

SHIRE OF

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1.0 INTRODUCTION

The Shire of Dandaragan is an attractive locale for walking and cycling, with its quiet residential streets, coastal exposure, and proximity to the future Principal Shared Pathway (the Turquoise Way Path), along the proposed Avon-Central Coast Regional 2050 Cycling Strategy network currently in planning.

The Shire first commissioned preparation of a Bike Network Plan in 2015, that provided a list of recommended works to be carried out throughout the towns of Jurien Bay and Cervantes from 2015-2020, to enhance their cycling facilities. Since this time, there has been growth in cycling participation within WA and the Shire of Dandaragan are looking to progress upgrades to the network by expanding areas of path for recreational acitivities and to include the nearby town sites of Badgingarra and Dandaragan.

Path Network Plan The purpose of this is to identify and describe directions for improvements to existing and future path routes, and new path infrastructure within the Shire of Dandaragan over the next 10 year period (2022 to 2032), for the following communities:

- Jurien Bay
- Cervantes
- Badgingarra; and
- Dandaragan

The approach by the Shire to link key destinations throughout each of the Shire's townsites to improve existing pathways is also highlighted within the Jurien Bay Growth Plan developed in 2012 through the State Government's Wheatbelt Development Commission and the Shire of Dandaragan, and included in the Jurien Bay CBD Urban Design Plan V5, and the Shire's Local Planning Strategy.

Providing connections between key destinations will facilitate pedestrian and cyclist movements through each townsite. This Path Network Plan (Plan), identifies potential locations for future paths to be prioritised and help to develop a functional path network that provides safe and non-motorised transport modes for incidental exercise resulting in community health benefits that link to these strategic locations.

By linking these proposed pathways, as outlined in this Plan, the Shire envisages encouraging walking or cycling over the use of vehicles, with an interconnected network of paths, putting the majority of residents within a 10 minute walk of beaches, public open space areas, or community facilities.

This Plan is intended to provide path objectives and guidance on the activities required to meet those objectives.

The Shire of Dandaragan currently has approximately 158,995m2 of footpath, of which 109,412m2 is concrete. Based on calculations of \$60/m2, over a life span of 55 years before reaching end of life, Council would need to commit a total of \$173k per annum to renew the existing path network.

This Path Network Plan proposes new or upgrades projects totalling \$1.25million over 10 years resulting in an annual commitment of approximately \$125,000.

Furthermore, the need for network pathways is dependent upon the following factors - traffic volume, the condition of particular roads/streets, pedestrian demand, and funding, therefore it is important to note that these conditions or demand may change over time. As a result of these changes, flexibility around project delivery needs to be taken into consideration by the Shire when seeking funding.

1.1 Project Area

The Shire of Dandaragan is a local government authority located in the Wheatbelt region of Western Australia, approximately 200 kilometres north of the state capital, Perth. This Path Network Plan will focus on the four most populous centres of the Shire which are the townsites of Badgingarra, Cervantes, Dandaragan and Jurien Bay.



Figure 1 – Shire of Dandaragan Map Source: Shire of Dandaragan Economic & Tourism Development Strategy 2020

1.2 Purpose

The Shire of Dandaragan has all the ingredients required for great recreational bike riding and walking – warm weather, rolling landscape, and outstanding natural beauty. Transport WA are reviewing existing infrastructure and creating Long-Term Regional Cycling Strategy Plans that will integrate networks throughout Regional WA. The Avon-Central Coast Regional 2050 Cycling Strategy is currently in development and will review the wider shared path network of the Shire and its integration to Regional WA. Figure 2 below outlines the many and varied reasons why investment in path networks will benefit the wider community.

HEALTH	ENVIRONMENTAL	ECONOMIC	SOCIAL
 Inactivity is estimated to 	Bikes produce	 Traffic congestion will 	 Bike riders contribute
cost Australia's economy \$13.8 billion per year	\$5 times less air pollution, consume 53 times less	cost Australia \$20.4 billion per year by 2020	to quieter more attractive neighbourhoods
Cvcling burns around	water and produce 13 times less carbon dioxide equivalent emissions	 Bike riders spend 20 times less in 	improved safety
\$1,200 kilojoules/hour	than cars over their life	maintenance and	 Bikes boost
the recommended daily "energy burn" through	cycle	operational costs than drivers	independence for people who do not drive
exercise	Bike riders are		Distance in the second second
Piding 1/ hour cook	two to three times	Bike lanes	Bikes promote
reduces the risk of obesity	pollution than car drivers	sales by 25%	and ability equity
cholesterol and diabetes	 Riding 7.5 kilometres to 	 Bike parking saves space: 	 Bikes enable young
	work and not driving	6-8 bikes can fit into one	people to be independent
 Bike riders take 	saves 1 ton of carbon	carpark space	and develop healthy habits
one less sick day/year	dioxide emissions/year		
	and the second second second second	 A bike rider takes up 	 More people riding make
 Riding reduces 	8 people riding to work	a third less space	streets safer for everyone
stress, anxiety and depression	each day offset the same emissions as	than a moving car	
 Riding to work or the 	1 hectare of forest/year	 The Australian government spends close 	
shops is one of the most	 Trips by bike are free; 	to \$30 million per day	
time efficient ways to	car trips cost	in maintaining and	
combine exercise with daily	5.9 cents a kilometre	improving the transport	
routine activities	in carbon dioxide emissions and water, air pollution & noise pollution	network – bikes require less infrastructure and do much less damage to roads than cars	



Figure 2 - How Do Shared Paths Benefit the Community? Source: City of Melbourne Bicycle Plan

1.3 Local Bike Netowk Context

This Network Plan will be part of the overall Western Australian Bicycle Network (WABN) Plan. The Avon-Central Coast Regional 2050 Cycling Strategy is anticipated to be released by the end of 2022.



Figure 3 - Bike Plan Integration Source: Department of Transport



1.4 Policy Input

The Path Network Plan will assist the Shire of Dandaragan in achieving objectives in their wider community plans and local planning strategy such as:

- Shire of Dandaragan Strategic Community Plan 2019-2029 Envision 2029;
- Shire of Dandaragan Draft Urban Design Plan 2021 (3.5 Opportunities 04)
- Shire of Dandaragan Local Planning Strategy 2020 (4.9 Transport Infrastructure)
- Jurien Bay Growth Plan 2012

The Shire's current strategic community plan, developed through extensive consultation with the Shire's local communities, outlines the following Infrastructure priorities:

"Our built environment responds to the accessibility and connectivity needs of all residents providing equitable access and opportunity for participation."

"Provide a well-designed and safe transport and shared path network that connects people to their destinations and encourages non motorised journeys within townsites."

In addition, the population of the Shire is ageing at a faster rate than WA¹, meaning it is even more essential to consider future proofing the network by incorporating strategies such as the 8 to 80 Cities² (Urban Transformation), and Safe Active Street initiative developed by the Department of Transport.

1.5 Analysis of Crash Data

The most recent crash statistics were obtained from the Main Roads WA IRIS Database Crash Analysis Reporting System (CARS). Of the 167 crash incidents recorded between January 2016 and December 2020, none resulted in injury to pedestrians or cyclists. Whilst the records show excellent safety for cyclists, data has shown that where cyclists are exposed to speeds in excess of 30km/hr, the risk of a fatal accident increases significantly. Consideration to lowering speed limits, where a major shared path runs parallel to a main road within the Shire, will be explored further in the following sections of this Plan.



1 Shire of Dandaragan Aged Care Strategy ZKC Consulting May 2011 2 Global Initiative https://www.880cities.org/

1.6 Overview of Existing Services

A review carried out by the Shire of Dandaragan in early 2021 of the existing path network shows that 86% of paths are currently in good or excellent condition and of the pathways surveyed, 94% of these consisted of either concrete or red asphalt sealed construction.



The path network covers a total area of 158,995m2, an increase of 5% since the original 2015 Bike Network Plan was commissioned.

Figure 5 - SoD 2021 Path Network Condition Survey

1.7 Path Construction

The Path Network Plan has allowed for three types of paths to be installed, however, this will be defined further at detailed design stage depending on existing site-specific conditions. For the purpose of this Plan, the following three path types considered are:

- Shared Path
- Footpath
- Unsealed Path

The construction of each of these paths is as follows:

Path Type	Construction Details
Shared Path	concrete or bituminous seal, minimum 3 metres wide, can include linemarking
Footpath	concrete or bituminous seal, minimum 1.8 metres wide
Unsealed Path	gravel, limestone or road base; minimum 2.5 metres wide,
Table 1 - Path Construction	

1.8 Recommended Path Network Processes

The proposed projects identified within this Plan have been identified as potential pathways to be constructed over the next 10 years to help provide direction for future planning of path routes.

Set guiding principles have been established by the Shire of Dandaragan in development of this Path Network Plan as follows:

- Equity ensure equitable provision across place and communities to support people to walk and cycle
 more often
- All ages, all abilities with the increased aged population anticipated in the Shire of Dandaragan, ensuring that the network is suitable for a wide range of ages is essential.
- Evaluation monitoring of the network to ensure identification of asset renewal on end of life approach



1.9 Bike Network Gap Analysis

Areas that have not been explored as part of this path network review, that may have an impact on proposed works, are listed below:

- Lighting
- Surveys (topographical and services)
- Future residential development areas
- Aborist Reports

- Land tensure
- Environmental sensitivity
- Title and heritage

2.0 CURRENT PROJECT PIPELINE

Summary of proposed path infrastructure projects that are funding approved or in the planning stages:

Town	Location	Description	Status
Badgingarra	Badgingarra Recreation Centre to Meagher Drive	Footpath replacement	Current reserve project with the Department of Transport (DoT)
Cervantes	Ronsard Park to Seville Street	Upgrade existing unsealed path to shared path	Funding approved for 2022- 2023 (partnership with the DoT)
	Thirsty Point to Thirsty Point Walk/ Hansen Bay Lookout to Hansen Rd	New shared path	In planning for inclusion in DoT's Avon-Central Coast Regional 2050 Cycling Strategy
	Hansen Bay Rd to Cervantes Rd	New shared path	In planning for inclusion in DoT's Avon-Central Coast Regional 2050 Cycling Strategy
	Cervantes Rd to Aragon/Seville Sts	New shared path	In planning for inclusion in Dot's Avon-Central Coast Regional 2050 Cycling Strategy
Jurien Bay	Bashford St (Indian Ocean Drive) to Coalseam Drive	New shared path	Current reserve project with the DoT and in planning for inclusion in DoT's Avon- Central Coast Regional 2050 Cycling Strategy

Table 2- Current and Future proposed projects



3.0 JURIEN BAY NETWORK

Jurien Bay is the largest town in the Shire of Dandaragan situated 220km north of Perth. The town has the capacity for fast future expansion with services and land development works well underway. The existing network in Jurien Bay is well established on the main travel routes and completion of a number of stages of the Turquoise Way Path have increased coastal access for all. Improvement of connectivity in the local area and introducing path amenities will enhance the town's path network even further.

- Population in 2019: 1,790
- Largest town in the Shire of Dandaragan
- Services and land available for significant growth (around 20,000+)
- Turquoise Way Path was identified as a strength in community consultation carried out in developing the Shire's Strategic Community Plan Envision 2029.

3.1 Overall Current Network

Proposed network plans are located at the end of this document in Appendix A.

Jurien Bay has relatively flat topography located on the coast of central Western Australia (refer to topography map provided below Figure 6). The southern half of the town is well connected with most new builds now including footpaths as part of land development works.



Figure 6 - Jurien Bay Isothermal Map Source: https://en-au.topographic-map.com/

3.2 End of Trip Facilities

There are a number of formal parking options available to cyclists in Jurien Bay within the Town Centre and along the newly redeveloped foreshore precinct. To continpossibility of adding ue to improve the parking network, the parking facilities in key locations with natural shade should be explored. For example, locations with existing tree cover and nearby to main tourist attraction areas would be an economical option.

Offering water stations for pedestrians and cyclists along the main path network would enhance the existing network for potential walkers and cyclists. Whilst there are no plans currently to add water stations, this could be an area to focus on in the future. Below (Figure 7 is a diagram of the existing potable water network in Jurien Bay which shows there are a number of locations along the coast, and in the town, that could provide excellent locations for water facilities.

A long term upgrade to be considered, could be the installation of repair stations around the town or at remote sections of pathway similar to that displayed in Figure 8 below. These stations require no services for installation.



Figure 7 - Jurien Bay Potable Water Supply Source: https://www.mngaccess.com.au



Figure 8 – Public Bike Repair Station Source: www.all4cycling.com.au

3.3 Traffic Analysis

Whilst current traffic data indicates safety on the roads in and around the Jurien Bay area is good, the Shire's planning documents outline that future planning for significant growth is to be considered in the long term.

To ensure Jurien Bay is an 8 to 80 city of the future; by definition, where everything land managers do is great for an 8 year old and an 80 year old, then it will be great for all people, consideration should be given to the following opportunities to improve safety when population increases occur.

Implementation of the proposed paths in this Plan will prioritise paths across intersections between paths and minor access roads of busy Bashford Street (Indian Ocean Drive), and other strategic locations within all Shire communities.

3.4 Proposed Opportunities

MAP ID	PRIORITY LISTING	ROAD	NETWORK TYPE	CONSTRUCTION TYPE	SCOPE	INDICATIVE COST	FUNDING POSSIBILITIES
1	High	Bashford St	expansion	Shared path	LIA connectivity project. Proposed bituminous shared path between junction with Carmella St and junction with Coalseam Dr – 1.02km in conjunction with the Airstrip connectivity project.	\$ 108,000.00	fully reliant on State Govt funding
2	Medium	Bower St to Doust St	upgrade	Footpath	Proposed concrete footpath between eastern point on Bower St heading south east, connecting to Doust St – 123m	\$ 25,000.00	
3	Medium	Shingle Ave	upgrade	Shared path	Proposed concrete footpath from Lesueur to Turquoise Way - 350 metres	\$ 65,000.00	fully reliant on State Govt funding
4	Medium	Lindsay St	upgrade	Footpath	Proposed concrete footpath from Bashford St to Turquoise Way - 450 metres	\$ 90,000.00	fully reliant on State Govt funding
5	Low	Corella Loop to Batavia Way	upgrade	Footpath	Proposed bituminous footpath between midpoint of Corella Loop and bend on Batavia Wy – 92m	\$ 18,000.00	
6	Low	Airstrip Rd	expansion	Shared path	Proposed bituminous footpath connecting from shared path on Bashford St (north) to end of sealed pavement - 595m in conjunction with the LIA connectivity project	\$ 100,000.00	fully reliant on State Govt funding
				TOTAL		\$ 406,000.00	

Table 3 - Jurien Bay proposed opportunities



Additional services for improvement are noted below for consideration in future:

- Introduction of electric bike hire in the town centre
- Improve cycle signage network, including providing details of ride times
- Ensure priority is provided for bicycles on Principal Pathways at road junctions
- Improve existing networks with amenities, such as water stations, bike repair stations, and shade sails
- Integrate recommended action outcomes from Avon-Central Coast Regional 2050 Cycling Strategy once completed.

3.5 Future Opportunities

Jurien Bay has been identified as a strategic area for inclusion within the Avon-Central Coast Regional 2050 Cycling Strategy which is anticipated to be released by the Department of Transport some time in 2023. Once completed, the recommended action items from this Strategy should be reviewed for inclusion in the 2023-2034 tranche of works.



Figure 9 - Avon Central Coast Regional Route 2050 Concept Jurien Bay Source: https://www.mysaytransport.wa.gov.au/avon-centralcoast-cycling-strategy/maps/ avon-central-coast-2050-regional-cycling-strategy-interactive-feedback-map

Below, Figure 10 shows the Jurien Bay pathways used by people in the Jurien Bay community who are registered Strava athletes. The map shows the recorded walking and cycling paths used by members throughout the town. The mapping tool could be used to identify areas frequently used and therefore, that may be best suited to the upgrade of amenities, such as water facilities, bike repair stations, or shade sails.

Strava can also be used to identify current regional path routes used by the community. This information, combined with crash data from Main Roads WA, can be used to identify safe routes to connect the eastern town sites to the coastal trails.



Figure 10 - Strava Global Heatmap of Jurien Bay Walk & Cycle Routes Source: https://www.strava.com/heatmap

4.0 CERVANTES NETWORK

The coastal town of Cervantes is located toward the central western boundary of the Shire of Dandaragan and is 198km northwest of Perth and 24km south of Jurien Bay. Being the closest community to the State's Nambung National Park, it accounted for up to 400,000 tourist visitors per year, with 150,000 of those being international visitors, prior to the COVID-19 global pandemic. These numbers are expected to start to stabilise now that international travel has resumed.

The Cervantes town centre already benefits from an upgraded bicycle and footpath network resulting from works carried out by the Shire. A number of these project have been delivered, and are ongoing, in partnership with the Department of Transport over the past 7 years.

This report will focus on further planned path upgrades that will continue to integrate the community further, along with exploring ideas for facility enhancements.

4.1 Overall Current Network

Cervantes is a coastal town with generally level topography. Figure 11 below shows the range of ground level heights found within the town of Cervantes. Due to its proximity to the ocean, a number of paths are subject to regular erosion along the coastal front and future planning by the Shire continues to address this throughut the planning process.

The new path network is shown in Appendix A.



Figure 11 - Cervantes Isothermal Map Source: https://en-au.topographic-map.com/



4.2 End of Trip Facilities

The existing formal parking facilities are located around the Cervantes town centre. A number of proposed parking facilities along the coast at key tourist destinations are shown in the overall network layouts contained in Appendix A. A bike repair station at Catalonia Park, along the popular Cervantes foreshore, has also been installed to provide service to this area of the town's path network.

The existing potable water network is shown below in Figure 12. Drinking water fountains could be added where the network is located near an existing key location within the town. Works towards this could be carried out as part of long term improvements in Cervantes.



Figure 12 – Cervantes Potable Water Supply Map Source: https://en-au.topographic-map.com/

4.3 Traffic Analysis

- One section of the proposed path network is on a Regional Distributor Road (Cervantes Road), with transition of the speed limit from 50km/h to 60 km/hr. Sight lines at the proposed crossing point should be reviewed to ensure adequate stopping times are provided.
- Analysis of the most recently available crash data obtained from MRWA recorded no bicycle crash reports between 2016 and 2020.



4.4 Proposed Opportunities

MAP ID	PRIORITY LISTING	ROAD	NETWORK TYPE	CONSTRUCTION TYPE	SCOPE	INDICATIVE COSTS	FUNDING POSSIBILITIES
1	High	Turquoise Way Path from Hill River to Catalonia Street	expansion	Shared path	Extend existing Turquoise Way Path from Hill River to Cervantes	3000000	fully reliant on State Govt funding
2	Medium	Corunna Rd – Public Carpark	expansion		Proposed Bicycle Parking at public toilets (Ronsard Park)	10000	
3	Medium	Iberia St (from Lang St intersection to Majorca St intersection)	upgrade & expansion	Shared path	Upgrade existing footpath to 3m wide concrete shared path – 630m	120000	fully reliant on State Govt funding
4	Low	Thirsty Point Walk Track from Thirsty Point Parking Area (Seville St) to Hanson Bay Rd Via Hanson Bay Lookout	upgrade	Shared path	Upgrade existing unsealed path to bituminous shared path – 1.91km. There are land tenure issues to be resolved to complete this project.	200000	fully reliant on State Govt funding
5	Low	Hansen Bay Rd from northern junction with Aragon St to Hansen Bay Lookout.	expansion	Shared path	Proposed bituminous shared path west side of existing carriageway from lookout to Aragon Street – 1.25km. There are land tenure issues to be resolved to complete this project.	150000	fully reliant on State Govt funding
6	Low	Aragon St, from intersection with Seville St, heading east, to intersection with Hansen Bay Road.	expansion	Shared path	Proposed bituminous shared path south side of carriageway – 300m. Dependent upon projects 4 and 5 above.	50000	fully reliant on State Govt funding
			тс	TAL		3530000	

Table 4 - Cervantes proposed opportunities

Improvement opportunities for further investigation:

- Erosion protection measures along coastal routes
- Improve the cycle signage network, including providing details of ride times
- Ensure priority is provided for bicycles on Principal Pathways at road junctions
- Improve existing networks with amenities such as water stations, bike repair stations, and shade sails
- Integrate recommended action outcomes from Avon-Central Coast Regional 2050 Cycling Strategy once completed.

4.5 Future Opportunities

The Avon-Central Coast Regional 2050 Cycling Strategy is expected to consider a route connection from Nambung National Park, travelling along the coast through to Cervantes and the Turquoise Path eventually connecting up to Way to Hill rivreview er and Jurien Bay. Once this Strategy is published, the Shire can their local path network to ensure the future path is connected to key tourist and local locations in the community. Figure 13 below shows the concept route mapped on the proposed Avon-Central Coast Regional 2050 Cycling Strategy network.



Figure 13 - Avon-Central Coast 2050 Cycling Strategy Concept Route - Cervantes Source: https://www.mysaytransport.wa.gov.au/avon-centralcoast-cycling-strategy?tool=map

Strava Labs provides a number of mapping tools to assist the development of local bike and walking paths. Figure 14 below shows the recorded cycle and walking paths in the town of Cervantes and can be used in the future to develop strategic routes and allow the Shire to focus on maintenance of the more heavily trafficked areas on the path network route.



Figure 14 - Strava Global Heatmap - Cervantes Source: https://www.strava.com/heatmap



5.0 BADGINGARRA NETWORK

The town of Badgingarra is located approximately 60km east of Cervantes and is situated beside the Brand Highway. The town has limited existing cycle paths with most pedestrians and cyclists likely using the road carriageway to travel.

There is opportunity to improve cycling and walking paths in this community to encourage a more active lifestyle.

5.1 Overall Current Network

The town is relatively level however has a rise of around 15m on the southeast corner of the town boundary along the firebreak track.

The proposed future additions to the existing path network are shown in Appendix A.



Figure 15 - Badgingarra Isothermal Map Source: https://en-au.topographic-map.com/

5.2 End of Trip Facilities

There are no recorded bicycle parking facilities in the town of Badgingarra. As part of the overall upgrade, some parking structures could be introduced at the community centre and post office.

5.3 Traffic Analysis

Traffic volumes in the town are low, creating a safe environment for pedestrians and cyclists, however, the town is located alongside Brand Highway which has a high volume of traffic, including road trains, travelling at high speeds of 110km/hr. The proposed path is running parallel to the existing roads reducing interaction between path users and cars. Over the short term, feedback should be sought from the community in regards to safety to ensure concerns are addressed at the appropriate time.

5.4 Proposed Opportunities

MAPID	PRIORITY LISTING	ROAD	NETWORK TYPE	CONSTRUCTION TYPE	SCOPE	INDICATIVE COSTS	FUNDING POSSIBILITIES
1	High	Meagher Dr	Upgrade	Shared Path	Replacement of existing concrete path from Community Recreation Centre to Meagher Dr	85000	fully reliant on State Govt funding
2	Low	Badgingarra Town Trail	Expansion	Unsealed Path	Proposed gravel path from public carpark at community centre to edge of fire break heading south along Northwest Road - 1698m (part 1). Proposed gravel path from the junction of Northwest Rd heading south and west to meet with the junction of Reimers St - 3120 metres (part 2). Proposed gravel path from Firebreak Track to Meagher Dr – 522m (part 3).	150000	fully reliant on State Govt funding
TOTAL	100 C			6		235000	

Table 5 - Badgingarra proposed opportunities

Additional improvement points are listed below for further discussion with key stakeholders.

- Introduce bicycle parking facilities at key locations in the community
- Ensure priority is provided for bicycles on Principal Pathways at road junctions
- Improve existing networks with amenities such as water stations, bike repair stations, and shade sails
- Integrate recommended action outcomes from Avon-Central Coast Regional 2050 Cycling Strategy once completed.



5.5 Future Opportunities

Additional connection opportunities will be published in the Avon-Central Coast Regional 2050 Cycling Strategy. This strategy should be reviewed when available.

Strava Global Heatmaps show an existing walking track east of the town off the North West Road that could be included in local expansion plans in the near future.



Figure 16 – Strava Global Heatmap - Badgingarra Source: https://www.strava.com/heatmap



6.0 DANDARAGAN NETWORK

The town of Dandaragan is the southernmost location included in this study, located approximately 100km south east of Cervantes and 40km south of Badgingarra. Dandaragan is located near to the neighbouring town of Moora, just 35km west.

6.1 Overall Network

Dandaragan is relatively level with a rise of around 10m towards the existing golf course situated to the north east area of the town. The existing pathway infrastructure is shown within Appendix A.



Figure 17 - Dandaragan Isothermal Map Source: https://en-au.topographic-map.com/

6.2 End of Trip Facilities

There is opportunity to construct end of trip facilities in the long term around the town. However, in the short term, parking facilities could be installed at the local school and sportsground, as well as the installation of a drinking fountain water station alongside the nearby potable water supply as shown below in Figure 18.



Figure 18 - Dandaragan Potable Water Supply Map Source: https://www.mngaccess.com.au

6.3 Improvements Opportunities

MAP ID	PRIORITY LISTING	ROAD	NETWORK TYPE	CONSTRUCTION TYPE	SCOPE	INDICATIVE COSTS	FUNDING POSSIBILITIES
1	Medium	Dandaragan Road	Expansion	Footpath	Extend existing concrete footpath South to last dwelling within the town – 510m	95000	fully reliant on State Govt funding
2	Low	Golf Drive	Expansion	Unsealed	Proposed gravel path around Firebreak Track surrounding the Golf Course – 2.39km	75000	fully reliant on State Govt funding
TOTAL	TOTAL						



Improvement opportunities for further investigation:

- Introduce bicycle parking facilities at key locations in the community
- Ensure priority is provided for bicycles on Principal Pathways at road junctions
- Improve existing networks with amenities such as water stations, bike repair stations, and shade sails
- Integrate recommended action outcomes from Avon Central Coast Regional 2050 Cycling Strategy once completed.

6.4 Future Opportunities

The Dandaragan Streetscape Beautification and BMX Track project completed in 2022 has provided increased opportunity for interest in walking and cycling acitivities within the Dandaragan community.

Based on information from Strava Global Heatmaps, the town of Moora appears to have a healthy existing cycling community therefore, cycle routes available between the towns could be investigated further.



Figure 19 - Strava Global Heatmap – Dandaragan/Moora Source: https://www.strava.com/heatmap

7.0 FUTURE PROJECT PLANNING

7.1 Project Programming

In planning for future path networks, the following design considerations have been taken into account as a planning tool to select priority pathways for construction:

- Identify links to key destinations
- Provide links with other paths to create a network
- Following existing tracks/trails where possible to minimise disturbance or removal of vegetation
- Avoidance of poorly drained locations
- Consideration and avoidance of safety hazards

The identification of priority locations has been based on the above priorities in order to provide fair and equitable rankings of high, medium and low for proposed future projects.

It is important to note that the ranking provided for a potential project does not necessarily mean a pathway will be constructed and will be determined through the provision of potential external funding and/or Council's adoption of future capital works budgets.

Priority Assessment Criteria						
Ranking	Criteria	Description				
Low	Connect links on all path networks	Provision for majority of residenc- es to have access to a pathway nearby.				
Medium	Community facilities missing links to be connected and community member request for consideration of pathway construction.	Missing links around community facilities, schools, medical centres and specific community requests for path construction or upgrade.				
High	Construction of shared path ate- rial links to community amenities, schools, and facilities.	Any missing link within 10 minutes walk from beaches, public open space, and community facilities.				

Table 7

7.2 Project Cost Planning

Since the development of the Shire's first Bike Network Plan 2015-2020, for the Jurien Bay and Cervantes townsites, over the past several years, the Shire of Dandaragan has worked extensively to expand its path network to provide increased connectivity to key destinations within both townsites. The majority of these projects have been in joint partnership with external funding partners and the Shire will continue to work with regional partners in order to maximise external funding opportunities.

Future projects identified throughout this plan amount to considerable construction length planned and at costs considerably higher than funding made available by Council. This means that the Shire will be required to continue to pursue external funding to complete those projects listed as high priority in the short term. Medium to low priority projects will continue to be planned for in the future, either through external funding or funded solely by Council, as determined through the annual budget process.

8.0 INTER-REGIONAL OPPORTUNITIES

Mapping software generated by Strava Global Heatmap shows existing routes travelled by bike or foot in the Shire of Dandaragan as shown below. This information could be used to develop a wider network for cyclists and walkers. For example, Badgingarra could be connected through to Cervantes via trails. Dandaragan could partner with the Shire of Moora to provide a connection between the towns.



Figure 20 - Strava Global Heatmap – Shire of Dandaragan Source: https://www.strava.com/heatmap

9.0 RESOURCES AND BACKGROUND MATERIAL

Australian Cycling Participation 2019

Shire of Dandaragan Age Friendly Community Plan

Shire of Dandaragan 2029 Community Plan

Disability Access and Inclusion Policy

https://roads-waterways.transport.nsw.gov.au/business-industry/partnerssuppliers/ lgr/downloads/programs/documents/bikeplanv2.pdf

National Cycling Participation Survey (download via https://austroads.com.au/publications/activetravel/apc91-19)

https://www.dandaragan.wa.gov.au/Profiles/dandaragan/Assets/ClientData/Documents/Strategies_and_ Plans/Economic_and_Tourism_Development_Strategy Interactive_.pdf

APPENDIX A - Town Bike Network Maps











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