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1 Introduction

1.1 Background
Cardno was commissioned by the Shire of Dowerin (‘The Shire’) to prepare a Local Bike Plan. The Bicycle Plan has been prepared in accordance with the Department of Transport’s Guidelines for Developing a Bicycle Plan May 2015. This Plan seeks to develop a comprehensive and attractive network of routes along with behaviour change initiatives to encourage cycling by providing for safer and more convenient routes.

1.2 Context
The Shire of Dowerin is located in the Wheatbelt region of Western Australia, about 160 kilometres northeast of Perth. The Shire covers an area of 1,867 square kilometres of mainly agricultural land and has a population of approximately 680 people. There is an extensive roadwork network comprising of 196km of sealed roads and 773km of unsealed roads providing broad access for residents, tourists and agricultural pursuits.

The Shire has a number of significant natural environmental assets including lakes, several reserves (Minnivale, Namelecatchem, Amery and Tin Dog Creek), natural and manmade infrastructures including a great variety walking trails.

Dowerin is the main townsit within the Shire, with an approximate population of 350 (ABS, 2013) which has remained steady or declined slightly in recent years. Dowerin is home to the Dowerin GWN Field Days, currently a two-day annual event which attracts in excess of 600 exhibitors and 15,000 visitors each year. A map of the townsit is shown in Figure 1-1.

Figure 1-1 Dowerin Townsite Study Area

Source: Google Maps 2015
1.3 Need for the Study
The Shire is keen to increase the level of cycling within the Dowerin community, providing a transport option for residents as well as encouraging more active and healthy lifestyles. In addition to serving the residents, the Shire is keen to further develop Dowerin as a tourist destination by capitalising on the growing cycling tourism market.

The development of this Local Bike Plan in accordance with Department of Transport (DoT) guidelines will assist in the order planning of the walking and cycling network and assist the Shire to access Regional Bicycle Network (RBN) and Safer Routes to School grant funding.

1.4 Vision and Objectives
The promotion of cycling can greatly assist and contribute to Dowerin’s objective of being a connected and cohesive community with strategies to ensure place requirements are integrated into planning processes. This Plan provides the “Vision” and sets the policy direction for cycle infrastructure provision to encourage cycling as a transport mode in Dowerin. It takes account of Main Roads WA standards and guidelines, Austroads guidelines and the forthcoming Department of Transport Shared Path Guidelines.

The local Bike Plan will take into consideration the objectives and vision of the Strategic Community Plan June 2013 (Refer Table 1-1). The vision for Dowerin is:

“A thriving rural community which will be a lifestyle choice for generations, a preferred location for business development and a recognised leader in environmental management”

The main vision and objectives of the Local Bike Plan is to develop a coordinated and strategic approach to delivering cycling infrastructure in order to maximise funding opportunities.

> To provide connections to key attractors within Dowerin.
> Ensure safe connections and routes to schools.
> Facilitate and promote more active and healthy lifestyles through walking and cycling.
> Enhance Dowerin as a cycle tourism destination

Table 1-1  Goals and Objectives - Shire of Dowerin Community Plan 2013

<table>
<thead>
<tr>
<th>No.</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Community</td>
</tr>
<tr>
<td>2</td>
<td>Local Economy and Business</td>
</tr>
<tr>
<td>3</td>
<td>Caring For Our Environment</td>
</tr>
<tr>
<td>4</td>
<td>Local Government Leadership</td>
</tr>
</tbody>
</table>

Source: Strategic Community Plan for the Shire of Dowerin 2013
Both walking and cycling are key components to achieving Dowerin’s vision. A vibrant, engaged and connected community is one which enables residents and visitors to move freely and safely around the townsite, a safe and secure community includes safe walking and cycling facilities which minimises conflicts which vehicles; and a place that nurtures its youth population ensures that there is always ‘something to do’ e.g. recreational cycling.

The continued development of the walking and cycling network within Dowerin is desirable to achieve these goals, not only with the provision of additional paths but also by creating an environment that encourages greater use of existing facilities. Cycling is seen as an attractive mode of transport for tourists, in particular a growing demographic of caravan/camper tourists who enjoy parking in one location and moving around the townsite by bicycle.

1.5 Policy Context

Planning for cycling in Dowerin 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 1-2). 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.

Table 1-2 Policies relevant to the Bike Plan

<table>
<thead>
<tr>
<th>No.</th>
<th>Policy</th>
<th>Federal</th>
<th>Metropolitan</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Moving Australia 2030 (2013)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>National Cycling Strategy (2010)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Walking, Riding and Access to Public Transport (2013)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Western Australian Bicycle Network (WABN) Plan 2014-2031</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>West Australian Planning Commission Development Control Policy 1.5 – Bicycle Planning (1998)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Shire of Dowerin Strategic Community Plan 2013</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>Dowerin Disability Access and Inclusion Plan 2013-2018</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
2 Planning for Pedestrians and Cyclists

2.1 Benefits of Cycling

Cycling within Dowerin is undertaken for both commuting (e.g. riding to school) and recreational purposes in Dowerin. Given the many benefits of cycling, there is considerable potential to increase the uptake of active transport modes particularly as a viable commuter transport choice. The benefits are shown in Figure 2-1.

Figure 2-1 Benefits of Cycling
2.1 Types of Cyclists and their Requirements

Cardno has identified a range of cyclist trip types made within Dowerin. These differences dictate the type infrastructure and facilities that would need to be provided. For further information refer to Table 2-1.

Table 2-1 Types of Cyclists and their Requirements

<table>
<thead>
<tr>
<th>Cyclist Type</th>
<th>Cycling Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Children</td>
<td>Skill varies, developing confidence.</td>
</tr>
<tr>
<td>Neighbourhood Cyclists</td>
<td>Neighbourhoods cycling involve trips to local schools, shops and trips for recreational / exercise purposes. Most of these trips involve distances of less than 5km and travel speeds typically less than 15km/h. Some of these cyclists may be comfortable riding on quiet streets; others may prefer to stick to the paths.</td>
</tr>
<tr>
<td>Sports Cyclists</td>
<td>Sports cyclists often travel at speeds greater than 30km/h. These cyclists often travel distances over 10km mainly along the sealed roads. Popular routes include the Kalannie and Meckering Roads due to the lower traffic volumes compared to the Goomalling-Merredin road.</td>
</tr>
<tr>
<td>Tourists</td>
<td>Includes tourists carrying bikes on their vehicle or caravan, seeking a short ride around town for exercise and/or sightseeing.</td>
</tr>
<tr>
<td>Touring</td>
<td>Long distance journeys, may be heavily equipped, some travelling in groups.</td>
</tr>
<tr>
<td>Sports Touring (Potential)</td>
<td>Larger, faster groups of sports cyclists taking advantage of the low traffic volumes and scenery for training or enjoyment.</td>
</tr>
</tbody>
</table>

2.2 Infrastructure Types

At this stage of development of the pedestrian and cycling network, it is considered that shared paths are the most appropriate form of facility for pedestrians and cyclists moving through the townsite, as these facilities provide for the less confident and younger cyclists.

Shared paths should generally be constructed in either concrete or other sealed surface. Brick paving should be avoided where possible, although it is recognised that pavers will often be desirable parts of streetscape enhancements within Dowerin’s town centre locations. Careful attention needs to be paid to the maintenance of brick pavers to ensure that any trip hazards or holes which may catch a bicycle tyre are repaired swiftly.

Some cyclists may prefer to cycle on the road rather than the path, particularly on quiet streets. It is not considered that the volumes of cyclists justify the provision of cycle lanes or other dedicated facilities at this stage. However, every street should be considered a ‘cycling street’ and any changes to the carriageway should cater for cyclists as legitimate road users. Careful attention should be paid to pinch points created by traffic calming devices, as well as pavement surface conditions.

For sports or faster cyclists looking to ride outside of the townsite, the primary infrastructure type is a sealed road surface and, for more heavily trafficked roads, a wide sealed shoulder to minimise conflict with heavy vehicles.

2.3 Path Construction Standards

It is recommended that all paths be constructed as shared paths in accordance with Austroads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths and the forthcoming Shared Path Guidelines being prepared by the Cardno on behalf of the Department of Transport and WA Local Government Association.
2.4 Road Hierarchy
The road hierarchy for Dowerin townsite and surrounds is shown in Table 2-2 and Figure 2-2.

Table 2-2 Road Hierarchy

<table>
<thead>
<tr>
<th>Road</th>
<th>Hierarchy</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewart Street</td>
<td>Regional Distributor</td>
<td></td>
</tr>
<tr>
<td>Dowerin-Kalannie Road</td>
<td>Regional Distributor</td>
<td></td>
</tr>
<tr>
<td>Stacy Street</td>
<td>Regional Distributor</td>
<td></td>
</tr>
<tr>
<td>Dowerin-Meckering Road</td>
<td>Regional Distributor</td>
<td></td>
</tr>
<tr>
<td>Meckering Road</td>
<td>Regional Distributor</td>
<td></td>
</tr>
<tr>
<td>Goldfields Road</td>
<td>Distributor B</td>
<td></td>
</tr>
<tr>
<td>Goomalling-Wyalkatchem Road</td>
<td>Distributor B</td>
<td></td>
</tr>
<tr>
<td>All other roads</td>
<td>Access Street / Access Road</td>
<td></td>
</tr>
</tbody>
</table>

2.5 Traffic Speeds
Austroads Guidelines states that where the difference between bicycle and motor 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 also indicates that segregation is desirable where the difference between bicycle and motor traffic speed exceeds 40 km/h. The Guideline 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. Posted traffic speeds for Dowerin are shown in Table 2-3 and Figure 2-3.

Table 2-3 Traffic Speeds

<table>
<thead>
<tr>
<th>Road</th>
<th>Traffic Speed</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewart Street</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Dowerin-Kalannie Road</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Stacy Street</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Dowerin-Meckering Road</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Meckering Road</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Goldfields Road</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Goomalling-Wyalkatchem Road</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>All others</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

2.6 Crash Data
No crashes involving bicycles in the Dowerin townsite are recorded in MRWA Crash Tool.
Figure 2-2   Road Hierarchy

Source: Main Roads Road Information Mapping
Figure 2-3  Traffic Speeds in the Shire of Dowerin

Source: Main Roads Road Information Mapping
3 Site Analysis

3.1 Land-uses Attractors and Generators

There are a number of key cycle trip attractors and generators in Dowerin. The land uses and attractors have been used to determine the route destinations for cycling trips within Dowerin. Refer to Table 3-1 and Figure 3-1.

Table 3-1 Land Use and Attractors

<table>
<thead>
<tr>
<th>Land-use</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health &amp; Medical</td>
<td>&gt; Not available in Dowerin</td>
</tr>
<tr>
<td>Education</td>
<td>&gt; Dowerin District High School (E1)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Community Resource Centre (Library) (E2)</td>
</tr>
<tr>
<td>Senior Facilities</td>
<td>&gt; Home and Community Care (S1)</td>
</tr>
<tr>
<td>Recreation</td>
<td>&gt; Field Days site (R1)</td>
</tr>
<tr>
<td></td>
<td>&gt; Centenary Park, including skate park (R2)</td>
</tr>
<tr>
<td></td>
<td>&gt; Tin Dog Creek Trail (R3)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Memorial Swimming Pool (R4)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Golf Course (R5)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Men's Shed (R6)</td>
</tr>
<tr>
<td></td>
<td>&gt; Churches (R7)</td>
</tr>
<tr>
<td>Civic Amenities</td>
<td>&gt; Dowerin and Districts Museum (C1)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Community Resource Centre (C2)</td>
</tr>
<tr>
<td></td>
<td>&gt; Dowerin Police Station (C3)</td>
</tr>
</tbody>
</table>
In addition to the attractors outlined above, the Shire is also planning to develop accommodation facilities on Fraser Street opposite the intersection with East Street, therefore generating additional demand for walking and cycling facilities between there and the other town facilities, especially the main street.
3.2 Existing Network

The existing path network of Dowerin is shown in Figure 3-2.

Figure 3-2 Existing Path Network
4 Community Consultation

4.1 Methodology

The inclusion of community consultation within the development of the Bike Plan has been highly important in order to better understand local cycling issues – both from the perspective of cyclists as well as non-cyclists. Consultation provides an opportunity to access cyclists’ extensive local knowledge and experiences as well as to identify local attitudes. A primary goal is to collect as much data and information as possible, and to develop an understanding of a comprehensive range of substantive issues and topics.

To guide the development of the Local Bike Plan, the Shire established a Project Steering Group which consisted of interested residents and cyclists, as well as representatives from the elected members and Council officers. This group met to discuss local issues and opportunities and the outcome of this meeting was a range of potential cycling projects which would be put to the community for their feedback. Accordingly, a survey was distributed to the community which included a section asking respondents to indicate their level of support for the various projects.

4.2 Survey Results

A total of 46 responses were received. The results are summarised below:

- The majority of respondents are people aged 30-49, which accounts for 54% of the total respondents.
- 35% of respondents said that they rarely/never cycle, while 41% said that they occasionally cycle. This result shows that there is low demand for cycling within the Shire. Only 24% of the respondents cycle at least a few times a month.
- 65% of respondents do not mind riding on the streets and 17% prefer long rides on the road, whereas only 4% of respondents only ride on paths and 15% prefer to ride away from traffic at trails such as the Tin Dog Walk Trail.

Survey respondents were requested to indicate their level of support for the nominated cycling project ideas. Three answers ‘Support’, ‘Neutral’ and ‘Do Not Support’ were available and each of these was given a numerical weighting in order to compare the results. The results of this weighted analysis is shown in Figure 4-1 below.

Figure 4-1 Survey Response to The Proposed Cycling Improvements
As shown in Figure 4-1, the most supported projects are:

- Shared path connection from Information Bay to the main street (Stewart Street)
- Cycling / Walking loop trail around the Golf Course reserve
- Shared path along Stewart Street from Fraser Street northward

These are followed closely by the shared path along Couper Street and providing a bicycle cage for the high school.

In regard to the longer road cycling loops, sealing Rifle Range and Sanders Roads was preferred over sealing the road between Amery and Minnivale. This is thought to be primarily due to Rifle Range and Sanders Roads also benefiting the town by allowing grain haulage trucks from the Meckering Road to avoid passing through the townsite.

These survey results have informed the priorities allocated to the recommended projects in Chapter 6.
5  Network Analysis

5.1  Townsite Shared Paths

5.1.1  Stewart Street

Stewart Street is the main street of the Dowerin townsite – the focal point of the town for residents and visitors with most shops being located on this street. An existing shared path partially links the Information Bay to Stewart Street; however it stops short of a full connection with the path network in Stewart Street, as shown in Figure 5-1. This path should be continued further north past the public toilets and connect to the path on the eastern side at the Jackson Street intersection as shown in Figure 5-2. This would provide a seamless connection between the town centre, Information Bay and the start of the Tin Dog Walk Trail.

Figure 5-1  Tin Dog Trail – Stewart Street Shared Path Termination

Figure 5-2  Potential Alignment of Tin Dog Creek – Stewart Street Shared Path Extension
The eastern side of Stewart Street has a wide paved footpath fronting the shops from its southern end to north of Memorial Avenue. North of Memorial Avenue, pedestrians are forced to negotiate an uneven verge and cyclists are forced onto the road which narrows significantly and carries road trains north of Fraser Street. The existing path termination is shown in Figure 5-3 below.

**Figure 5-3  Stewart Street looking north showing end of existing path**

Extending the existing path to Fraser Street and then east along the northern verge of Fraser Street (refer to Figure 5-4) as far as the recreation centre would provide a convenient linkage between the town centre, the local businesses and the future accommodation facilities to be located on Fraser Street at East Street.

**Figure 5-4  Fraser Street**
5.1.2 **Memorial Avenue**

Memorial Avenue runs east-west from Stewart Street to Maisey Street, connecting the town centre with the school, recreation grounds, Field Days site and the existing swimming pool. It will also form part of the most convenient link to the future Golf Course trails.

Paths exist along both sides of Memorial Avenue, with the northern path being more suitable as a shared path for low speed or low confidence cyclists. To improve access to this path it is desirable to address some of the deficiencies identified in **Figure 5-5** and **Table 5-1** below.

![Figure 5-5 Kerb Ramp Issues Location](image)

**Table 5-1 Crossing Issues along Memorial Avenue**

<table>
<thead>
<tr>
<th>No.</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Memorial Avenue/East Street, west leg</td>
<td>East-west crossing kerb ramp on the northern side of Memorial Avenue is not flushed with the road surface kerb ramp.</td>
</tr>
<tr>
<td>2</td>
<td>Memorial Avenue/East Street, north leg</td>
<td>No kerb ramps were provided for north-south crossing.</td>
</tr>
<tr>
<td>3</td>
<td>Memorial Avenue/Dudley Street in front of school entrance</td>
<td>Kerb ramp is not provided on the southern side of Memorial Avenue</td>
</tr>
<tr>
<td>4</td>
<td>Memorial Avenue/Hilda Street, west leg</td>
<td>No kerb ramps were provided for north-south crossing.</td>
</tr>
<tr>
<td>5</td>
<td>Memorial Avenue/Maisey Street, west leg</td>
<td>No kerb ramps provided for north-south crossing</td>
</tr>
<tr>
<td>6</td>
<td>Memorial Avenue/Maisey Street, north leg</td>
<td>No kerb ramp provided for east-west crossing</td>
</tr>
</tbody>
</table>

One particular issue raised during the community consultation was the conflict between cyclists and vehicles at the existing school car park driveway shown in **Figure 5-6**. This driveway can be quite busy during school drop off / pick up times and it was suggested that an alternative path entrance to a future school bicycle cage could be developed around the eastern edge of the car park to eliminate the need for children on bicycles to cross the driveway. This work is recommended to be developed by the school.

![Figure 5-6 Existing Dowerin District High School Car Park Driveway on Memorial Avenue](image)
5.1.3 Goldfields Road (part of Goomalling-Merredin Road)

Goldfields Road forms part of MRWA’s Goomalling-Merredin Road and is the main traffic route through the town, stretching from east to west. A path currently exists on the northern side of Goldfields Road from Cottrell Street to Jones Street, most of which is a standard concrete path. However, the section from Hilda Street to Maisey Street is provided in the form of a painted section of the road carriageway as shown in Figure 5-7 below. Whilst the painted lines and red coloured surface delineates clearly a safe space for pedestrians and cyclists, there is a definite perception of danger due to the lack of any solid barrier between the path and heavy vehicles using the adjacent lane. Accordingly, it is recommended that the Shire seek MRWA approval to construct a small concrete island separating the path from the adjacent traffic lanes, with gaps as necessary to allow entry/exit from driveways and side streets.

Further east, approaching Jones Street, there is a short section of path which is in poor condition (refer to Figure 5-8) which is a trip hazard for pedestrians and a crash hazard for cyclists. It is recommended that this short section of path be ripped up and re-laid with seamless tie-ins at either end.

Figure 5-7 On-road Section of Goldfields Road Path

Figure 5-8 Poor Quality Path on Goldfields Road

A further minor issue noted on Goldfields Road is the lack of north-south crossing kerb ramps at the Hilda Street intersection shown in Figure 5-9. Constructing kerb ramps to serve this crossing movement would provide an improved crossing facility and continuous route along the Hilda Street path from Stacy Street to Memorial Avenue.

A western extension of the path network from Cottrell Street to Stewart Street is not considered a priority as most pedestrians and cyclists will access Stewart Street via Jackson Street and access / parking arrangements in the vicinity of the roadhouse are problematic for path construction. Should demand for this desire line increase in the future, such a connection could be further considered.
5.1.4 Skate Park connection
The Dowerin skate park is located in Centenary Park on the corner of East Street and Goldfields Road. Paths exist on the perimeter of the park but there is no formal connection into the park from East Street other than an unsealed track with a dangerous drop-off at its connection with the East Street path (refer to Figure 5-10). It is recommended that the existing unsealed path through the park (refer to Figure 5-11) be widened to a minimum of 2.0m and sealed, with an improved connection to the East Street path. This work would provide a convenient connection from East Street to the town centre via Jackson Street.

Figure 5-10 East Street path and connection to skate park
5.1.5 Couper Street

Couper Street is one of the few remaining residential streets in the Dowerin townsite without a path, as shown in Figure 5-12. It is recommended that a shared path be constructed along the western side of Couper Street to link Goldfields Road with Memorial Avenue.

Figure 5-12 Couper Street

5.2 Townsite End-of-Trip Facilities

End of Trip (EoT) facilities, such as bike parking, are an important aspect of a bicycle network. For Dowerin there are two main needs for EoT facilities:

> Bicycle cage at the school to be used by students
> U-rails at various locations along Stewart Street and at other recreational facilities

It is noted that local residents rarely feel the need to lock their bicycles when cycling around Dowerin, however visitors to the town may prefer to do so and therefore the U-rail facilities are mainly aimed at serving these users. An example of this type of facility is shown in Figure 5-13.
Figure 5-13 Example of U-rail bicycle parking

The bicycle cage at the school would replace the existing bike rack shown in Figure 5-14 and would provide an increased level of security and weather protection for the bicycles. It is recommended that the cage be located in a position within the school which enables a new path access to be constructed around the eastern perimeter of the car park, thereby minimising the conflicts between drivers and cyclists at the existing driveway.

Figure 5-14 Existing bike rack at Dowerin District High School

5.3 Recreational and Cycle Tourism

5.3.1 Benefits of Cycle Tourism

Cycling is growing in WA and nationally. More and more people have become more environmentally conscious and making the choices to adopt cycling as a genuine mode of transport and as an environmentally sustainable recreational activity.

Cycling tourism provides numerous economic, social, and environmental benefits for the Shire. As such, it is in the interest of the Shire to build the necessary facilities to attract recreational and long-distance cyclists and help promote the Shire as a cycling tourism destination. Economically, the Shire would benefit from an increase in tourists who would then spend their money on accommodation and food.

It is noted that groups of sporting and recreational cyclists are currently attracted to the neighbouring Shire of Goomalling, taking advantage of the scenery and lightly trafficked sealed roads. If suitable riding routes are available in Dowerin then an opportunity exists to encourage some of these riders to visit Dowerin, boosting the local economy.
In addition, to cycling routes and trails, the Shire must offer good complementary facilities such as bike friendly accommodation, good food options and other End of Trip facilities. To be successful, the provision of these facilities should ideally form part of a package and branding that sets Dowerin apart from neighbouring areas.

5.3.2 Road Cycling Loop Routes

Loop routes are generally preferred by recreational road cyclists; however the existing radial-based sealed road network within the Shire currently lacks any loop routes which are suitable for the short to medium (10-70km length) rides.

During the community consultation phase, several potential options were discussed to achieve a loop routes which might be suitably attractive and functional for road cyclists. These are outlined below.

5.3.2.1 Dowerin – Amery – Minnivale – Dowerin Loop

This route is an approximately 40km loop, beginning in Dowerin and heading east along the Goomalling-Merredin Road, north into Minnivale, west alongside the railway line to Amery and then south into Dowerin via the Dowerin-Kalannie Road as shown in Figure 5-15. The Minnivale to Amery portion of this route (9km) would require sealing to provide for road cyclists.

Figure 5-15 Dowerin – Amery – Minnivale – Dowerin Loop Route

5.3.2.2 Rifle Range Road – Sanders Road – Dowerin Loop

This route is an approximately 18km loop, beginning in Dowerin and utilising the Dowerin-Meckering Road, Sanders Road, Rifle Range Road and then the Goomalling-Merredin Road. Both Rifle Range and Sanders Roads (8km) are currently unsealed and these would need to be sealed to provide for road cyclists.

The Shire is currently planning to upgrade and seal Rifle Range and Sanders Roads to provide access to/from the CBH facility for heavy vehicles coming from the south, eliminating the need for these vehicles to pass through the townsites. If funding for this project can be obtained, it will certainly have a cycling benefit.
5.3.3 Connection from Goomalling to Dowerin

As discussed previously, recreational cycling groups currently visit the neighbouring Shire of Goomalling to take advantage of lightly trafficked sealed roads. Provision of a suitable link for cyclists between Goomalling and Dowerin could encourage these cyclists to visit Dowerin and boost the local economy.

Two basic options are available to achieve this link, as shown in Figure 5-17:

> Road corridor – upgrading and widening to provide 1.5m (minimum) wide sealed shoulders

> Rail corridor – construction of a rail trail alongside the existing operating rail line

Both options are considered to be worth investigating in the long term, however issues around access to the rail corridor and the need for many kilometres of new construction reduce the attractiveness of the rail corridor option. It is recommended that the Shire work with MRWA to seek widened shoulders along the Goomalling-Dowerin road corridor, prioritising sections of road with visibility restrictions.
**5.3.4 BMX Track**

A BMX track for use primarily by local youths, as well as visitors to the town, was raised as an option during the community consultation, with a potential location identified next to the existing 4WD track at the field days site as shown in **Figure 5-18**. This project was not strongly supported by the community in the consultation survey and therefore is considered a low priority. If this project is to be progressed by the Shire, consideration should be given to developing a pump track in order to use by a broader user group.

*Figure 5-18 Potential BMX Track Location*
5.3.5 **Golf Course Trail Loop**

A strong desire for additional areas to cycle recreationally around town, away from traffic, was expressed during the community consultation phase. The golf course, which is under Shire ownership and currently very underutilised, was identified as a preferred location for the development of a trail network. The golf course is located close to the townsite but away from traffic, includes extensive vegetation but also numerous existing cleared informal trails, and is of a suitable size to incorporate an attractive riding environment for both children and adults.

An indicative layout for a trail network in the golf course reserve is shown in Figure 5-19, taking advantage of existing cleared tracks and maintaining the integrity of the course for continued use if desirable. However, careful design consideration would be required to ensure that the tracks are designed with the end user in mind rather than simply following the existing tracks.

The primary access to the trails will be via existing quiet streets (Metcalf and Maisey Streets). A potential and desirable link to the Dowerin-Kalannie Road was also identified, although this would pass through a section of privately held land. This connection would enable cyclists riding the Amery-Minnivale loop to incorporate the golf course trails within their riders.

The trails could be constructed either as a formed but unsealed surface suitable for bicycles with larger tyres (e.g. mountain bikes) as well as walkers. Alternatively, the trails could be constructed in asphalt, enabling thinner-tyred bikes to use them and providing a longer lasting facility. This decision is likely to be affected by cost considerations and requirements for any grant funding which may be secured towards the facility.

This project was well supported by the community survey responses and accordingly has been allocated a high priority in Chapter 6.

**Figure 5-19 Golf Course Trail Loop Potential Alignment**
6 Implementation and Recommendations

6.1 Shared Path Network Plan

The recommended shared path network for the townsite is presented in Figure 6-1.

Figure 6-1 Ultimate Townsite Path Network Map
6.2 **Schedule of Works**

The recommended schedule of works, in order of priority, is presented in **Table 6-1**.

**Table 6-1 Schedule of Works**

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Description</th>
<th>Indicative Length (m)</th>
<th>Indicative Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Information Bay to Town Centre Missing Link</td>
<td>100</td>
<td>$20,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Construct 2m wide shared path from the existing path termination to Jackson Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Golf Course Trail Loop</td>
<td>4000</td>
<td>$190,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Construct trail loop around the golf course and provide link to Dowerin-Kalannie Road (cost estimate is for mountain bike trail standard – a sealed surface path will require additional funds)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Stewart Street Shared Path</td>
<td>800</td>
<td>$85,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Construct 2m wide shared path on the eastern side from Fraser Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fraser Street Shared Path</td>
<td>350</td>
<td>$60,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Construct 2m wide shared path on the northern side from Stewart Street to East Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Couper Street Shared Path</td>
<td>150</td>
<td>$20,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Construct 2m wide shared path on the western side from Goldfields Road to Memorial Avenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Skate Park Connection</td>
<td>60</td>
<td>$10,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Upgrade and seal path connection from East Street to skate park</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>School Bicycle Cage</td>
<td></td>
<td>$30,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Install bicycle cage and new path entry to school from Memorial Avenue (funded by school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Kerb Ramp Improvements</td>
<td>-</td>
<td>$15,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Install new kerb ramps on these intersections:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‒ Memorial Avenue/East Street, north and west leg crossings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‒ Memorial Avenue/Dudley Street, west leg crossing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‒ Memorial Avenue/Hilda Street, west leg crossing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‒ Memorial Avenue/Maisey Street, north and west leg crossing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>‒ Goldfields Road/Hilda Street, west leg crossing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Bicycle Parking</td>
<td>-</td>
<td>$5,000</td>
</tr>
<tr>
<td></td>
<td>&gt; Install bicycle parking rails at various locations in town – e.g. Stewart Street, recreation centre, Centenary Park</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Project Description</td>
<td>Indicative Length (m)</td>
<td>Indicative Cost</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>10</td>
<td>Rifle Range-Sanders Road Loop</td>
<td>8,000</td>
<td>$4,000,000</td>
</tr>
<tr>
<td></td>
<td>Seal Rifle Range Road from Goomalling-Wyalketcham Road to Sanders Road (approx. 3km) and Sanders Road from Rifle Range Road to Dowerin Meckering Road (approx. 5km) to create 18km on-road cycling loop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Dowerin-Amery-Minnivale-Dowerin Loop</td>
<td>9,000</td>
<td>$4,500,000</td>
</tr>
<tr>
<td></td>
<td>Seal Amery-Benjabeering Road between Amery and Minnivale (approx. 8.5km) to create a 40km on-road cycling loop from Dowerin to Amery, Minnivale and back to Dowerin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>BMX or Pump Track</td>
<td>-</td>
<td>$40,000</td>
</tr>
<tr>
<td></td>
<td>Build basic BMX track or pump track north of the Recreation Grounds Complex next to the existing 4WD track</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.3 Encouraging Behaviour Change

While constructing new infrastructure is crucial to the promotion of cycling in Dowerin, it is imperative to engender usage of new infrastructure through encouraging behaviour change. The following sections outline a variety of factors that influence cycling behaviour. In addition, methods to stimulate cycling change by encouraging those who do not currently cycle to take up cycling, as well as ensuring that existing cyclists will continue to ride throughout Dowerin will be outlined.

### 6.4 School Programs

School children are a critically important component of the cycling community and the early exposure of children to cycling as an enjoyable way to spend their leisure time and to get to/from school has been proven to contribute significantly to children continuing to cycle into adulthood. The major opportunities for encouraging school children to ride bicycles include:

> Cycling to/from school – the townsite residents live within comfortable cycling distance of the school.

> Cycling lessons at school – teaching children the basics of riding a bicycle and safety on and around the roads

> Organised cycling sport, either at school or on weekends, ranging from simple leisurely rides, to road riding and mountain biking

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.

### 6.5 End of Trip Facilities

End of Trip facilities should be implemented as outlined in the Schedule of Works.
6.6 Maintenance Programs

Regular maintenance is required to keep cycling facilities in a reasonable condition. Cyclists are particularly vulnerable to punctures and crashes caused by broken glass, loose gravel and vegetation. Regular maintenance activities should include the following:

- Regular sweeping of paths to remove gravel, sand/earth, broken glass and vegetation;
- Targeted sweeping of known problem areas – e.g. paths through parks after a Saturday night;
- Prompt cleanup from storms, fires and other one-off events which cause damage to paths;
- Regular pruning of vegetation to ensure the full path width is available; and
- A regular, documented system of visual path inspections to identify surface or structural defects.

An allocation should be made in each financial year for preventative or remedial maintenance to address this type of issue.

Particular path sections which require maintenance and repair include:

- Goldfields Road shared path near Jones Street (as shown in Figure 5-8)
7 Funding Opportunities

There are a number of funding opportunities available for implementing cycling facilities within Western Australia. Those relevant to Dowerin are outlined in Table 7-1 below.

Table 7-1 Funding Opportunities

<table>
<thead>
<tr>
<th>Funding Opportunities</th>
<th>Description</th>
</tr>
</thead>
</table>
| **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 end of trip 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. |
| **Bikewek Grants**                            | > Community groups, organisations and local governments can apply to share in $30,000 in grants to support local cycling events and activities as part of Bikewek. |
| **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. |
| **Lotterywest Trail Grants**                  | > A partnership between Lotterywest and the Department of Sport and Recreation to assist in developing trails in WA. The grant categories are planning, construction, and trail promotion. |
About Cardno

Cardno is an ASX200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Contact
Perth Office
11 Harvest Terrace
West Perth WA 6005
PO Box 447
West Perth WA 6872
Phone +61 8 9273 3888
Fax +61 8 9486 8664

wa@cardno.com.au
www.cardno.com