility impaired, parents with prams and people with disabilities. This is particularly important when considering infrastructure provision near schools, medical facilities, community amenities and aged care facilities.

Table 4-1 Land Use and Attractors

Land- Use	Dardanup	Eaton/Millbridge	Burekup
Health & Medical	N/A	Eaton Medical Centre Eaton Dental Centre	N/A
Education	Dardanup Primary School Our Lady of Lourdes Primary School	Glen Huon Primary School Goodstart Early Learning Eaton Eaton Community College Eaton Primary School Little Explorers Early Learning	River Valley Primary School
Senior Facilities	N/A	Bethanie Esprit Retirement Village Bethanie Fields Retirement Village	N/A
Youth Centre	N/A	Bethanie Eaton Social Centre	N/A
Recreation	Wells Recreation Park Carramar Park Dardanup Commercial Precinct Mt Lennard Mountain Bike Trail Gnomesville	Eaton Fair Shopping Centre Eaton Bowling Club Beaufort Park Millbridge Park Cadell Park Isaac Park Hunter Park Hazelgrove Reserve Castlereagh Park Eaton Recreation Centre & 24hr Gym Eaton Community Centre Eagle Wetland Reserve Eaton Reserve Watson Reserve Leicester Reserve Eaton Foreshore Playground Eater Football Pavilion Eaton Softball Pavilion	Sikes Avenue Reserve Burekup Country Club Shier Rise Reserve Burekup Oval Burekup Skate Park
Civic Amenities	Post Office & Dardanup Public library Dardanup Civic Precinct	Eaton Community Library & Post Office	Burekup General Store & Newsagency

4.1.2 Schools Analysis

Schoolchildren are a key element of the 'Interested but Concerned' cycling demographic and a key target market for any Bicycle Plan. It well documented that if schoolchildren can develop a habit of cycling to school, they are more likely to continue cycling into adulthood even after obtaining a driving licence.

To ensure the Local Bike Plan targets this demographic, the schools within the Shire have been analysed to identify gaps in the existing path network that may be barriers to children cycling to school. In addition, schools have been identified as key traffic generators for Local Routes.

Table 4-2 presents a summary of the issues identified for each school and the components of the network plan that serve each school. It should be noted that very few responses to the surveys were received from the schools and/or school students. The Shire should consider a targeted consultation strategy in the future to encourage a greater interest in the Bicycle Plan from these important stakeholders.

Table 4-2 Schools Analysis - Summary

Suburb	School	Issues	Proposals
Burekup	River Valley Primary School	Moderate path conditions along the school frontage. Some quiet streets missing footpaths.	Connect path with missing link at the corner of Shenton Rd and Russell Rd
Dardanup	Dardanup Primary School	No visible marked or children pedestrian crossings in the vicinity of the school. Lack of safe and convenient cycling routes through Dardanup West, connecting to the school.	Consider connections from Dardanup West
	Our Lady of Lourdes Primary School	No visible marked or children pedestrian crossings in the vicinity of the school. Lack of safe and convenient cycling routes through Dardanup West, connecting to the school.	Consider pedestrian crossings near the school entrance
Eaton	Glen Huon Primary School	No visible marked or children pedestrian crossings in the vicinity of the school connecting to bus stop on Edith Cowan Ave. Footpath is only provided on one side of the road along Monash Blvd.	Maintain and improve existing path links connecting neighbouring residential streets.
	Eaton Community College	Lack of safe and convenient cycling routes through Burekup and Dardanup, connecting to the school.	Complete network surrounding the school
	Eaton Primary School	No visible marked or children pedestrian crossings in the vicinity of the school connecting to bus stop on Hale Street.	Maintain and improve existing path links connecting neighbouring residential streets

4.2 Road Hierarchy

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

Primary Distributors (light blue): Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes and all are National or State roads. They are managed by Main Roads.

Regional Distributors (red): Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by Local Government.

District Distributor A (green): These carry traffic between industrial, commercial and residential areas and connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by Local Government.

District Distributor B (dark blue): Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.

Local Distributors (orange): Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. They are managed by Local government.

Access Roads (grey): Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by Local government.

Even though most of the local roads within the townsites are designated as Access Roads, some roads experience more traffic than others and Main Roads does not differentiate different types of Access Roads regardless of the traffic volume.

In general, Access Roads can be divided into two categories below:

1. ***Collector Street:*** Provide connection of residential streets with traffic carrying roads and provide access to grouped or commercial properties and community facilities as well adjacent properties. This type of road can also accommodate local cycle and pedestrian movement.
2. ***Local Street:*** Provides access to adjacent properties as well as local area. It can also accommodate pedestrian and local cycle movement.

The Main Roads WA Functional Hierarchy for the three (3) townsites within the Shire of Dardanup are shown in the Network Analysis **Section 4.5**.

4.3 Traffic Speeds

Austroads Guidelines states that where the difference between bicycle and vehicular traffic speeds is less than 20km/h, full integration may be acceptable, and bicycles and motor traffic can usually share the road pavement without any special provision being required.

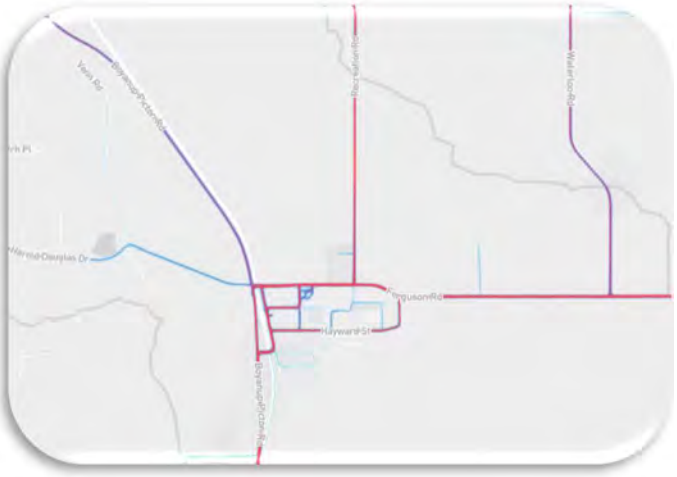
Austroads states that segregation is desirable where the difference between bicycle and motor traffic speed exceeds 40 km/h. The Guidelines also indicates that 85th percentile speeds of people cycling under free flow conditions can be expected to be in the order of 30 km/h. This is potentially representative of confident riders on flat terrain, but speeds are likely to be lower in hilly areas or for casual cyclists. Traffic speed limits for the Shire of Dardanup based on the Main Roads WA's Road Information Mapping System database are shown in the Network Analysis **Section 4.5.**

4.4 Current Routes

Strava heat maps give an indication of routes used by cyclists that record their ride. It is often the cycling demographic that is more geared towards road cycling rather than transport cycling. **Figure 4-1** to **Figure 4-3** shows the mapping of strava users, with red indicating frequent use and blue less frequent use.

Figure 4-1 Dardanup and Burekup Strava Heat Map

Dardanup Strava Heat Map



Burekup Strava Heat Map

Figure 4-2 Eaton/Millbridge Strava Heat Map

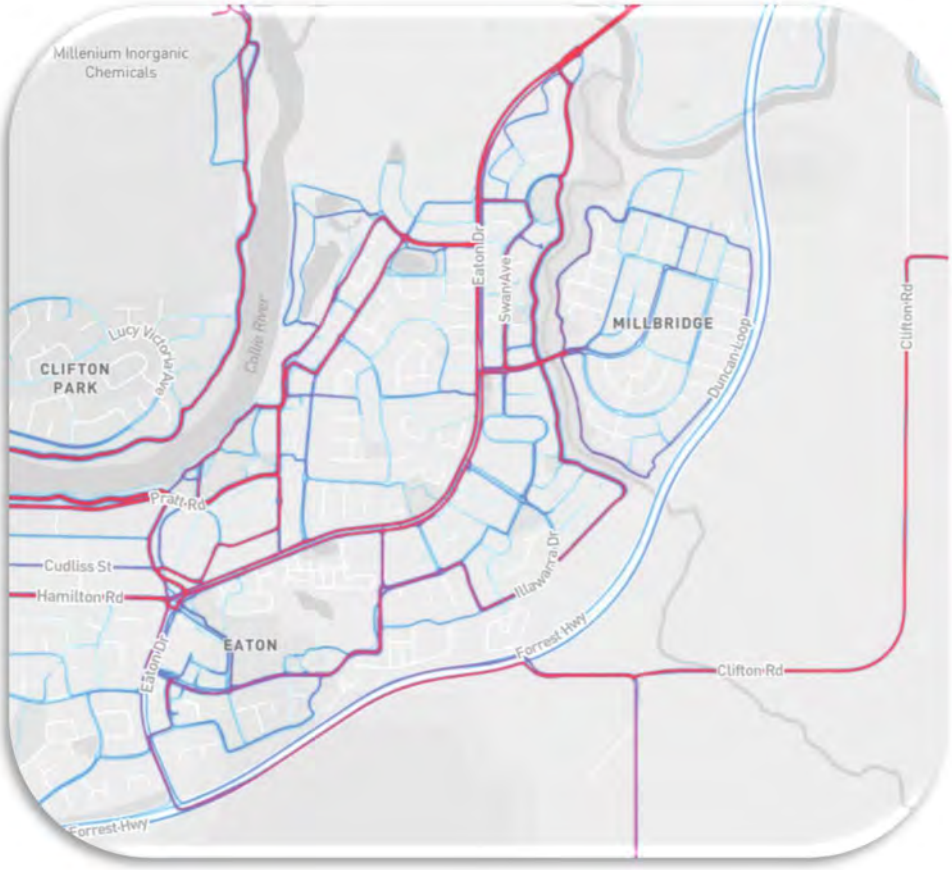
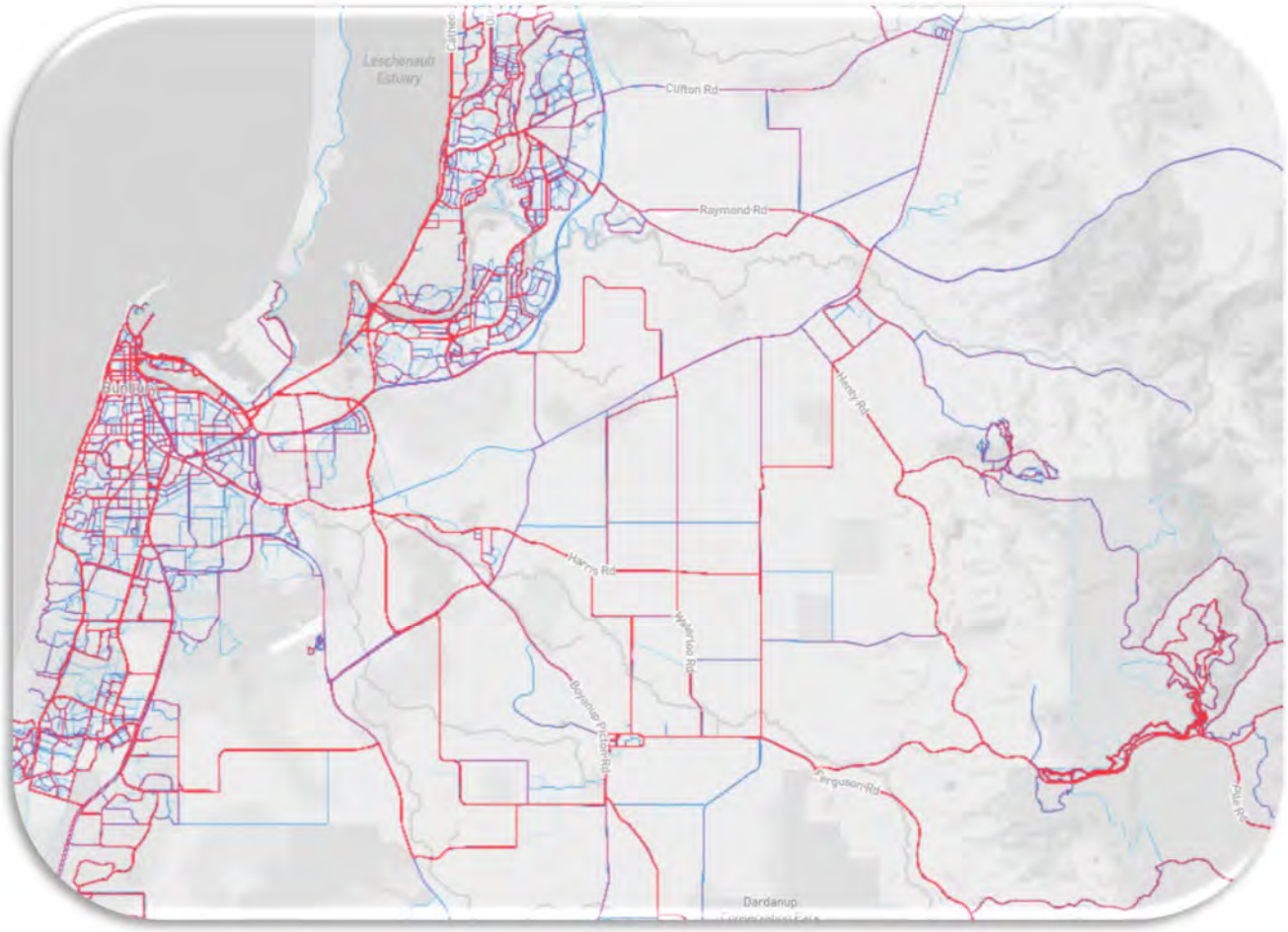


Figure 4-3 Wider Region Surrounding Shire of Dardanup Strava Heat Map



Semi-rural roads such as Henty Road, Harris Road and Willinge Drive form key routes for road cyclists heading inland from Bunbury towards locations such as Dardanup and the Ferguson Valley.

4.5 Network Analysis

The cycling network is separated into two general categories: townsite networks and external connections. The following information pertains largely to access and connectivity within each townsite.

4.5.1 Burekup

Table 4-3 Burekup Road Hierarchy

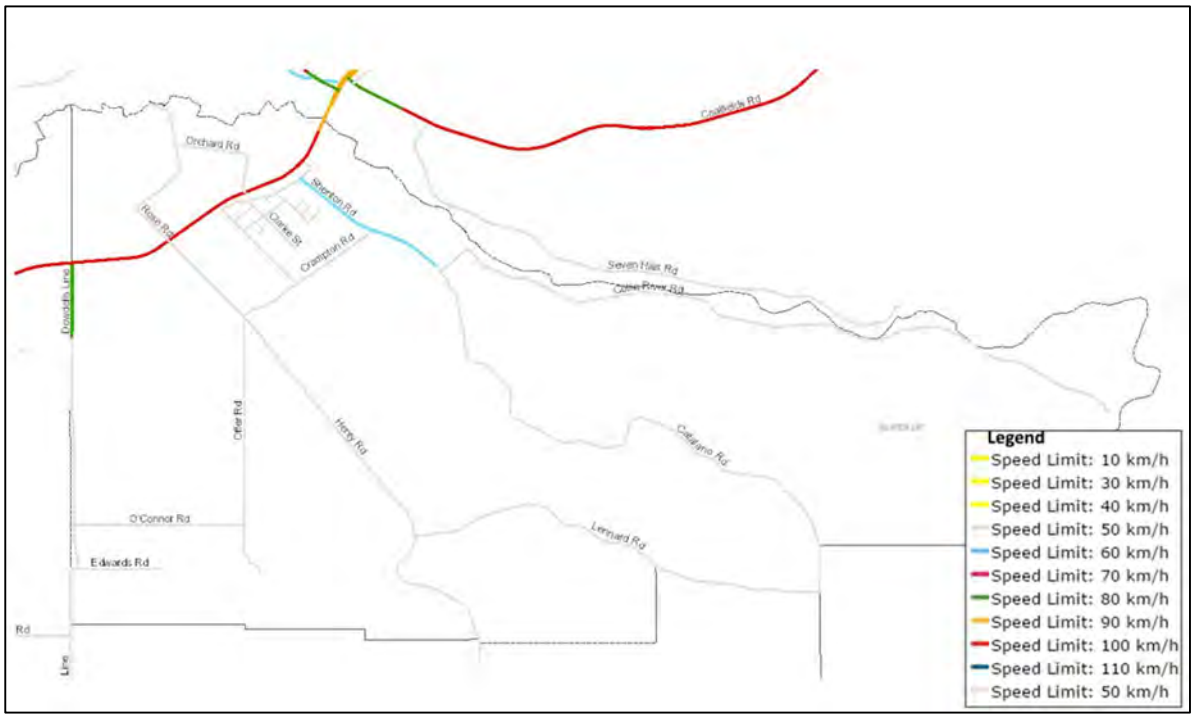
Road	Hierarchy	Key
Henty Road	Local Distributor	
South Western Highway	Primary Distributor	
Dowdells Line	Local Distributor	

Figure 4-4 Burekup Road Hierarchy

Table 4-4 Burekup Traffic Speed Limits

Road	Traffic Speed (km/h)	Key
Henty Road	50	
Shenton Road	60	
South Western Highway	100 90	
Dowdells Line	80 50	

Figure 4-5 Burekup Traffic Speeds



4.5.1.2 Commercial Precinct

Burekup does not have a commercial precinct as it primarily consists of residential dwellings. The nearest commercial area is the Eaton Shopping Centre located in Eaton. Established connections between Burekup and Eaton would greatly benefit both townsites by providing greater accessibility between the two suburbs. The Burekup Community Facilities Plan provides an outline of the future developments within the Burekup Townsite. The plan aims to provide new paths and parking facilities to improve traffic safety.

4.5.1.3 Education

River Valley Primary School

Figure 4-6 River Valley Primary School

River Valley Primary School (**Figure 4-6**) is bounded by Russell Road and Shenton Road. Existing cycle paths include footpaths along Shenton Road and a shared path along Russell Road.

Source: Metromap

4.5.1.4 Recreational

Burekup Country Club

Burekup Country Club (see **Figure 4-7**) is located next to River Valley Primary School and is accessible from Russell Road and Gardiner Street through shared paths.

Figure 4-7 Burekup Country Club

Source: Metromap

Figure 4-8 Incomplete path connection at Shenton Road and Russell Road

Figure 4-9 shows a map of existing and proposed cycling paths in Burekup (also in **Appendix B**). Burekup functions as a residential community with suburban retail and education land uses. As a result of this function, Burekup has a well-formed street network and adjacent path infrastructure.

Figure 4-9 Burekup Existing and Proposed Cycling Infrastructure

4.5.2 Eaton/Millbridge

Table 4-5 Eaton/Millbridge Road Hierarchy

Road	Hierarchy	Key
Forrest Highway	Primary Distributor	
Old Coast Road	Distributor B	
Hamilton Road	Distributor B	
Eaton Drive	Distributor A	

Figure 4-10 Eaton/Millbridge Road Hierarchy

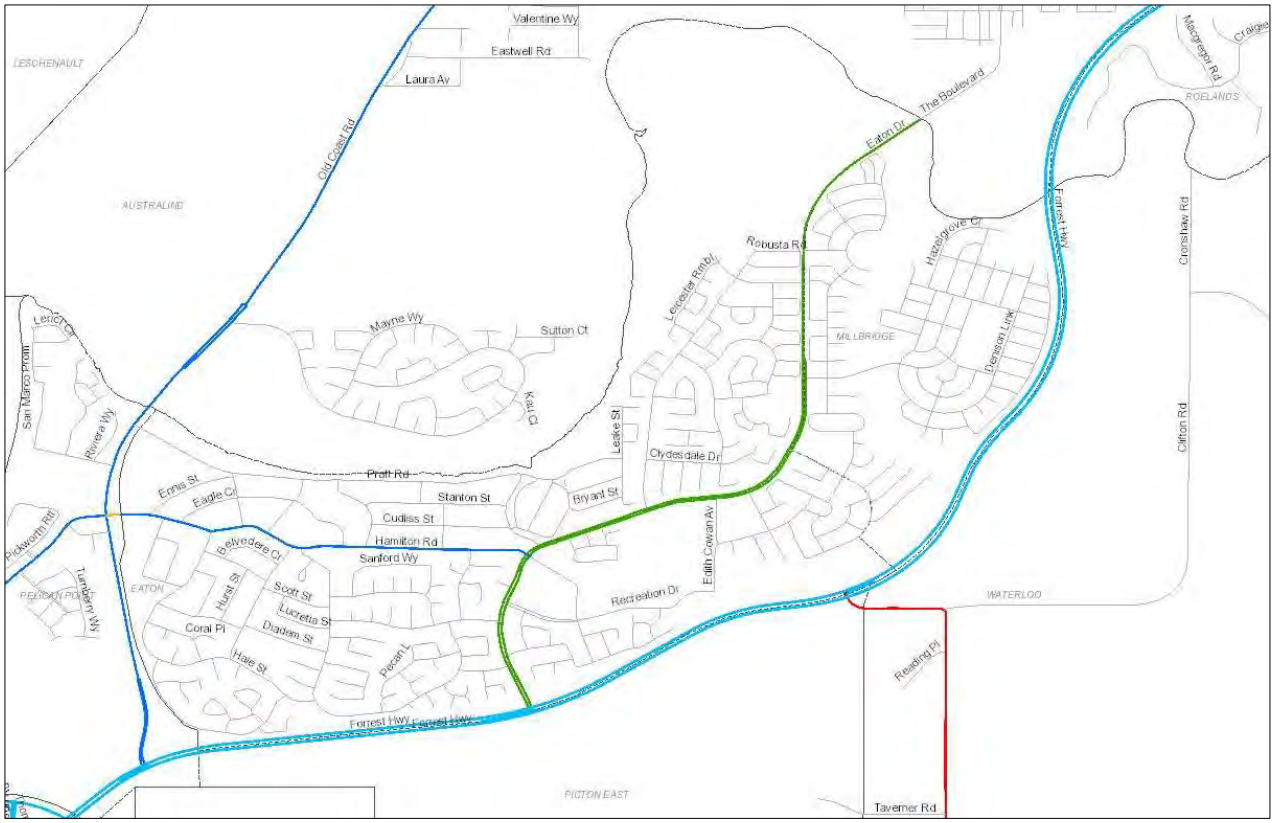
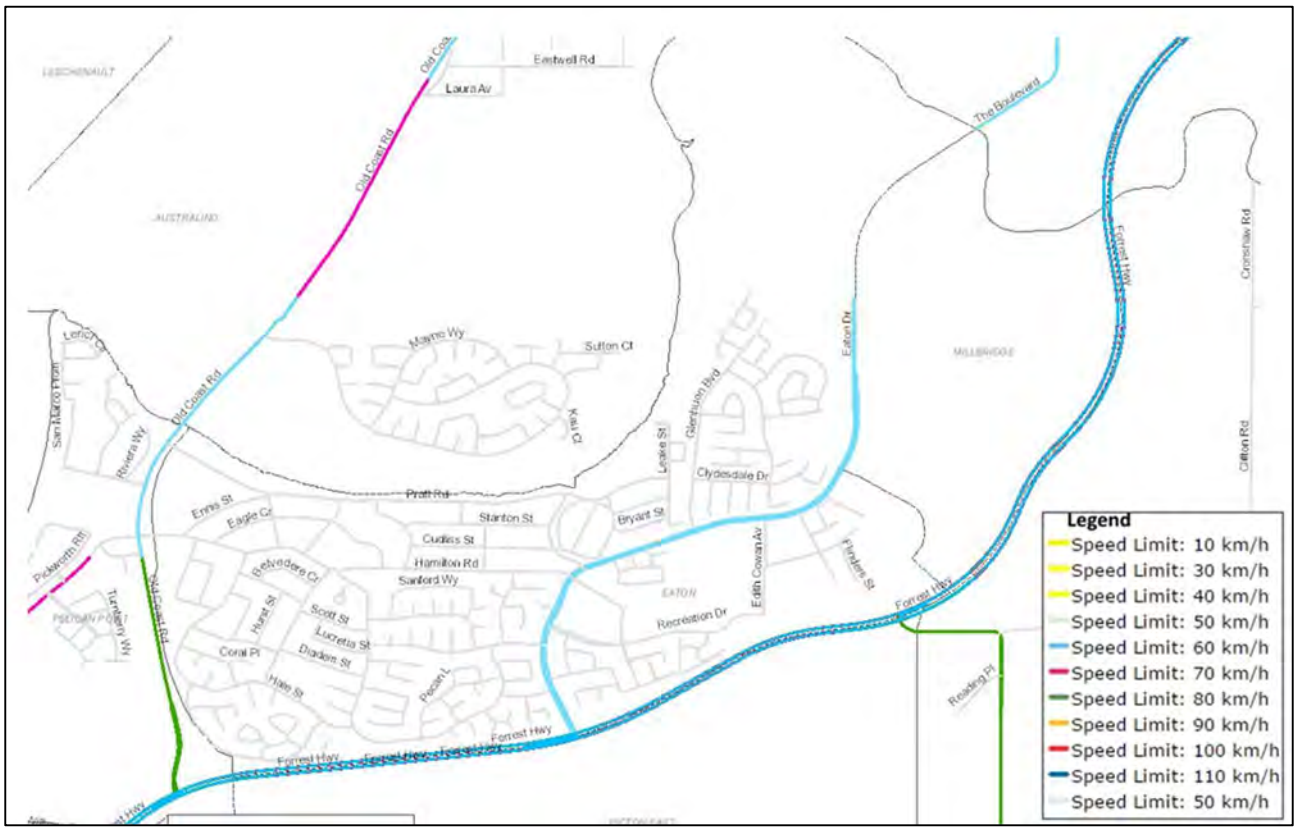


Table 4-6 Eaton/Millbridge Traffic Speed Limits

Road	Hierarchy	Key
Forrest Highway	100 80	
Old Coast Road	60 70 80	
Hamilton Road	50	
Eaton Drive	60	

Figure 4-11 Eaton/Millbridge Traffic Speeds



4.5.2.2 *Commercial Precinct*

The Eaton/Millbridge community facilities plan provides an outline of the future developments within the Eaton/Millbridge Townsite. The plan aims to create a vibrant and sustainable activity centre with various developments for the Eaton/Millbridge Community.

Eaton Shopping Centre

Figure 4-12 Eaton Shopping Centre

Source: Metromap

Eaton Shopping Centre is located at the corner of Eaton Drive and Recreation Drive. As outlined in the community facilities plan, various improvements have been proposed including a skate park and a new library building near Eaton Fair Activity Centre.

Cycling provisions in the vicinity of the centre include shared paths along both sides of Eaton Drive and a single shared path along Council Drive and Recreation Drive.

4.5.2.3 Education

Glen Huon Primary School

Glen Huon Primary School is bounded by Eaton Drive, Edith Cowan Avenue, Murdoch Crescent and Monash Boulevard. Access to the school is provided via Monash Boulevard and Murdoch Crescent.

Existing cycling infrastructure includes the existing shared path located along all the frontage roads.

Figure 4-13 Glen Huon Primary School

Source: Metromap

Eaton Community College

Figure 4-14 Eaton Community College

Eaton Community College is located 500m east of Eaton Shopping Centre. The college is bounded by Recreation Drive to the south and Edith Cowan Avenue to the east. Access to the site is via Recreation Drive and Edith Cowan Ave. Shared paths along the school frontage provide key connections to Eaton Shopping Centre and to Eaton Drive. High quality shared paths are provided on Eaton Drive which provides good cycling connectivity to the Millbridge townsite. A secure bicycle parking area and formal pedestrian crossing points improve cycling amenity.

Source: Metromap

Eaton Primary School

Eaton Primary School is located to the east of Eaton Shopping Centre. The school is bounded by Hale Street, Casuarina Street and Daidem Street. Shared paths are provided along school frontage roads, connecting to Hamilton Road.

Figure 4-15 Eaton Primary School

Source: Metromap

4.5.2.4 Recreational

Eaton Recreation Centre

A recreation centre, sporting facilities and playground are located adjacent to Eaton Fair Shopping Centre and Eaton Community College.

Figure 4-16 Eaton Recreational Facilities

Source: Metromap

Eaton Bowling Club

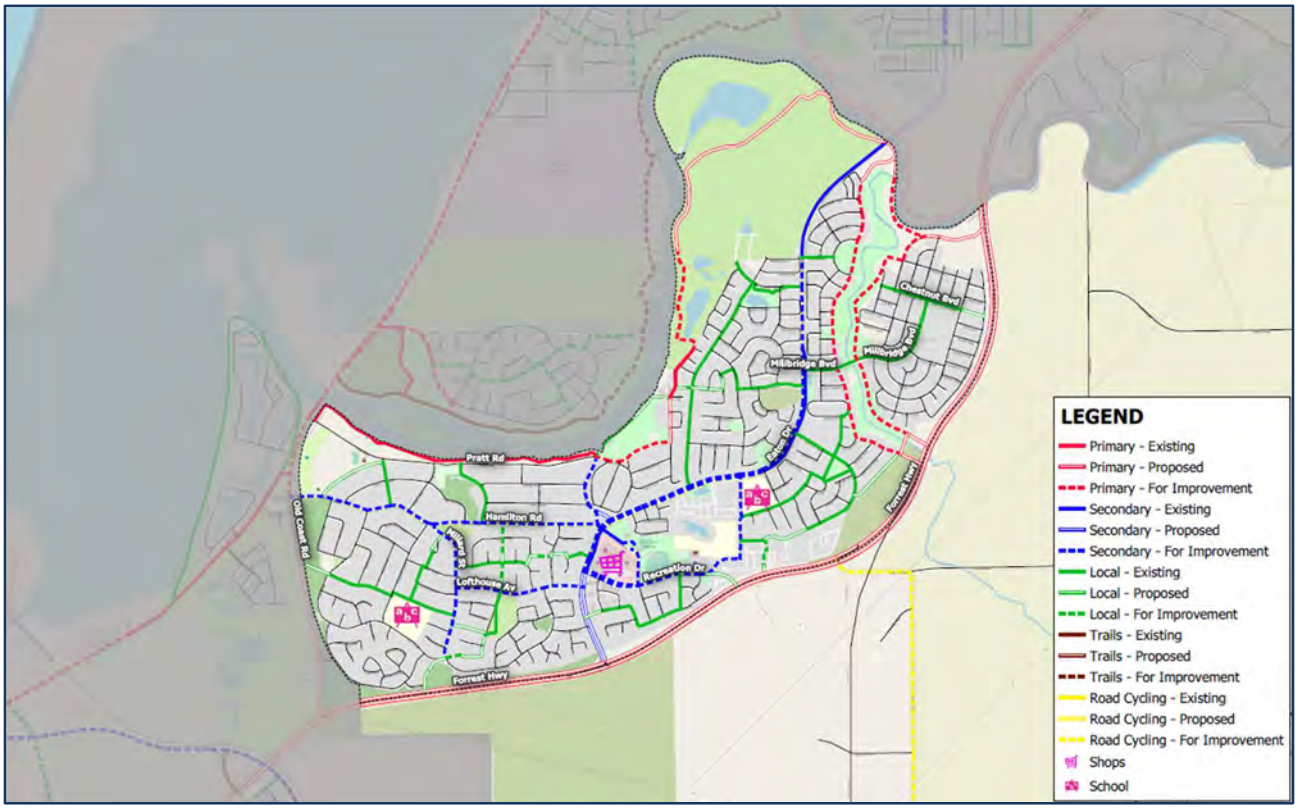
The Eaton Bowling Club is located along Pratt Road facing Collie River. It is accessible via shared paths that runs along Pratt Road and Boblin Street.

Figure 4-17 Eaton Bowling Club

Source: Metromap

Figure 4-18 shows the map of existing and proposed cycling paths in the Eaton/Millbridge Townsite (also found in **Appendix B**). Eaton/Millbridge functions as a residential community which includes dense housing along with commercial precincts and educational land uses. As a result of this function, Eaton/Millbridge has a well-formed street network and adjacent path infrastructure.

Figure 4-18 Eaton/Millbridge Existing and Proposed Cycling Facilities



4.5.3 Dardanup

Table 4-7 Dardanup Road Hierarchy

Road	Hierarchy	Key
Moore Road	Local Distributor	
Moore Road	Regional Distributor	
Boyanup Picton road	Primary Distributor	
Ferguson Road	Regional Distributor	
Waterloo Road	Regional Distributor	
Garvey Road	Local Distributor	

Figure 4-19 Dardanup Road Hierarchy

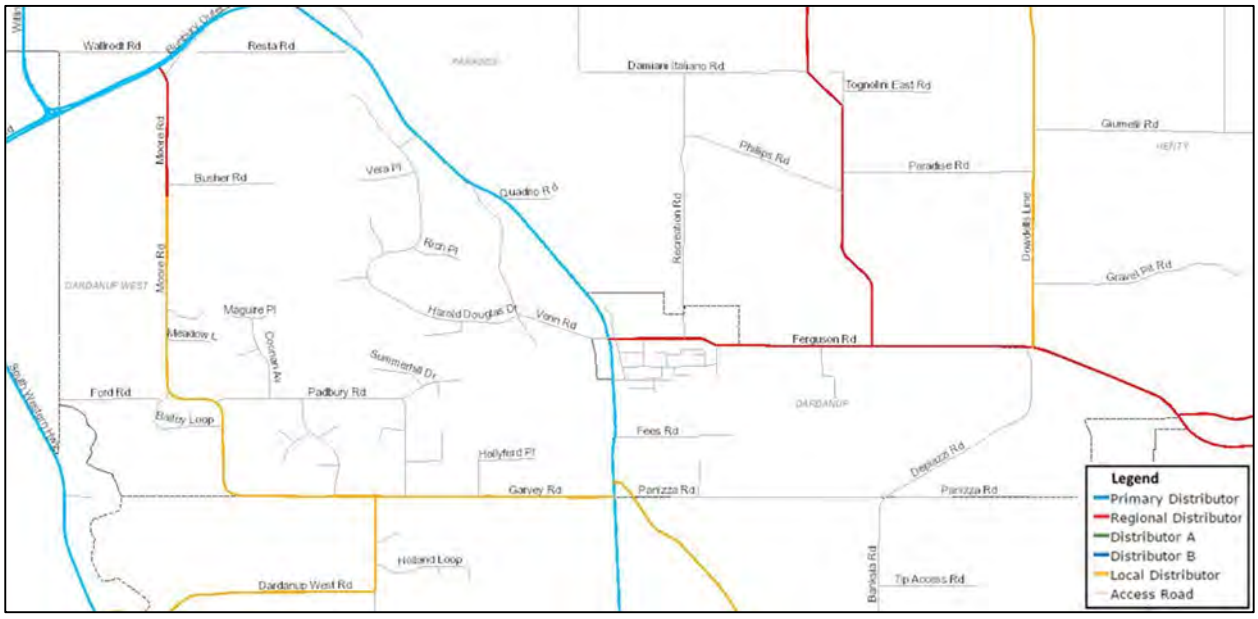
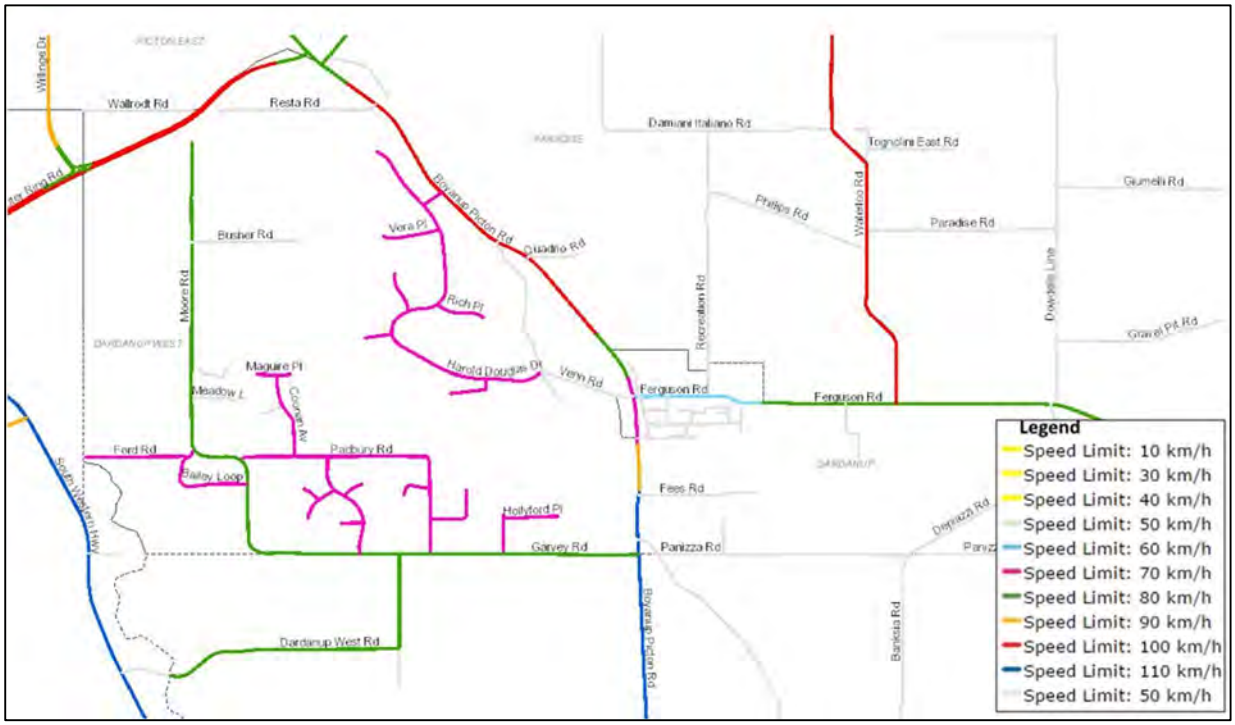


Table 4-8 Dardanup Traffic Speed Limits

Road	Hierarchy	Key
Moore Road	80	
Boyanup Picton Road	100 80 70 90 110	
Ferguson Road	60 80 100	
Garvey Road	80	

Figure 4-20 Dardanup Traffic Speeds



4.5.3.2 *Commercial Precinct*

Dardanup does not have a commercial precinct as it consists primarily of residential dwellings. The nearest commercial area is the Eaton Shopping Centre located in Eaton. Established connections between Dardanup and Eaton would greatly benefit both townsites by providing greater accessibility between the two suburbs.

4.5.3.3 *Education*

Dardanup Primary School

Figure 4-21 Dardanup Primary School

Source: Metromap

Dardanup Primary School is located along Hayward Street. Access to the school is via Hayward Street. Existing facilities include a footpath connection along Hayward Street which leads to a shared path along Ferguson Road.

However, the Ferguson Road path terminates to the west of Boyanup Picton Road, with no connection along or across this regional road. Cycling to school from properties in Dardanup West, as well as other townsites, requires students to use the existing sealed shoulders on Boyanup Picton Road. Students must also cross this Highway without the benefit of a formal pedestrian/cyclist crossing.

Figure 4-22 Dardanup Primary School Bike Parking

4.5.3.4 Our Lady of Lourdes Primary School

Our Lady of Lourdes Primary School (**Figure 4-23**) is located along the corner of Ferguson Road and Boyanup Picton Road. Access to the school is via Ferguson Road. Existing facilities include shared paths that runs along both sides of Ferguson Road.

However, the Ferguson Road path terminates to the west of Boyanup Picton Road, with no connection along or across this regional road. Cycling from school from properties in Dardanup West, as well as other townsites, requires students to use the existing sealed shoulders on Boyanup Picton Road. Students must also cross this Highway without the benefit of a formal pedestrian/cyclist crossing.

Figure 4-23 Our Lady of Lourdes Primary School

Source: Metromap

4.5.3.5 *Recreational*

Carramar Park

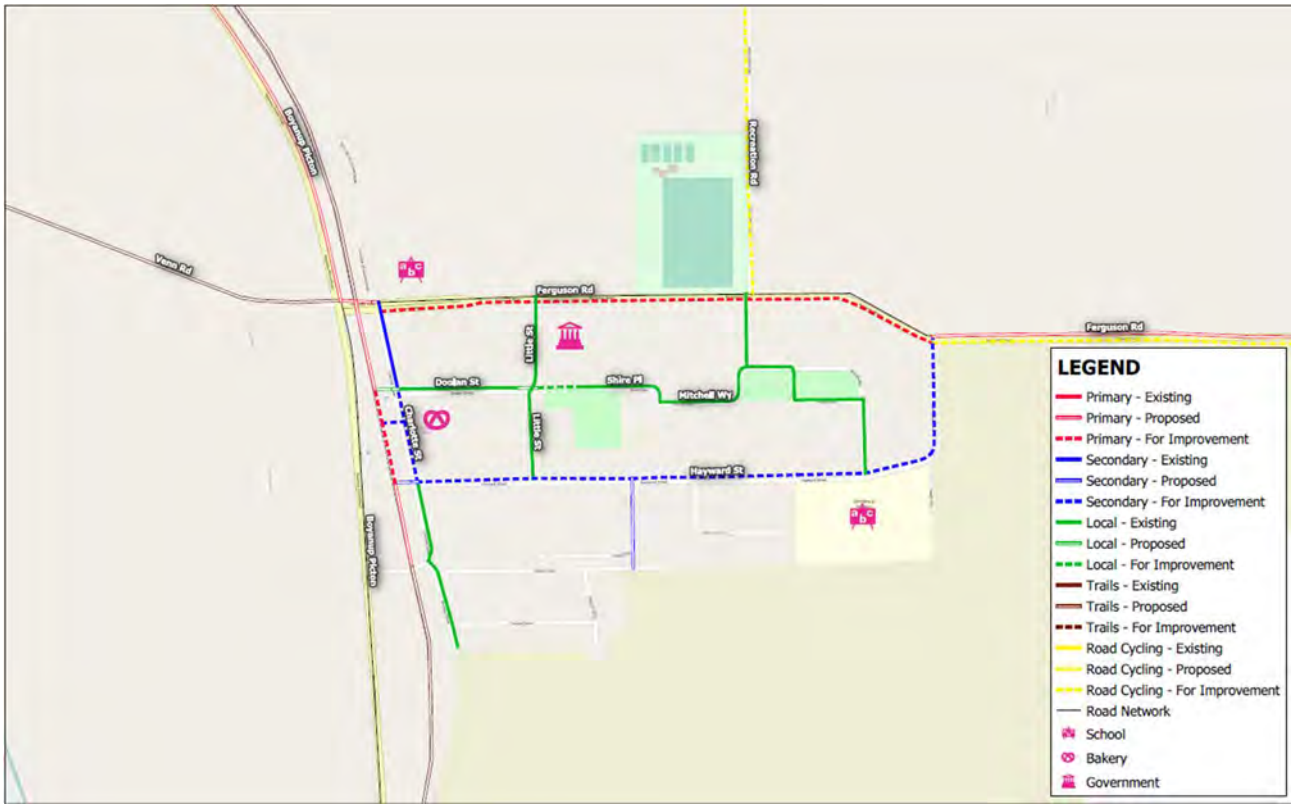
Carramar Park (**Figure 4-24**) is in the heart of Dardanup townsite, allowing easy access from shared paths and footpaths along all neighbouring roads.

Figure 4-24 Carramar Park

Source: Metromap

Figure 4-25 shows the map of existing and proposed cycling paths for the Dardanup Townsite (also found in **Appendix B**). It functions as a residential community with suburban retail and education land uses. As a result of this function, Dardanup has a well-formed street network and adjacent path infrastructure.

Figure 4-25 Dardanup Existing and Proposed Cycling Facilities



4.6 Connections Between Townsites

The existing cycling network remains unappealing due to a lack of coverage between townsites. The subregions' existing cycling infrastructure typically consists of shared paths of varying quality and a small number of sporadic, unprotected bike lanes which in many cases remain unconnected to the wider network. **Table 4-9** shows the approximate distances between the townsites. In terms of intertown and interregional connections, most cycling currently takes place on low volume roads, with little to no dedicated cycling infrastructure. Unprotected facilities on busy roads are unlikely to attract new riders due to actual and perceived safety concerns.

Table 4-9 Distances between Townsites (in km)

Townsite	Dardanup	Eaton/Millbridge	Burekup
Dardanup	-	10	11
Eaton/Millbridge	10	-	8
Burekup	11	8	-

Based on the distance between townsites, emphasis has been placed on the Burekup/Eaton connection and Dardanup/Eaton connection.

4.6.2 Burekup / Eaton/Millbridge Connection

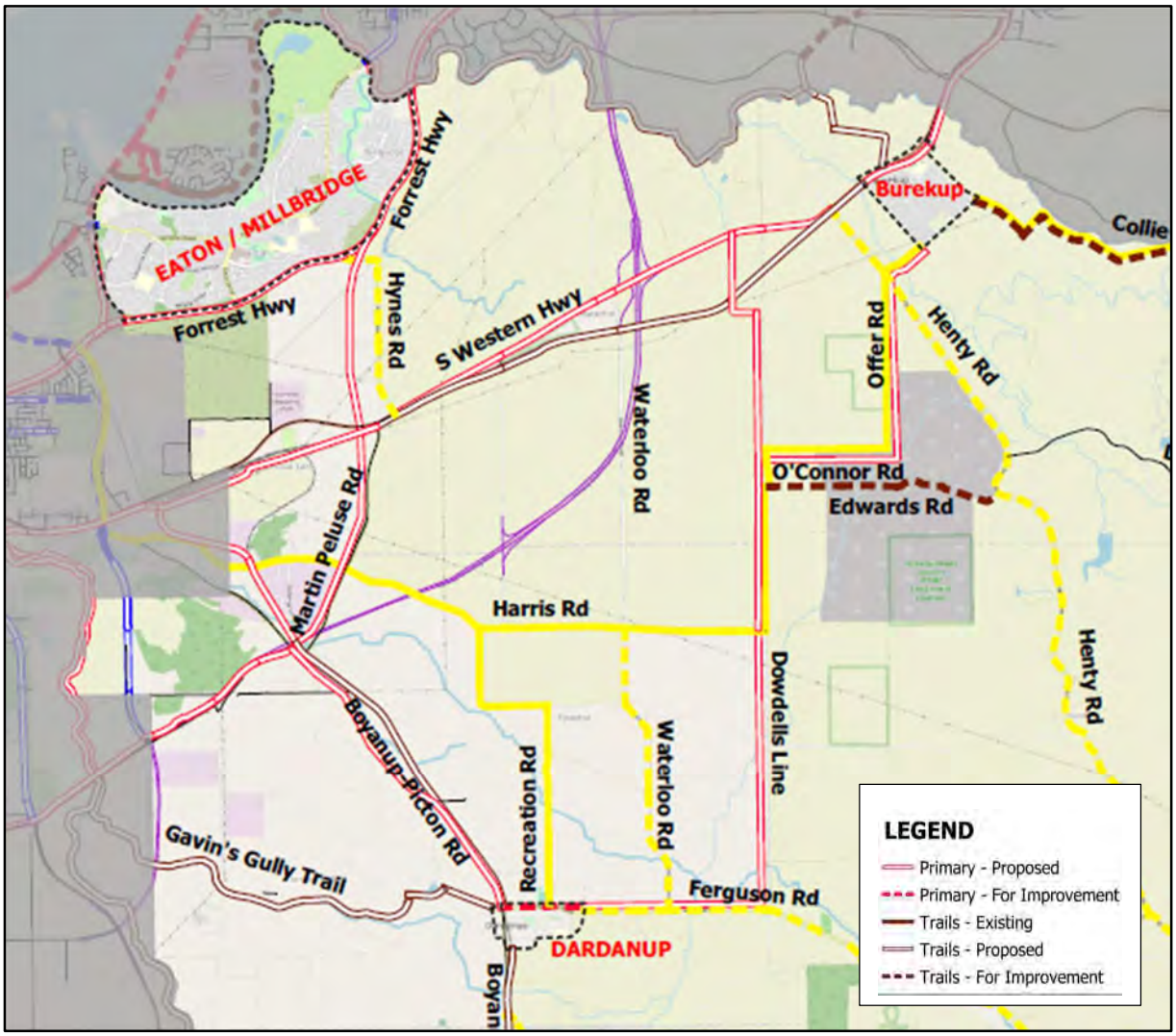
Eaton is a popular attraction for residents living in Dardanup and Burekup due to its commercial precinct. The route available from Burekup is via South Western Highway connecting to Bunbury Outer Ring Road and Forrest Highway. South Western Highway is characterised by high-speed but low volume roads, while Forrest Highway is characterised by high speed and high traffic volumes. This route has been developed as a spine linking Burekup with Eaton and Millbridge. It is intended to serve local demand as well as commuters trying to access the wider cycling network.

Bunbury Wellington 2050 Cycling Strategy shows that major road projects along Forrest Highway and South Western Highway will provide important opportunities to develop high quality cycling routes. In the proposal, the Bunbury Outer Ring Road and Forrest Highway are categorised as primary cycling routes connecting Burekup and Eaton. The *Bunbury Wellington 2050 Cycling Strategy* also shows the upgrade of Shenton Road, Crampton Road and Hutchinson Road to secondary routes as well as various local routes linking residential areas within the Burekup Townsite.

4.6.3 Dardanup / Eaton/Millbridge

Boyanup-Picton Road is the major link connecting Dardanup with Eaton/Millbridge and other neighbouring suburbs such as Picton and Boyanup. Provision of formal crossings at several locations between Dardanup and Eaton would allow for secondary school children and utility trips between the two townsites. Utilising the old rail reserve running along Boyanup Picton Road and with minor road upgrades, a route can be established effectively connecting Dardanup and Eaton. The low traffic volumes along this route would make it relatively safe for cyclists to ride on the road.

Figure 4-26 Connections Between Townsites



5 Stakeholder Consultation

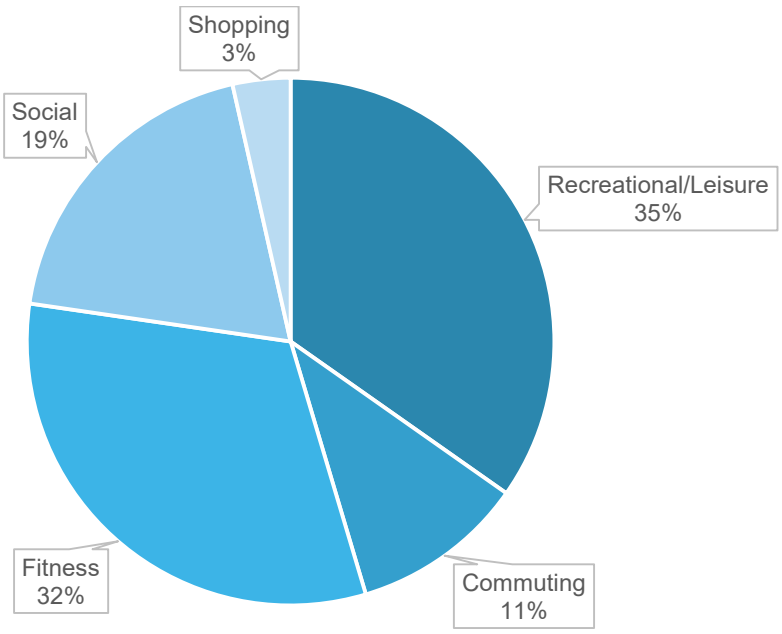
Stakeholder and community consultation consisted of a one-month online survey and in person discussions. The online survey included an interactive map to provide the ability for participants to pinpoint locations of concern. The Stakeholder Engagement Outcomes Report can be found in **Appendix D**.

The survey sought feedback from participants as to what improvement would encourage them to cycle more frequently or make their experience more enjoyable. Below is the list of responses. Overall, the comments are focused on the need for **safe infrastructure** and a **connected network**. Other key themes were driver behaviour, lighting, secure bike parking, safer road crossings and the desire for more paths with better design.

The respondents were 50/50 male/female with 65% aged 46 and over. Thirty percent were aged 25-45 and 3 people under the age of 17 took part in the survey. Most live, work or socialise in the Shire of Dardanup and 98% either own or have access to a bicycle.

Figure 5-1 shows the reasons given for riding a bike are varied and not all people ride only for fitness.

Figure 5-1 What is the Main Reason You Ride a Bike?



5.2 Bicycle Infrastructure – Saddle Survey

The existing infrastructure throughout the Shire consists of shared paths and a few sporadic unprotected bike lanes. The inter-town connections occur on low volume rural roads without dedicated cycling infrastructure. There are key connections which would provide a connected network and/or training routes to form a loop.

It was observed that there are few bike parking facilities and limited end-of-trip facilities within the Shire.

Figure 5-2 Crampton Road, Burekup

Informal routes, such as along Crampton Road, Burekup, show a desire to ride safely on a loop through the townsite (Refer to **Figure 5-2**).

Locations for small infrastructure projects, such as at Doolan Street and Little Street in Dardanup (see **Figure 5-3**) were observed, which would complete a network of local routes. It is recommended to provide a kerb ramp and approximately 5m of path across the verge to link the path adjacent to the park and parking area to the path on Doolan Street (Project #D1).

Figure 5-3 Doolan Street Connection at Little Street

Millars Creek shared path is a shaded primary route along the creek, but access in some locations needs to be addressed, such as at Chamberlain Grove where the route down to the path includes steps which are not traversable by bike (**Figure 5-4** and **Figure 5-5**).

Figure 5-4 Millars Creek Sealed Path

Figure 5-5 Chamberlain Grove, Millbridge Access to Millars Creek Path and the Desire Line

A feasibility study is recommended (Project #EM3) to construct a new ramped path in this location. It can be seen in **Figure 5-5** that there is a desire line from people walking and riding adjacent to the stepped ramps.

6 Projects

As a result of the research, investigation and consultation undertaken as part of the project, several potential infrastructure projects were identified and shortlisted for inclusion in the 5-year implementation plan. It should be noted that the prioritisation process is subjective and is intended to provide guidance only. Opportunities may arise over the implementation of this Plan which may fast track or delay the progress of projects.

A total of thirty-two infrastructure and fourteen non-infrastructure cycling projects are proposed within the Shire of Dardanup over the next 5-years. Further investigation will need to be undertaken to develop detailed concepts and understand the true cost of each project. Funding assistance from other agencies, such as the DoT, will need to be explored during implementation of the Plan. A description of the Shire of Dardanup project list is provided in this section and shown in **Table 6-1 -Table 6-4**. The implementation of these projects will be dependent on further investigation and community consultation.

6.1 Areas Outside Shire Control

A number of issues identified are located in areas outside of local government control. It is proposed that the Shire lobby for improvements to these areas, as described below:

- Any projects that include Old Coast Road;
- Bunbury Outer Ring Road construction of the Principal Shared Path;
- Safe connections across Forrest Highway (with the addition of an extra turning lane into Eaton Drive)
- Safe connections across South Western Highway at Burekup (Orchard Road) and Willinge Drive into Eaton; and
- Ensuring concepts for intersection upgrades in Eaton prioritise bike and pedestrian movements (Hamilton Road Roundabout, Lofthouse Avenue/Millard Street Roundabout and Peninsula Lakes Drive).

6.2 Project List

The Australian Bicycle Council and the federal Department of Infrastructure, Transport, Regional Development and Local Government suggests a list of criteria for assessing proposed bicycle facilities. These are listed in the form of six objectives which are outlined below:

1. Public Consultation Consideration of stakeholder concerns and the impact that the project may have on alleviating issues.
2. Strategic Consideration of how the project fits into the long-term aspirational cycle network. Connectivity Consideration of how the project may impact accessibility to the following destinations and facilities: a. Schools; b. Tertiary institutions; c. Recreational and tourism facilities; d. Employment zones; and e. Public transport hubs.
3. Economic Consideration of how the project may impact the following: a. Mode shift – refers to the potential to encourage mode shift away from the private vehicle; b. Impact on motor vehicles – refers to the potential impact on private vehicle trips (i.e., journey times); and c. Impact on accessibility to commercial facilities.
4. Safety Consideration of how the project impacts general safety of the following users: a. Cyclists; and b. Pedestrians.
5. People and Communities Consideration of the how the project impacts the following: a. Level of service – refers to the quality or 'bicycle friendliness' of the route, including factors such as coherence, comfort and convenience; and b. Townscape/urban planning – refers to how the proposed project fits into an overall town plan.

As part of developing an action plan of proposed infrastructure projects, the broad qualitative impact of each proposal was identified under each of the above six objectives. The resultant scale, short/medium/long, is provided to assist in the timeframe for future programs.

Table 6-1 Burekup Project List

#	Project Name	Description of Requirement	Linkages/Benefit	Length	Timeframe
B1	Corner of Shenton Rd / Russell Rd	Complete portion of path on the corner of Shenton Rd / Russell Rd	Connect the secondary route and provide access to the Primary School	30m	Short
B2	Rail Trail Burekup	Consult with PTA and MRWA to improve the gravel path adjacent to the rail line, between the SW Highway (north of Shenton Road) and the Burekup entrance crossover	Extending the primary network along SW Hwy, part of the Community Facilities Plan	800m	Medium
B3	Rail Link Burekup North	Consult with PTA to improve the gravel path adjacent to the rail line for a connection to Roelands. Once the trail adjacent to the rail line is constructed, investigate a connection between Shenton Rd and the trail with a kerb ramp on both sides of Russell Rd	Linking the town network to the Rail Trail and BMX tracks and connects students to school in Roelands	4.4kms	Long
B4	Rail Link Burekup South	Once the trail adjacent to the rail line is constructed, investigate a connection between Hutchinson Rd to the trail in consultation with PTA and MRWA. This will require a bridge/culvert across a ditch	Linking the town network to the Rail Trail and future possible connection to Orchard Rd proposed trail	20m	Long

Table 6-2 Dardanup Project List

#	Project Name	Description of Requirement	Linkages / Benefit	Length	Timeframe
D1	Doolan Street	Connect Doolan St to the shared path that links to Mitchell Wy by providing a kerb ramp and path through the verge	Connects Doolan St to Mitchell Wy to complete this section of local route	5m	Short
D2	Rail Trail Dardanup	Complete the Primary Route between Ferguson Rd and Doolan St, and Hayward St and the Charlotte St crossover	Completes the primary route rail trail along the townsite to connect with the proposed trail on Venn Road	120m	Long
D3	Venn Road	Any improvements should consider cycling infrastructure. Community Facilities Plan proposes widening / reconstructions (SLK 0 - 2.22)	Connects Dardanup to Dardanup West (Harold Douglas Dr)	2.2kms	Short
D4	Brett Place	Include a shared path provision or re-design Brett Pl as a low traffic neighbourhood street	North-South link through Dardanup to Civic Precinct	120m	Medium
D5	Ferguson Road Crossing	Improve crossing between future subdivision and civic area through widening of median at either Recreation Rd or Little St	This will enable a location for an entry statement and slower vehicle speeds upon arrival into the Townsite in addition to a safe pedestrian crossing point	2m	Medium
D6	Bridle Path to Fees Road Crossing	Provide a safe crossing, through barrier protection, across Boyanup Picton Rd at Fees Rd. Also include a safe railway crossing in collaboration with PTA and ARC	Connects West Dardanup to Dardanup. Included in Community Facilities Plan	150m	Medium
D7	Bridle Path	Upgrade dirt bridle path to more compacted base	Provides access to Dardanup from Dardanup West along existing path used by students	780m	Medium
D8	Crossing Boyanup-Picton Rd	Advocate to MRWA for a safe formal crossing point on Boyanup Picton Road to access Venn Road	Provides a link for proposed trail along Venn Road	n/a	On-going

Table 6-3 Eaton / Millbridge Project List

#	Project Name	Description of Requirement	Linkages/Benefits	Length	Timeframe
EM1	Chestnut Blvd	Once proposed primary route on Forrest Hwy is constructed, connect Chestnut Blvd between Denison Link and Duncan Loop	Completes local route to primary route on Forrest Hwy	135m	Long
EM2	Millars Creek Crossing, Chamberlain Grove	Feasibility study to link paths across Millars Creek with a pedestrian/cycling bridge	Provides a second connection across Millars Creek and facilitates loop walks/rides. Low-level crossing would be significantly cheaper to implement compared to high-level bridge adjacent to Forrest Hwy	70m	Medium
EM3	Chamberlain Grove	Feasibility study for a new ramped path connection between Millbridge Blvd and the Millars Creek path (western side)	Improves connectivity between Millbridge and the Millars Creek path. Current access route is via stairs or convoluted route via back streets	30m	Medium
EM4	Diadem Street	Review potential for a path connection between Diadem St / Hale St intersection and Old Coast Rd, to connect with proposed primary route along Old Coast Rd. This includes discussions with City of Bunbury	Improves connectivity to Eaton Primary School and south-west portion of Eaton residential area	150m	Long
EM5	Old Coast Road	Advocate with MRWA and City of Bunbury to construct a path along Old Coast Rd between Hamilton Road and Forrest Hwy	Continue to build a primary network	1.4kms	On-going
EM6	Recreation Drive	Investigate opportunity to construct high-quality path connection from Recreation Dr, along old road reserve, to Forrest Hwy at the eastbound parking bay, including safe crossing point	Provides safer access for road cyclists between Eaton and Hynes Rd, minimising the use of Forrest Hwy. Use of Forrest Hwy was raised as a safety issue by cycle club	200m	Medium
EM7	Forrest Highway	Feasibility study to construct a separate path on Forrest Hwy between Hynes Road and Recreation Drive link and include a path cut across Forrest Hwy	Provides safer access for road cyclists between Eaton and Hynes Rd, minimising the use of Forrest Hwy. Use of Forrest Hwy was raised as a safety issue by cycle club	600m	Long
EM8	Lofthouse Avenue / Eaton Drive	Community Facilities Plan proposes new traffic signals. These should ensure safe pedestrian crossing facilities and link into currently gated access to shops with footpath connection	Improves connectivity through Eaton to access the shops	n/a	Long
EM9	Millbridge Blvd	Feasibility study to include a switchback adjacent to the steps from Millbridge Blvd to Millars Creek path on the edge of the substation, the western side of the bridge	Provides a clear link between the Millars Creek Path to Millbridge Blvd	25m	Long
EM10	Hamilton St	Provide a safe crossing across Hamilton St at Bobin St or Ann St	Improves north/south connectivity through Eaton	n/a	Medium

Table 6-4 Shire Wide Project List

#	Project Name	Description of Requirement	Linkages / Benefit	Length	Timeframe
S1	Henty Road	Feasibility study to sufficiently widen Henty Rd between SLK 3.89 – 5.36 to provide a sealed shoulder on uphill section. Community Facilities Plan proposes to reinstate shoulders (SLK 2.5 - 5.5 and SLK 8.0 - 11.0)	Separates slow moving uphill cyclists from other traffic, improving safety. This section was raised as a specific safety issue by the cycle club	2 kms	Short
S2	Edwards Road	Feasibility study into constructing a trail path to connect Henty Rd to Dowdells Line/ Harris Rd using existing road reservation. Community Facilities Plan proposes widening / reconstruction on Harris Rd (SLK 0.0 - 1.20 and SLK 5.76 - 7.44)	Connect routes	6.5kms	Long
S3	Joshua Creek Road	Feasibility study to seal the unsealed section of Joshua Creek Road between Crooked Brook Road and Boyanup, 2.2kms within Shire of Dardanup and 2.4kms within Shire of Capel. Part of long-term planning in Community Facilities Plan (SLK 0.0 - 2.2 and SLK 6.25 - 7.2)	Creates an additional training route loop with low traffic volumes. Improves road safety for general traffic and reduces maintenance costs for Shire	2.2kms	Medium
S4	Pile Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction of Pile Rd (SLK 5.66 - 7.99, SLK 9.01 - 11.56 and SLK 11.0 - 16.78)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S5	Ferguson Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction (SLK 13.56 - 19.56)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S6	Collie River Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction (SLK0 - 1.61 and 1.61 - 4.43)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S7	Town Connection - Burekup to Eaton Trail	Feasibility study east of BORR to link Burekup with Eaton/Australind via Collie River. West of BORR to Eaton to be incorporated into the District Structure Plan.	Provide trail connectivity between Burkeup townsite and Eaton/Australind	78m	Medium
S8	Town Connection - Dardanup to Bunbury Trail	Feasibility study to select preferred alignment for trail connecting Dardanup to Bunbury via Venn Rd, Killarney Rd, drainage reserve and then to Willinge Dr Extension. This is dependent on BORR and crossing opportunities	Provides connectivity for West Dardanup residents to Dardanup townsite, and provides connectivity to Bunbury via Willinge Dr	7kms	Medium
S9	Town Connection - Burekup to Dardanup	Feasibility study to select alignment for rail connecting Burekup to Dardanup via Dowdells Line to Ferguson Rd. Community Facilities Plan proposes widening / reconstruction of Dowdell's Line Rd (SLK 3.85 - 5.69, SLK 0.03 - 2.07, SLK 3.41 - 3.85)	Provides connectivity between Burekup townsite to Dardanup townsite	11kms	Long
S10	Town Connection - Burekup to Bunbury	Feasibility study to utilise existing Railway Rd and railway reserve to connect Burekup to Bunbury as a trail path	Provides connectivity between Burekup townsite to Bunbury	n/a	Short

S11	Lennard Rd	Advocate for trail quality surface using existing road reservation. Includes off road connections along Pile Rd (approx. 750m) and Henty Rd (approx. 550m)	Connects trail routes to the Munda Biddi and Dowdells Line via Edwards Rd	12kms	Long

Section 6.3 further expands on many of the projects contained within the Minor Works Project List (**Table 6-5**).

Table 6-5 Minor Works Project List

#	Project Name	Location	Description of Requirement	Benefits	Priority
MW1	Old Coast Road Bridge	Eaton	Work with City of Bunbury to strengthen the connection from bridge underpass to local route and beyond into Bunbury CBD	Connects to local and primary route into Bunbury	Short
MW2	Henty Road/Ferguson Road	Shire	Request MRWA to reduce speed limits on Henty Road and Ferguson Road to 80km/hr	Supports training routes	Short
MW3	Cycling Without Age	Shire	Support the initiation of a chapter of Cycling Without Age, starting in Eaton/Millbridge. Engage with aged care facilities and the WA chapter of CWA.	Promotes cycling	Medium
MW4	End of Trip Facilities	Shire	Provide end of trip facilities such as: secure bike parking, repair stations and drinking fountains in appropriate locations	Promotes cycling	Medium
MW5	Development Provisions	Shire	Consider including required bicycle parking provision rates for various land use classifications in updated TPS9	Encourages cycling	Medium
MW6	Wayfinding and Signage	Shire	Review the Directional Signage Policy to include local cycling friendly wayfinding signage guidelines and a Ferguson Valley Signage Strategy, including a prioritisation list. This should include signage on cycling training routes, including Henty Road, Ferguson Road, entry statements or welcome signage at key entrance points to training routes; local gateway signage where road users enter a designated training route; behavioural signage at regular intervals along busier training route; warning signs, including activated warning signs in targeted locations	Safer cycling environment	Short
MW7	Pump Track and Bike Skills Track	Burekup/ Shire	Investigate a pump track and bike skills track	Promotes cycling skills	Medium
MW8	Bicycle Library	Shire	Investigate a Bicycle Library Scheme	Encourages cycling	Medium
MW9	Valet Bicycle Parking	Shire	Provide secure bicycle parking at community events	Promotes cycling	Medium
MW10	Bike Bus	Shire	Support and encourage 'bike bus's initiatives at the primary schools	Encourages cycling	Medium
MW11	Bicycle Recycling	Shire	Support re-use of bikes by providing a drop off location for Bicycles for Humanity	Promotes cycling	Long
MW12	E-bike Scheme	Shire	Offer e-bike salary sacrifice to Shire staff	Encourages cycling	Medium
MW13	Your Move	Shire	Sign up to Your Move	Encourages cycling	Medium
MW14	Driver Education	Shire	Work with WestCycle to lobby MRWA and RSC to implement a targeted driver education program	Safer cycling environment	Medium

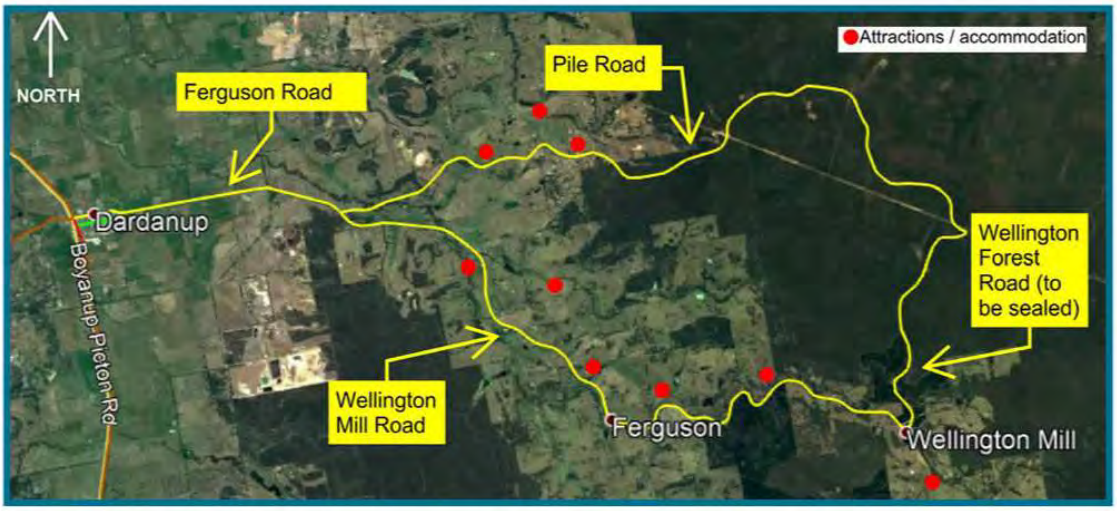
6.2.1 Road Cycling Routes

The Shire of Dardanup is a premium destination for recreational / training riders; both for single riders and for group / club rides. These types of riders are attracted to relatively low traffic volumes, uncongested riding environments, scenery and the hills, which suit the desired training patterns.

These riders generally do not require dedicated or protected infrastructure and are satisfied to ride in low levels of mixed traffic; most of the perception of safety or congested comes from frustrated motorists who are not able to easily and safely overtake cyclists on many sections of the rural and semi-rural road network.

The Bunbury-Wellington Cycling Strategy 2050 provided a key training route in the Shire (see **Section 1.7.2**).

Figure 6-1 Bunbury-Wellington 2050 Cycle Strategy Road Cycling Route

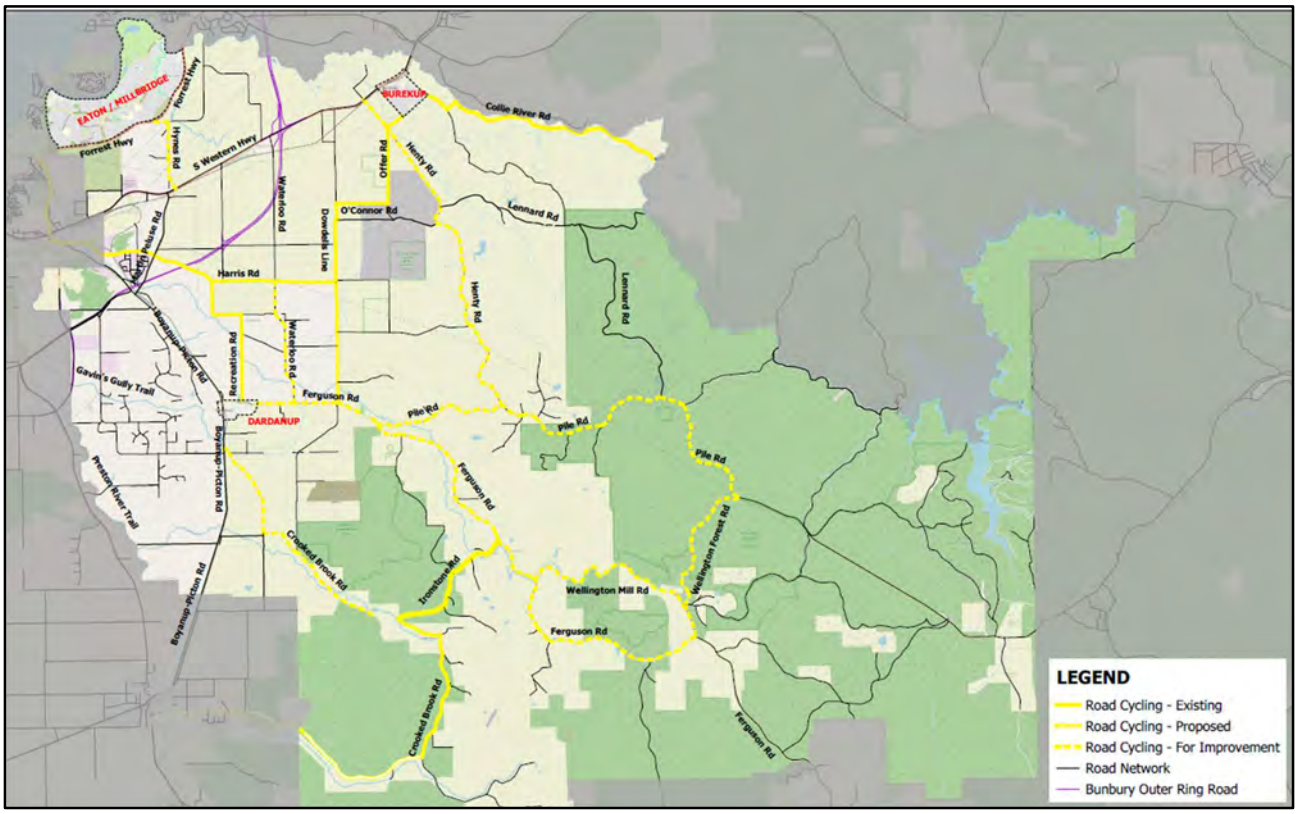


Source: Bunbury Wellington 2050

Consultation with local cycling clubs and the community revealed additional regular training routes as well as locations where riders felt unsafe. The map in **Figure 6-2** shows the routes as indicated through the stakeholder consultation (also shown in **Appendix B**). In addition, suggested infrastructure works to improve safety are listed in the action plan.

Accordingly, the recommended strategy for the training routes is to manage the conflicts between cyclists and motorised traffic, mainly through signage and other behavioural strategies, while also implementing certain minor infrastructure improvements where warranted and feasible. The nominated projects provide benefits to both cyclists and other road users – drivers will be able to more easily overtake in a safe manner, reducing delays and frustrations and correspondingly improving safety for riders.

Figure 6-2 Road Training Routes



The recommended actions for the key training routes include signage and behavioural strategies (See **Section 6.2.1**) and infrastructure improvements as listed in the action plan. Some of these recommendations include:

- Widened shoulder on Henty Road;
- Reduced speed limits;
- Behavioural signage; and
- Feasibility study to seal Joshua Creek Road.

Figure 6-3 Joshua Creek Road

6.3 Minor Works Improvements

An audit/gap analysis of existing end of trip facilities is recommended to help gain an understanding of current supply and demand which would inform Council of the locations that could be benefited the most from investment. The size and type of facilities that are suitable (i.e. secure bike parking, sheltered and functional bike racks and lockers) should also be considered in the analysis.

6.3.1 Cycling Without Age

Figure 6-4 Cycling Without Age

Source: Cycling Without Age Australia

Cycling Without Age is a not-for-profit charity that provides a community service by connecting those no longer able to ride for themselves with their community and the outdoors by giving them free rides on trishaw ebikes, piloted by volunteer cyclists.

There are chapters throughout Australia, including Perth, Rockingham, Sorrento, Albany and York. The national organisation can support the initiation of a local chapter.

6.3.2 End of Trip Facilities

As part of the network planning, it is recommended that EoT facilities (bike racks, drinking fountains, etc.) are provided at strategic locations (Project #MW4). EoT facilities encourage more people to cycle as it provides a safe, secure and convenience place to park for the cyclist.

Public bicycle parking in the form of U-rails should also be progressively installed in front of shops, businesses, cafes etc. across the townsites. Retrofitting vertical poles with bicycle parking racks is a potential option to increase bicycle parking. The Shire of Dardanup should also aim to install bicycle parking racks at all sports grounds and playgrounds.

As part of the enhancement to the cycling network, bicycle racks are recommended to be added at the following locations, as required:

- Burekup Primary School – adjacent to entrance
- Burekup Country Club
- Dardanup Eustace Fowler Park – for local businesses
- Eaton Bowling Club
- Eaton Skate Park / playground precinct
- Eaton Recreation Centre

6.3.2.1 Bicycle Pump and Repair Stations

There is also a lack of bicycle repair and pump stations throughout the Shire, and it is recommended that these be located in popular destinations with the end of trip facilities. Additionally, water supply stations should be located throughout the cycle network. In addition to the completion of an audit/gap, it is recommended that Bicycle pump and repair stations be installed:

Dardanup Railway Reserve; Eaton Community Facilities near the Eaton Cricket/Football Club; Skateboard Park; Burekup Country Club; and locations identified by the Shire which are needed for students accessing school buses.

Figure 6-5 Example – Public Bicycle Repair Stand and Pump

Source: All4Cycling

Water fountains are also recommended to be installed at the Dardanup Railway Reserve (other locations have drinking fountains).

In addition, the Shire should investigate the installation of e-bike charging stations to encourage and cater for the potential increased use in e-bikes. A potential location to include an e-bike charging station is in the vicinity of Eaton Fair and the Community Facilities.

Provision of storage lockers, showering facilities and bicycle pump and repair stations for staff and visitors (visitor usage is at the discretion of the property owner or manager) are strongly encouraged for local businesses and schools. These facilities may also be provided in other areas where cycling demand is high.

Recommendation: Provide end of trip facilities such as: secure bike parking, repair stations and drinking fountains in appropriate and strategic locations

6.3.3 Wayfinding

Figure 6-6 Wayfinding Pavement Stickers in City of Wanneroo

Source: DoT

Effective signage and wayfinding are important to cater for recreational cyclists and visitors to the Shire. It enables people to orient themselves and navigate from place to place with ease. Wayfinding can include signs or stickers, and can include other elements of the public realm, such as street furniture and public art.

It can assist bike riders to know where they are, where they are going and the best route to get there. A useful system should be visible and integrate with any existing signage. At the moment, there is no identifiable signage in place within the Shire.

Creative and playful branding for wayfinding signage could also be explored, such as the example shown in **Figure 6-6** which was completed as part of the DoT's Your Move program (discussed further in **Section 6.5.6**).

The objectives for wayfinding include:

- Attractive and visually readable signage and wayfinding for both members of the community and visitors.
- Promote cyclist and pedestrian safety and accessibility.
- Create safe integration of vehicular, bicycle, and pedestrian traffic.
- Preserve and enhance the appearance of the Shire.
- Consistency in design and installation.
- Create utilitarian signage within an affordable budget.
- Deliver a signage system that is unique and identifiable to the Shire.
- Provide a guide for the installation of signage at key cycle routes.

The Shire should consider visible signage for bike riders that encourages active modes of travel. The signs chosen should be colourful and informative and display the nearest facility in terms of approximate distance and cycle time to get to the destination.

Recommendation: Review the Directional Signage Policy to include local cycling wayfinding and a Ferguson Valley Signage Strategy.

6.3.3.2 Signage and Behavioural Strategies

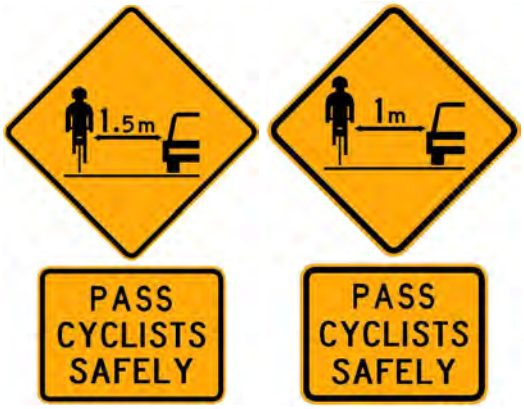
Behavioural strategies will be critical to the ongoing management of competing road user groups. The focus should be on informing road users to expect to see cyclists, particularly on the popular training routes, and encourage safe and courteous behaviour from all road users.

Key elements of the strategy include:

1. 'Entry Statement' or 'Welcome' signage at key entrance points to the training routes, clearly informing road users that they are entering a road network which is shared between multiple user groups, each with the right to use the road safely. These are established within the Ferguson Valley, but it could be expanded along known training routes.
2. Local 'Gateway' warning signage at locations where road users enter a designated training route, such as the example shown in **Figure 6-7**. This type of signage is a reminder to road users to anticipate training riders on the road ahead. It should be used on the more lightly trafficked training routes such as in the Bickley Valley and Pickering Brook areas.
3. 'Behavioural' signage located at regular intervals along the busier training routes – i.e. Henty Road, Ferguson Road and Hynes Road. The purpose of these signs is to encourage safe overtaking manoeuvres and these could be accompanied by supplementary plates that indicate the distance to the next safe passing place.
4. Warning signs, including activated (via sensors that are triggered by a passing cyclists) warning signs, placed in targeted locations where significant speed differentials can be expected, or there are sight distance restrictions, and insufficient room for drivers to safely overtake in typical conditions.

A Wayfinding Strategy, incorporating indicative locations for the above sign types, should form the basis of discussions with Main Roads as the approval authority for signs and lines.

Figure 6-7 Signage Examples

Entry Statement Style	Informative Style
	
Behavioural Style	**Activated Warning Style**
	
	
	

6.3.4 Dedicated Cycle Tracks

Cycle tracks located in community parks for recreational use are increasing in popularity throughout Perth. These facilities provide an environment for cyclists to ride separate from general traffic. A number of local governments have installed cycle track facilities in Perth which have been observed to have high levels of use. Two popular types include:

Pump Tracks – These facilities often consist of circular loops with smooth dirt mounds and berms that cyclists can ride around in a pumping motion. These facilities can also include bike jumps, which are associated with more experienced cyclist skills; and

Bike Skills Track – These facilities often consist of asphalt path circuits with pavement markings and signage simulating an urban traffic environment. These facilities are targeted for youth/beginner cyclists.

An example is Dianella Regional Open Space, which has a pump track and a mountain bike skills trail (**Figure 6-8**).

It is proposed that a Pump Track and Bike Skills Track be constructed at Burekup, extending the community-initiated BMX tracks near the train line and the Burekup Country Club.

In Eaton, a track could be located adjacent to the Skate Park on Council Drive. This location provides adequate space, cycle connections and parking. The facility should consider CPTED (Crime prevention through environmental design) principles.

Figure 6-8 Dianella BMX Track

Source: City of Stirling

Construction of Pump Tracks requires specific expertise and youth services are required for involvement in the design and operation. A yearly maintenance budget must also be considered for the facilities.

Recommendation: Investigate a Pump Track and Bike Skills Track Burekup, extending the community-initiated BMX tracks near the train line and the Burekup Country Club. Review if other locations are suitable for these facilities within the Shire.

6.4 Development Provisions

The Shire of Dardanup Town Planning Scheme No. 3 and relevant Planning Policies do not currently include requirements for long-stay bicycle parking or provision of EoT facilities for new developments.

It is recommended that the Shire considers including bicycle parking provision rates in its new TPS9 for various land use classifications. It is recommended that the bicycle parking requirements include provisions for long and short stay parking:

- Long stay bike parking is provided for all-day parking (e.g. for employees, students) would need to be of higher quality, secure (via bike cage or fully enclosed bike lockers) and would require an accompanying end-of-trip facilities such as lockers and showers.
- Short stay bike parking is for visitors and are usually in the form of a bike rails. As it is less secure than a bike cage or a bike locker, short stay bike rails need to be place close to the building and in well-lit areas where it can be easily seen.

Table 6-6 Austroads Recommended Bicycle Parking Provisions

Land use	Long Stay (e.g. employee/resident)	Short Stay (Visitor/shopper)
Amusement parlour	-	2 plus 1 per 50 m2 gfa
Apartment house	1 per 4 habitable rooms	1 per 16 habitable rooms
Art gallery	1 per 1500 m2 gfa	2 plus 1 per 1500 m2 gfa
Bank	1 per 200 m2 gfa	2
Café	1 per 25 m2 gfa	2
Community centre	1 per 1500 m2 gfa	2 plus 1 per 1500 m2 gfa
Consulting rooms	1 per 8 practitioners	1 per 4 practitioners
Drive-in shopping centre	1 per 300 m2 sales floor	1 per 500 m2 sales floor
Flat	1 per 3 flats	1 per 12 flats
General hospital	1 per 15 beds	1 per 30 beds
General industry	1 per 150 m2 gfa	
Health centre	1 per 400 m2 gfa	1 per 200 m2 gfa
Hotel	1 per 25 m2 bar floor area 1 per 100 m2 lounge beer garden	1 per 25 m2 bar floor area 1 per 100 m2 lounge beer garden
Indoor recreation facility	1 per 4 employees	1 per 200 m2 gfa
Library	1 per 500 m2 gfa	4 plus 2 per 200 m2 gfa
Light industry	1 per 1000 m2 gfa	-
Major sports ground	1 per 1500 spectator places	1 per 250 spectator places
Market	-	1 per 10 stalls
Motel	1 per 40 rooms	
Museum	1 per 1500 m2 gfa	2 plus 1 per 1500 m2 gfa
Nursing home	1 per 7 beds	1 per 60 beds
Office	1 per 200 m2 gfa	1 per 750 m2 over 1000 m2
Place of assembly	-	-
Public hall	-	-
Residential building	1 per 4 lodging rooms	1 per 16 lodging rooms
Restaurant	1 per 100 m2 public area	2
Retail show room	1 per 750 m2 sales floor	1 per 1000 m2 sales floor
School	1 per 5 pupils over year 4	-

Land use	Long Stay (e.g. employee/resident)	Short Stay (Visitor/shopper)
Service industry	1 per 800 m2 gfa	-
Service premises	1 per 200 m2 gfa	-
Shop	1 per 300 m2 gfa	1 per 500 m2 over 1000 m2
Swimming pool	-	2 per 20 m2 of pool area
Take-away	1 per 100 m2 gfa	1 per 50 m2 gfa
University/Inst. of Tech	1 per 100p/t students 2 per 100f/t students	-

Source: Austroads Guide to Traffic Management Part 11: Parking.

Table 6-7 Austroads Recommended End of Trip Facilities Requirements

No. of long-stay bicycle spaces provided	No. of Lockers[1]	No. of Showers [2]
1-2	1-2	0
3-5	3-5	1
6-10	6-10	2 (one male, one female)
11-20	11-20	4 (two male, two female)
More than 20	20 or more	4 (two male, two female) **Plus** Additional showers at the rate of 2 showers (one male, one female) for every 10 long-stay parking spaces over 20 provided thereafter

Source: Austroads Guide to Traffic Management Part 11: Parking

Notes: To be of suitable volume and dimensions to allow storage of clothing, towels, cycling helmets and footwear; well ventilated, secure and lockable; and located close to shower and change room facilities (where provided). A ratio of one locker to one bicycle space is to be provided.

Change room facilities must also be provided and may be either a combined shower and change cubicle or communal change room for each gender directly accessible from the showers.

Also, the Shire may wish to allow a reduction in the amount of car parking spaces required at development approval stage where it can be justified via a travel plan that end of trip facilities will be provided as part of the development.

Recommendation: Consider including bicycle parking provision rates in its new TPS9 for various land use classifications.

6.5 Non-Infrastructure Program

There are many programs that do not require physically built infrastructure but that support cycling in other ways. These programs may reduce the barriers to cycling, such as access to a bicycle.

6.5.1 Bike Library

One of the major barriers to encouraging residents to take up cycling is not owning a bicycle. Purchasing a bicycle is a significant investment for many people and one which is unlikely to be made without some confidence that it will be frequently used.

To help overcome the barrier of “no bike” in getting people cycling, the City of Vincent invested in 10 bicycles with funding assistance from the Royal Automobile Club (RAC) and Zap Electric Vehicles and set up a ‘Bike Library” at the City’s Beatty Park Library. Vincent residents are permitted to borrow the bicycles for a few hours at no cost, whilst longer riders attract a nominal fee. Non-residents with appropriate ID are also able to avail themselves of the scheme for a higher fee. The City of Vincent reports that the scheme has been a success, with the bicycle booked out most weekends and many weekdays – particularly the cargo bike,

which allows car-less households to do shopping that would otherwise be prohibitive on foot or a regular bicycle.

Recommendation: Investigate the feasibility of a Bicycle Library Scheme, potentially based at the libraries or community centres. The launch of the scheme could be tied to the opening of significant sections of Secondary Routes and Local Routes.

6.5.2 Valet Bicycle Parking at Community Events

Figure 6-9 WA Day Event Bike Parking

Bicycle racks can be placed at the entrance of community events, showing the Shire's commitment to cycling by providing inclusive parking for people that choose to ride. If possible, staff can manage the parking and ensure the security of the bikes while also showing that those who choose to ride are valued.

Businesses, such as Event Bike Hire, can provide bike parking to support event sustainability. They consider the locations, within a few metres of the entrance, within sightlines, minimise obstructions for pedestrians, well-lit, weather protected if possible and with signage.

Source: Event Bike Hire

Recommendation: Provide secure bike racks at community events

6.5.3 'Bike Bus'

Figure 6-10 Barcelona Bike Bus Program

A 'Bike Bus' is a group of people who cycle to work, university or school in a group, using a set route and timetable to pick up more "passengers" on the way. Examples of bike buses in Sydney include: Lane Cove Public School "Bike Bus" from school to the Flat Rock Reserve in Willoughby for junior sport; Bourke Street Public School Bike Bus along Bourke Street Cycleway; Macquarie University Bike Bus every Wednesday morning; and most notably in Barcelona – the "bicibús".

Source: newsforkids.net

Recommendation: Support bike bus initiatives at primary schools

6.5.4 Bicycle Recycling – Bicycles for Humanity WA

Annual or semi-annual bike collection days can be arranged by the Shire as an opportunity for people to pass on their used adult sized bikes to Bicycles for Humanity WA. The bikes are given a new life in remote WA communities or in the developing world. The nearest drop off point is: Rotary Clubs of Mandurah Districts and Pinjarra – Pinjarra Men's Shed, Lot 503, Williams, Pinjarra Rd.

6.5.5 E-bike Scheme

E-bikes are gaining in popularity and could help encourage people to cycle because they do not require as much physical energy to operate compared to traditional bikes and allow a longer distance of travel for the equivalent amount of energy expenditure. E-bike salary sacrificing has recently been ruled in favour of by the ATO and as a result, there are leasing and financing companies that provide e-bike packages to employers. The program typically works by deducting a monthly fee from the employee's wage, which is the pre-tax wage if the employee agrees to use the bike predominantly for work-related travel.

Recommendation: Dardanup offer an e-bike salary sacrifice service to Shire staff and promote to other organisations to offer the same service

6.5.6 Behaviour Change - Your Move

The Department of Transport's Your Move program supports communities, local governments, schools and workplaces to promote active transport and reduce congestion. Your Move online provides support to local government, school and workplace 'champions' who want to promote walking, cycling and public transport. Through registering on the Your Move website, organisations can access information, run travel surveys, choose activities to implement, and share activities to earn rewards. Training and networking forums also run each quarter.

Recommendation: The Shire encourage local schools and workplaces to register for the Your Move program.

The 'Your Move' Program includes participation by schools. The schools can earn points by sharing stories regarding active transport and the points can be redeemed for items and services such as bike racks and bike education sessions.

The Shire, in conjunction with State Government agencies and community groups, could undertake programs to encourage school students to take up cycling. These initiatives should be continued at least once every two years, with different schemes targeting different age groups. A key focus should be children in the 10-14 age bracket, who are reaching the age where they may consider and are permitted by their parents to cycle to school.

A separate school program to target kindergarten or early primary school students (5-9 age bracket) can also be provided. The goal is to instil a good travel behaviour early in the student's life, with the hope that they would continue through to adulthood.

6.5.7 Targeted Driver Education

Driver education, when targeted properly, can be an effective tool in encouraging better road user behaviour. Safety focused industries, such as mining, focus significant training resources on driver education in order to protect the safety of employees, contractors and the public, forming a key component of their obligations under Occupational Health and Safety legislation. As a major employer, the Shire of Dardanup has a responsibility to ensure that staff who are required to drive or cycle as part of their employment, are educated in appropriate road user behaviour, including sharing the road with cyclists.

Recommendation: The Shire works with WestCycle to lobby MRWA and the Road Safety Commission (RSC) to implement a targeted driver education program.

7 Implementation and Monitoring

A total of thirty cycling infrastructure projects and thirteen non-infrastructure projects (minor works improvements) are proposed within the Shire over the next 5 years. High level order of cost estimates has been determined for these projects, however further investigation will need to be undertaken to develop detailed concepts and understand the true cost of each project.

It should be noted that the maintenance of all cycling infrastructure paths should be undertaken regularly and included in the capital works schedule.

7.1 Funding

Funding opportunities for implementation of the Local Bike Plan can be found through various sources. **Table 7-1** provides potential funding sources.

Table 7-1 Potential Funding Sources

Funding Opportunities	Description
Regional Bicycle Network Grants Program	> State funding initiative to assist local governments within Regional WA with the planning and implementation of the regional component of the Western Australian Bicycle Network (WABN). > Intention is to fund projects that deliver the greatest benefit for the community and reduce cycling barriers.
Connecting Schools Grant Program	> Grant program aimed at improving bicycle access and EoT facilities for schools. > To be eligible for the grant, schools must also employ complementary behaviour change techniques through the 'TravelSmart to School' program, to encourage increased cycling to school.
Bike Month Grants	> Community groups, organisations and local governments can apply to share in $50,000 in grants to support local cycling events and activities as part of Bike Month.
Healthier Workplace WA	> Healthier Workplace WA offer small grants of up to $10 000 for workplaces to implement projects that promote and support workers' health and wellbeing.
RAC Community Sponsorships	> The program has a range of sponsorship categories for community groups to access including Grass Roots, Project and Partnership categories.
Office of Road Safety Community Grants	> To encourage community groups to participate in road safety, the Road Safety Community Grant Program provides from $50 to $1000 in event grants.
Roads to Recovery Program	> Supports the maintenance of local road infrastructure assets
Black Spot Program	> National funding initiative to assist in implementing measures at roads with proven history of crashes. > Subject road would need to be nominated as a 'black spot' to be considered for funding. > Project proposals should be able to demonstrate a benefit to cost ratio of at least 2 to 1
Road Project Grants	> Split between Rehabilitation and Improvement > Funding providing on a cost sharing basis of LGs contributing $1 for every $2 from the Road Project Grant funds.
Financial Assistance Grants to Local Government	> Identified local road component, untied in the hands of local government

7.2 Follow Up Activities

An Implementation Plan should include such items as:

- The establishment of an implementation working group which will monitor and drive the implementation process.
- An implementation schedule which includes both construction (e.g. schedule of works) and non-construction projects.
- Communication and media opportunities for promoting bike plan initiatives and milestones.
- Bike plan review cycle/s.
- A reporting schedule that includes reporting against key performance indicators.

A bike plan working committee or advisory group can coordinate implementation across relevant parts of the organisation. The working committee may be a continuation of the bike plan management team and it will focus on:

- Identifying priorities to assist the implementation schedule.
- Holding public events to promote the bike plan and associated programs.
- Representing the interests of cyclists in the LGA.
- Monitoring and reviewing the bike plan.
- An implementation schedule with timeframes, priorities, the responsible business area, and other metrics tabulated against actions, events and milestones including: media & communications; delivery of both infrastructure & supporting non-infrastructure programs and initiatives; monitoring; and performance reporting.

APPENDIX

A

ACTION PLAN

Cardno

now

Stantec

BUREKUP ACTION PLAN					
#	Project Name	Description of Requirement	Linkages/Benefit	Length	Timeframe
B1	Corner of Shenton Rd / Russell Rd	Complete portion of path on the corner of Shenton Rd / Russell Rd	Connect the secondary route and provide access to the Primary School	30m	Short
B2	Rail Trail Burekup	Consult with PTA to improve the gravel path adjacent to the rail line, between the SW Highway (north of Shenton Road) and the Burekup entrance crossover	Extending the primary network along SW Hwy, part of the Community Facilities Plan	800m	Medium
B3	Rail Link Burekup North	Consult with PTA to improve the gravel path adjacent to the rail line for a connection to Roelands. Once the trail adjacent to the rail line is constructed, investigate a connection between Shenton Rd and the trail with a kerb ramp on both sides of Russell Rd	Linking the town network to the Rail Trail and BMX tracks and connects students to school in Roelands	4.4km	Long
B4	Rail Link Burekup South	Once the trail adjacent to the rail line is constructed, investigate a connection between Hutchinson Rd to the trail. This will require a bridge/culvert across a ditch	Linking the town network to the Rail Trail and future possible connection to Orchard Rd proposed trail	20m	Long

DARDANUP ACTION PLAN					
#	Project Name	Description of Requirement	Linkages / Benefit	Length	Timeframe
D1	Doolan Street	Connect Doolan St to the shared path that links to Mitchell Wy by providing a kerb ramp and path through the verge	Connects Doolan St to Mitchell Wy to complete this section of local route	5m	Short
D2	Rail Trail Dardanup	Complete the Primary Route between Ferguson Rd and Doolan St, and Hayward St and the Charlotte St crossover	Completes the primary route rail trail along the townsite to connect with the proposed trail on Venn Road	120m	Long
D3	Venn Road	Any improvements should consider cycling infrastructure. Community Facilities Plan proposes widening / reconstructions (SLK 0 - 2.22)	Connects Dardanup to Dardanup West (Harold Douglas Dr)	2.2km	Short
D4	Brett Place	Include a shared path provision or re-design Brett Pl as a low traffic neighbourhood street	North-South link through Dardanup to Civic Precinct	120m	Medium
D5	Ferguson Road Crossing	Improve crossing between future subdivision and civic area through widening of median	This will enable a location for an entry statement and slower vehicle speeds upon arrival into the Townsite in addition to a safe pedestrian crossing point	2m	Medium
D6	Bridle Path to Fees Road Crossing	Provide a safe crossing, through barrier protection, across Boyanup Picton Rd to access Fees Rd. Also include a safe railway crossing in collaboration with PTA and ARC	Connects West Dardanup to Dardanup. Included in Community Facilities Plan	150m	Medium
D7	Bridle Path	Upgrade dirt bridle path to more compacted base	Provides access to Dardanup from Dardanup West along existing path used by students	780m	Medium
D8	Crossing Boyanup-Picton Rd	Advocate to MRWA for a safe formal crossing point on Boyanup Picton Road to access Venn Road	Provides a link for proposed trail along Venn Road	n/a	On-going

EATON/MILLBRIDGE ACTION PLAN					
#	Project Name	Description of Requirement	Linkages/Benefits	Length	Timeframe
EM1	Chestnut Blvd	Once proposed primary route on Forrest Hwy is constructed, connect Chestnut Blvd between Denison Link and Duncan Loop	Completes local route to primary route on Forrest Hwy	135m	Long
EM2	Millars Creek Crossing, Chamberlain Grove	Feasibility study to link paths across Millars Creek with a pedestrian/cycling bridge	Provides a second connection across Millars Creek and facilitates loop walks/rides. Low-level crossing would be significantly cheaper to implement compared to high-level bridge adjacent to Forrest Hwy	70m	Medium
EM3	Chamberlain Grove	Feasibility study for a new ramped path connection between Millbridge Blvd and the Millars Creek path (western side)	Improves connectivity between Millbridge and the Millars Creek path. Current access route is via stairs or convoluted route via back streets	30m	Medium
EM4	Diadem Street	Review potential for a path connection between Diadem St / Hale St intersection and Old Coast Rd, to connect with proposed primary route along Old Coast Rd. This includes discussions with City of Bunbury	Improves connectivity to Eaton Primary School and south-west portion of Eaton residential area	150m	Long
EM5	Old Coast Road	Advocate with MRWA and City of Bunbury to construct a path along Old Coast Rd between Hamilton Road and Forrest Hwy	Continue to build a primary network	1.4km	On-going
EM6	Recreation Drive	Investigate opportunity to construct high-quality path connection from Recreation Dr, along old road reserve, to Forrest Hwy at the eastbound parking bay, including safe crossing point	Provides safer access for road cyclists between Eaton and Hynes Rd, minimising the use of Forrest Hwy. Use of Forrest Hwy was raised as a safety issue by cycle club	200m	Medium
EM7	Forrest Highway	Feasibility study to construct a separate path on Forrest Hwy between Hynes Road and Recreation Drive link and include a path cut across Forrest Hwy	Provides safer access for road cyclists between Eaton and Hynes Rd, minimising the use of Forrest Hwy. Use of Forrest Hwy was raised as a safety issue by cycle club	600m	Long
EM8	Lofthouse Avenue / Eaton Drive	Community Facilities Plan proposes new traffic signals. These should ensure safe pedestrian crossing facilities and link into currently gated access to shops with footpath connection	Improves connectivity through Eaton to access the shops	n/a	Long
EM9	Millbridge Blvd	Feasibility study to include a switchback adjacent to the steps from Millbridge Blvd to Millars Creek path on the edge of the substation, the western side of the bridge	Provides a clear link between the Millars Creek Path to Millbridge Blvd	25m	Long
EM10	Hamilton St	Provide a safe crossing across Hamilton St at Bobin St or Ann St	Improves north/south connectivity through Eaton	n/a	Medium

SHIRE SURROUNDS ACTION PLAN					
#	**Project Name**	**Description of Requirement**	**Linkages / Benefit**	**Length**	**Timeframe**
S1	Henty Road	Feasibility study to sufficiently widen Henty Rd between SLK 3.89 – 5.36 to provide a sealed shoulder on uphill section. Community Facilities Plan proposes to reinstate shoulders (SLK 2.5 - 5.5 and SLK 8.0 - 11.0)	Separates slow moving uphill cyclists from other traffic, improving safety. This section was raised as a specific safety issue by the cycle club	2km	Short
S2	Edwards Road	Feasibility study into constructing a wide shared path to connect Henty Rd to Dowdells Line/Harris Rd using existing road reservation. Community Facilities Plan proposes widening / reconstruction on Harris Rd (SLK 0.0 - 1.20 and SLK 5.76 - 7.44)	Connect training routes	6.5km	Long
S3	Joshua Creek Road	Feasibility study to seal the unsealed section of Joshua Creek Road between Crooked Brook Road and Boyanup, 2.2kms within Shire of Dardanup and 2.4kms within Shire of Capel. Part of long term planning in Community Facilities Plan (SLK 0.0 - 2.2 and SLK 6.25 - 7.2)	Creates an additional training route loop with low traffic volumes. Improves road safety for general traffic and reduces maintenance costs for Shire	2.2km	Medium
S4	Pile Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction of Pile Rd (SLK 5.66 - 7.99, SLK 9.01 - 11.56 and SLK 11.0 - 16.78)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S5	Ferguson Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction (SLK 13.56 - 19.56)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S6	Collie River Road	Consider road riding environment when improvements are delivered. Community Facilities Plan proposes widening / reconstruction (SLK0 - 1.61 and 1.61 - 4.43)	Improved safety for training routes through the Ferguson Valley	TBD	On-going
S7	Town Connection - Burekup to Eaton Trail	Feasibility study to link Burekup with Eaton/Australind via Collie River. Alternatively, Clifton Rd to link with the drainage reserve to Burekup	Provide trail connectivity between Burkeup townsite and Eaton/Australind	78m	Medium
S8	Town Connection - Dardanup to Bunbury Trail	Feasibility study to select preferred alignment for trail connecting Dardanup to Bunbury via Venn Rd, Killarney Rd, drainage reserve and then to Willinge Dr Extension. This is dependent on BORR and crossing opportunities	Provides connectivity for West Dardanup residents to Dardanup townsite, and provides connectivity to Bunbury via Willinge Dr	7km	Medium
S9	Town Connection - Burekup to Dardanup	Feasibility study to select alignment for rail connecting Burekup to Dardanup via Dowdells Line to Ferguson Rd. Community Facilities Plan proposes widening / reconstruction of Dowdell's Line Rd (SLK 3.85 - 5.69, SLK 0.03 -2.07, SLK 3.41 - 3.85)	Provides connectivity between Burekup townsite to Dardanup townsite	11km	Long
S10	Town Connection - Burekup to Bunbury	Feasibility study to utilise existing Railway Rd to connect Burekup to Bunbury as a trail path	Provides connectivity between Burekup townsite to Bunbury	n/a	Short
S11	Lennard Rd	Advocate for trail quality surface using existing road reservation. Includes off road connections along Pile Rd (approx. 750m) and Henty Rd (approx. 550m)	Connects trail routes to the Munda Biddi and Dowdells Line via Edwards Rd	12km	Long

MINOR WORKS ACTION PLAN					
#	Project Name	Location	Description of Requirement	Benefits	Priority
MW1	Old Coast Road Bridge	Eaton	Work with City of Bunbury to strengthen the connection from bridge underpass to local route and beyond into Bunbury CBD	Connects to local and primary route into Bunbury	Short
MW2	Henty Road/Ferguson Road	Shire	Request MRWA to reduce speed limits on Hentry Road and Ferguson Road to 80km/hr	Supports training routes	Short
MW3	Cycling Without Age	Shire	Support the initiation of a chapter of Cycling Without Age, starting in Eaton/Millbridge. Engage with aged care facilities and the WA chapter of CWA.	Promotes cycling	Medium
MW4	End of Trip Facilities	Shire	Provide end of trip facilities such as: secure bike parking, repair stations and drinking fountains in appropriate locations	Promotes cycling	Medium
MW5	Development Provisions	Shire	Consider including required bicycle parking provision rates for various land use classifications in updated TPS9	Encourages cycling	Medium
MW6	Wayfinding and Signage	Shire	Review the Directional Signage Policy to include local cycling friendly wayfinding signage guidelines and a Ferguson Valley Signage Strategy , including a prioritisation list. This should include signage on cycling training routes, including Henty Road, Ferguson Road, entry statements or welcome signage at key entrance points to training routes; local gateway signage where road users enter a designated training route; behavioural signage at regular intervals along busier training route; warning signs, including activated warning signs in targeted locations	Safer cycling environment	Short
MW7	Pump Track and Bike Skills Track	Burekup/Shire	Investigate a pump track and bike skills track	Promotes cycling skills	Medium
MW8	Bicycle Library	Shire	Investigate a Bicycle Library Scheme	Encourages cycling	Medium
MW9	Valet Bicycle Parking	Shire	Provide secure bicycle parking at community events	Promotes cycling	Medium
MW10	Bike Bus	Shire	Support and encourage 'bike bus's initiatives at the primary schools	Encourages cycling	Medium
MW11	Bicycle Recycling	Shire	Support re-use of bikes by providing a drop off location for Bicycles for Humanity	Promotes cycling	Long
MW12	E-bike Scheme	Shire	Offer e-bike salary sacrifice to Shire staff	Encourages cycling	Medium
MW13	Your Move	Shire	Sign up to Your Move	Encourages cycling	Medium
MW14	Driver Education	Shire	Work with WestCycle to lobby MRWA and RSC to implement a targeted driver education program	Safer cycling environment	Medium

APPENDIX

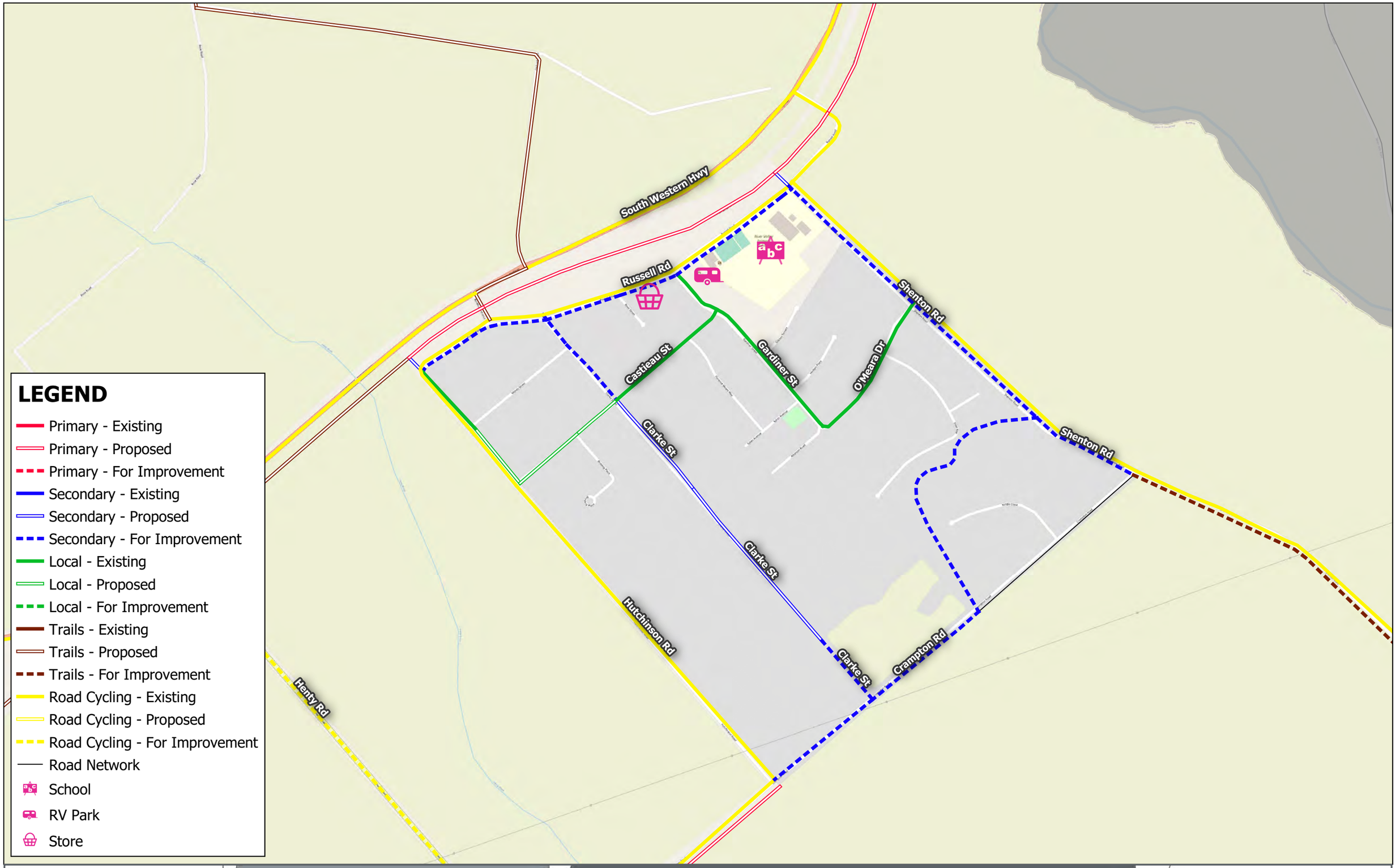
B

CYCLING NETWORK MAPS

Cardno

now

Stantec



Shire of Dardanup

1:7,000 Scale at A3

m

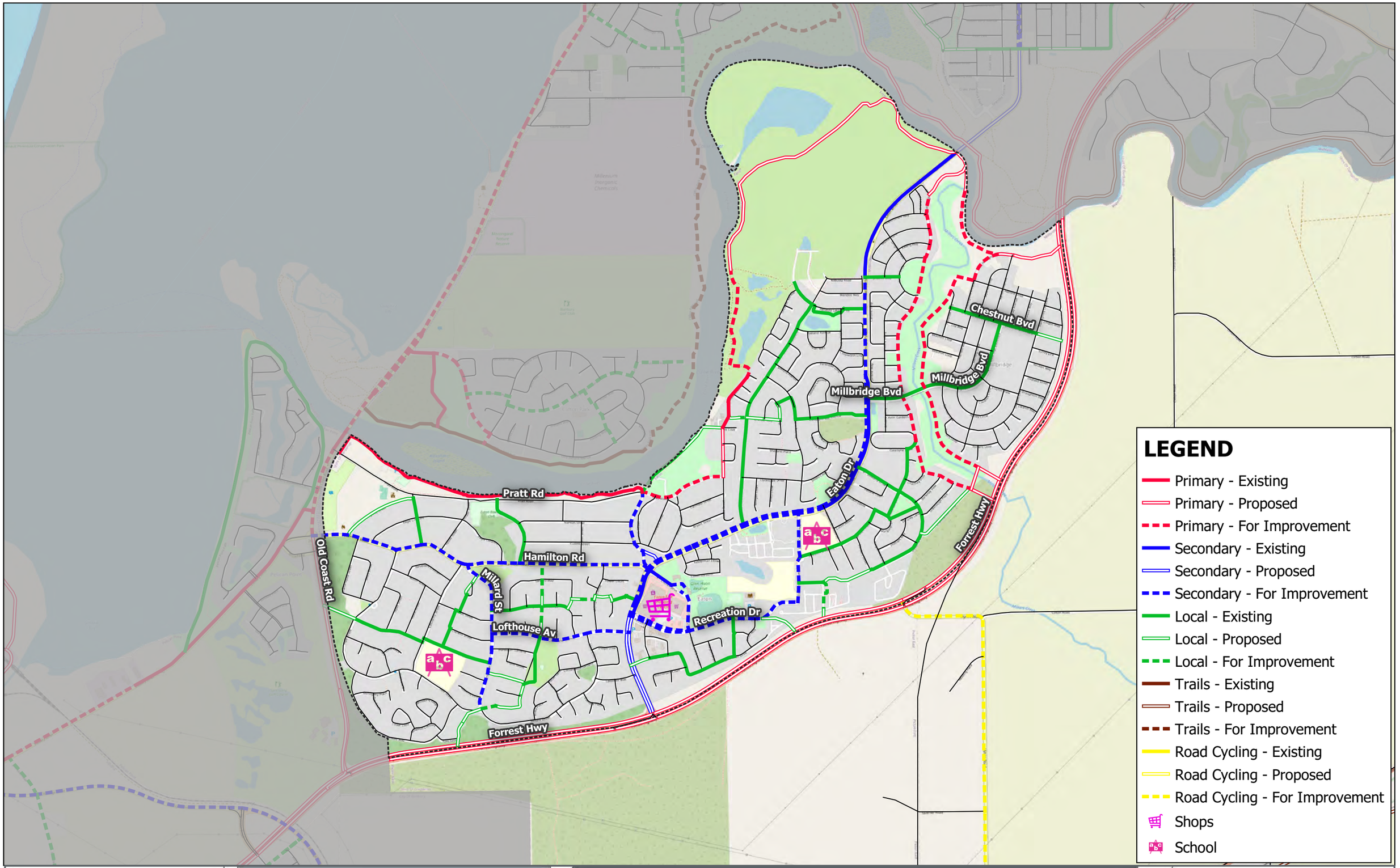
0 100 200 300 400 500

SHIRE OF DARDANUP
BUREKUP BIKE PLAN

CW1200114

Cardno now Stantec

Map Produced by WA Traffic and Transport Planning
Date: 2023-3-8
Coordinate System: GDA50/ MGA Zone 50
Project: CW1200114
Map: Bike Plan



Shire of Dardanup

1:20,000 Scale at A3

km

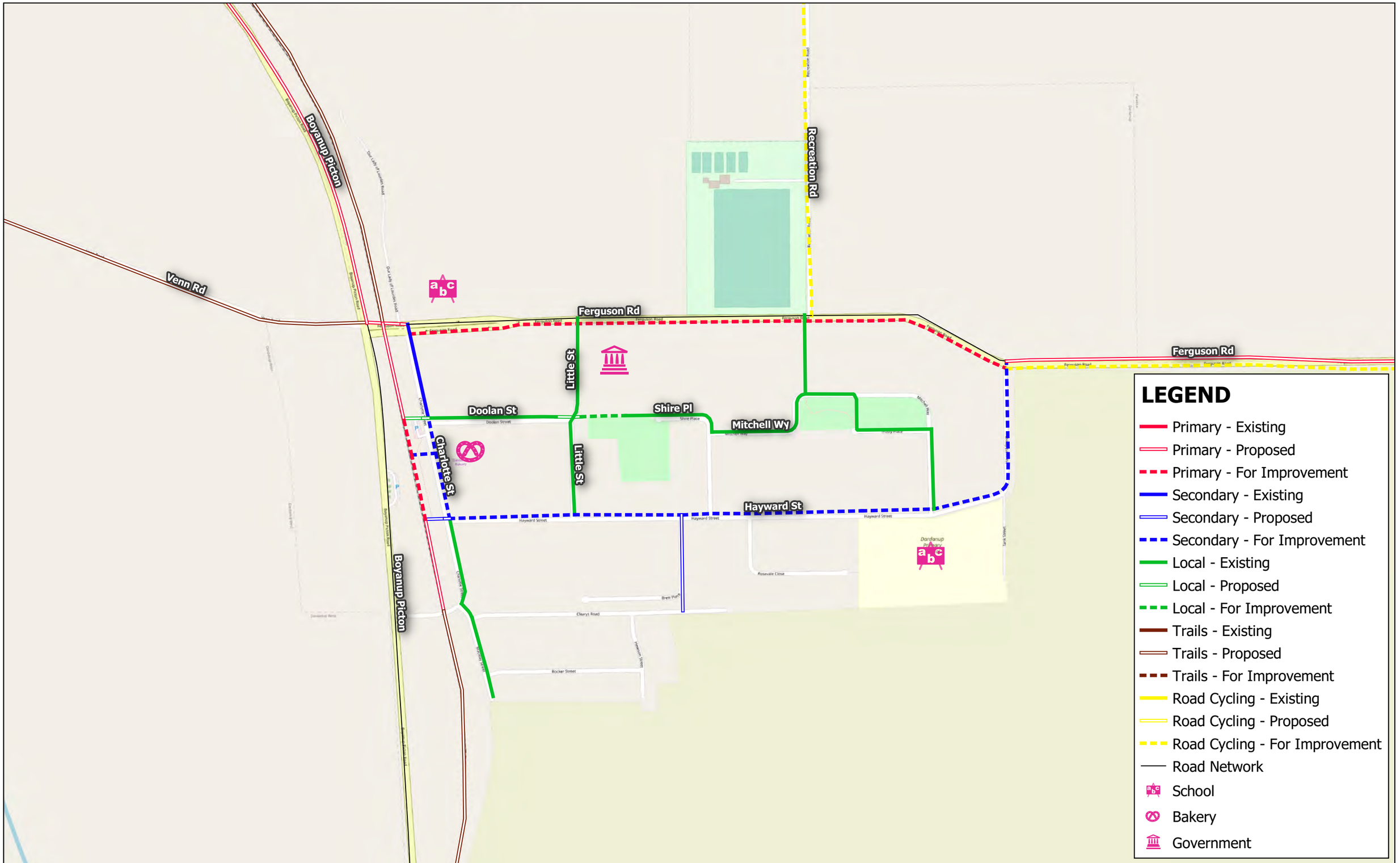
0 0.5 1 1.5

SHIRE OF DARDANUP
EATON/MILLBRIDGE BIKE PLAN

CW1200114

Cardno now Stantec

Map Produced by WA Traffic and Transport Planning
Date: 2023-3-8
Coordinate System: GDA50/ MGA Zone 50
Project: CW1200114
Map: Bike Plan



Shire of Dardanup

1:5,000 Scale at A3

m

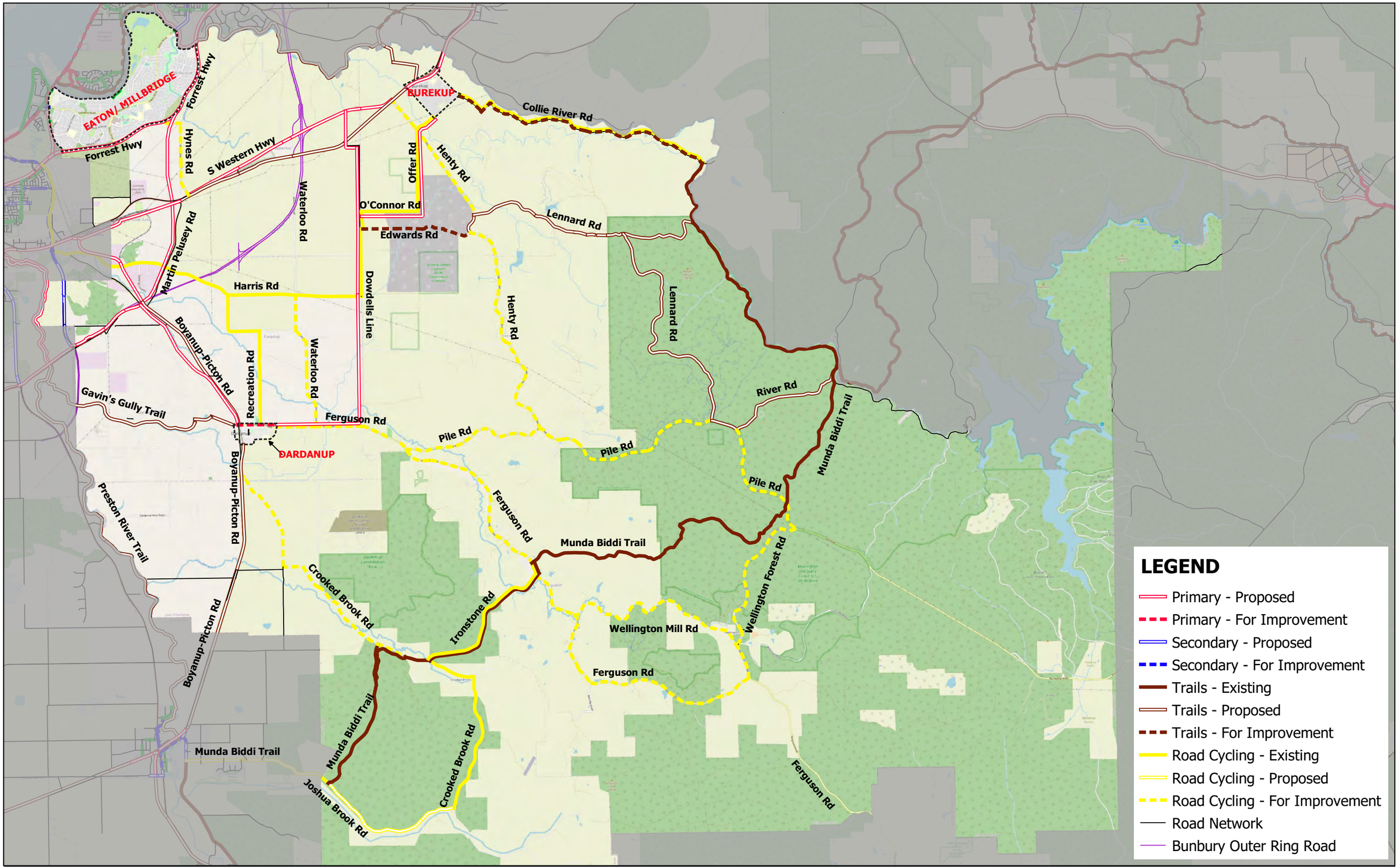
0 100 200 300 400

SHIRE OF DARDANUP
DARDANUP BIKE PLAN

CW1200114

Cardno now Stantec

Map Produced by WA Traffic and Transport Planning
Date: 2023-3-8
Coordinate System: GDA50/ MGA Zone 50
Project: CW1200056
Map: Bike Plan



Shire of Dardanup

1:100,000 Scale at A3

km

0 1 2 3 4 5 6

SHIRE OF DARDANUP BIKE PLAN

CW1200114

Cardno now Stantec

Map Produced by WA Traffic and Transport Planning
Date: 2023-3-13
Coordinate System: GDA50/ MGA Zone 50
Project: CW1200114
Map: Bike Plan

EATON / MILLBRIDGE
BUREKUP
DARDANUP
Forrest Hwy
Forrest Hwy
Hynes Rd
S Western Hwy
Waterloo Rd
Offer Rd
Collie River Rd
Henty Rd
O'Connor Rd
Lennard Rd
Martin Peluse Rd
Dowdells Line
Harris Rd
Henty Rd
Lennard Rd
Boyanup-Picton Rd
Recreation Rd
Waterloo Rd
Gavin's Gully Trail
Ferguson Rd
Pile Rd
Pile Rd
Pile Rd
Preston River Trail
Boyanup-Picton Rd
Ferguson Rd
Crooked Brook Rd
Ironstone Rd
Wellington Mill Rd
Wellington Forest Rd
Ferguson Rd
Boyanup-Picton Rd
Crooked Brook Rd
Ferguson Rd

LEGEND

- Road Cycling - Existing
- Road Cycling - Proposed
- Road Cycling - For Improvement
- Road Network
- Bunbury Outer Ring Road

Shire of Dardanup

1:100,000 Scale at A3

km

0 1 2 3 4 5 6

SHIRE OF DARDANUP BIKE PLAN

CW1200114

Cardno now Stantec

Map Produced by WA Traffic and Transport Planning
Date: 2023-3-8
Coordinate System: GDA50/ MGA Zone 50
Project: CW1200114
Map: Bike Plan

APPENDIX

C

POLICY CONTEXT

Cardno

now

Stantec

1 Policy Review

1.1 Australian National Cycling Strategy, 2011-2016 (Australian Bicycle Council)

This Strategy (NCS) set out a series of actions intended to deliver the overarching vision to double the number of people cycling in Australia over the five-year period of the strategy. It focused on areas considered critical to maintaining momentum regarding cycling, whilst aiming to ensure that all local planning and transport plans are fully integrated and address the needs of cycling. Following a review of the NCS in 2017, it was reinforced that increased walking and cycling is in the national interest whilst identifying that a fresh approach to national cycling and walking coordination is required. As a result, it was decided that there is no immediate need for a new national cycling or walking strategy in the short term. The Australian Bicycle Council (ABC) is proposed to be reformed into the Cycling and Walking Australian/New Zealand (CWANZ) group.

CWANZ is responsible for the national coordination of action on cycling, whilst focusing on a small number of strategic actions that aim to deliver outcomes that are in the national interest and that cannot be delivered effectively by jurisdictions working alone.

1.2 Western Australian Bicycle Network Plan (DoT, 2014-2031)

The Western Australian Bicycle Network Plan (WABN) is part of the DoT Integrated Transport Framework and Moving People ideology. It replaces the Perth Bicycle Network as the strategic level of planning for WA and Perth and is focussed on achieving several strategic initiatives to provide a safe and sustainable cycling network to ultimately promote and encourage cycling as a mode of transport. The key recommendations of the WABN Plan include:

- Expansion of the PSP network;
- A feasibility study for an end-of-trip facility in the CBD;
- A connection to schools program;
- A connection to rail/major bus stations program;
- Review of traffic management on local roads;
- Review of the local bicycle routes;
- Development of an online journey planner;
- Planning for cycling facilities in larger regional cities;
- Formulation of a WABN Implementation Reference Group; and
- Biennial review of the Plan.

1.3 National Cycling Participation Survey (2021)

The National Cycling Participation Survey (NCPS) is a standardised survey that is repeated biennially to estimate the participation for each state and territory.

1.4 Western Australian Strategic Trails Blueprint 2017-2021

This is an overarching guide for consistent and coordinated planning, development and management of quality trails and trail experiences across Western Australia. It provides a vision, guiding principles, strategic directions and actions for consideration across the State for government, trail managers, landholders, trail support groups, tourism operators and the community.

1.5 Bunbury – Wellington 2050 Cycling Strategy

The strategy sets out a blueprint for connecting, enhancing and extending the region's cycling routes through the development of an interconnected network of off-road shared paths, protected on-road bike lanes and low-stress residential streets. Key opportunities assessed at benefitting residents and visitors to the Shire of Dardanup include:

- Various options to facilitate a coastal connection to Bunbury (defined as Connect Bunbury to Busselton).
- Various options to facilitate a coastal connection to Mandurah (defined as Connect Bunbury to Mandurah).
- Various inland connections including connecting Burekup and Dardanup to other connecting paths (defined as Connect small towns along the South Western Highway corridor).

All of these have implications for the shire in working in partnership with the Department of Transport and neighbouring shires but is at present un-costed and will require a strong working relationship with all parties to realise the necessary grant funding to implement.

1.5.1 Primary Routes

These routes should be completely separated and shared paths at least 3m in width. Within the Shire of Dardanup, it is proposed Millars Creek shared path is upgraded between Chamberlain Grove and Millbridge Boulevard. Also, the Collie River foreshore (south side) between the bridges at Old Coast Road and Eaton Drive.

1.5.2 Secondary Routes

Secondary routes (as defined in **Section 3.1**) are typically located along urban arterials and can take the form of either on-road (protected) bike lanes or off-road shared paths. In both cases, it is critical that they are planned with the “8 to 80” design philosophy in mind.

Proposed routes are along Hamilton Road, Eaton Drive and The Boulevard, providing a feeder routes into the suburbs of Eaton, Millbridge, Treendale and Kingston. Also, a new shared path on the northern side of Ferguson Road linking Charlotte Street to Dardanup Oval is expected to be constructed.

These routes are often in built-up environments and should give due consideration to the design at intersecting roads. Separation of on-road cycling is desireable to minimise the interaction between cyclists and vehicular traffic.

1.5.3 Local Routes

Local routes are to collect cycling traffic from residential areas. The treatments by look like quiet suburban streets or 30km/h safe active streets. Chamberlain Grove is proposed to have a shared path in Millbridge, from Illawarra Drive to provide a connection to Millers Creek path system.

1.5.4 Rail Trails

There are over 500km of dormant, disused and closed railways located to the south and east of Bunbury.

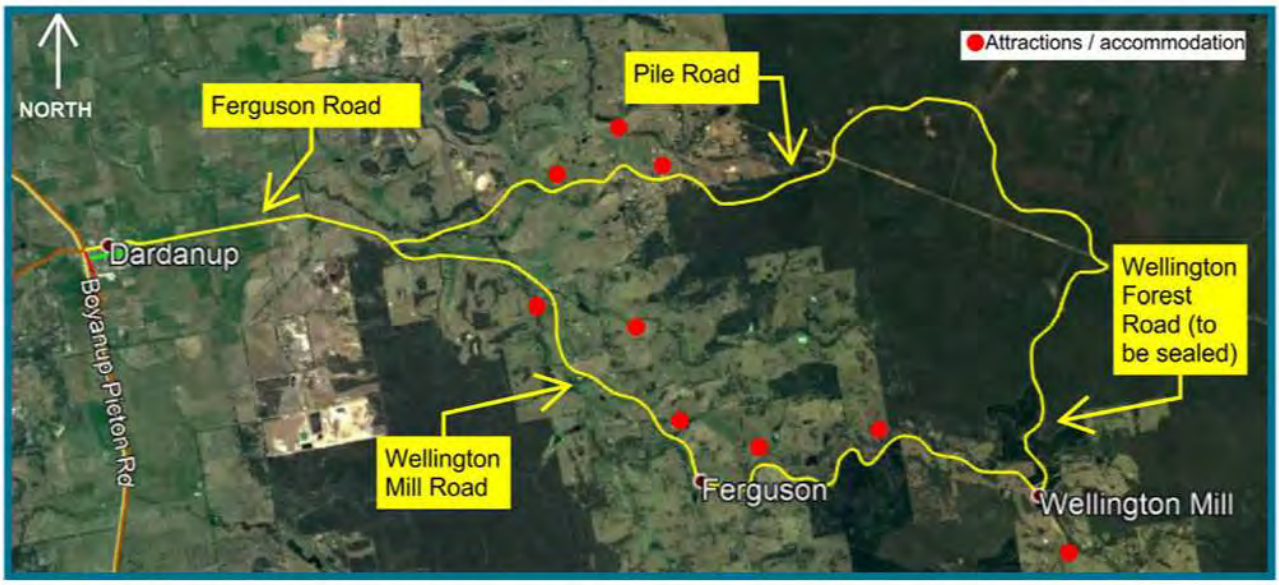
Bunbury to Dardanup has an open (freight and passenger services that connections the town, providing a safe alternative to the South Western Highway.

1.5.5 Road Cycling Routes

There is an emerging need to develop formalised routes for the subregion’s local and visiting road cyclists. Road cycling is popular on lower order, rural and semi-rural roads on the outskirts of cities and towns 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 in order to improve safety and user-experience.

One such route is that between Dardanup and the Ferguson Valley, utilising local roads including Ferguson, Pile, Wellington Forrest and Wellington Mill roads.

Ferguson Valley Loop - Road Cycling Route



Already popular with cycling groups, the route also has the potential to attract tourists, given the surrounding scenery and numerous connections to accommodation and hospitality businesses around the Ferguson Valley.

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

Further feasibility and consultation are required to identify training routes throughout the Bunbury-Wellington subregion.

1.6 Strategic Community Plan

The Strategic Community Plan is the highest level integrated strategic corporate planning document, setting out the long-term vision of the community for the next 10 years. It will influence how the Shire uses its resources to deliver services to the community.

The vision is to provide effective leadership in encouraging balanced growth and development of the Shire while recognising the diverse needs of the community.

The values are:

- Strong civic leadership representing the whole of the Shire which is supported by responsible and transparent corporate governance;
- Maintaining a balanced respect for our natural assets and built environment, while retaining our lifestyle values, community spirit and identity;
- A safe and vibrant community which is inclusive and welcoming for all ages and interests;
- To encourage a diverse and resilient economy that supports a range of local employment opportunities; and
- Provision and maintenance of facilities, infrastructure and services to promote the Shire as an attractive and desirable place to live.

The key outcomes to support cycling are:

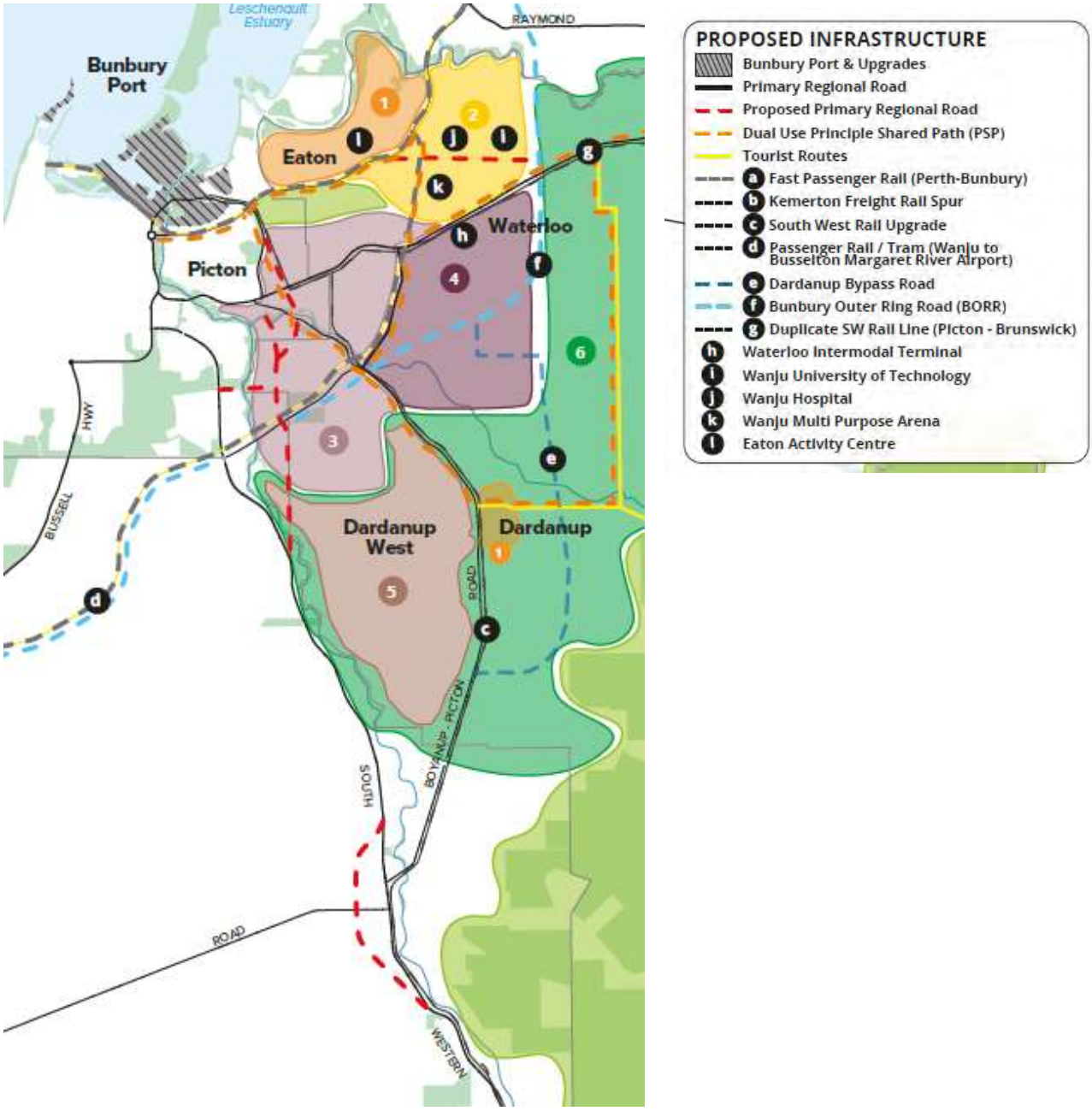
- Outcome 2.2.2 “To Provide Sustainable Transport Infrastructure” and
- Outcome 5.1.5 “Provide a series of interconnected walkways, pathways and cycle ways that meets community needs and expectations.”

1.7 Shire of Dardanup 2050 Vision

This document aims to set out a future the community is proud of, passionate about being involved in and committed to achieving with a vision that: In 2050 the Shire of Dardanup will be a healthy, self-sufficient and sustainable community that is connected and inclusive, and where our culture and innovation are celebrated.

Healthy aspirations include ‘Provide facilities which create opportunities for people to move’ with 94% of the community support fostering a community culture of activity and health. Connected aspirations include ‘Improve transport networks’ with 86% of the community supporting to facilitate connection between centres with cycling scooting and ride-share.

Figure 1-1 Proposed Infrastructure



1.8 Sport and Recreation Plan 2020 – 2030

This plan identifies the current and future needs of the Shire in respect of the development of facilities, programs and services with one objective to maximise the community’s opportunities for physical activity.

The Vison for the provision of sport and recreation infrastructure is:

To provide and maintain a range of sport and recreation facilities, infrastructure and services which promote the Shire as an attractive and desirable place to live and visit by connecting and promoting the economic and social value of sport and recreation to the health and wellbeing of the community.

The Tracks and Trails Plans will review resources allocated to the development upgrade and maintenance of existing dual use tracks and trails within the Shire. The intention is to create a greater connectivity between residents, the foreshore and between townsites and sport and recreation infrastructure. The Shire will

investigate opportunities to develop mountain bike tracks in the vicinity of Forrest Highway, or at other appropriate State lands within the Shire. The Plan also supports working with the Department of Transport and local residents to implement the Bunbury Wellington 2050 Cycling Strategy.

1.9 Public Health Plan 2021

The Plan has a prevention focus, to encourage individuals to change their attitudes and lifestyles. It supports the Strategic Community Plan's objective to contribute towards the development of a Transport Strategy for the Shire and support programs and events that promote active transport.

1.10 Dardanup Disability Access & Inclusion Plan 2018 - 2023

The Shire of Dardanup is committed to working towards equity for all community members including people with disability, their family members and carers and where required, disability organisations to ensure that barriers to access are addressed appropriately. The Shire is committed to ensuring that people with disability, their family members and carers are able to access its services, facilities, functions and information. The DAIP provides a framework for the identification of areas where access and inclusion can be improved and for the development of strategies to best improve access and inclusion.

1.11 Dardanup Sport & Recreation Plan 2020 – 2030

The Plan provides the direction and commitment needed for the future; limiting the potential for an ad hoc approach to sport and recreation planning while guiding future decision making.

1.12 Dardanup Place & Community Plan 2020 – 2030

The Plan seeks to guide the priority programs, projects, and initiatives that the Place and Community team seek to deliver over the coming 10-year period in line with the Shire's Strategic Community Plan

1.13 Community Facilities Plans

The following community facilities plans were reviewed:

- Dardanup Community Facilities Plan
- Burekup Community Facilities Plan
- Eaton Millbridge Community Facilities Plan
- Ferguson Valley and Surrounds Community Facilities Plan

APPENDIX

D

STAKEHOLDER ENGAGEMENT OUTCOMES

Cardno

now

Stantec

Stakeholder Engagement Outcomes

Dardanup Local Bike Plan

CW1200114

Prepared for
Shire of Dardanup

8 June 2022

Cardno

now

Stantec

Contact Information

Stantec Australia Pty Ltd
Cardno BEC

11 Harvest Terrace
West Perth WA 6005
PO BOX 447

www.cardno.com
Phone +61 8 9472 4224
Fax +61 8 9486 8664

Document Information

Prepared for	Shire of Dardanup
Project Name	Dardanup Local Bike Plan
File Reference	CW1200114_Stakeholder Engagement Outcomes
Job Reference	CW1200114
Date	8 June 2022
Version Number	B

Author(s):

Shannon Leigh
Principal Transport Planner

Effective Date 8/06/2022

Approved By:

Ray Cook
Business Leader – Traffic & Transport Planning

Date Approved 8/06/2022

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
A	23/05/2022	Draft	S_L	RJC
B	8/06/2022	Final	S_L	RJC

Table of Contents

Appendices

Figures

1 Introduction

As part of the Shire of Dardanup Local Bike Plan, consultation with the community was a key component to understand the issues and opportunities within the Shire. Stakeholder consultation is a major component of any Bike Plan, allowing the relevant communities to provide input into the identification of issues and appropriate responses to these issues.

A survey was conducted over a four-week period in May in order to understand the issues and opportunities of the cycling network in the Shire of Dardanup. A total of 65 responses were collected and the results are presented below. The responses will form part of the Action Plan in this report.

1.1 Outcomes

The outcomes of the survey show road cyclists who enjoy training rides through the Ferguson Valley as well as recreational riders who want a safe and connected network. The comment with the most support from the community was in relation to the gravel path near the Eaton Scout Hall and the desire for it to be sealed all the way to Peninsula Lakes Drive. A wider verge or cycle path from Dardanup towards Bunbury Bypass into the port area was seen as important to provide access to the paths in Australind and Koombana. In addition, many felt a pump track or bmx jump tracks would enhance their communities. The other comments related to a lack of adequate paths and secure bike parking.

Figure 1-1 Word Cloud from Comments

Not surprisingly, people who ride on the roads through the Ferguson Valley felt the vehicle speeds and lack of sealed shoulders in locations made for an unsafe environment.

2 Demographics

Figure 2-1 shows the distribution of responses by age profile of the respondents, showing the diverse age range of people within the Shire. Thirty-five percent of the respondents were aged between 36 – 45 and those aged 46+ represented 45% of the total. **Figure 2-2** shows the gender profile of the respondents, with an even distribution of males and females.

Figure 2-1 Age Profile of Respondents

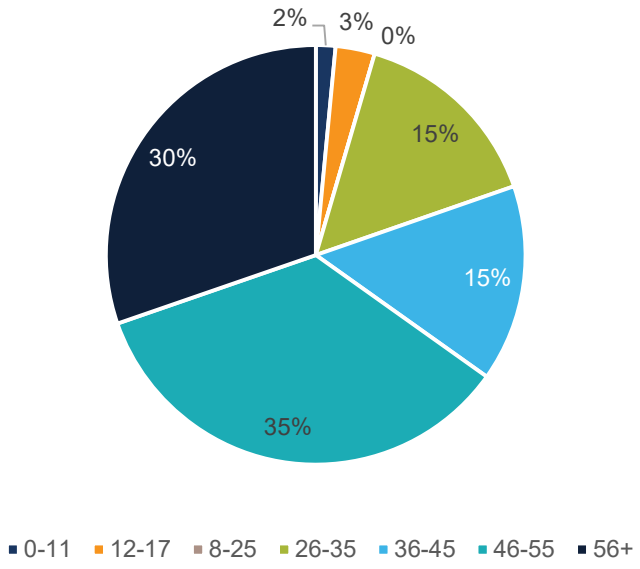


Figure 2-2 Gender Profile of Respondents

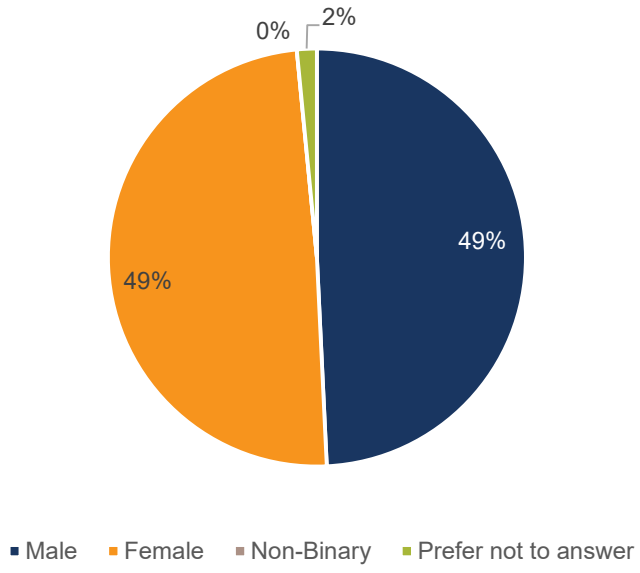


Figure 2-3 indicates if the participants live, work, learn or socialise in the Shire of Dardanup, with the majority responding they engage in one or more of these ways with the Shire.

Figure 2-3 Do you live, work, learn or socialise in Shire of Dardanup?

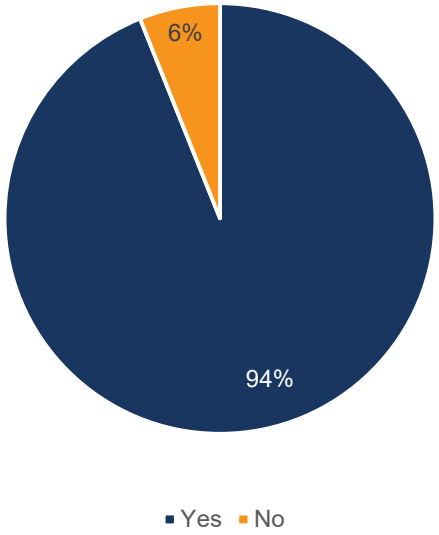
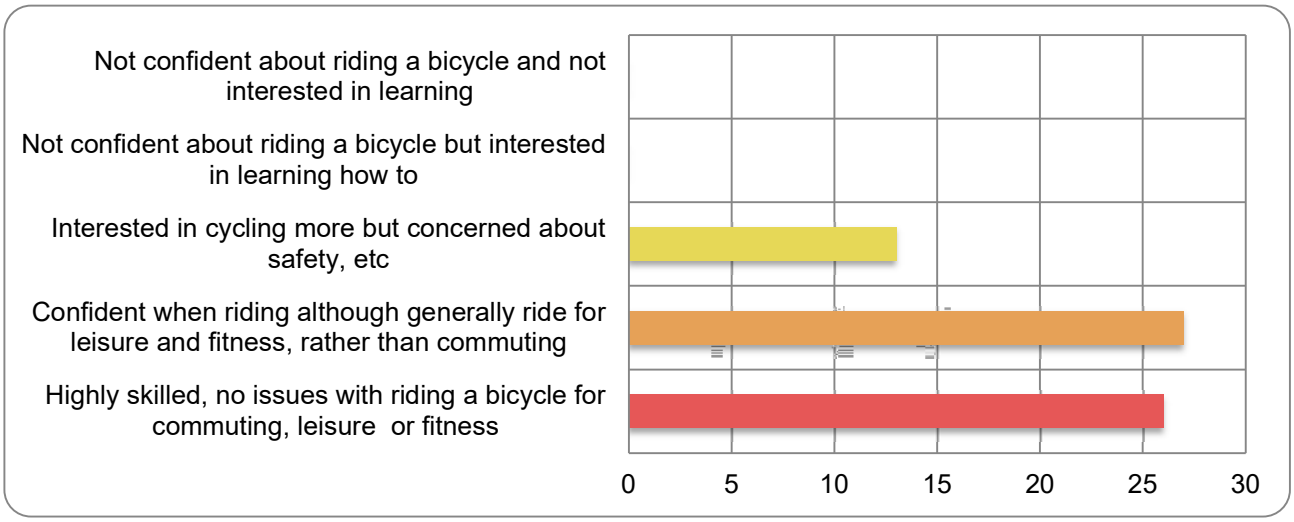


Figure 2-4 Dardanup Consultation

3 Type of Bike Rider

The survey then asked what type of bike rider the respondent considered themselves, with most either highly skilled or confident when riding a bicycle, and none categorising themselves as ‘not confident about riding a bicycle and not interested in learning’ or ‘not confident about riding a bicycle but interested in learning how to.’

Figure 3-1 Which of these phrases best describes you as a bike rider?



Of those that were not currently riding, they stated it had been less than 5 years since they had last ridden a bike.

Figure 3-2 Burekup Consultation

4 Bicycle Access and Use

The majority of respondents own a bicycle and half ride their bike 1-6 times a week. The average number of bikes within respondents' households is **4**.

Figure 4-1 Do you have access to a bicycle?

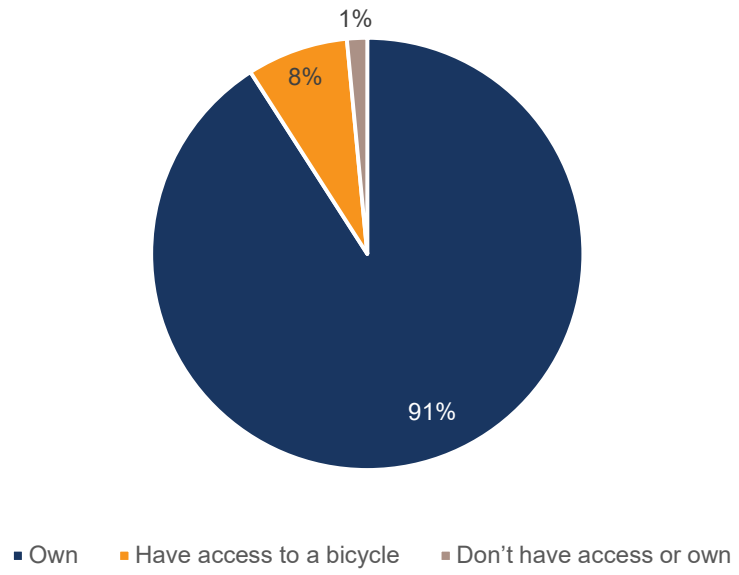
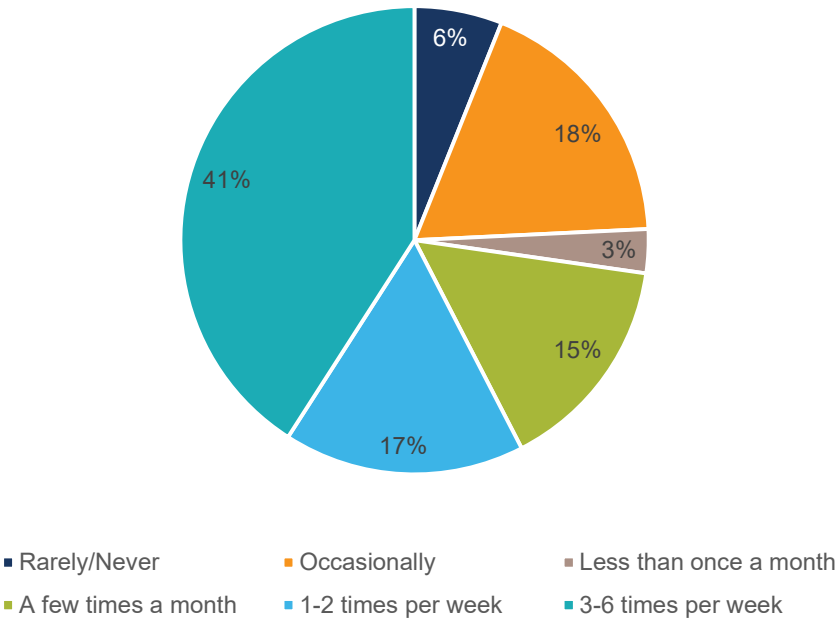
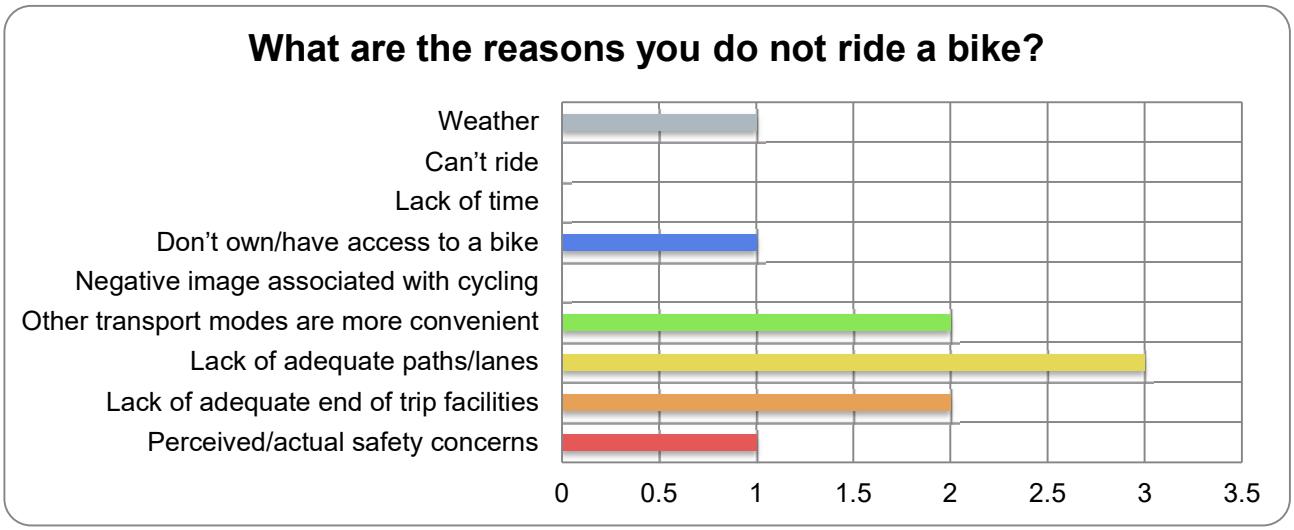


Figure 4-2 How often do you ride?



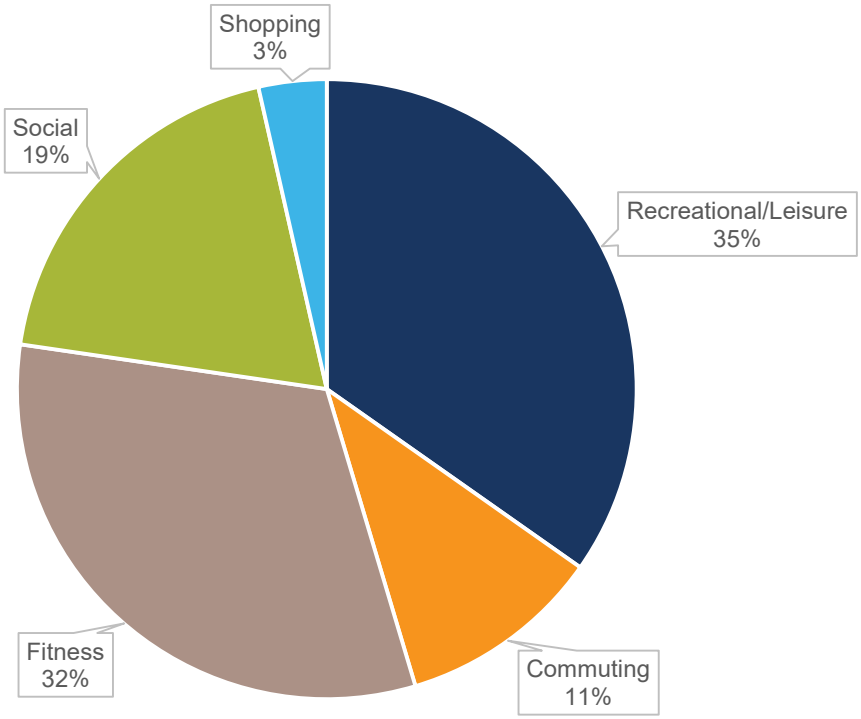
When asked what were the reasons they don't ride, only 4 participants responded and 3 stated it was a lack of adequate paths/lanes and stated "more paths would help start cycling in the future" (Refer to **Figure 4-3**).

Figure 4-3 Reasons Participants Do Not Ride a Bike



The main reasons that respondents ride their bike are: **recreation, leisure, fitness and socialising** (Refer to **Figure 4-4)**. A small proportion ride for commuting and only a handful use their bike for utility purposes such as shopping.

Figure 4-4 What is the main reason you ride a bike?



This aligns with **Figure 4-5** which shows the major benefits experienced from cycling of **health & fitness and enjoyment**.

Figure 4-5 Benefits from Cycling

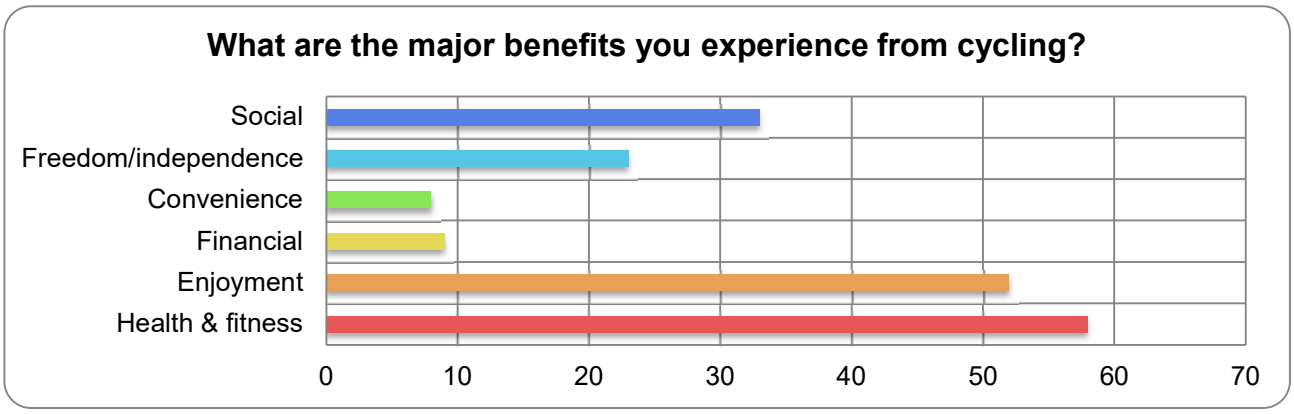


Figure 4-6 Eaton Fair Shopping Centre Consultation

5 Travel Habits

Participants were asked where they usually travel to and from, using any mode of transport, as well as what locations they travel to. As can be seen below, there were responses for all types of places, with Bunbury, Eaton and Dardanup the key locations for the travel (Refer to **Figure 5-1** and **Figure 5-2**).

Figure 5-1 Where Travelling To and From

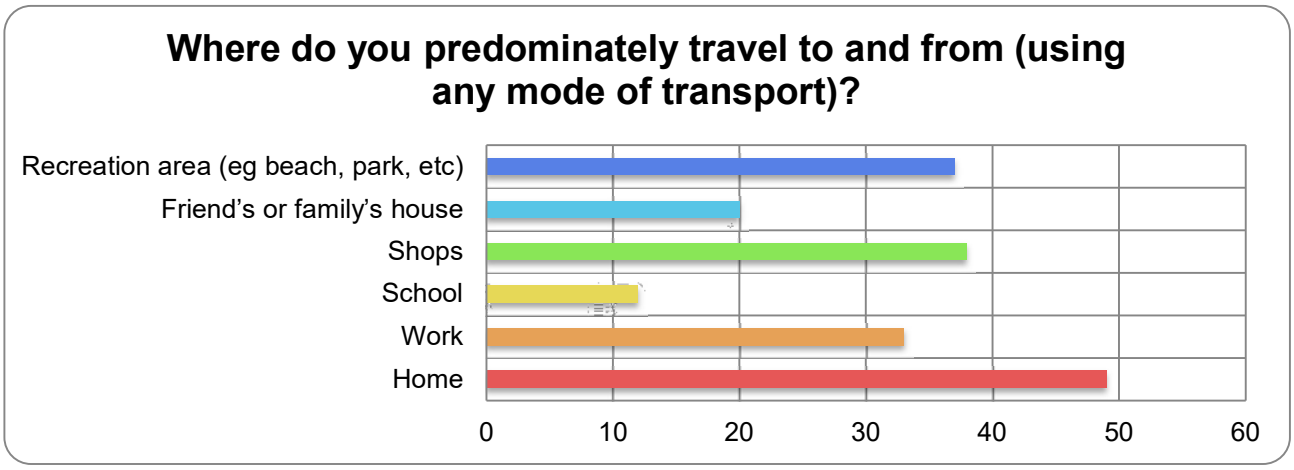


Figure 5-2 What locations do you travel to?

Lastly, the survey asked: During the week, what mode of transport do you most commonly use and how long would an average trip take? Refer to **Figure 5-3** - **Figure 5-5** below for the responses - showing most trips are 10 minutes or more.

Figure 5-3 Mode of Transport for Trip Less than 10 Minutes

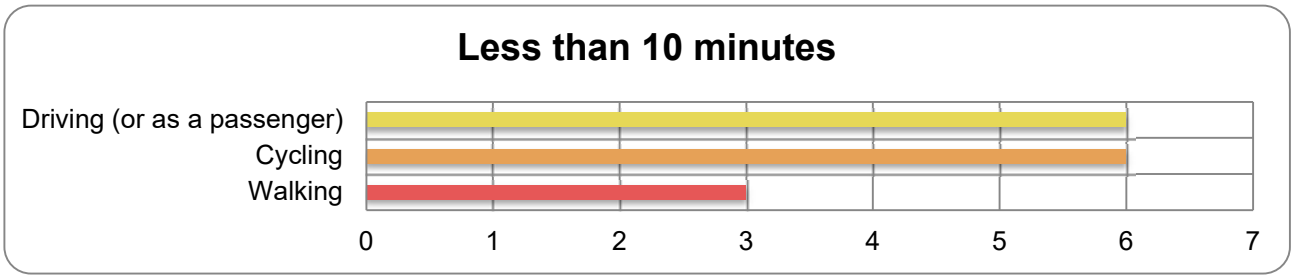


Figure 5-4 Mode of Transport for Trips 10 -30 Minutes

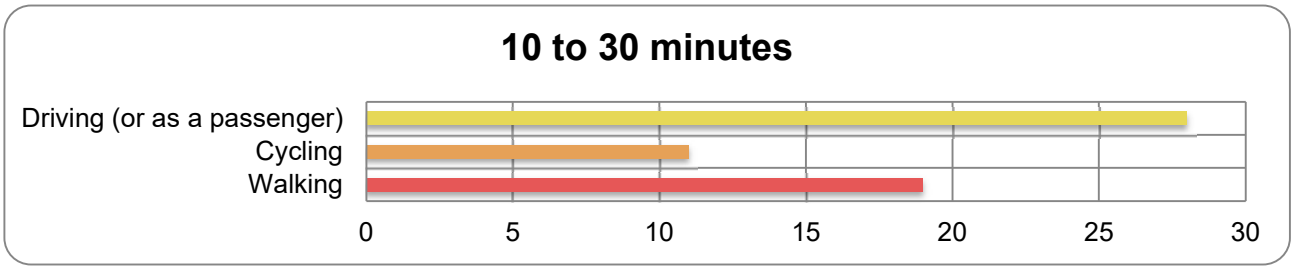
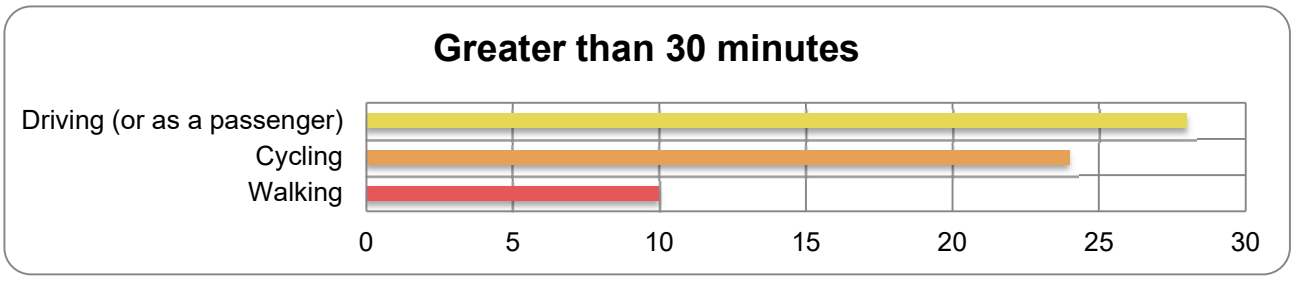


Figure 5-5 Mode of Transport for Trips Greater than 30 Minutes



6 Comments

The survey sought feedback from participants as to what improvement would encourage them to cycle more frequently or make their experience more enjoyable. Below is the list of responses. Overall the comments are focused on the need for **safe infrastructure** and a **connected network**. Other key themes were driver behaviour, lighting, secure bike parking, safer road crossings and the desire for more paths with better design.

Driver Behaviour

Cars showing more respect for cyclists. Properly constructed bike paths
Less vehicles parking halfway onto the footpaths, house setback is not big enough to park a car or 4-wheel drive between the garage and the footpath.
I used to ride everyday but cycle paths aren't safe, cars pull out at you from driveways and some driveways you can't see the cars coming. Cars also park all over them I find it safer to walk.
I cycle around the Ferguson Valley every weekend. The speed limit between Pile Rd and St Aidan's is 100km/hr. This is dangerous for both cyclists and drivers. There is tourist traffic, concerned driveways, tourist attractions and trucks. The speed limit needs to be reduced before there is an accident or fatality.

Lighting

Hamilton Rd path needs fixing the lighting doesn't reach the path a lot of gravel from driveways effect the path between Hale St and Millard and everyone's bins are put out on the path so it can't be used. Also need to carry path on to cross more direct to major Estuary Rd path
Lighting, away from main roads and highways, wide paths suitable for bikes and pedestrians. I would like to be able to cycle safely to the TAFE but atm the highway and lack of safe access prohibits that.
Better lighting along Lofthouse Road
Safe and smooth cycleways. Hamilton Road footpath is very rough and bumpy. Hamilton Road also has very poor lighting on the footpath. I would ride to work but it is too dangerous even with bike lights to ride on Hamilton Road footpath

Secure Parking	
	Connected trails, secure areas for when shopping or at destination away from bicycle.
	More bike lanes/paths and improved areas to store bikes at shops etc
	Better facilities for safe / secure parking of bikes at the shopping centre, Library, sports centre. eg under cover, racks you can lock your bike to with some sort of security cameras as bikes all around Bunbury are being stolen and vandalised.
	Better bike security at shops. Mountain bike system along the Collie River.
Crossings	
	On/off ramps at road crossings need to be made smoother and bike friendly. Drop offs between the path and road surface are often too high causing bone rattling thud at every road crossing.
	Safer ways to cross major roads, bike path to link up with estuary drive path.
	Just safer road crossings
	My cycling experience would become more enjoyable if I could get over the rode to Millbridge in a safer quicker way so I'm not waiting for 10 minutes plus just to cross one road during the week.
More Paths	
	The roads around me are not very wide and a lot of vehicles do not slow down when approaching a bike rider so sometimes it feels unsafe. It is unsafe to ride on the gravel shoulder because of loose gravel and often a steep drop-off from the bitumen.
	More routes and also wider routes.
	More paths and a bike park
	More recreational cycle paths, cycle specific paths on major roads, rather than (dangerous) shared pedestrian/cycle paths.
	More Ebike trails in the Ferguson Valley for recreation
	This would make the area more inclusive for people that aren’t great at mountain biking and would be safer and also good for tourism
	More bike paths
	The planned cycleways of the Bunbury Outer Ring Road be constructed now, not at some indeterminate date in the future. Will allow safe cycle commuting to occur along the entire length

Design

Better verges on the road or dedicated cycling path. Would cycle more with kids but Ferguson road is too narrow and dangerous. Would also cycle to Bunbury from Dardanup if verges were wider to allow cyclists a safe place to drive. Riding on road is too dangerous with kids and no cycling paths like in Eaton, Bunbury or Australind.
Better cycle routes away from high speed traffic
Spend serious money to create bike lanes instead of us having to ride on footpaths or narrow busy roads. For example, Hamilton Road and Eaton Drive are just plain dangerous for cyclists. Create conditions that don't automatically privilege cars and push bikes onto the margins. Rethink traffic planning from the ground up to encourage cycling and walking. Encourage local shopping and service hubs not outdated monstrosities like Eaton Fare. Be leaders in all of this not followers long after the fact.
I would like to see the planning department take a consistent approach to the requirement for the provision of shared paths (bike, pedestrian and horse) in special rural areas including but not limited to Dardanup West. The approach at the moment appears at best ad hoc with the result being a complete lack of connectivity of sections of paths. As a result, it is necessary for children and adults to walk along busy high-speed roads (80 km/h) when going between properties, to a bus stops or for exercise etc. It appears when Developments in the area are approved/endorsed by Council, little regard is given for the activities of people who will live in the areas, unlike the requirements placed on development within townsites.
Lessen bike interactions with road traffic
More space for bikes on roads separated from traffic
Wider roads, smoother edge of road with less rubbish, glass and rocks / coarse blue metal, greater separation from trucks and heavy traffic
Regular path maintenance, corners on paths designed better with less 90 degree turns. Connecting will paths (near the scout hall)

General

Better published bike path maps.
I think you should offer bike hire or something fun like that in the summertime down at Eaton Foreshore. Maybe hire of electric scooters like Bunbury has. Make some fun stuff available for hire to encourage people to be active.

Eaton Drive

Improved Crossing across Eaton Drive between Eaton Fair and old Eaton area.
To go to the shops I would need a safe way to cross-over Eaton Drive. This crossing could be near Eaton Fair.
I see pedestrians taking their life into their hands trying to cross there just about every time I am in that area.
A safety division along Eaton Drive so I feel safe from traffic and my kids can't fall off onto the road. Or car mount the footpath. Would feel safer for walking as well.

Ferguson Road	
	Ferguson Rd needs a cycling lane, particularly on the section between Dardanup and the turn off to the new tip. Meeting road trains with rubbish and large trucks travelling both ways candy a challenge for the Cyclist. It should've been part of the provisions for the original setup.
	Having a cycling lane full length of Ferguson Road would be beneficial as at times I feel like a little sorry for the locals trying to pass cyclists. While I have a radar warning me at 150 m of any approaching vehicle from behind, not all riders can afford this.
	Roads out in Ferguson Valley need wider shoulders to accommodate the bike using these roads on weekends, plus better access from Eaton out to Dardanup would be helpful. Is the BORR going to have cycle paths that help this happen?
	I like Dardanup, Ride Shoulders along Ferguson Rd
	Wider roads in Ferguson Valley and also the approaching roads
	Defined bike lanes on widened main arterial rural roads such as Ferguson Road
	Wider roads, advertising to all road user that cyclists have a right to be there. More bike tracks and better paths for bike use in Dardanup Town and throughout the Ferguson Valley.

Missing Connections
More cycle paths from Dardanup West to Dardanup & Ferguson Valley & Bunbury
Bicycle roadway along new Bunbury Bypass.
A cycle way connecting all of the three places. I would like to be able to especially get from Glen Iris to Eaton safely by cycling.
A circular bike track that goes around the outside of Eaton similar to Atlanta Beltline that links in a big circle
Make use of the old train tracks and turn into a bike trail access from Bunbury to Dardanup.
More cycling paths like the one along estuary drive. I love the barriers that make me feel safer, and it is a lovely smooth ride. I would love the Bunbury Farmer's Market to be easily accessible via cycle paths.
More dedicated cycle paths. Pull up the railway line from Picton to Boyanup and make this into cycle way. I would use it all the time
More interconnections across Millars Creek.
Paths from/through Ferguson, Dardanup and Bunbury.
I'd love to have a bike track from Pelican Point into Bunbury.
Cycle way from Dardanup out to Ferguson Valley. There needs more tourism in the valley. A cycle way would encourage people to visit the valley support local business in winery's, brewery's and accommodation.
Better on road cycling lanes out to Ferguson and around shire to create better connectivity
Every road crossing takes you 25m in the wrong direction and then another 25m to get back to where you were.
A cyclepath that connects Australind, Eaton to Bunbury

Bike lanes & dedicated paths. Eaton has good shoulders & paths. Dardanup has suitable roads. However, there is no direct option between them. The only access is via the Port Access Rd. Hynes Rd &Martin Plusey are high risk due to the narrow width of the road, let alone a shoulder or dedicated bike lane.
Maybe incorporating more cycle paths around the river to follow it all the way from Millbridge to Collie Bridge. Considering housing is being developed up near the Treendale/Millbridge Bridge, the connection to parks and sporting grounds would be of great benefit, particularly if you're able to limit the hilliness.
More longer distance dedicated bike paths, along rail tracks, between Bunbury and Dardanup. Same with dedicated bike paths to Busselton, Collie. A route around the Australind inlet. Separate bike paths from walking paths, the speed difference is too vast, also the surface isn't great for road bikes.
A safe crossing point over Boyanup Picton Road to allow children to ride from West Dardanup area to Dardanup townsite/school.
Live in Burekup, no safe connections to Eaton, Dardanup etc. Need infrastructure
More thought into linking town areas with suitable access to outer lying roads. eg Link Bunbury to Busselton along coast.
Extend bike path from Leige St through to Collie River bridge at Treendale
Suggest footpaths on western side of Boyanup Picton Road with a crossing over the road approximately 100m south of Venn road. This would then go over the old rail line and connect to the existing footpaths etc on the main street.
I would like to see off bitumen bike track connections between Ferguson Valley hospitality venues that are away from the road and preferably under tree tunnels. Maybe an easy track designed for all terrain EBikes that links as many of the businesses together would enhance tourism in the precinct.
Connection of cycle routes to suit competitive and commuter cyclists. Best options are dedicated cycle paths, two lanes and bitumen without road crossings. Second best are roads with wide shoulders designed for bike movements to allow riders and commuters to travel at a reasonable speed and not be threatened by vehicles.

APPENDIX

A

BIKE PLAN SURVEY

Cardno

now

Stantec

Shire of Dardanup

Shire of Dardanup Bike Plan Survey 2022

Today's Date: _____

1. Gender: Male ❑ Female ❑ Non-Binary ❑
2. Age: ❑ 0-11 ❑ 12-17 ❑ 18-25 ❑ 26-35 ❑ 36-45 ❑ 46-55 ❑ 55+
3. Do you live, work, learn or socialise in the Shire of Dardanup?
   ❑ Yes ❑ No
4. Do you own or have access to a bicycle?
   ❑ Own ❑ Have access to a bicycle ❑ Don't have access or own
5. How many bikes are in your household? _____
6. How often do you ride a bike?
   ❑ Rarely/Never *(Go to Section 2)*
   ❑ Occasionally ❑ Less than once a month ❑ A few times a month
   ❑ 1-2/Week ❑ 3-6/Week ❑ Daily *(Go to Section 3)*
7. Which of these phrases best describes you as a bike rider?
   ❑ Highly skilled, no issues with riding a bicycle for commuting, leisure or fitness
   ❑ Confident when riding although generally ride for leisure and fitness, rather than commuting
   ❑ Interested in cycling more but concerned about safety, etc.
   ❑ Not confident about riding a bicycle but interested in learning how to
   ❑ Not confident about riding a bicycle and not interested in learning

Section 2 (Non-Rider)

8. How long has it been since you last rode a bike?
   ❑ Less than 5 years
   ❑ More than 5 years
   ❑ I have never ridden a bike
9. What are the reasons you do not ride a bike?
   ❑ Perceived/actual safety concerns
   ❑ Lack of adequate end of trip facilities
   ❑ Lack of adequate paths/lanes
   ❑ Other transport modes are more convenient
   ❑ Negative image associated with cycling
   ❑ Don't own/have access to a bike
   ❑ Lack of time
   ❑ Can't ride
   ❑ Weather
   ❑ Other

   _____
   _____
10. Of those, what are the top 2 reasons you do not ride a bike?

    _____
11. What might help you to start cycling in the future?

    _____
    _____

Section 3 (You and Riding)

12. What is the main reason you ride a bike? (*Check one or more*)
    ❑ Recreational/Leisure ❑ Commuting ❑ Fitness ❑ Social ❑ Shopping
    ❑ Other _____
13. What are the major benefits you experience from cycling?
    ❑ Health & fitness
    ❑ Enjoyment
    ❑ Financial
    ❑ Convenience
    ❑ Freedom/independence
    ❑ Social
    ❑ Other

    _____
    _____
    _____

Shire of Dardanup

14. Of those benefits in Question 13, which is the most beneficial to you?

_____

15. Where do you predominately travel to and from (using any mode of transport)?
- ❑ Home
- ❑ Work
- ❑ School
- ❑ Shops
- ❑ Sporting facility
- ❑ Friend's or family's house
- ❑ Recreation area (eg beach, park, etc)
- ❑ Other

_____

_____

16. Please specify exact locations based on your responses above (eg include which shopping complex or the suburb of your friends/family):

_____

_____

17. During the week, what mode of transport do you most commonly use and how long would an average trip take? (For example, if you walk to work and it generally takes you five minutes, tick 'walking' under 'less than 10 mins).

Less than 10 mins
- ❑ Walking
- ❑ Cycling
- ❑ Driving (or as passenger)

10 to 30 mins
- ❑ Walking
- ❑ Cycling
- ❑ Driving (or as passenger)

Greater than 30 mins
- ❑ Walking
- ❑ Cycling
- ❑ Driving (or as passenger)

18. What improvements would you like to see that would encourage you to cycle more frequently or at all? What would make your cycling experience more enjoyable?

_____

_____

_____

_____

On the map you may wish to **circle** or put an **X** at a particular location and include comments, suggestion, ideas for improvements, issues, or commendation below. If your comments on a route relate to areas beyond the boundaries shown, please feel free to describe your route further through arrows and/or text.

If you have any further comments, please feel free to attach them on a separate page

APPENDIX

E

CRASH LOCATIONS AND REPORTS

Cardno

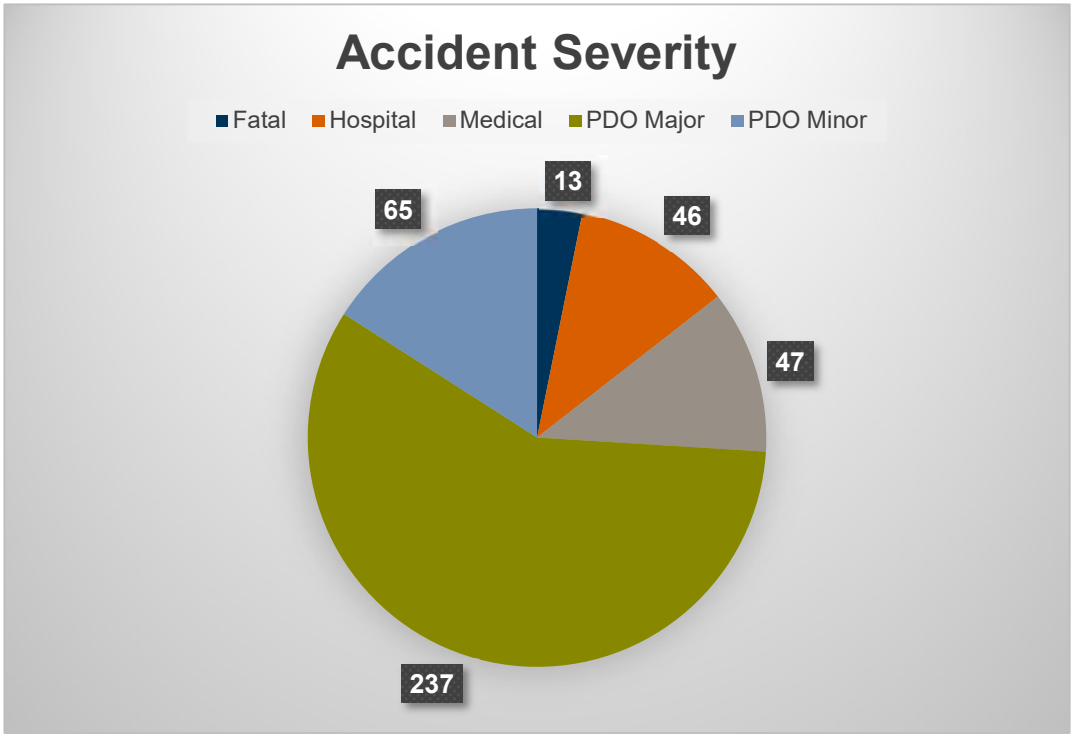
now

Stantec

Crash Data

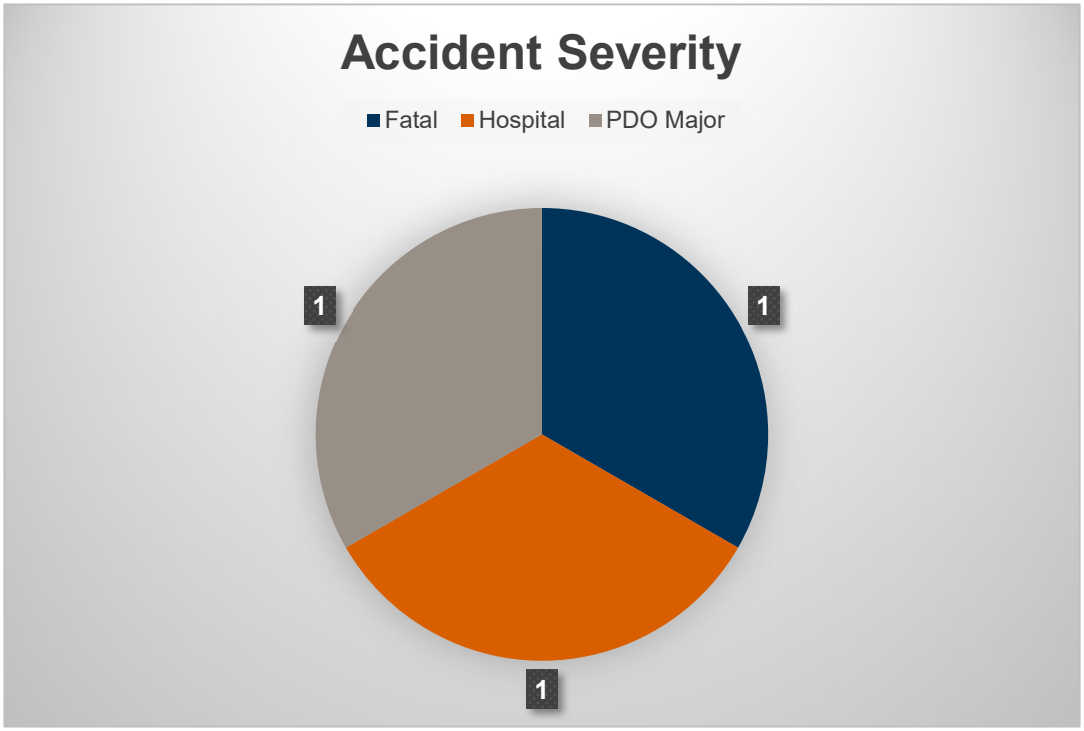
Safety is a very important factor in developing a successful Bike Plan. The availability and quality of existing cycle facilities is a good way of determining the level of safety and performance within an area. Main Roads Western Australia (MRWA) crash data was used to identify the level of safety and approximately 408 crashes have occurred within the Shire from 1 January 2016 to 31 December 2020. Crash data for Dardanup is shown in the figures below. 'PDO' refers to 'Property Damage Only' with no injury.

Accident Data for Shire of Dardanup LGA



Source: Crash Map WA

Accident Severity of Crashes Involving Bicycles



Source: Crash Map WA

In summary, there was a total of 3 crashes involving cyclists over the 5-year period, with 1 of these crashes resulted in fatality, 1 of them resulting in hospital. As the crash data only contains reported crashes, it is very likely that many crashes involving minor property damage are not reported.

Crash Locations

As mentioned above, there were 3 crashes involving a bicycle within Dardanup from 1 January 2016 to 31 December 2020. According to the data provided by Main Roads WA, all 3 crashes occurred near intersections. The location of these crashes is listed in **Table 1-1**. All crashes occurred during the day time and in dry conditions.

Table 1-1 Bicycle Crash Locations listed by level of Occurrence

Crash Locations	Number of Crashes
South Western Highway	1
Ferguson Road	1
Millbridge BVD	1

When assessing locations that result in high incidences of crashes, the causes of the crashes must first be identified before any engineering treatments can be implemented. A step by step process for identifying causes is provided in *Austroads Guide to Road Safety: Part 8 - Treatment of Crash Locations*. The document also provides information on the factors that contribute towards a safe riding environment, as well as the facets that influence the risk of a serious injury resulting from a motor accident. The following information in relation to speed is pertinent in assessing crash locations:

- Speed in urban areas greater than 5km/h above average doubles the risk of an injury crash and 10 km/h on urban highways.
- Reductions as little as 1 to 2% in average speed result in substantially greater reductions in fatalities and serious injuries.
- Chances of surviving a crash decrease markedly above certain speeds, depending on the type of crash i.e.:
  - Pedestrian struck by vehicle: 30 km/h.
  - Motorcyclist struck by vehicle (or falling off): 30km/h.
  - Side impact vehicle striking a pole or tree: 40km/h.
  - Side impact vehicle to vehicle crash: 50km/h.
  - Head-on vehicle to vehicle (equal mass) crash: 70km/h.

Source: Australian Transport Council (2011)

It should be noted that the majority of cycling crashes are solely not vehicle-bicycle crashes, but are instead a result of a variety of other factors. Surveys conducted internationally suggest that the most common sources of injury for cyclists are:

- Car crash: 29%.
- Falling from bicycle: 17%.
- Poor path quality: 13%.
- Rider error: 13%.
- Collision with stationary object: 7%.
- Crash while avoiding an animal: 4%.

These statistics show that while interactions between vehicles and cyclists is important, other factors including infrastructure quality and education are also important when considering how to reduce the risks of cycling.