

Traffix Group

Merbein Pedestrian and Cycling Plan

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- Appendix A** LATM Plan
- Appendix B** Questionnaire
- Appendix C** Figures 8, 9 & 10 (Enlarged Copies)

1. Introduction

Traffix Group has been engaged by Mildura Rural City Council to develop a Pedestrian & Cycling Plan for the township of Merbein.

The study area comprises the township of Merbein and is bounded by Channel Road to the south, Wentworth Road to the north, Sanders Street to the west and Forbes Drive to the east. The study area is shown in Figure 1 below.

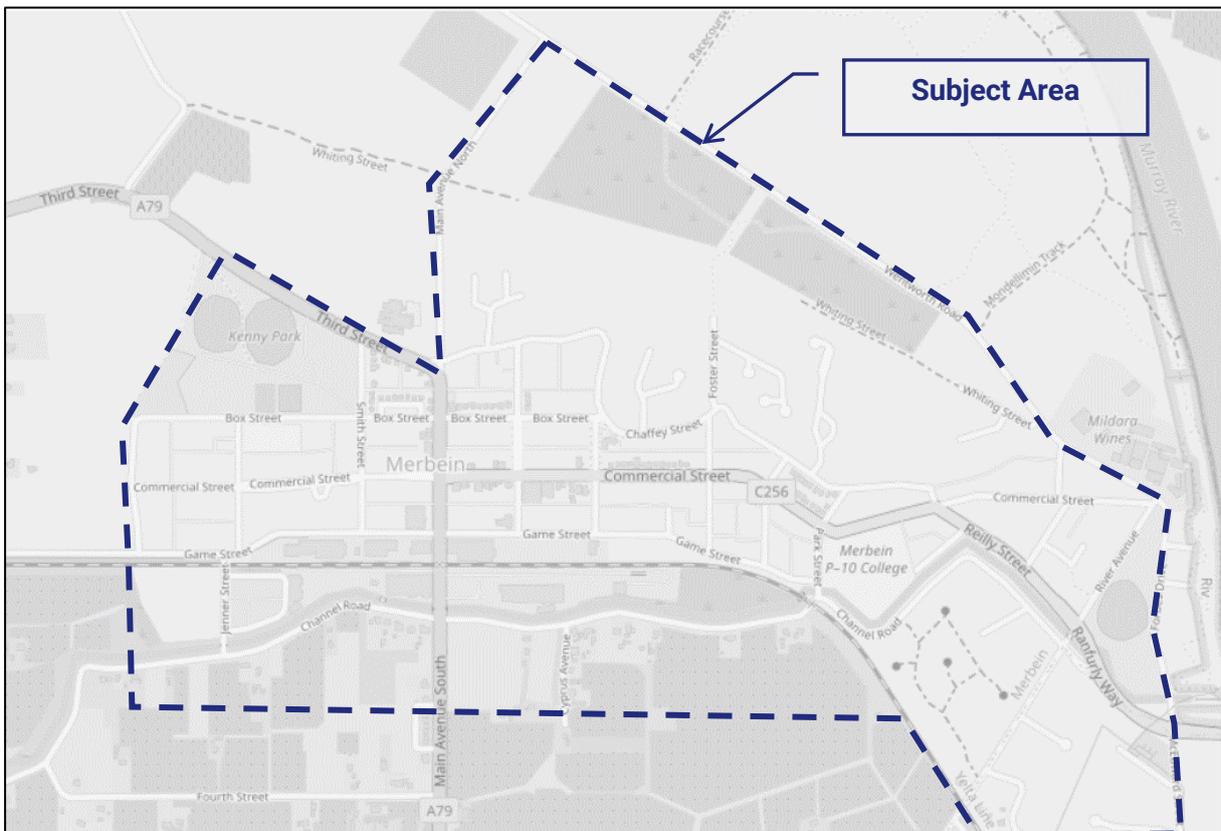


Figure 1: Study Area

2. Study Process

The objective of the study is to prepare a Pedestrian and Cycling Plan for the town of Merbein, which addresses pedestrian and cycling issues identified by the community.

This was achieved through a process of community consultation undertaken by Traffix Group and Mildura Rural City Council, including circular questionnaire surveys and in-person consultation sessions.

The adopted study process consists of the following main components:

- Familiarisation with the study area
- Consultation,

Merbein Pedestrian and Cycling Plan

- Development of the plan
- Reporting

The flowchart presented in Figure 2 describes the study process for the Pedestrian & Cycling Plan.

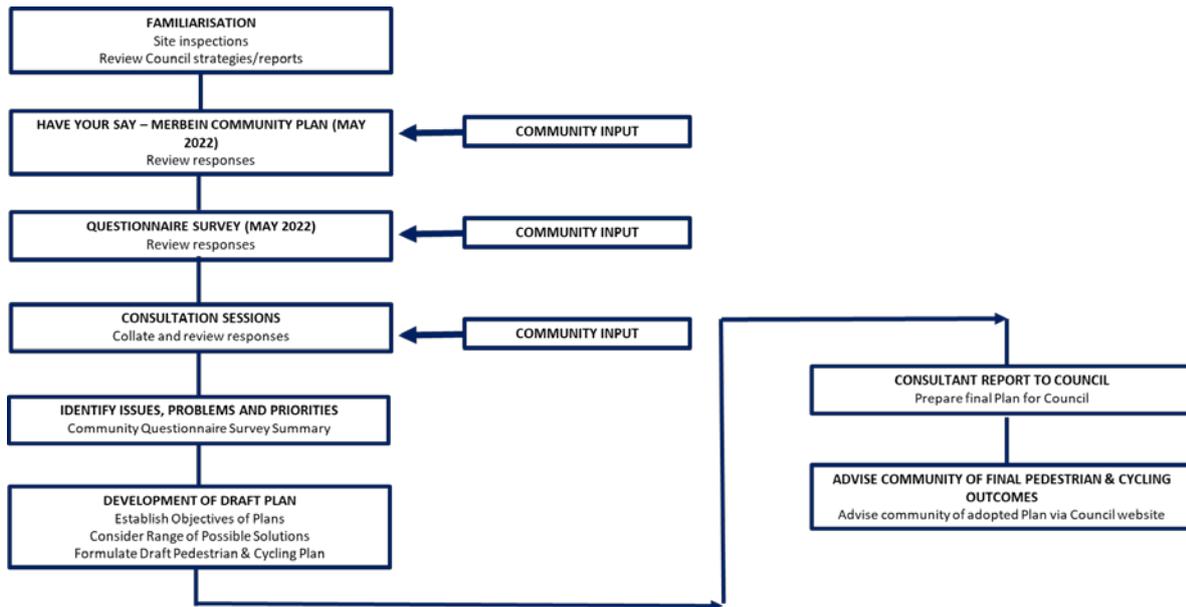


Figure 2 Study Process

The objectives of the Pedestrian and Cycling Plan include:

- Provision of additional pedestrian and cycling facilities
- Improvements to existing pedestrian and cycling facilities
- Provision of safer crossing facilities for pedestrians and cyclists
- Provision of better walking and cycling links
- Reducing the occurrence and potential for vehicle and pedestrian/cyclist crashes

3. Background Information

3.1. Speed Management Strategy – Technical Report (2017)

In 2017 Council completed a technical study that would form the basis for a speed management strategy for the municipality which was a review of the current speed limits and corresponding fatal and serious injury crash history (December 2006 – November 2016) associated with each speed zone.

It is acknowledged that the speed limit in Merbein does not exceed 80km/h, with the majority of roads the default 50km/h local roads.

Merbein Pedestrian and Cycling Plan

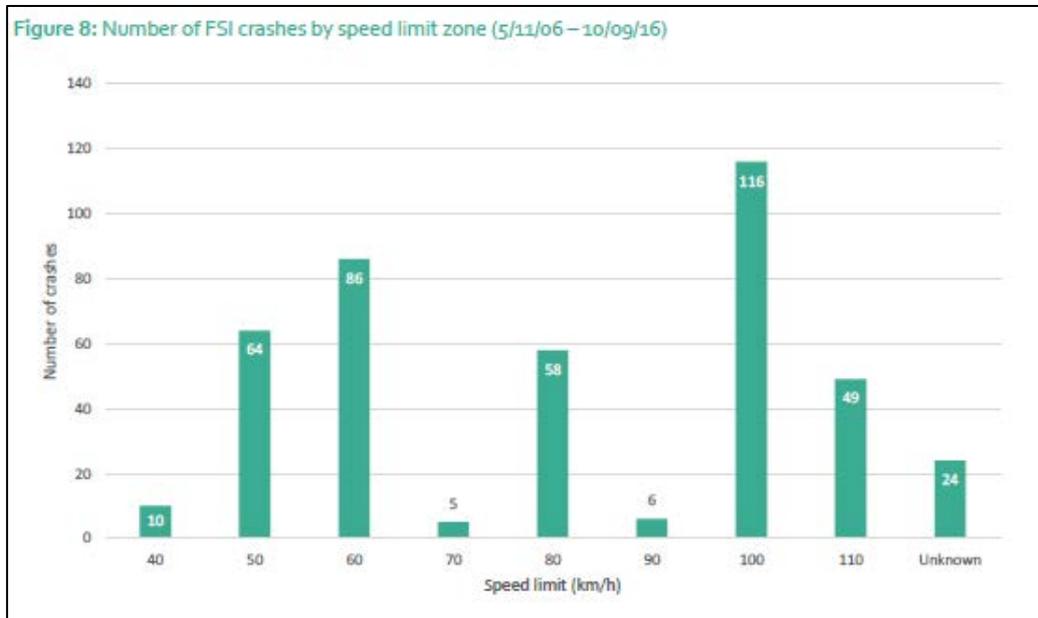


Figure 3 FSI Crashes by Speed Zone

As part of the development of the strategy, several consultation sessions were undertaken with three different focus groups including the general public to identify community sentiment relating to speed limits, Safe System aligned treatments and overall safety. The key outcomes from this report included:

- Safe speeds are integral in managing road safety. Speed limits should be suited to the operating environment such that should a crash occur, it does not result in a fatality or serious injury.
- There is community sentiment for lowering of speed limits in residential areas and around schools.

3.2. Road Safety Strategy (2018-2022)

Council's Road Safety Strategy was created in alignment with the National Road Safety Strategy 2011-2020 and Victoria's Towards Zero 2016-2020 Road Safety Strategy and Action Plan. The strategy reviewed the most recent 10-year crash history as well as responses to an online questionnaire of local residents. Based on community input and crash history, the following areas were prioritised for road safety improvements:

- Reducing crashes relating to pedestrians, run-off-road, intersection, head-on and on high-speed roads
- Education programs in the community – especially in primary schools
- Lobbying for better road safety policies and vehicle manufacturers for better safety features with State and Federal governments

Merbein Pedestrian and Cycling Plan

3.3. Other Projects Within Merbein

It is understood that there are several projects occurring concurrently within Merbein that the Pedestrian and Cycling Plan will complement to implement a holistic approach on addressing the future vision of Merbein as identified through various community consultations. A summary of the projects is provided as follows.

3.3.1. Merbein Community Plan

Consultations for the Merbein Community Plan occurred in May 2022. The Pedestrian and Cycling Plan also held community consultations during this period in conjunction with the Community Plan to ensure alignment between the two Plans. The key themes of the Plan include:

- Safety
- Health
- Township Improvements
- Advocacy
- Recreation
- Promotion/Tourism
- Environment

It is expected that certain aspects of pedestrian and cycling will be captured as part of this Plan hence it is important that the two Plans complement one another. The Merbein Community Plan is yet to be finalised at the time of this report.

3.3.2. Area Wide 40km/h Speed Limit

Mildura Rural City Council is currently considering a proposal to implement an area wide speed limit reduction of local roads in Merbein to 40km/h except for peripheral routes including Game Street, River Avenue and Wentworth Road. The arterial network consisting of Commercial Street and Main Avenue will remain at 60km/h except for a section of Commercial Street between Main Avenue and Obryan Street where a speed limit of 50km/h applies. The laneways will have a default 20km/h speed limit. Consultation undertaken in relation to the area wide speed reduction has generally been supportive.

The reduction in the speed limit resulting in the majority of roads in Merbein to a lower speed of 40km/h will create a safer environment for all users especially pedestrians and cyclists where in the event of a collision with a vehicle, the risk of a serious injury or death is significantly reduced.

A graphical representation of the area wide speed limit proposal is presented in Figure 4.

Merbein Pedestrian and Cycling Plan

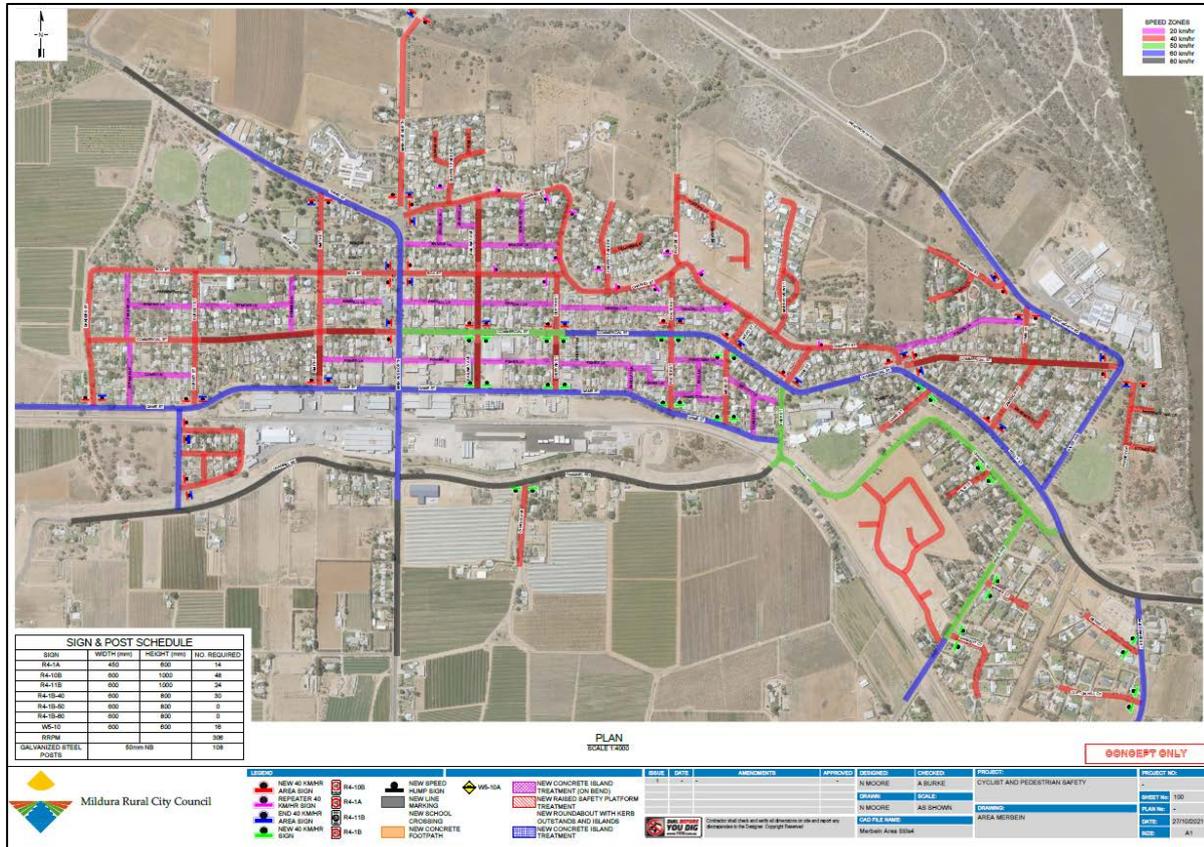


Figure 4 Proposed Area Wide 40km/h Speed Limit

3.3.3. Local Area Traffic Management (LATM)

Council is considering the implementation of a local area traffic management strategy for Merbein that would support the Community Plan, area wide speed limit reduction and the Pedestrian & Cycling Plan. The LATM recommends several infrastructure upgrades to address speed, safety and accessibility based on historic and known issues. Some of these treatments include:

- Raised safety platforms
- Concrete islands
- Kerb outstands

Note that the installation of raised safety platforms and speed humps are to be installed with consideration of buses and heavy vehicles that may impact on stability whilst negotiating these humps.

A copy of the LATM which includes both infrastructure and speed limit changes is attached in Appendix A.

4. Existing Conditions

4.1. Road Network & Hierarchy

There are two arterial roads managed by the Department of Transport that travel through town including:

- Commercial Street – Reilly Street – Ranfurly Way provides an east west connection between Merbein and Mildura. The posted speed limit is 60km/h except for the section of Commercial Street between Obryan Street and Main Avenue North through the main shopping precinct where the speed limit is 50km/h. The carriageway is undivided with a single lane of traffic in each direction with on-road bike lanes and kerbside parking permitted.
- Main Avenue South – Main Avenue North – Third Street provides a north south connection between Merbein and Yelta. The posted speed limit is 60km/h. The carriageway is undivided with a single lane of traffic in each direction with kerbside parking permitted.

The remaining road network consists of local roads and laneways managed by Mildura Rural City Council.

A map overview of Merbein is presented in Figure 5.

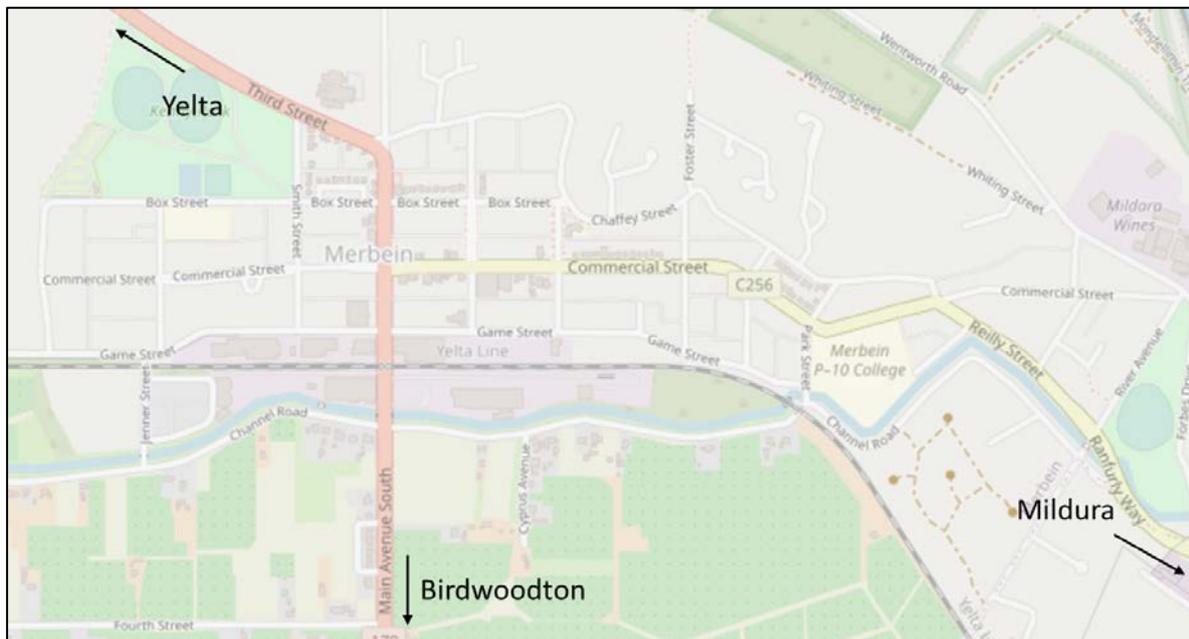


Figure 5 Melway Reference

4.2. Land Use

The majority of land use within the Merbein township is residential. Other significant non-residential land uses in the area include:

- Generations Early Learning

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- Chaffey Aged Care
- Kenny Park
- Caravan Park
- Merbein Rodeo
- Merbein Swimming Pool
- Our Lady of Sacred Heart Primary School
- Historical Society
- Merbein Library
- Main Shopping Strip
- Merbein Kindergarten & Maternal & Child Health Centre
- Merbein P-10
- Chaffey Park
- Merbein Common

The location of each of these facilities is presented on the land use plan at Figure 6.



Figure 6 Land Use Plan

4.3. Public Transport

Public transport services within the study area comprises of five (5) bus routes. A graphical representation of the bus routes is presented in Figure 5.

Bus routes 211, 311 and 312 travel via Commercial Street and routes 250 and 300 via Main Avenue South, all of which provide connections to Mildura.

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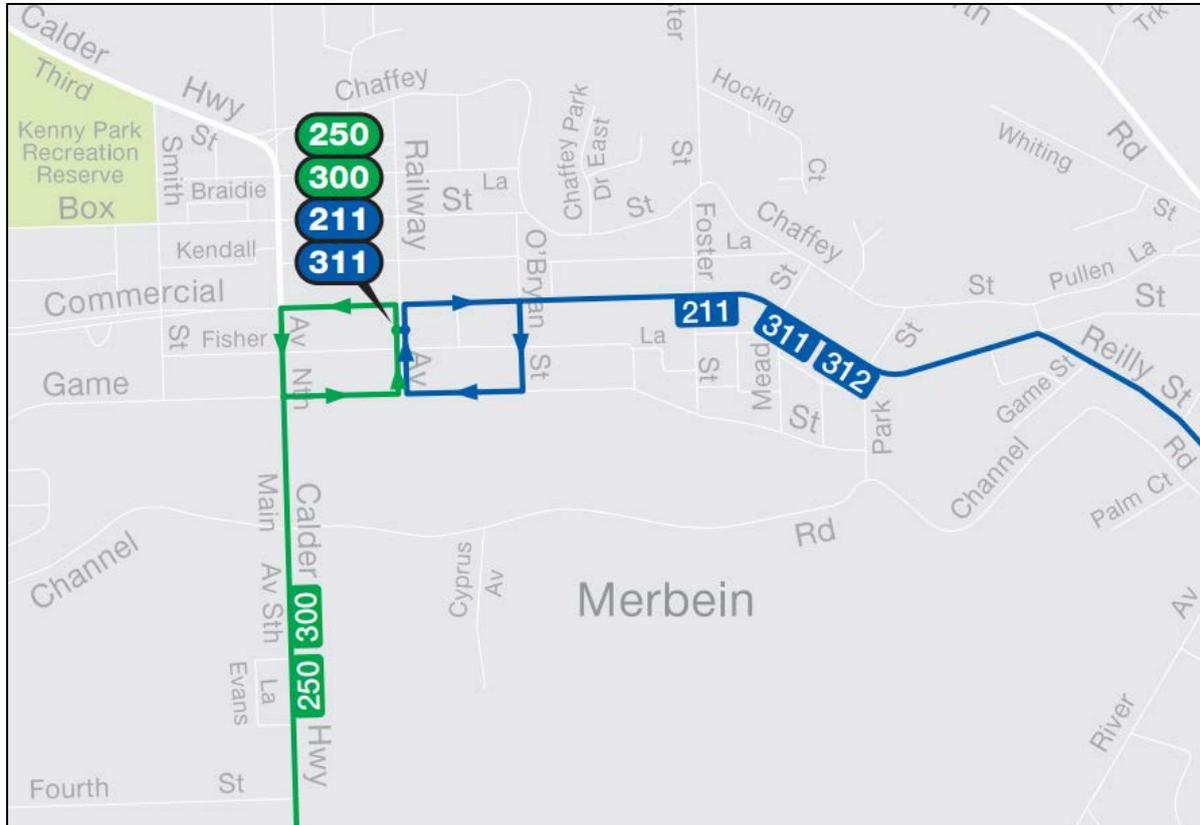


Figure 7 PTV Map for Merbein

4.4. Existing Walking and Cycling Facilities

There are existing walking and cycling facilities in the township of Merbein which generally comprise of footpaths and on-road bike lanes.

A plan illustrating the existing extent of walking and cycling facilities within the township is presented at Figure 8¹.

¹ An enlarged copy of Figure 8 is provided at Appendix C of this report.

Merbein Pedestrian and Cycling Plan

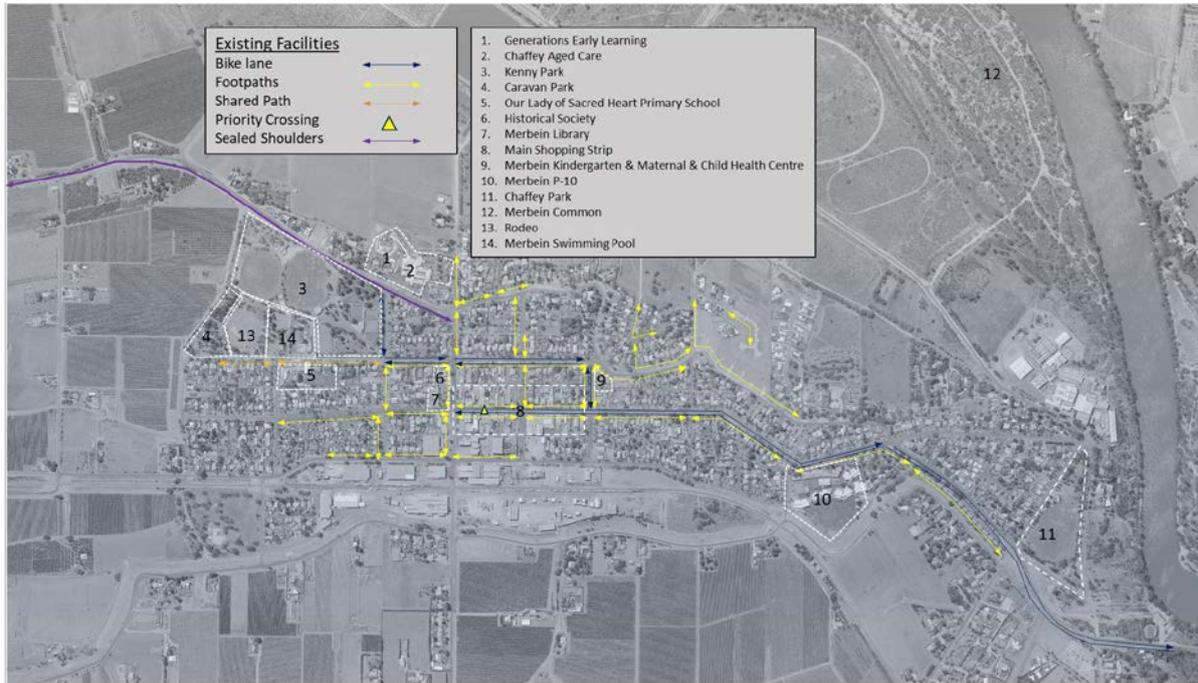


Figure 8 Existing Walking and Cycling Facilities

On-road bike lanes are currently limited to three main routes including Commercial Street to the east of Main Avenue, Box Street to the east of Smith Street and the section of Smith Street between Box Street and Third Street.

Most streets within the town contain footpaths, however, they are generally limited to one side of the road except within the main shopping strip on Commercial Street. Some streets, however, contain no footpaths on either side of the road. Also on Commercial Street is a pedestrian (zebra) crossing with flashing lights. It is noted that there are no other formal crossing facilities within the town.

A full listing of the existing walking and cycling facilities is detailed in Table 1, noting that a separate review would be required to ensure that all existing facilities are in accordance with current standards.

Table 1 Listing of Existing Walking and Cycling Facilities

Type of Facility & Location
Footpaths
Box Street - South side between Smith Street and Obryan Street
Chaffey Street - South side between Obryan Street and Foster Street
Chaffey Street - North side between Main Avenue North and Chaffey Park Drive

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Type of Facility & Location
Chaffey Street - North side between Chaffey Park Drive and Murray View Court
Chaffey Park Drive - East side to Chaffey Street
Commercial Street - South side between Surgey Street and River Avenue
Commercial Street - North side between Main Avenue North and Obryan Street
Delamere Court - North side to Chaffey Park Drive
Foster Street - East side between Hocking Court and Chaffey Street
Game Street - North side between 41 Game Street and Barclay Lane
Hocking Court - North side to Foster Street
Main Avenue North - East side between 54 Main Avenue North and Box Street
Main Avenue North - West side between Box Street and Game Street
Railway Avenue - East side between Braidie Lane and Commercial Street
Railway Avenue - West side between Chaffey Street and Commercial Street
Smith Street - East side between Box Street and Commercial Street
Smith Street - West side of between Commercial Street and Game Street
Shared User Paths
Box Street - South side between Smith Street and Decker Lane
On-Road Bike Lanes
Box Street - Both sides between Smith Street and Obryan Street
Commercial Street and Reilly Street - Both sides between Main Avenue North and McEdward Street

Merbein Pedestrian and Cycling Plan

Type of Facility & Location
Smith Street - Both sides between Third Street and Box Street
Priority Crossing
Commercial Street - Zebra crossing with flashing lights
Sealed Shoulders
Third Street - Both sides between the Calder Highway and Main Avenue North

4.5. Crash History

A review of the recent 10-year crash history from January 2012 to December 2021 for the study area was undertaken which indicated a total of 20 casualty crashes within the township of Merbein. Of the 20 crashes, there was one fatal crash that occurred on Game Street in 2014 as a result of a driver under the influence who had veered off road and collided with a tree. Additionally, there were also four serious injuries, one of which involved a pedestrian.

Overall, only two (2) of the 20 crashes involved pedestrians, both of which were on Commercial Street near the main shopping precinct. None of the crashes involved cyclists.

A summary of the crashes is provided in Table 1 with the crash diagram presented in Figure 9².

Table 2 Crash Summary Matrix

	DCA	Severity	Date	Day	Time	Condition	Light
1	120	Other injury	7/06/2019	Fri	10:45	Dry	Day
2	173	Other injury	21/09/2020	Mon	3:30	Dry	Dark
3	174	Other injury	10/07/2020	Fri	21:33	Dry	Dark
4	110	Other injury	29/10/2020	Thu	10:00	Dry	Day
5	152	Other injury	20/07/2019	Sat	12:45	Dry	Day
6	120	Other injury	27/07/2016	Wed	16:00	Dry	Day
7	183	Fatal	22/01/2014	Wed	23:52	Dry	Dark
8	174	Other injury	13/09/2012	Thu	11:35	Dry	Day

² An enlarged copy of Figure 9 is provided at Appendix C of this report.

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	DCA	Severity	Date	Day	Time	Condition	Light
9	111	Other injury	20/02/2012	Mon	7:25	Wet	Dusk
10	173	Serious injury	2/05/2016	Mon	1:20	Dry	Dark
11	110	Other injury	16/07/2015	Thu	13:25	Dry	Day
12	110	Other injury	8/01/2012	Sun	18:20	Dry	Day
13	100	Other injury	8/02/2013	Fri	17:30	Dry	Day
14	102	Serious injury	28/05/2015	Thu	18:10	Dry	Dark
15	181	Other injury	8/05/2019	Wed	17:48	Dry	Dark
16	130	Other injury	6/02/2012	Mon	13:30	Dry	Day
17	113	Serious injury	7/11/2011	Mon	8:35	Dry	Day
18	171	Other injury	3/07/2011	Sun	18:50	Dry	Dark
19	110	Serious injury	18/09/2011	Sun	13:30	Dry	Day
20	174	Other injury	22/07/2011	Fri	9:30	Dry	Day

Merbein Pedestrian and Cycling Plan

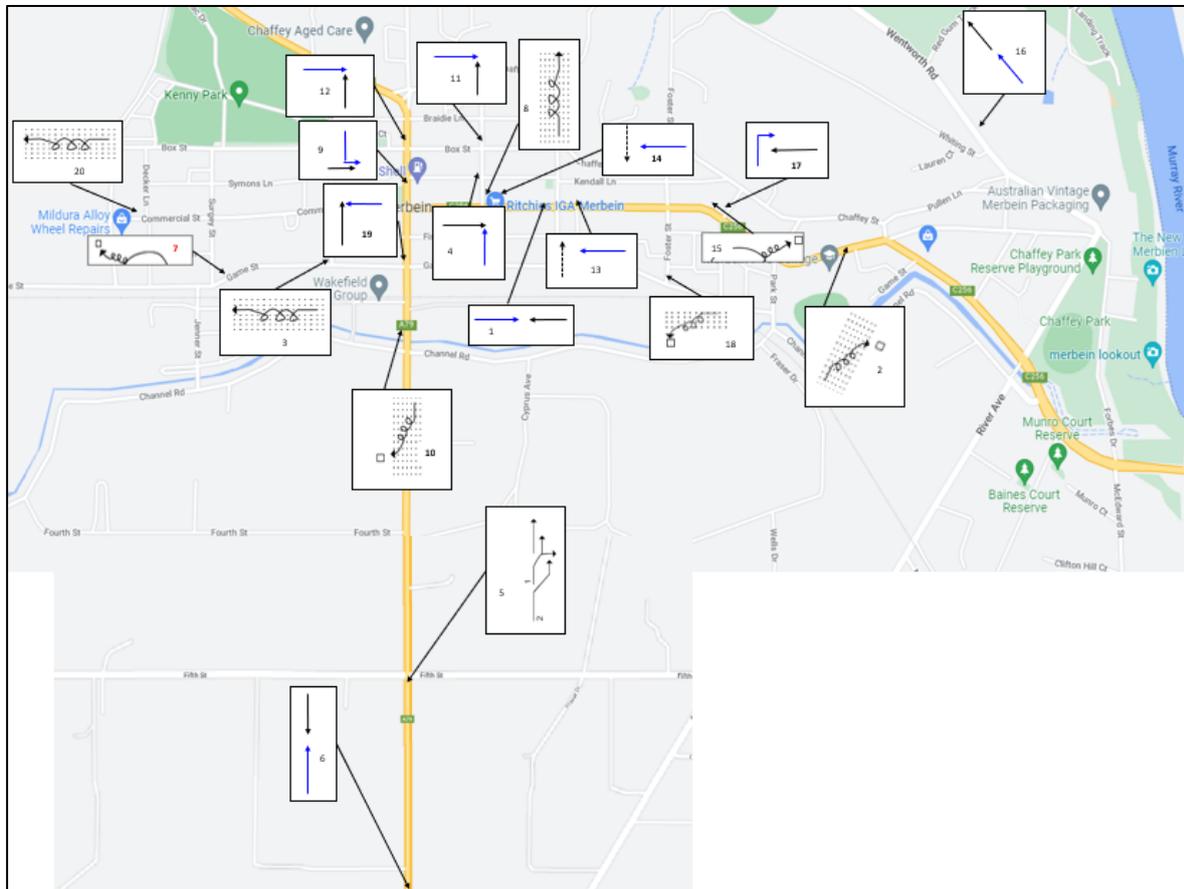


Figure 9 Crash Diagram

5. Community Consultation

5.1. Historic Community Walking and Cycling Queries

Council has provided a record of complaints received from the community between 2018 and 2022 for the study area, more specifically relating to walking and cycling. Some of the historic key issues that was raised include:

- Vehicles speeding along Commercial Street and laneways
- Consideration of speed humps to slow traffic
- Lack of footpaths on a lot of local streets
- Need for a school crossing outside the P-10 school

5.2. Community Questionnaire and Consultation Sessions

The consultation period for this project commenced on Monday 16 May 2022 to Friday 20 May 2022 to seek comments from the community on existing and future pedestrian and

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cycling improvements within the study area. The consultation processes undertaken are described below:

- **Questionnaire Survey** – An online questionnaire was distributed to key stakeholder groups including local schools, recreational services and businesses within the study area as well as external organisations that frequent through the town. In addition, a question was also included as part of Council’s ‘YourSay’ webpage.
- **Consultation Sessions** – Three consultation sessions were undertaken in Merbein in conjunction with the Merbein Community Plan to ensure both plans are aligned.

As part of the questionnaire, feedback was also sought from the community in relation to locations where there are safety issues for walking and cycling, these locations include:

- Commercial Street
- Box Street
- Game Street
- Chaffey Street

Of the 13 responses received for the questionnaire, 77% of respondents use walking for the purpose of ‘exercise fitness and/or commuting to work/school/shops’, whereby 92% would walk for a minimum of 30 minutes. Of the 13 respondents, 54% cycle for a minimum duration of 30 minutes for the purposes of ‘exercise fitness and/or commuting to work/school/shops’.

A copy of the questionnaire is attached to Appendix B of this report.

A question was also posted on Council’s ‘YourSay’ webpage as part of the Merbein Community Plan which sought comments on the following:

‘What do you see as your top three priorities that would make walking and cycling easier and safer for you?’

A total of 77 responses were received including the historic queries from 2018, based on these responses, the key issues raised in relation to walking and cycling in Merbein are presented in Table 3.

Table 3 Summary of Consultation Responses

Questionnaire	Historic Queries	Merbein Community Plan
<ul style="list-style-type: none"> • The provision of all-weather paths suitable for pedestrians and cyclists • Need for more footpaths on roads outside of the main shopping precinct • Better bicycle links into Merbein • Need for more crossing locations on Main Avenue 	<ul style="list-style-type: none"> • Speeding along Commercial Street, Chaffey Street and in laneways • Need for footpaths on Obryan Street and on Main Avenue South towards residential property to the south • Need for a school crossing outside the P-10 school • Speed humps on various roads to reduce speeds 	<ul style="list-style-type: none"> • The need for more street lighting for roads outside of the main shopping precinct • Lack of footpaths on most roads where at least one side of the road should have a footpath • Better connections to key destinations including schools, shopping precinct and recreational services

Merbein Pedestrian and Cycling Plan

Questionnaire	Historic Queries	Merbein Community Plan
<p>North and around schools and Kenny Park</p> <ul style="list-style-type: none"> Improve walking and cycling links to existing paths 	<ul style="list-style-type: none"> Upgrade required at the intersection of Commercial Street/Reilly Street to reduce confusion for drivers 	<ul style="list-style-type: none"> Lack of bicycle facilities both on-road/off-road

5.3. Other Issues

There were other issues that were raised during the consultation that do not form part of the Pedestrian and Cycling Plan, however following discussions with Council officers, the recommendations proposed below would result in further benefits to the community and improve walking and cycling, these include:

- Closing off the southern end of Forbes Drive to traffic and replacing it with an all-weather path for walking and cycling.
- Reducing the speed limit on Ranfurly Way to 60km/h between McEdwards Street and Channel Road. This is an arterial road which will require further consultations with DoT.
- Provision of a shared zone speed limit of 10km/h within the internal roads of the Early Learning Centre to reduce vehicle speeds and create a safer environment for parents and staff.

6. Pedestrian and Cycling Plan

The pedestrian and cycling plan has been developed to address the issues raised from the community consultations and following a review of the existing land uses and pedestrian and cycling networks within the township.

The recommendations aim to address missing walking and cycling links within Merbein, improve connectivity to key destinations as well as provision of safer crossing locations. Some of the key recommendations include:

- Provision of an east-west and north-south bicycle connection through Merbein
- Provision of footpaths on roads leading to the main shopping precinct as well as schools and parks
- Provision of crossing locations to enable safer crossing facilities
- Provision of shared user paths to provide off-road facilities for connections to schools

The plan proposes at minimum a footpath on one side of each street within Merbein however as development for new subdivision are in progress it is anticipated that the increase in residential homes will result in additional pedestrian traffic around these areas. This may lead to implementation of footpaths on both sides of the surrounding roads to facilitate the increased demand.

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Any proposed or existing on-road bicycle lanes should be maintained such that there are no debris or hazards along the path that may cause cyclists to lose control.

In addition to the physical treatments proposed to improve walking and cycling safety within Merbein, considerations combining these treatments with reducing the speed limit within the township to 40km/h will further benefit the community. The reduction of vehicle speeds will reduce the severity of a crash on pedestrians or cyclists involved potentially from a fatal or serious injury to a minor injury.

A plan illustrating the recommended pedestrian and cycling improvements is presented at Figure 10³ whilst a detailed listing of all the recommended treatments is presented at Table 4 and the LATM treatments to assist in further reducing speeds in the township in Table 5.

The purpose of providing additional infrastructure will provide better connectivity to key destinations within the township as well as provision of new or improve infrastructure to facilitate pedestrian and cycling movements in a safer environment. Further details as to why type of treatment has been proposed is summarised as follows:

- On-road bike lanes extensions are proposed on Commercial Street completes an east-west connection through Merbein meanwhile Main Avenue bike lanes provide a north-south connection
- On-road bike lanes are proposed on River Avenue provides a connection to the Commercial Street bike route as well as to Wentworth Road for cyclists connecting to the Common
- At minimum, all local roads within Merbein are proposed to have at least one footpath installed one side of the road to better connect pedestrians to key destinations such as schools and residential areas. It is noted that following the completion of new subdivisions that some roads may warrant footpaths on both sides to facilitate additional pedestrian traffic
- Raised pedestrian priority crossings are proposed within the main shopping strip where there are higher volumes of pedestrian and vehicle traffic. This allows pedestrians a safer crossing facility whereby drivers are expected to stop and give way to pedestrians thereby reducing the risk of a crash
- Pram ramps and refuge islands are proposed at locations in proximity to key community destinations including schools to ensure that pedestrians are connected to key destinations from other parts of Merbein. Refuge islands will allow pedestrians to wait safely within the road before picking a gap in traffic to complete their crossing
- Shared user paths are proposed where there is sufficient carriageway width to install a path without requiring major civil works. The paths are proposed on roads where connectivity is clearly required between different residential estates, to schools and recreational areas. These paths allows both pedestrians and cyclists to travel off-road away from traffic whereby the risk of a crash is reduced significantly resulting in lower chances of fatal or serious injuries

³ An enlarged copy of Figure 10 is provided at Appendix C of this report.

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- Concrete islands are proposed at locations where there are tight curves to and at the start of a minor road to reduce vehicle speeds from the main road

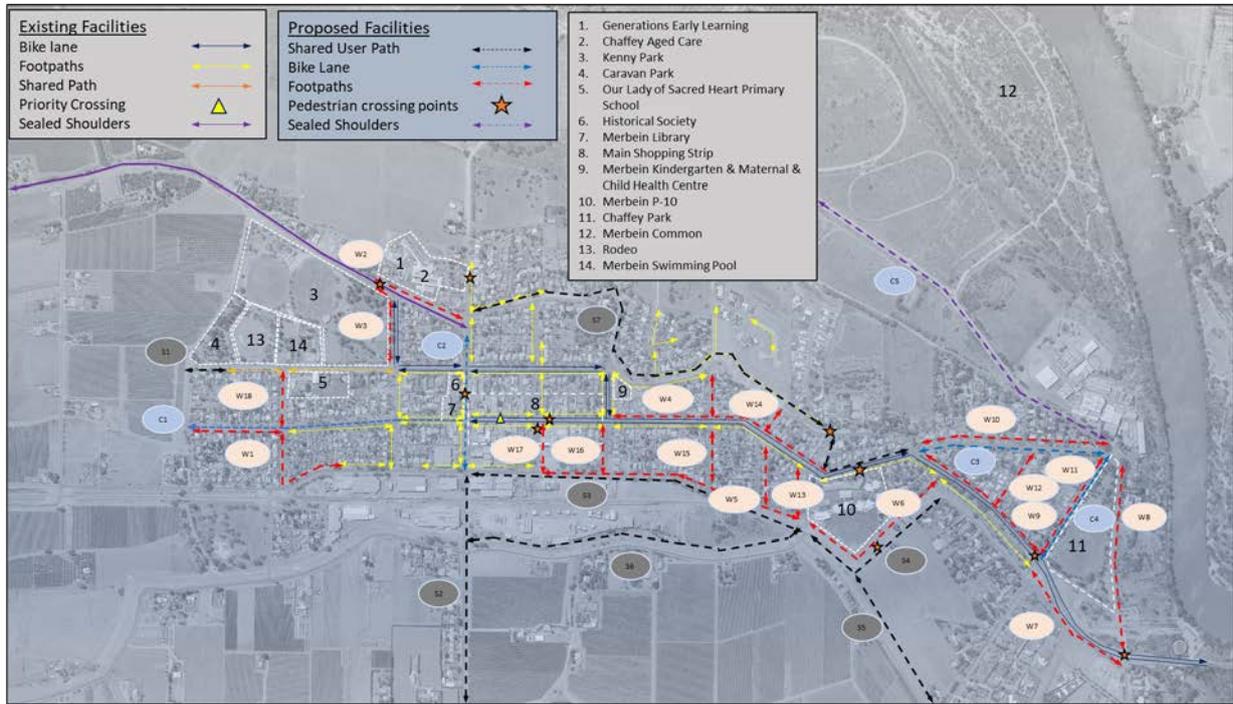


Figure 10 Proposed Walking and Cycling Improvements

Table 4 Proposed Walking and Cycling Projects

No.	Project	Type	Purpose
C1	Commercial Street - On-road bike lanes on, west of Main Avenue N	Cycling	Continuation of existing bike lanes on Commercial Street to extend east-west link through town
C2	Main Avenue N - On-road bike lanes	Cycling	Provision of a north-south connection from Third Street to Game Street
C3	Commercial Street - On-road bike lanes between Chaffey Street and River Avenue	Cycling	Continuation of existing bike lanes on Commercial Street to extend east-west link through town
C4	River Avenue - On-road bike lanes	Cycling	Provision of a link between Chaffey Park to Reilly Street
C5	Wentworth Road - Sealed shoulders/bike lanes	Cycling	Provision of sealed shoulders along Wentworth Road
W1	Commercial Street, Surgey Street and Game Street - Footpath on one side	Walking	Continuation of the footpath connection on Commercial Street and Game Street

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No.	Project	Type	Purpose
W2	Third Street - Footpath on one side	Walking	Provide a connection to the Early Learning and Aged Care facility
W3	Smith Street - Footpath on one side	Walking	Footpath connection to Early Learning Centre
W4	Commercial Street - Footpath on one side	Walking	Continuation of the footpath on Commercial Street
W5	Game Street - Footpath on one side	Walking	Provide a footpath connection on Game Street to nearby residential homes and shopping precinct
W6	Old channel - Walking track	Walking	Extension of the Channel Walk behind the P10 school
W7	Reilly Avenue between River Avenue and McEdward Street - Footpath on the south side	Walking	Footpath connection to link new subdivisions to the south
W8	Forbes Drive - All weather path	Walking	Improve walking path and extend to Ranfurly Way
W9	Reilly Street - Footpath on one side	Walking	Provide connection between Commercial Street and River Avenue
W10	Commercial Street - Footpath on one side	Walking	Provide connection between Reilly Street and River Avenue
W11	River Avenue - Footpath on one side	Walking	Provide connection between Commercial Street and Reilly Street
W12	Cameron Street - Footpath on one side	Walking	Provide a connection to Commercial Street
W13	Park Street - Footpath on one side	Walking	Provide a connection to Commercial Street
W14	Mead Street - Footpath on one side	Walking	Provide a connection to Commercial Street
W15	Foster Street - Footpath on one side	Walking	Provide a connection to Commercial Street
W16	Obryan Street - Footpath on one side	Walking	Provide a connection to shopping precinct
W17	Railway Avenue - Footpath on one side	Walking	Provide a connection to shopping precinct
W18	Surgey Street - Footpath on one side	Walking	Provide a connection to OLSH school
S1	Box Street - SUP	Shared User Path	Continuation of connection on Box Street

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No.	Project	Type	Purpose
S2	Main Avenue South/Calder Highway - SUP	Shared User Path	Provide a connection to residents south of town
S3	Game Street - SUP	Shared User Path	Provide a connection along Game Street
S4	Channel Road - SUP	Shared User Path	Provide a connection
S5	New subdivision - SUP	Shared User Path	Provide a connection for a future rail trail
S6	Main Channel - SUP	Shared User Path	Provide a connection along the Main Channel
S7	Chaffey Street - SUP	Shared User Path	Provide a connection along Chaffey Street utilising existing footpaths and new paths
P1	Third Street - Pram ramps and refuge on both sides	Pedestrian crossing	Provide a crossing point to the Generations Early Learning
P2	Main Avenue North - Pram ramps on both sides	Pedestrian crossing	Provide a crossing point for residents from the Aged Care facility to access footpath on the eastern side of Main Avenue N and the shopping precinct
P3	Main Avenue North - Pram ramps on both sides	Pedestrian crossing	Provide a crossing point to the library
P4	Commercial Street - Raised pedestrian crossing	Pedestrian crossing	Provide a priority crossing facility for residents within the shopping precinct
P5	Railway Avenue - Raised pedestrian crossing	Pedestrian crossing	Provide a priority crossing facility for residents within the shopping precinct
P6	Chaffey Street - Pram ramps on both sides	Pedestrian crossing	Provide a crossing point for residents from the new subdivisions to the north
P7	Commercial Street - School crossing	School crossing	School crossing outside P10 school to connect students to residential subdivisions to the north
P8	Channel Road - Pram ramps and refuge on both sides	Pedestrian crossing	Provide a crossing point to the P-10 School from the new subdivisions to the south
P9	Reilly Street - Pram ramps on both sides and provide refuge within median	Pedestrian crossing	Provide a safe crossing point from new subdivisions to the south and Chaffey Park
P10	Ranfurly Way - Pram ramps on both sides and provide refuge within median	Pedestrian crossing	Provide a safe crossing point from new subdivisions to the south and Chaffey Park

Merbein Pedestrian and Cycling Plan

Table 5 Proposed LATM Projects

Project	Type	Purpose
Chaffey Street near Pullen Lane	Concrete Island on bend	To prevent vehicles from veering across the opposing lane and slow vehicle speeds through bends
Chaffey Street near Park Street	Concrete Island on bend	To prevent vehicles from veering across the opposing lane and slow vehicle speeds through bends
Sanders Street at Game Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Surgery Street at Game Street, Commercial Street and Box Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Litchfield Street at Jenner Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Rainbow Street at Jenner Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Smith Street at Third Street, Commercial Street and Game Street.	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Chaffey Park Drive at Chaffey Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Railway Avenue at Chaffey Street and Box Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Obryan Street at Game Street and Commercial Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Foster Street at Chaffey Street, Commercial Street and Game Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians

Merbein Pedestrian and Cycling Plan

Project	Type	Purpose
Mead Street at Game Street, Commercial Street and Chaffey	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Park Street at Chaffey Street and Park Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Game Street at Reilly Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians
Cameron Street at Commercial Street and Reilly Street	Concrete island at intersection	To reduce vehicle speeds into minor streets and provide refuge for pedestrians

7. Prioritisation of Improvements

Based on the recommendations, a high-level cost estimate for each improvement has been prepared based on recent construction rates provided by Council as well as current rates within the industry. These costs include only the main construction items and do not include site specific items such as service impacts or traffic management. A 30 per cent allowance has been included for contingencies.

Based on the complexity and cost of each project and the identified need, each recommendation is categorised into the following timeframes:

- Short term (1-2 years)
- Medium term (3-5 years)
- Long term (>5 years)

Each of the recommendations have been allocated a priority in Table 5.

Table 6 Prioritised list of improvements

No.	Project	Type	Total cost (\$)	Priority
C1	Commercial Street - On-road bike lanes on, west of Main Avenue N	Cycling	15,000	Short term
C2	Main Avenue N - On-road bike lanes	Cycling	8,000	Short term
C3	Commercial Street - On-road bike lanes between Chaffey Street and River Avenue	Cycling	10,000	Short term

Merbein Pedestrian and Cycling Plan

No.	Project	Type	Total cost (\$)	Priority
C4	River Avenue - On-road bike lanes	Cycling	7,000	Short term
C5	Wentworth Road - Sealed shoulders/bike lanes	Cycling	2,700,000	Long term
W1	Commercial Street, Surgey Street and Game Street - Footpath on one side	Walking	235,000	Medium term
W2	Third Street - Footpath on one side	Walking	205,000	Short term
W3	Smith Street - Footpath on one side	Walking	105,000	Short term
W4	Commercial Street - Footpath on one side	Walking	270,000	Short term
W5	Game Street - Footpath on one side	Walking	175,000	Short term
W6	Old channel - Walking track	Walking	200,000	Short term
W7	Reilly Avenue between River Avenue and McEdward Street - Footpath on the south side	Walking	150,000	Short term
W8	Forbes Drive - All weather path	Walking	250,000	Short term
W9	Reilly Street - Footpath on one side	Walking	205,000	Short term
W10	Commercial Street - Footpath on one side	Walking	235,000	Short term
W11	River Avenue - Footpath on one side	Walking	155,000	Short term
W12	Cameron Street - Footpath on one side	Walking	82,000	Short term
W13	Park Street - Footpath on one side	Walking	65,000	Short term
W14	Mead Street - Footpath on one side	Walking	125,000	Short term
W15	Foster Street - Footpath on one side	Walking	145,000	Short term
W16	Obryan Street - Footpath on one side	Walking	62,000	Short term
W17	Railway Avenue - Footpath on one side	Walking	62,000	Short term
W18	Surgey Street - Footpath on one side	Walking	62,000	Short term
S1	Box Street - SUP	Shared User Path	55,000	Short term
S2	Main Avenue South/Calder Highway - SUP	Shared User Path	445,000	Medium term
S3	Game Street - SUP	Shared User Path	683,000	Medium term

Merbein Pedestrian and Cycling Plan

No.	Project	Type	Total cost (\$)	Priority
S4	Channel Road - SUP	Shared User Path	225,000	Medium term
S5	New subdivision - SUP	Shared User Path	320,000	Medium term
S6	Main Channel - SUP	Shared User Path	662,000	Medium term
S7	Chaffey Street - SUP	Shared User Path	1,023,000	Short term
P1	Third Street - Pram ramps and refuge on both sides	Pedestrian crossing	6,500	Short term
P2	Main Avenue North - Pram ramps on both sides	Pedestrian crossing	4,500	Short term
P3	Main Avenue North - Pram ramps on both sides	Pedestrian crossing	4,500	Short term
P4	Commercial Street - Raised pedestrian crossing	Pedestrian crossing	12,000	Short term
P5	Railway Avenue - Raised pedestrian crossing	Pedestrian crossing	12,000	Short term
P6	Chaffey Street - Pram ramps on both sides	Pedestrian crossing	4,500	Short term
P7	Commercial Street - School crossing	School crossing	4,500	Short term
P8	Channel Road - Pram ramps and refuge on both sides	Pedestrian crossing	6,500	Short term
P9	Reilly Street - Pram ramps on both sides and provide refuge within median	Pedestrian crossing	6,500	Short term
P10	Ranfurly Way - Pram ramps on both sides and provide refuge within median	Pedestrian crossing	6,500	Short term

The full cost of implementing each of the above facilities is estimated at \$9,009,000, with a breakdown of these costs over the short, medium and long term presented at Table 7.

Merbein Pedestrian and Cycling Plan

Table 7 Implementation Cost Summary

Priority	Cost
Short Term Priorities	\$3,739,000
Medium Term Priorities	\$2,570,000
Long Term Priorities	\$2,700,000
TOTAL	\$9,009,000

Potential funding sources for implementing the recommended works include:

- Safe System Pedestrian Infrastructure Program (IP43)
- Commonwealth Road Safety Program
- TAC Local Government Grant Program

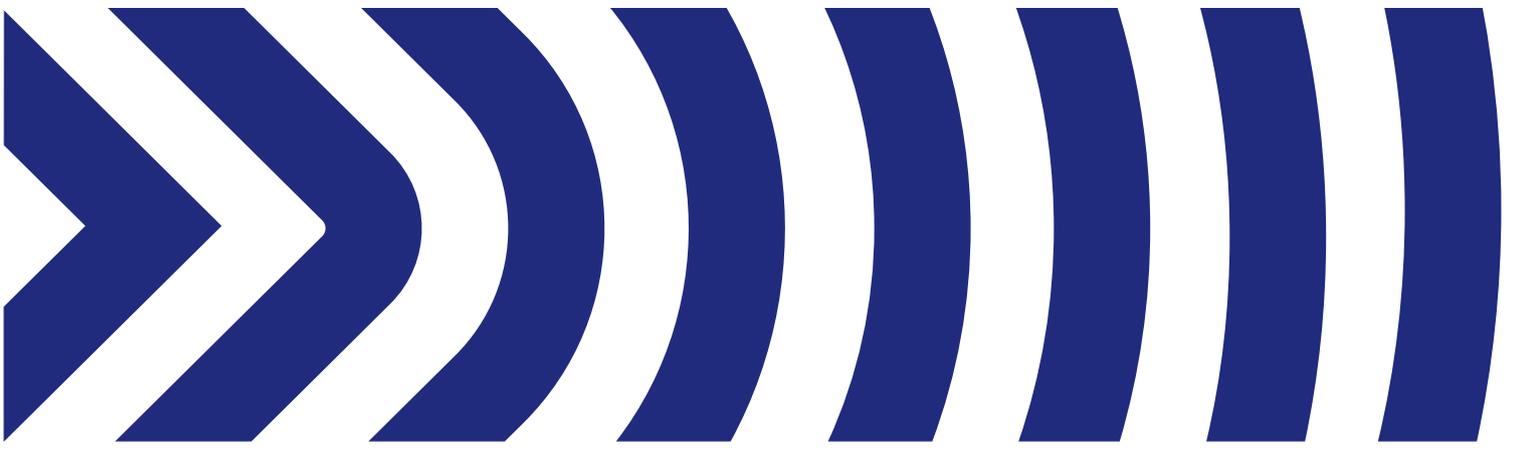
Conclusion

The pedestrian and cycling plan has been developed to address the issues raised from the community consultations and following a review of the existing land uses and pedestrian and cycling networks within the township.

Key recommendations include:

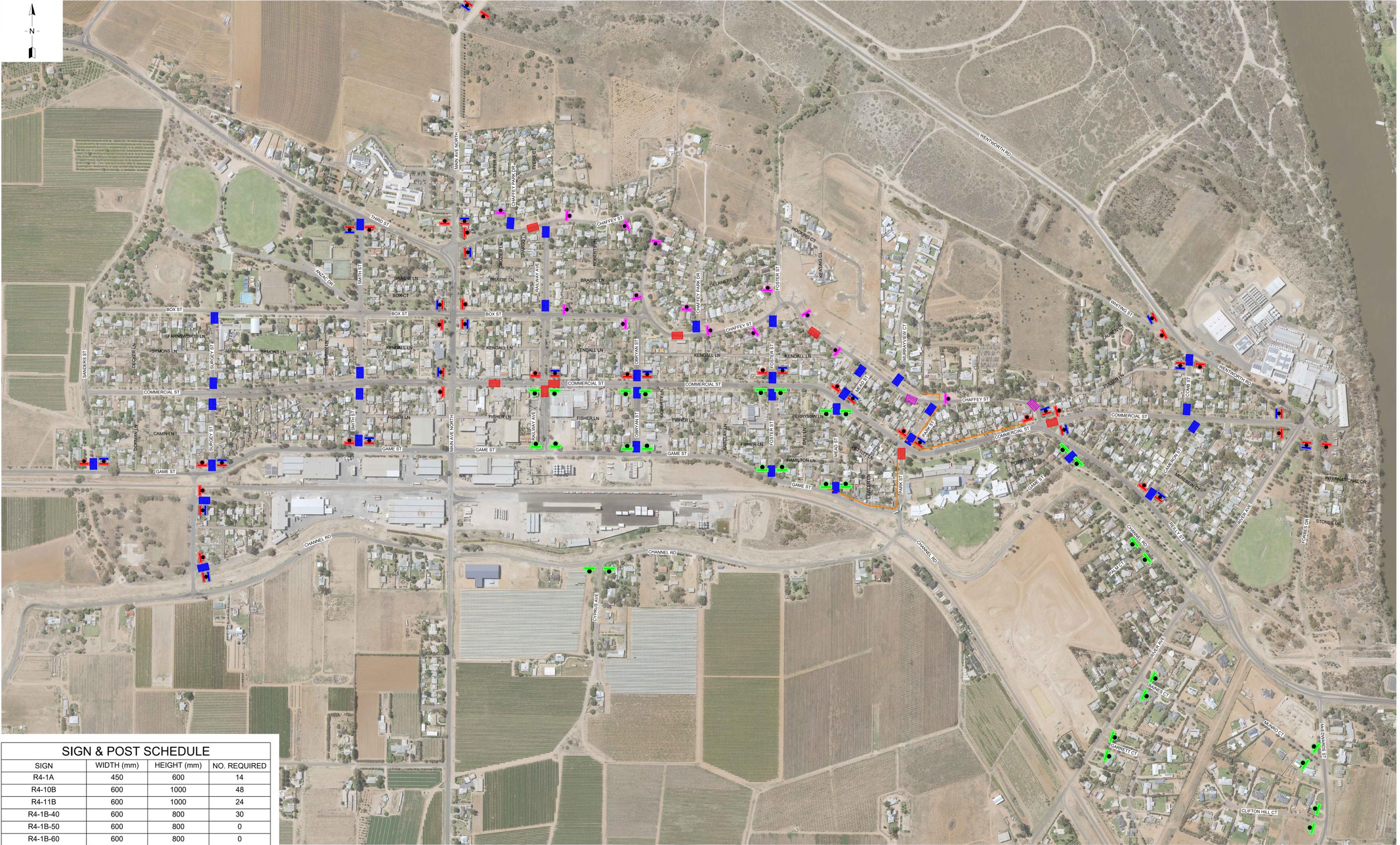
- Provision of an east-west and north-south bicycle connection through Merbein
- Provision of footpaths on roads leading to the main shopping precinct as well as schools and parks
- Provision of crossing locations to enable safer crossing facilities
- Provision of shared user paths to provide off-road facilities for connections to schools

The recommendations from this Plan in conjunction with other Council initiatives including the Merbein Community Plan, area wide speed limit reductions and LATM will create a safer and better connected community.



Appendix A

LATM Plan



SIGN & POST SCHEDULE

SIGN	WIDTH (mm)	HEIGHT (mm)	NO. REQUIRED
R4-1A	450	600	14
R4-10B	600	1000	48
R4-11B	600	1000	24
R4-1B-40	600	800	30
R4-1B-50	600	800	0
R4-1B-60	600	800	0
W5-10	600	600	16
RRPM			306
GALVANIZED STEEL POSTS	50mm NB		108

PLAN

SCALE 1:4000

CONCEPT ONLY

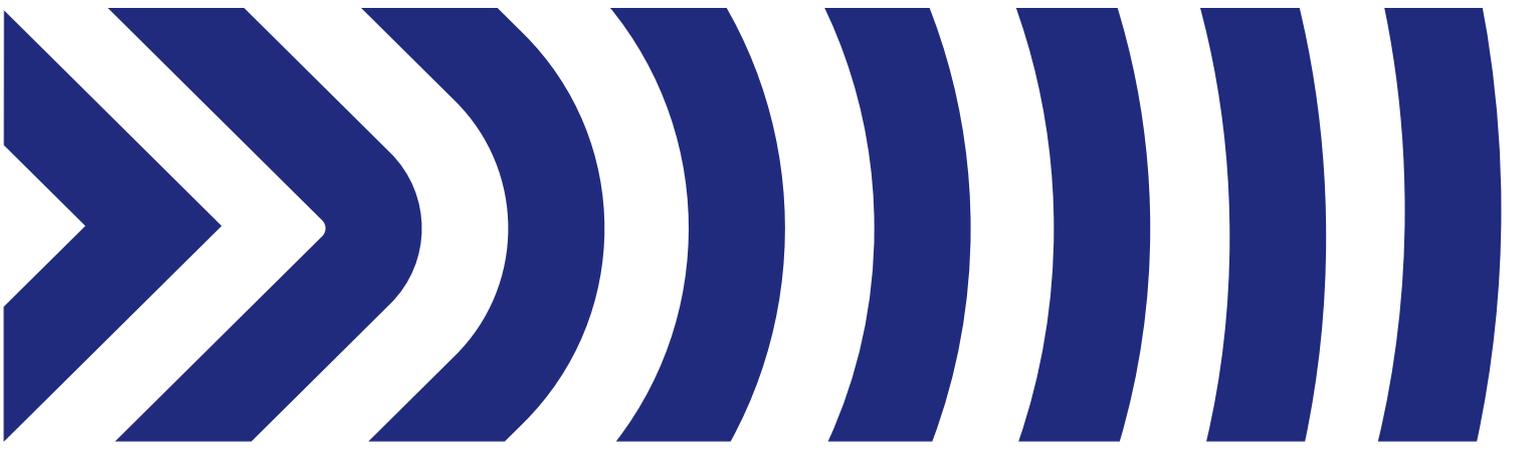


LEGEND	
	NEW 40 KM/HR AREA SIGN
	REPEATER 40 KM/HR SIGN
	END 40 KM/HR AREA SIGN
	NEW 40 KM/HR SIGN
	R4-10B
	R4-1A
	R4-11B
	R4-1B
	NEW SPEED HUMP SIGN
	NEW LINE MARKING
	NEW SCHOOL CROSSING
	NEW CONCRETE FOOTPATH
	W5-10A
	NEW CONCRETE ISLAND TREATMENT (ON BEND)
	NEW RAISED SAFETY PLATFORM TREATMENT
	NEW ROUNDABOUT WITH KERB OUTSTANDS AND ISLANDS
	NEW CONCRETE ISLAND TREATMENT

ISSUE	DATE	AMENDMENTS	APPROVED	DESIGNED:	CHECKED:	PROJECT:	PROJECT NO:
1	-		-	N MOORE	A BURKE	CYCLIST AND PEDESTRIAN SAFETY	-
				DRAWN:	SCALE:		SHEET No: 100
				N MOORE	AS SHOWN	DRAWING:	PLAN No: -
				CAD FILE NAME:		AREA MERBEIN	DATE: 27/10/2021
				Merbein Area Stils4			SIZE: A1



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Appendix B

Questionnaire



Merbein Walking & Cycling Plan Questionnaire

Mildura Rural City Council has been successful in obtaining funding from the TAC to prepare an action plan for the improvement of pedestrian and cyclist safety, plus connectivity, within the Merbein township.

The plan will aim to benefit pedestrian and cyclist activity in tourism, recreational, residential, schools and commercial aspects of the township.



* Required

What is your connection to Merbein? *

- I am a local resident
- I work in Merbein
- I like to shop in/visit Merbein
- Other: _____

What is your gender?

- Male
- Female
- Other: _____

What is your age?

Your answer _____

How do you normally travel around Merbein? *

- Drive a car
- Walk
- Catch buses
- Cycle
- Ride a motorbike
- Skateboard
- Manual scooter
- Motorised scooter
- Other: _____

Questions for Walking

What is your main purpose for walking in Merbein?

- Commuting to work/school/shops
- Exercise fitness
- Social recreational
- Other: _____

How often do you walk during the week?

- Daily
- Weekly
- Monthly

When walking in Merbein, on average how long do you walk?

- Less than 15mins
- 15mins
- 30mins
- An hour
- More than an hour

How would you rate the existing level of safety when walking in Merbein?

- 0 1 2 3 4 5
- Very unsafe Very Safe

What improvements should be made to increase your participation in walking?

Your answer _____

List up to 5 locations where there are existing safety issues for walking?

Your answer _____

Do you have any suggestions on potential improvements to address the safety issues you have identified?

Your answer _____

Thinking specifically of road crossings, nominate locations where you experience difficulties crossing?

Your answer _____

Thinking of walking in Merbein, identify any locations where there are missing links/gap in the network?

Your answer _____

Are there any other issues you would like to raise for walking in Merbein?

Your answer _____

Questions for Cycling

What is your main purpose for cycling in Merbein?

- Commuting to work/school/shops
- Exercise fitness
- Social recreational
- Other: _____

How often do you cycle?

- Daily
- Weekly
- Monthly

When cycling in Merbein, on average how long do you cycle?

- Less than 15mins
- 15mins
- 30mins
- An hour
- More than an hour

How would you rate the existing level of safety when cycling in Merbein?

- 0 1 2 3 4 5
- Very unsafe Very safe

What improvements should be made to increase your participation in cycling?

Your answer

List up to 5 locations where there are existing safety issues for cycling?

Your answer

Do you have any suggestions on potential improvements to address the safety issues you have identified?

Your answer

Thinking specifically of road crossings, nominate locations where you experience difficulties crossing?

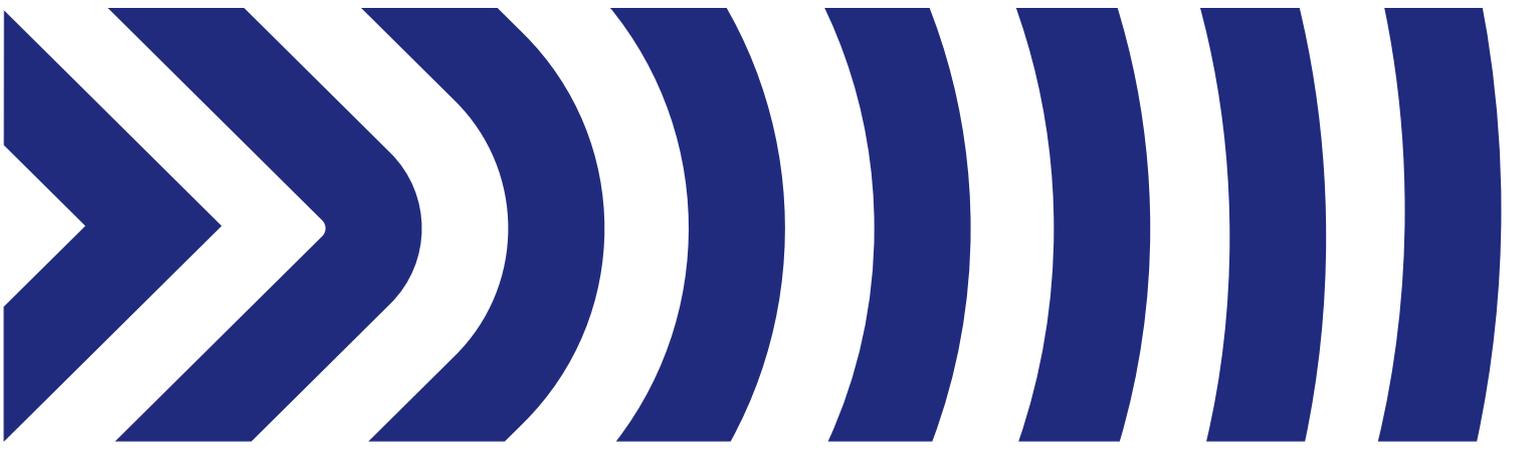
Your answer

Thinking of cycling in Merbein, identify any locations where there are missing links/gap in the network ?

Your answer

Are there any other issues you would like to raise for cycling in Merbein?

Your answer



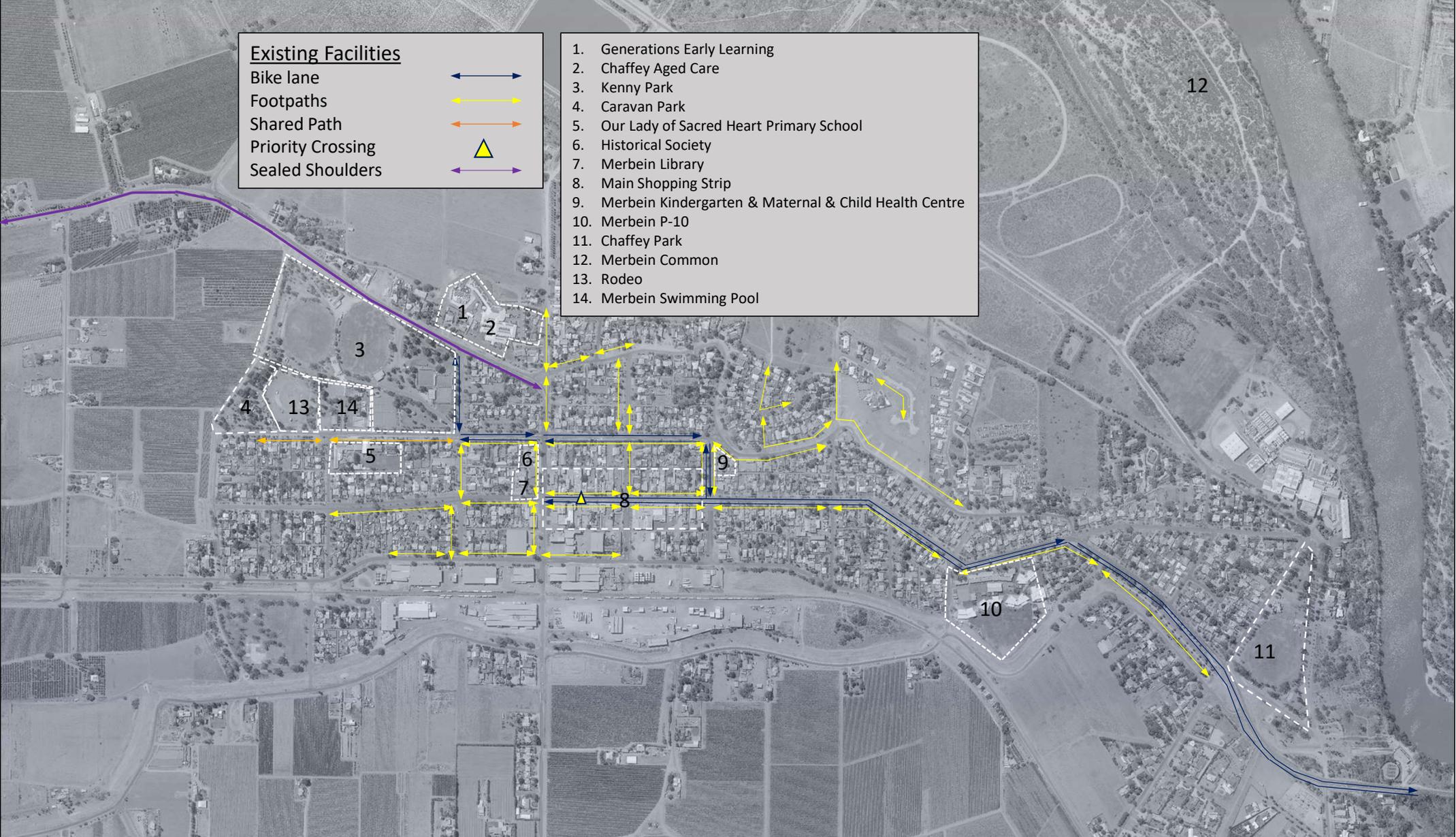
Appendix C

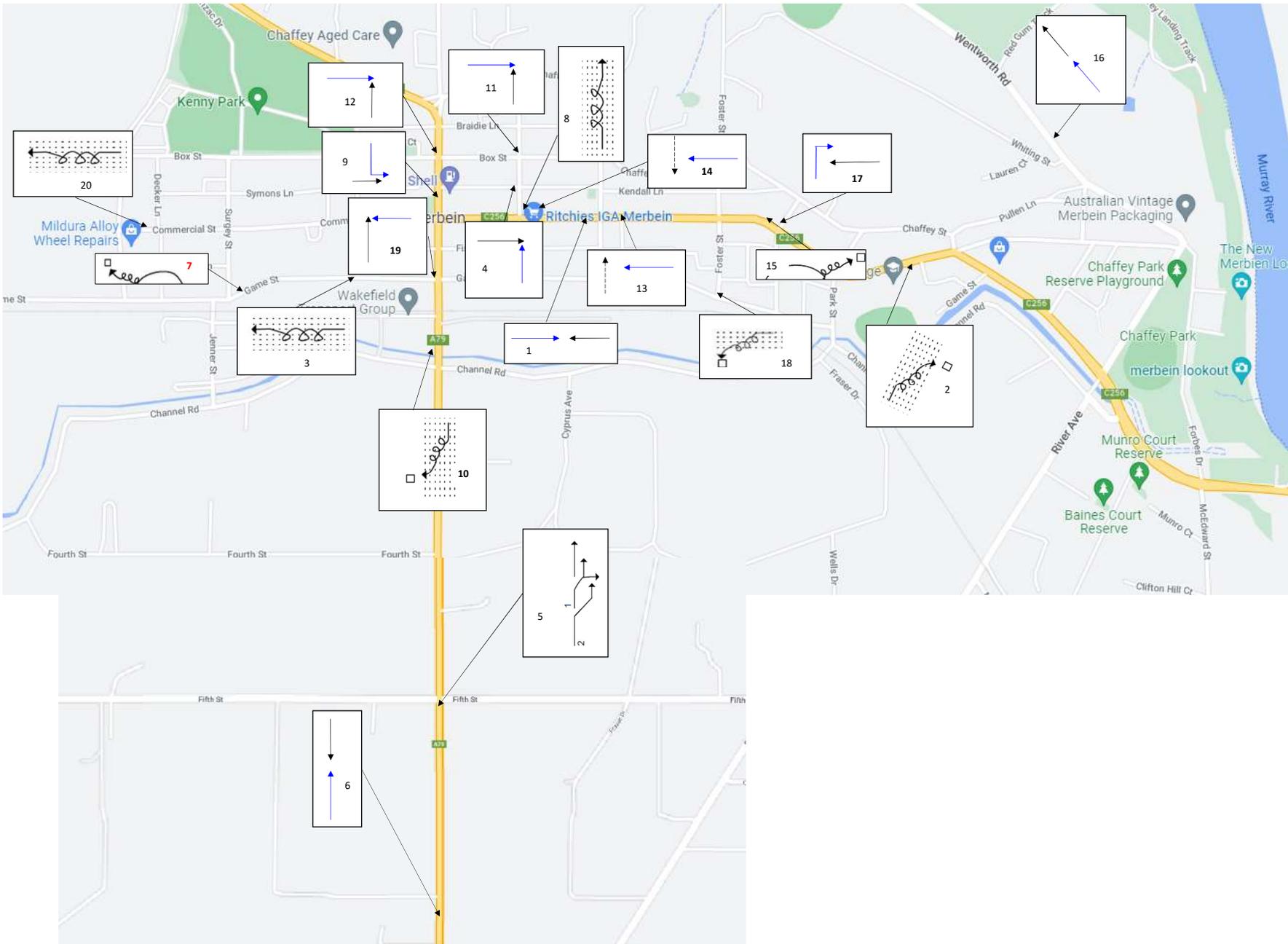
Figures 8, 9 & 10 (Enlarged Copies)

Existing Facilities

Bike lane	
Footpaths	
Shared Path	
Priority Crossing	
Sealed Shoulders	

1. Generations Early Learning
2. Chaffey Aged Care
3. Kenny Park
4. Caravan Park
5. Our Lady of Sacred Heart Primary School
6. Historical Society
7. Merbein Library
8. Main Shopping Strip
9. Merbein Kindergarten & Maternal & Child Health Centre
10. Merbein P-10
11. Chaffey Park
12. Merbein Common
13. Rodeo
14. Merbein Swimming Pool





Existing Facilities

- Bike lane 
- Footpaths 
- Shared Path 
- Priority Crossing 
- Sealed Shoulders 

Proposed Facilities

- Shared User Path 
- Bike Lane 
- Footpaths 
- Pedestrian crossing points 
- Sealed Shoulders 

1. Generations Early Learning
2. Chaffey Aged Care
3. Kenny Park
4. Caravan Park
5. Our Lady of Sacred Heart Primary School
6. Historical Society
7. Merbein Library
8. Main Shopping Strip
9. Merbein Kindergarten & Maternal & Child Health Centre
10. Merbein P-10
11. Chaffey Park
12. Merbein Common
13. Rodeo
14. Merbein Swimming Pool

