Banyule Bicycle Strategy

Including Action Plan 2022-2027

Banyule
City Council

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1.1 Introduction

1.2 General

Cardno Victoria Pty Ltd (Cardno) has been commissioned by Banyule City Council to aid in the review and development of a new bicycle strategy. The strategy will build on the achievements of the Banyule Bicycle Strategy 2010-2020 and will support cycling for recreation or transport becoming a viable and safe mode choice for everyone.

This draft strategy report provides a suite of recommendations to assist Banyule City Council to improve the quality of the bicycle network within the municipal boundary, increase connectivity to the surrounding network, and encourage cycling participation. These recommendations have been informed by a comprehensive assessment of the existing bicycle network within the City of Banyule. This assessment comprised the following:

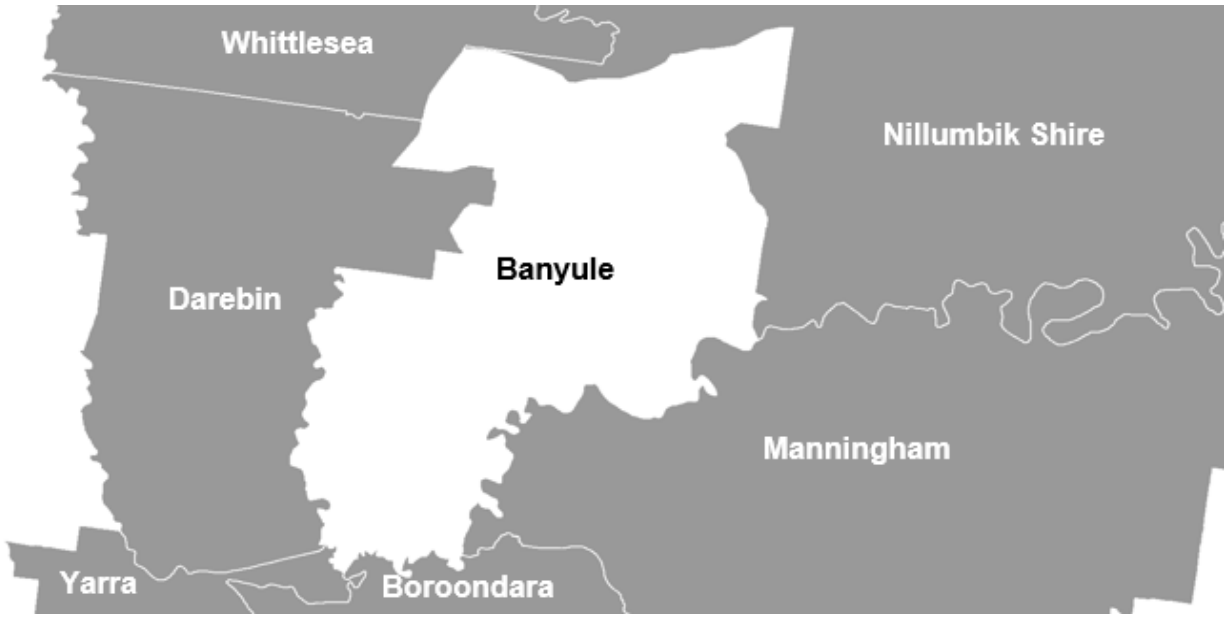
- A detailed site inspection;
- Community engagement including consultation with key stakeholders such as Department of Transport (DoT), Council, the Banyule Bicycle User Group and other local stakeholders;
- An assessment of existing facilities including traffic counts;
- Collation of Principal Bicycle Network (PBN) and Strategic Cycling Corridor (SCC) databases; and
- A literature review of existing background documentation including plans relevant to surrounding municipalities and greater Melbourne.

This draft report and recommendations are presented to Council and community for review and comment. Input gained through this process will be reflected in the development of the final Banyule Bicycle Strategy 2020 and strategic action plan.

1.3 Background

The Banyule local government area is located approximately 7km to 21km northeast of central Melbourne. Figure 1-1, shows the municipality in the context of surrounding councils. The Yarra River runs along the south-eastern boundary and Darebin Creek runs along the western boundary. Three Major Activity Centres (MACs) are located within this area, being Heidelberg, Ivanhoe and Greensborough. The La Trobe National Employment and Innovation Cluster (NEIC) is situated to the immediate west of the Banyule boundary, with the Metropolitan Ring Road and Greensborough Bypass located to the north. Banyule is primarily a residential area with a varying topography, including expansive areas of open space particularly along the Yarra and Plenty River valleys. Other key land uses include industrial uses, education institutions, health and leisure facilities.

Figure 1-1 Banyule Local Government Area



Based on the 2016 Australian Bureau of Statistics (ABS) census data, the population of Banyule is increasing at a 0.6% growth rate per annum with a median age of 39 years, higher than the median for both Victoria and Australia. Banyule is identified as having an ageing population which is forecast to continue over the next 30 years, resulting in an increase in the demand of health and aged care services.

In order to minimise the associated cost impact to all levels of government and maintain community wellbeing, it is vital to provide a high level of access to public open space for low-impact recreation as well as good quality active mode infrastructure which decreases reliance on private vehicle transportation. At present car dependency identified as being high in Banyule, coupled with a lack of provision and connectivity of cycling infrastructure. A number of major projects of state significance are planned or occurring within the municipality, providing both an obstacle and an opportunity with respect to the cycling network.

Improving cycling infrastructure is beneficial from a public health perspective, with additional environmental sustainability benefits associated with reduced private vehicle usage. Banyule City Council is committed to environmental sustainability having declared a climate emergency in 2019 and adopted an ambitious target of carbon neutrality by 2028.

1.4 Purpose of the Banyule Bicycle Strategy

The development of the Banyule Bicycle Strategy (BBS) will significantly contribute towards creating a safe, convenient and accessible network of cycling infrastructure for all ages and abilities. Consideration is to be given to linkages with other transport modes and key destinations, while complementing Banyule's natural environment, community character and the community's overall standard of living.

As an overview, the purpose of the BBS is to identify a set of objectives and key strategies to provide a framework for achieving this vision. This strategy seeks to do this by:

- Establishing a framework for investment that follows a regional and corridor-based approach;
- Prioritise a series of key actions to improve the provision of key cyclist infrastructure within Banyule;
- Encouraging investment in advocacy, education and building a strong cycling culture within different groups;
- Providing measurable benchmarking tools for goalsetting and measuring cycling trends;
- Considering constraints to cycling within Banyule including topography, scale and demand; and
- Advocate for inclusion of cycling infrastructure in all state government projects within the municipality.

2 Strategy Background

2.1 Existing Conditions

To inform the development of proposed recommendations to improve Banyule's Bicycle network and increase uptake within the region, Cardno has prepared a background report that investigated the existing conditions of bicycle infrastructure and community sentiment towards cycling within Banyule.

Specifically, the Background Report comprised the following elements:

- Literature review;
- Demographic data and cycling statistics;
- Site inspection;
- Consultation;
- Crash statistics and cyclist count data collection; and
- Assessment of existing infrastructure.

These elements are outlined briefly within the following sections. For greater detail please refer to the Background Report dated 1 June 2020 attached within Appendix A.

2.1.1 Literature Review

A number of background documents and studies were reviewed in developing this BBS, including:

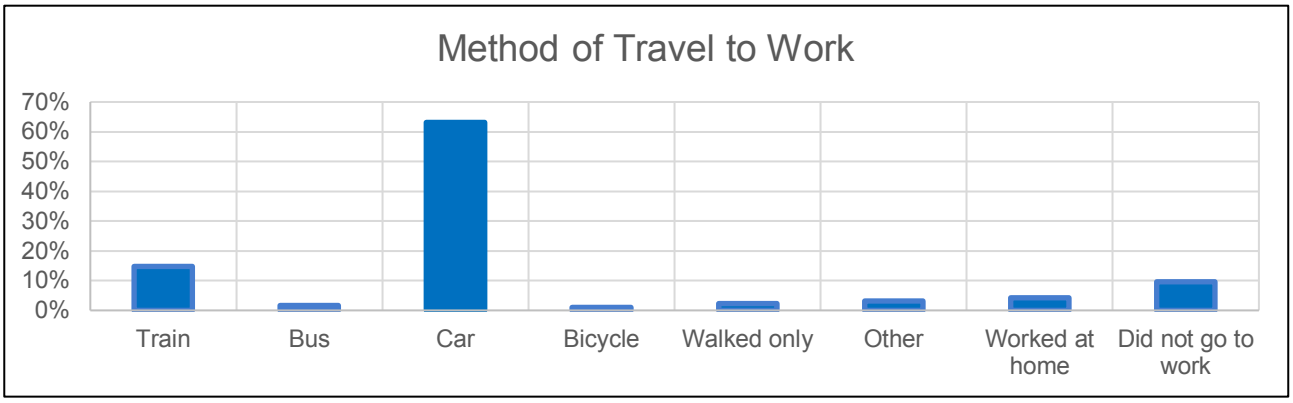
- Banyule Council Plan 2017-2021;
- Banyule Integrated Transport Plan (BITP) 2015-2035;
- Banyule Bicycle Strategy 2010-2020;
- Banyule Bicycle Route Review 2018 (draft);
- Banyule Safe Travel Plan 2016 – 2026;
- Neighbouring Council Bicycle and Transport Strategies;
- Strategic Cycling Corridors – Overview Document for Councils 2019;
- Bicycle Facilities at Banyule Rail Stations – Report 2019;
- Victorian Bicycle Strategy 2018-2028;
- Movement & Place (M&P) Framework 2019; and
- Northern Regional Trails Strategy 2016.

2.1.2 Demographic Data and Cycling Statistics

Demographic data collected in the 2011 and 2016 Census including age and employment distribution were compared against travel to work data throughout Banyule. In summary the following was observed:

- The median age of Banyule residents is 39 years old, with a greater proportion of older residents compared to Greater Melbourne – highlighting a need for Disability Discrimination Act (DDA) compliance, public and active transport infrastructure;
- 71% of working residents commute outside Banyule whilst 36% live and work within Banyule;
- Mode choice is generally outlined in Figure 2-1, outlining a high proportion of vehicle and train travel;
- Of those that cycled to work (1%), 85% of those surveyed were male and the majority of cyclists (58%) were between ages 30-49 years; and
- Average trip distance for cyclists within Banyule is 8km and for a duration of 36 minutes, it is noted that the CBD is located approximately 7km/h southwest of the southern border of Banyule.

Figure 2-1 Method of Travel to Work



2.1.3 Site Inspection

To build on the understanding of the cycling network and environment within Banyule, particularly from a cyclists' perspective, Cardno representatives undertook an extended site inspection on 23 January 2020.

During the site inspection, the following was generally observed:

- Within town centres there are limited facilities provided for cyclists.
- The topography of Banyule is generally defined by hills which combined with its distance from the CBD makes commuting regularly to and from the city from Banyule challenging for cyclists;
- Train Station car parking appeared to be exceeding capacity (i.e. cars parked on kerb), whilst bike parking at stations is inadequate;
- Bicycle infrastructure leading to and at railway stations is generally limited;
- While bicycle paths are provided in certain areas, they are not necessarily connected and often abruptly terminate;
- Off-road shared paths typically do not connect seamlessly to on-road facilities creating a number of missing links; and
- Wayfinding generally was lacking and did not sign connections sufficiently.

2.1.4 Crash Statistics and Cyclist Count Data Collection

In the five years between 2014 and 2018, out of a total of 977 crashes reported, 98 crashes (approx. 10%) involved cyclists.

- A majority of the crashes occurred on a weekday (approximately 83% of cyclist related crashes);
- 91% of bicycle crashes involved a collision with a vehicle;
- Of the total cyclist associated crashes, no fatal crashes were reported and were only deemed serious and minor, at a proportion of 27% and 73% respectively;
- Crashes are generally dispersed throughout Banyule, with particularly high-risk areas located within and between the southern border of council area and the Heidelberg town centre;
- Around one-third of cyclist crashes reported that a party involved was under the influence of alcohol highlighting a need for safer bicycle infrastructure and increased education around driving under the influence;
- Approximately 56% of the recorded cyclist crashes occurred at intersections and 44% at non-intersection locations; and
- Only 1% of crashes were reported at off-road locations. As noted previously, as crash stats data relies on reported incidents, these are often not presented at off-road facilities.

2.1.5 Assessment of Existing Infrastructure

2.1.5.1 *Existing Network*

Key public realm infrastructure for cycling typically includes on-road and off-road paths, bicycle parking and wayfinding signage. Broadly speaking, Banyule has good provision of off-road paths for cycling, however there is a lack of on-road facilities and connections to these off-road paths.

When cycling in Banyule, it is considered that wayfinding signage is sporadic. Whilst there are good examples of wayfinding signage, there are also key locations where more could be done to direct cyclists to connecting cycle routes. Furthermore, there are examples where wayfinding signage suggests routes which are discontinuous, or where an alternative route may be more appropriate.

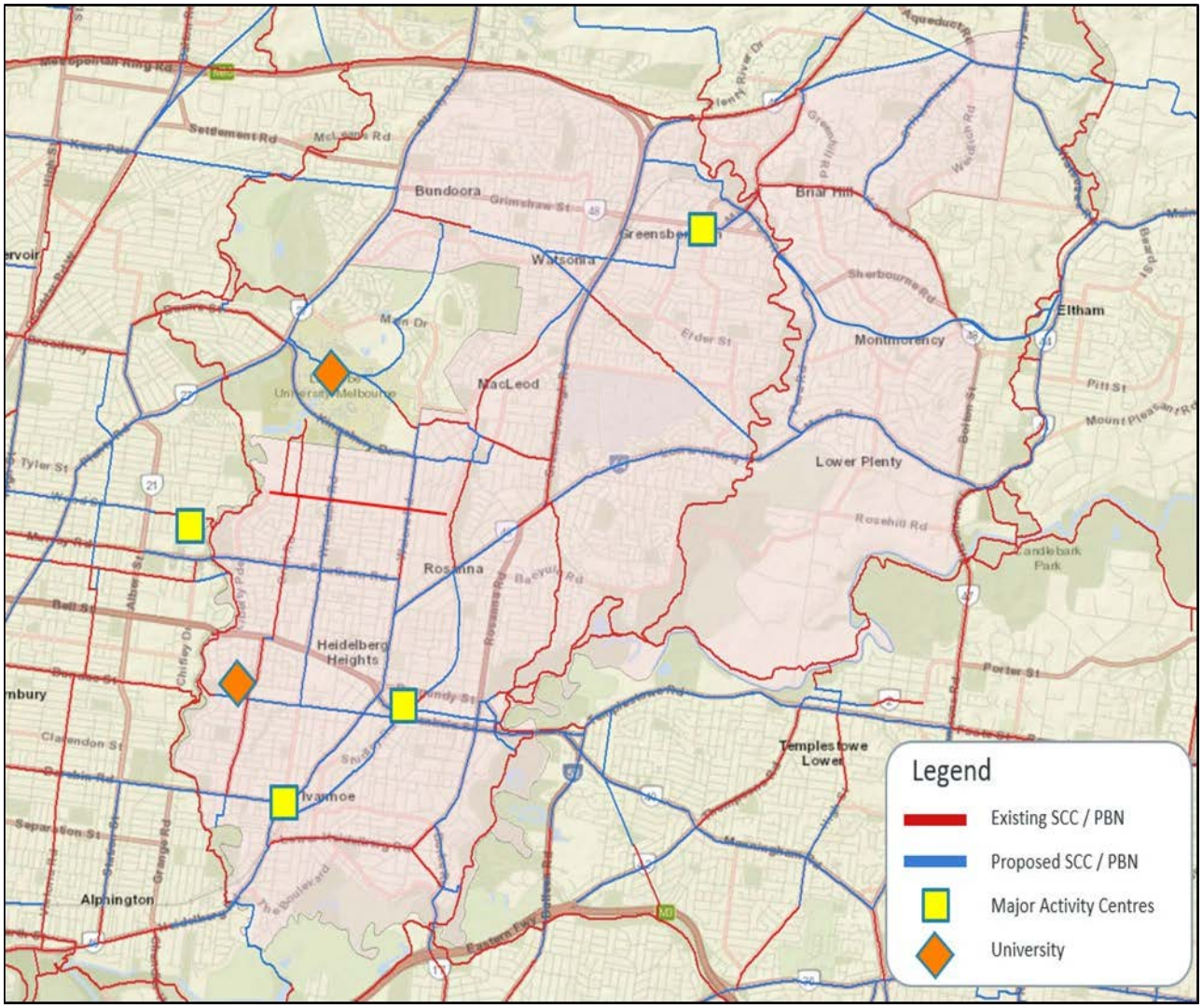
Banyule's cycling network consists of a combination of Principal Bicycle Network (PBN), Strategic Cycling Corridor (SCC), Local Bicycle Network (LBN) links and off-road trails as shown in Figure 2-2.

Principal Bicycle Network (PBN) – The PBN is a network of existing and proposed bicycle routes that provide access to key destinations in the Melbourne metropolitan area. The PBN is generally aligned along the arterial road network and major collector roads within Banyule, focused on connecting 'anchor' destinations such as Central Activity Districts. The quality of paths along the PBN varies greatly with some areas yet to be sufficiently developed to facilitate the proposed function.

Strategic Cycling Corridors (SCC) - The SCC network was first developed in 2015 by VicRoads. The network seeks to provide a safe alternative transport mode which will result in a lower-stress transport experience compared to other modes of transport. SCC are destination focus and priorities the safety of the rider, followed by the directness of the route. SCC are a subset of the PBN and are the most important routes for people cycling for transport as they link up important destinations (*Victorian Cycling Strategy 2018-28).*

Combining the existing and proposed PBNs and SCCs, Figure 2-2 outlines the combined existing and proposed cycling routes throughout the network. Although there are many routes proposed across the network, many are still to be implemented leaving significant gaps throughout the network, including within the proximity of major activity centres. This map provides a picture of the difficulties confronting cyclists within the municipality, with direct routes generally not supported throughout. It is noted that although these maps were last dated in 2016, based on observations during site inspection, this figure continues to provide an accurate representation of the existing network.

Figure 2-2 Existing and Proposed Strategic Cycling Corridor & Public Bicycle Network



Network routes courtesy of Department of Transport (Dated July 2016)

2.1.5.2 *Topography*

Banyule is described as having an undulating topography, with the elevations typically higher in the north than in the south. From a cyclist's perspective, the undulating terrain is more notable in the eastern and northern portions of the municipality surrounding Greensborough and Montmorency where gradients in excess of 5% are common.

In combination with typically lengthy commuting distances required from Banyule residential areas to key employment centres (i.e. CBD, La Trobe University) the surrounding topography is considered to create a significant barrier for daily commuting trips.

2.1.5.3 *Major Activity Centres (MACs)*

The absence of on-road paths is notable towards and through the centre of Banyule's MACs, at Ivanhoe, Heidelberg and Greensborough. Generally, cycling related infrastructure within activity centres include bicycle parking hoops, wayfinding signage, warning signage and bike lanes, either dedicated or shared, is lacking

In terms of railway station bicycle parking, 'Parkiteer' secure bicycle parking has been provided at Greensborough, Heidelberg, Rosanna, and Watsonia Railway Stations. It is understood that all other stations in Banyule are provided with bicycle hoops at a minimum, albeit limited in some cases. Upon inspection, it appears that existing bike parking at stations has room to accommodate further demand, with the exception of Ivanhoe Station.

2.2 Consultation

The Banyule Bicycle Strategy has been developed to guide Banyule becoming a municipality that:

- Enhances the natural environment and liveability of our places by supporting cycling as a key form of zero-emission transport.
- Implements a network of safe, convenient and accessible cycling routes with linkages to other transport modes and key destinations.
- Embraces the health, social, economic and environmental benefits of cycling.
- Encourages and promotes a cycling culture for all ages and abilities.

The development of Banyule Bicycle Strategy has included three key phases of consultation – two supporting the exploration of issues and opportunities for cycling within the municipality and one seeking feedback after the release of the draft strategy. These are outlined below.

2.2.1 Phase One – Initial consultation: Banyule Bicycle Route Review

In May 2018, Banyule City Council commenced preparatory work to inform the development of a new municipal bicycle strategy. This early work included a review of the existing Banyule Local Bicycle Network (LBN) involving an audit of the routes for completeness, usability and safety. It also included updated GIS mapping of all routes.

Council also conducted a preliminary community consultation via the engagement website, Shaping Banyule, promoted in the *Banyule Banner* and by the distribution of postcards. The consultation sought feedback on cycling journeys within Banyule and asked:

- What makes them special?
- What would make a positive difference to your ability to undertake these journeys?

2.2.2 Phase Two – Stakeholder Workshop and BikeSpot 2020

Work on the development of the draft strategy commenced in November 2019 and on Wednesday 5 February 2020 a stakeholder workshop was held at Council. The workshop was organized and jointly hosted by the transport consultants, Cardno and Banyule City Council, with 30 participants, including members of the Banyule Bicycle User Group (BUG), Department of Transport, Bicycle Network, Banyule Councillors, representatives of Council service units (Open Space Planning, Transport Engineering, Community Programs, Assets and City Services), members of the community and representatives of neighbouring Councils. For stakeholders that could not attend, feedback was also received via e-mail and telephone contact. ,

Comments were sought on the positive and negative aspects of the existing bicycle network within Banyule as well as any opportunities that these groups see for improvement throughout the municipality. Some of the key themes identified from the consultation are highlighted below:

> There is a strong demand for additional bicycle parking infrastructure which includes increased parking at schools, town centres, parks and railway stations;

> Signage for pedestrians and cyclists was highlighted regularly by stakeholders as a major issue to be addressed;

> Increased community engagement in regards to cycling within the municipality including education, training, beginner routes and promotion at schools is required;

> Banyule has an opportunity to advocate for cycling infrastructure to be included within major transport projects such as North East Link Projects (NELP) and the Hurstbridge Railway Line Upgrade; and

> Greater connectivity is required between and at major activity centres, neighbouring council networks, La Trobe University, community facilities such as parks, sports fields and skate parks, schools and hospitals.

From 31 March to 31 May 2020 Banyule City Council also participated in BikeSpot 2020. This project, developed by the online engagement firm, CrowdSpot, and the Amy Gillett Foundation, asked Victorians to share their perceptions of cycling safety at various locations by adding a Safe or Unsafe spot to a web-based interactive map and providing comments.

2.2.3 Phase Three - Public Exhibition of draft Banyule Bicycle Strategy

The draft Banyule Bicycle Strategy was presented to Banyule City Council at the ordinary meeting held on 1 March 2021. Council resolved to approve the public exhibition of the draft strategy for a period of six weeks. The initial engagement period was scheduled from 24 May to 5 July 2021. This was extended to 30 July 2021 to allow for the rescheduling of activities cancelled due to restrictions associated with Victoria's fourth COVID-19 lockdown.

The public exhibition period and consultation activities were advertised via the *Banyule Banner* and via postcards and posters printed and distributed to Council Service Centres, libraries, leisure centres and bicycle retailers. The primary purpose of phase three was to obtain community and stakeholder input on the draft Banyule Bicycle Strategy and identified issues, opportunities and recommendations.

A full summary of public consultation activities undertaken during three stages is presented in Appendix C of this report.

2.3 Summary of Issues

The background work undertaken in the preparation of this strategy has identified the following:

- Anticipated rapid growth in the northern region reaching a population of 1.6 million people in 2050 (Victoria in Future, 2016) coupled with the ageing population of Banyule highlights the need for associated open public realm space, health and aged care services;
- A significant number of paths have missing links throughout the network. Currently, cyclists have to navigate roads without satisfactory cycling facilities, take detours or dismount and walk along the pedestrian footpaths, particularly in town centres;
- There is typically no road space allocated to bicycle infrastructure throughout Banyule, there also appeared to be limited bicycle parking available in town centres;
- Female riders represented just 15% of Banyule cyclists which is below average female ridership representation in Victoria (22%);
- A majority of the cycling associated crashes occurred during weekdays, which could be related to cycle commuting to work;
- Physical barriers to bicycle network connectivity such as major road, rail lines, rivers and topography;
- General concern regarding the impact of the North East Link project to cycling connections and breaking any momentum; and
- Only 14% of the LBN are off-road cycling facilities. Most of the cycling associated crashes were reported along on-road cycling routes. Off-road facilities are generally safer for cyclists as these facilities have greater horizontal separation from vehicles than that of on-road facilities.

2.4 Summary of Opportunities

Similarly, a range of opportunities has also been identified in the preparation of this strategy that have been further explored and reflected in the recommendations.

- There is an opportunity to increase the number of commuter cyclists to the CBD through the provision of high-quality cycling facilities and more direct commuter cycling routes within Banyule, given the demand for this commuting movement. Based on *'idcommunity'* profile data, only 1% of the working residents preferred cycling as their main method of travel versus 63% using a car. This presents an opportunity to introduce means to encourage a modal shift from vehicles to cycling;
- There is also an opportunity to provide direct cycling routes through realignments and provision of missing links;
- There are numerous opportunities to provide additional and more direct routes to improve travel time as well as safety, particularly for cyclists;
- The identification of key trip attractors and the bicycle infrastructure network provides an opportunity to prioritise key areas, for example ensuring safe connections to schools and recreational facilities;
- Improving safety by reducing the road speed limits in appropriate locations, particularly within and around town centres. This would improve safety benefits with minimal effect on vehicle travel times;

- There are opportunities to increase bicycle parking and connections to railway stations, recreation reserves and schools, where car parking in many areas is at or is close to capacity, bicycle parking provides an alternative option;
- Promote and implement grass roots community measures to increase the uptake of cycling; and
- Investigate opportunities to provide additional end of trip facilities to encourage and facilitate cycling.

3 Benchmarking

3.1 Vision

The vision of this cycling strategy is:

- To ensure that cycling is a safe alternative mode of transport throughout the whole municipality;
- To make Banyule a cycling friendly region for all ages;
- To significantly increase the use of cycling as a mode of transport and reduce the dependence on private vehicles; and
- To embrace a cycling culture and its health, social, environmental and economic benefits; and
- To continue to promote cycling for transport to work, studies and recreation.

3.2 Benchmarking

To achieve this vision the following benchmarking concepts are introduced to begin contemplating some broad targets that Banyule City Council can seek to achieve through the establishment and implementation of a Bicycle Strategy.

These benchmarking concepts are intended to be objectives of the Banyule Bicycle Strategy that are also measurable indices that Banyule could check prior to and after the implementation of cycling facilities / promotion throughout the region.

As such it is envisaged that each benchmarking concept introduced is measured via appropriate tools on a regular basis to determine the effectiveness of treatments. This may be on a municipality wide basis or via 'spot checks' within the relevant vicinity of key areas such as schools, stations and activity centres.

3.2.1 Volume Increase

The primary benchmarking indicator for measuring the increase in cyclists is determined by simply counting the number of cyclists at different points in time. The increase in volume of cycling is and can be widely measured within Census data, but also on local level with targeted cyclist counts along popular routes.

There is one (1) permanent bi-directional bicycle counting station located on the Darebin Creek Trail near Heidelberg Road and Willowbank Grove, Ivanhoe. The counter location can be used to establish a profile and trends that measure the increase of cyclists over time. However, with only one counter, this provides a limited picture of the wider municipality. Installation of additional counting stations and/or undertaking regular cyclist counts (i.e. annually) within Banyule would be required to effectively assess the effectiveness of treatments over time.

3.2.2 Gender Ratio

A high proportion of female cyclists is a strong indication of the health of a city's cycling environment. The higher the proportion, the better the cycling infrastructure. In the top international cycling cities, women tend to comprise around 50% of cycling numbers. Generally, this benchmark is most easily measured through Census data as gender is not something that is generally measured in a typical cycling count.

3.2.3 School Aged Children

A key way to gauge the change in trend of cycling is to observe the proportion of children cycling to school. An increase in school aged children riding to school will likely have flow on effects as they are more likely to consider cycling in the future.

Additionally, in the short-term the independence provided to children by cycling may reduce the requirement of vehicle trips by their parents including school drop-offs, to sporting training and events, and socially to the shops and friends' places.

Through the establishment of a close relationship between schools regarding the promotion of cycling through the City of Banyule, the proportion of school aged children cycling may be measured by surveying schools / students / parents or through observing school's bicycle parking data.

3.2.4 Road Speed

30km/h road speeds are quite common in European cities for local and residential streets where cycling infrastructures exists. The prevailing justification is that the severity of injuries to pedestrians and cyclists in collisions involving motor vehicles is much less than that at 50 km/h, and that lowering link speeds has a marginal impact on vehicle journey times in cities, compared with delays at intersections. From a local context, we are beginning to see inner-city municipalities trial and adopt 40km/h road speed limits, to improve the safety and comfort for cyclists.

Within Victoria, Yarra City Council has widely adopted 40km/h speed limits on local roads and recently been trialling 30km/h road speed limits in portions of Fitzroy and Collingwood, with the 12-month trial resulting in Council recommending to retain areas of 30km/h road speed limits permanently. Similarly, Maribyrnong City Council as part of their strategy to improve road safety and increase cycling as a mode of transport throughout the municipality is adopting a 40km/h speed limit on all local streets.

Given the topography, size and density of Banyule it is considered that a widely adopted speed reduction across the municipality is not necessarily appropriate, however in certain locations, the reduction of road speed in combination with supplementary treatments may greatly assist in reducing increasing confidence and safety for cyclists within Banyule.

For clarity, within the context of improving conditions for cyclists, it is considered that the speed reduction has to be signed to be properly effective. For example, a reduction in the average traffic speed to 40km/h from 50km/h due to congestion is anticipated to have less of an impact in increasing the perceived safety of the roadway for cyclists compared to a signed 40km/h speed zone.

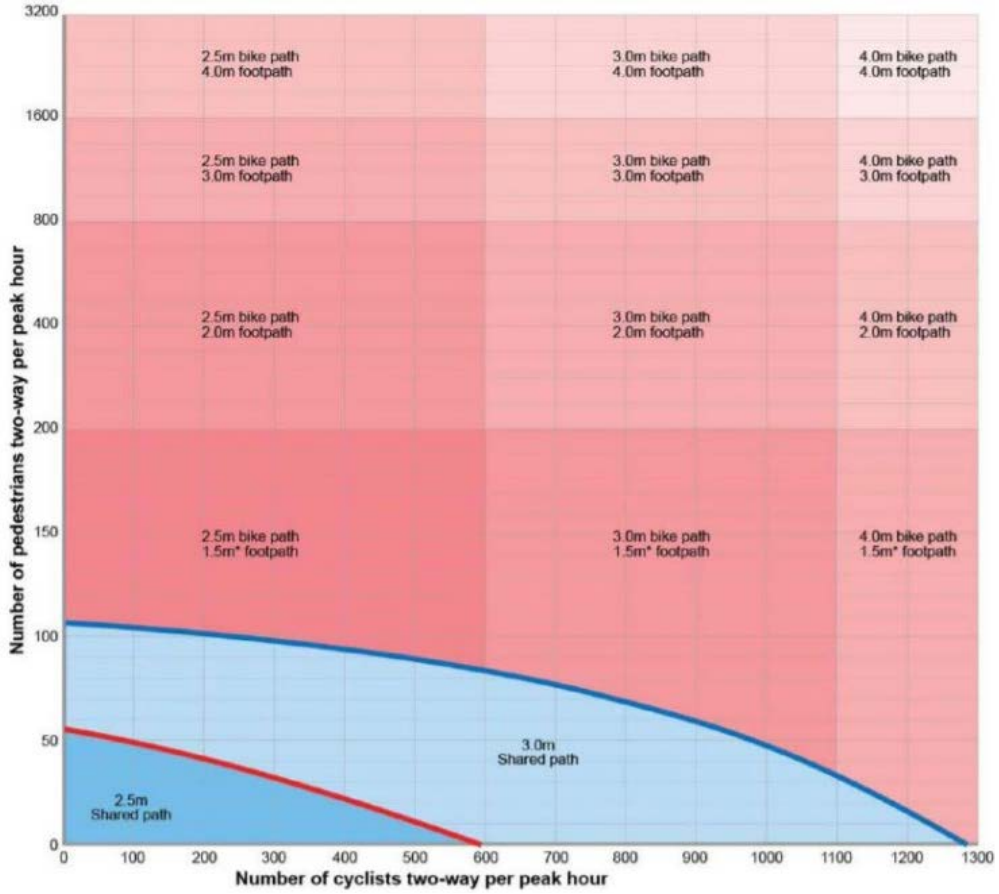
3.2.5 Fit-for-Purpose

In the review of pedestrian, vehicle and cycling counts, Banyule Council should ensure that the cycling infrastructure, such as on-road cycle lanes and shared user paths, are fit for purpose. There are many factors which inform this, however main considerations include providing sufficient widths and quality of infrastructure to ensure that the bicycle passage is maintained and provides an appropriate level of comfort and safety.

Considerations for fit for purpose should consider the volume and type of cyclists. For example, surrounding schools, on-road bicycle paths on busy streets are less appropriate and less likely to be adopted, whilst on-road paths on quiet, local roads or off-road paths are more appropriate.

Regarding volumes, Cycling Aspects of Austroads Guides (Austroads 2017) Figure 3-1 below outlines the types of cycling paths recommended in areas with high proportions of cyclists and pedestrians.

Figure 3-1 Path Widths for a 75/25 Directional Split



Source: Cycling Aspects of Austroads Guides (2017)

3.2.6 Mode Choice

As shown in Figure 2-1, cycling within Banyule comprises a very low portion of mode choice for people travelling to work (1%). As such, this benchmarking device, as measured within the Census may provide a clear indication in the future, if implemented strategies are increasing this aspect.

It is noted, that there are many other less measurable trips that the community must make a decision of mode choice. Examples include:

- Regular trips to the shops
- Recreation trips (including riding to the park as opposed to driving);
- Trips to sporting events, pool and gym facilities; and
- Any other social trip made.

3.2.7 Cycling Safety

As outlined within Section 2.1.4, throughout Banyule there were 98 reported crashes involving cyclists over the last 5 years. Although a large proportion of this strategy focuses on increasing bicycle use throughout Banyule, the other and equally important focus is to ensure that cycling within Banyule is safe.

Generally, it is considered that the two goals can be considered in the same light, as increasing the actual and perceived safety will likely encourage new users who may be more uncomfortable than existing cyclists to adopt cycling.

Going forward, it is important to look at crashes involving cyclists under a lens that also considers the increase in cycling trips. For example, if there are approximately 20 crashes involving cyclists per year at current, if the number of cycling trips doubles over the next 5 years and 20 crashes per year is retained, the number of cycling incidents per trip has effectively halved. Nonetheless, the aim should and always will be minimise the chance an occurrence of incidents as much as possible.

4 Considerations

4.1 Government Policy

Changes to cycling policy enforce a structural and cultural change at all levels, policy changes can be made by Council through changes during revisions of the Planning Scheme, or through advocacy to key stakeholders including VicRoads / DoT the State and Federal Government and inclusion within major projects within the municipality.

Policy changes may be indirect or direct and include measures such as:

- Elevating the status of cycling within local government and advocating to elevate the status of cycling within State and Federal Government;
- Increasing bicycle parking at new developments including private parking on-site and publicly available on-street bicycle parking;
- Reducing the requirements for car parking and therefore encouraging shifts to active and public transport;
- Including requirements to provide e-bike charging stations;
- Ensuring public space and council assets provide parking and end of trip facilities.

In order to be effective, policy changes should be consistent at all levels of government, and accord to neighbouring municipalities. In order to be successful, projects and programs will need to be focused at addressing the needs of different groups, issues and locations. Funding similarly will be required to be split across several programs and be committed across a number of years to ensure momentum in continuing to build a cycling culture throughout Banyule.

To encourage support within Council, rides could be organised for local councillors including both within their municipality and exemplary areas nearby to provide an understanding of the potential opportunities of a cycling network and existing issues and constraints within their network.

Prior to the commitment of new infrastructure, Council can also consider conducting trials including reallocation of road space, road closures or other temporary measures to gauge local support to cycling improvements within an area.

4.2 New Infrastructure

Naturally, the provision of new and/or improved infrastructure will encourage existing or potential cyclists to adopt cycling as a mode choice. These could be for factors such as:

- Decreasing travel time by providing an easier, more direct or prioritised route;
- Increasing the safety of the journey;
- Increasing trip comfort and ease of use; and
- Enhancing the aesthetic journey, particularly for recreational trips.

Although, there are wide variety of infrastructure improvements to improve cycling throughout the Banyule bicycle network, infrastructure improvements should generally targeted to align with other objectives of this strategy and encourage repeated choice of cycling as a mode within the following areas and for relevant user groups:

- Schools,
- Stations; and
- Commercial and shopping precincts.

Some example treatments available to improve the cycling infrastructure are outlined below:

4.2.1 On-Road (Mid-block) Facilities

On-road mid-block facilities should assist with allowing cyclists to be remain a safe distance from live traffic and allow for travel at moderate to high speeds (30+km/h). Some examples of mid-block facilities that can be provided include:

- Protected bike lanes (i.e. Copenhagen or kerb-separated);
- Unprotected on-road bike lanes;
- Bus-Lanes;
- Sharrows;
- Contra-flow bicycle lanes (i.e. one-way for vehicles, two-way for cyclists)
- Wide kerbside lanes or shoulders

Noting that Banyule is generally a well-developed municipality with established roads limited available space to install new infrastructure, the construction of on-road cycling infrastructure will likely rely on space in the road reserve being reallocated to prioritise cycling.

Creating space for cycling can be achieved by a number of mechanisms including:

- Road widening including of the verge, median, and shoulders;
- Indenting or restricting car parking;
- Removing traffic lanes;
- Closing a road to vehicles; and
- Adjusting the existing carriageway (i.e. narrowing traffic lanes).

4.2.2 Intersections

It is also important to consider the intersections of the road network with off-road paths. At these locations treatments such as the following may be provided

- Dedicated signal phases;
- Bike boxes;
- Hook turn boxes (see Rathdowne Street example in Figure 4-1);
- Refuges;
- Multi-lanes (i.e. roundabouts)
- Slip lanes;
- Raised crossings;
- Cyclist priority crossings (shared path has priority over vehicle movements) (See St Georges Road example in Figure 4-1); and
- Signalised crossings (including provision of dedicated bike lane).

4.2.3 Off-Road Paths

Off-road cycling paths are generally broken down into three categories, and depicted in

1. Shared User Paths (SUPs) where the space is shared by both pedestrians and cyclists (left)
2. Exclusive Bicycle Paths for cyclists only, which may be sealed or unsealed. Typically, pedestrians are provided with their own path adjacent to the bike path (middle); and
3. Separated zones within a single path or carriageway (right).

Figure 4-1 Off-Road Paths

As outlined within Figure 3-1, the provision of each should consider bicycle and pedestrian volumes.

4.2.4 Other Considerations

Transitions

At transition locations where the on-road bike lane meets the off-road bike path, ramps should be provided linking the path and road carriageway. At these locations wayfinding signage should also be provided to assist cyclists transition into the changed environment.

Sight distances should be clear so that cyclists have visibility of pedestrians & vehicles when approaching and travelling across the ramps. In higher speed environments, pavement markings and signage directed at vehicles should be provided in addition to the ramps.

Pedestrians should not be able to mistake the ramp as a crossing location.

Soft / Indirect Measures

A number of other infrastructure requirements that are generally required to support cyclists including both on and off road include:

- Wayfinding;
- Bicycle Counters;
- Fixiteer Stations;
- Lighting;
- Speed Reduction; and Pavement Repair.

Figure 4-1 highlights examples in Melbourne of some of the measures identified in the preceding sections.

Figure 4-2 Example Cycle Network Treatments

Signalised Bike Hook-Turn
(Rathdowne Street, City of Melbourne)

On-Road to Off-Road Transition
(Napier Street, City of Yarra)

Road Narrowing with Cycling Priority
(Ethel Street, City of Darebin)

Cycling Priority Crossing
(St Georges Road, City of Darebin)

4.3 Safer Routes

All new and existing facilities should be considered proactively to be made as safe as possible. Increasing the safety of routes, will increase confidence of cyclists and make the journey more enjoyable resulting in repeated choices of cycling as a mode choice.

Victoria's 'Towards Zero' plan aims to ensure no one is seriously injured on the roads. 10% of the overall $1.4 billion dollar investment is focused on infrastructure for pedestrians and safe cycling and includes measures such as:

- Protection for vulnerable users including separate lanes for cyclists;
- Raised crossings at intersections with off-road shared paths;
- Traffic calming in busy areas such as shopping strips and town centres; and
- Reducing speeds including to 30km/h on local roads to reduce the likelihood of road trauma.

Considering the topography of Banyule, it is noted that more on-road protection is required for cyclists who are ascending hills as their speed differential to adjacent vehicles will be higher. Cyclists tend to 'wobble' more uphill, as it requires more effort compared to flat and downhill environments.

4.4 Bicycle Parking

Bicycle parking serves as the end terminal allowing cyclists to safely and reliably secure their bike. As such, parking supply and convenience is a key determinant of cycling for both current and potential cyclists.

For example, if the location of safe parking is not known to a gym patron, a potential cyclist may choose to drive under the expectation that their bike may be stolen or damaged when left unattended.

The wide presence and high visibility of bicycle parking at important destinations including shopping precincts, work places, schools, public transport facilities and recreational facilities encourages the take up of cycling.

Bicycle parking can increase the catchment area of public transport and the convenience and presence of well positioned bicycle parking spaces and hoops can encourage a change in mode, particularly in busy or paid parking areas. In long-term parking areas (such as railway stations) highly visible areas with consistent video or pubic surveillance should be provided.

It is noted that, as part of this strategy's investigation within Banyule, the occupancy of Parkiteer stations at stations remained relatively low. Usage of these facilities may be low if people are not aware of their existence or consider the sign-up process a barrier. Whenever any of the advocacy channels outlined in the following section are implemented, the use of Parkiteer stations and any other relevant parking facilities (i.e. at workplaces) should be encouraged as appropriate.

4.5 Advocacy

In addition to the initiatives outlined above, creation of a cycling culture within the municipality can be kickstarted or accelerated by a wide variety of advocacy tools as outlined below:

4.5.1 Online Resources

Banyule has a great opportunity to update its on-line cycling resources which are currently limited.

Information that can be included on the website, potentially on a dedicated cycling page include:

- Online cycling maps including
  - Route maps;
  - Locations of bicycle parking;
  - Locations of bike maintenance 'fixiteer' stations; and
  - Locations of bike shops.
- Training and education events and services such as bike skills, ride to school and community rides;
- Bike hire / loan (potentially free)

- Links to wider available resources such as community cycling groups, Parkiteer registration, Bicycle Network and other useful resources
- Links to grant application opportunities; and
- Dedicated Council contact information.

4.5.2 Training and Education

There are many resources available to assist in cycling education and encouragement as outlined below.

4.5.2.1 *Education Modules*

Road Safety Education Victoria (roadsafetyeducation.vic.gov.au) provides a wide range of modules and learning tools aimed at all ages from pre-school through to tertiary including many that focus on all sorts of aspects of cycling.

These can be all found at the online resource: http://www.roadsafetyeducation.vic.gov.au/

4.5.2.2 *Council / User Group Training Schemes*

The implementation of training schemes to teach existing or potential cyclists bike handling, repair, maintenance and education on cycling, including sharing of local tips within the area is a great way to encourage more people to ride.

These events can be formal events supported through Council funding or through volunteers, or informal booths and promotion events in high activity areas with offerings such as free coffee. Throughout the consultation process for the Banyule Bicycle Strategy a number of organisations discussed the value of these and are likely to want to be involved, including Bicycle Network Victoria, local Bicycle User Groups and youth groups. As discovered through the consultation process, there are likely to be many groups within Banyule willing to assist that could be greatly successful backed with the right support and promotion.

4.5.3 Events

Encouraging participation in events such as triathlons, fun rides or trail days is a great way to introduce and familiarise people of all ages with cycling. With this encouragement and support, riders may feel more comfortable to take up cycling on a more regular basis.

Considering Banyule's provision of trail rides and wide open spaces, there is a great opportunity to provide a number of off-road events that could introduce or encourage the uptake of cycling.

4.5.4 Ride To School

Encouraging cycling within schools can and should be facilitated by a wide variety of methods including:

- Increasing safe and secure bicycle parking provision at schools;
- Encouraging participation in Bicycle Network Australia's national ride to school day and RACV Great Victorian Bike Ride;
- Ensuring that bicycle infrastructure surrounding schools facilitate the safe movement of young cyclists, including additional provisions at signalised crossings, off-road paths where possible and wide, smooth and safe footpaths where not currently provided;
- Encouraging parents & teachers to take up cycling as ambassadors as role models; and
- Exploring potential reward schemes.

Figure 4-3 Ride to School

Image Courtesy of Bicycle Network Australia

4.5.5 Bicycle Share Programs

Public bicycle share programs make bicycles available for rent throughout an area, they are typically implemented to increase cycling levels and to facilitate the beginning and end of public transport journeys.

Studies of the effectiveness of these programs generally have mixed results. Within Melbourne, these programs have a well-publicised history of issues, however there remains an option to increase the number and popularity of a cycling within an area.

Within Banyule specifically, due to the surrounding topography, population density and size, generally it is considered that the typical programs on manual bikes are unlikely to be successful. However, the recent introduction and possibility of electric bicycle share programs (even on a local rented level) may make this option more viable.

Figure 4-4 Jump Electrical Bike Share (Uber)

Image Courtesy of RACV

4.5.6 Open Streets (Car-free Days)

'Open Streets' refer to temporarily closing streets to vehicle traffic to allow the public to reclaim the streets as a public space allowing for safe walking and riding. These days can be created by annual local fates or festivals, and provide an opportunity for Council to promote alternative transportation.

4.6 Other Considerations – Impacts of Covid-19

Commencing in March 2020, the wide reaching impact of Coronavirus including social distancing, changes to work routines and employment throughout Victoria is likely to extend for a period of months or even years. Looking forward, the implications of Covid-19 are also likely to extend to Victoria's transport network with ongoing discussions regarding the impacts including:

- Reducing the capacity of public transport due to social distancing;
- Workplaces have been called to stagger their work hours to spread peak flows, and to adjust their typical hours of operation and requirements, with many more workers to work from home; and
- As public transport becomes less viable commuters and travellers will be forced to rely on alternative transport modes including private vehicles and bicycles.

Regarding cycling specifically, if more commuters are drawn to private vehicles it is possible that the network becomes even more congested compared to pre-Covid-19. As such cycling is likely to become much more attractive as it is likely to become more efficient, particularly where employees live within a rideable distance.

It is noted that within the month of April 2020 during Stage 3 restrictions (everyone to work at home except for essential workers), studies undertaken by the Bicycle Network have shown that cycling volumes have increased by 270% compared to November 2019. This is particularly the case with many people seeking to pursue activities to provide a break from the house and to remain active. Specifically, in the vicinity of Banyule, a count on the Koonung Creek Trail showed an increase of 237% from 192 riders on 10 November 2019 to 455 on 25 April 2020.

4.7 Other Considerations – Induced Demand

When considering the construction of new infrastructure, the concept of induced demand should be considered. Regarding traffic, induced demand is the public's natural reaction to the increase in space, that is if you build more space for traffic, than you may get more traffic.

By constructing new infrastructure travellers can be caused to:

1. Re-route;
2. Re-time;
3. Re-mode;
4. Re-locate;
5. Re-evaluate (to take or not to take); or
6. Stick with the status quo.

Regarding cycling, induced cycling trips represents trips that would not have previously been made by a bicycle. A focus of this strategy is targeting an increase in the amount and quality of space provided to cyclists, whilst improving infrastructure and hence the experience of cyclists on the network. Unless new cycling trips are induced (including increasing the frequency of trips), the investment in cycling is generally considered to have no impact on traffic congestion, public health or emissions.

As such, through encouraging cycling trips within Banyule the key objectives of the Banyule Bicycle Strategy are to:

- Re-mode: Influence travellers to re-mode existing trips from vehicles to cycling trips such as trips to work, school or the shops;
- Re-evaluate: Influence travellers to re-evaluate a decision not to travel, to travel by bike (i.e. take-up recreational rides); and
- Re-route: Influence travellers in vehicles to travel along vehicle priority routes, and cyclists to travel on cyclist priority routes.

It is noted that in the increase in demand on newly constructed cycling facilities continues to increase over time often years after construction. This is generally considered to occur in low cycling modal share areas, as more people take up cycling as a mode of travel over time.

4.8 Other Considerations - Priority

Before considering the cost of implementation of any treatment, the objective of the treatment and the likelihood of its effectiveness should be considered. Important considerations include:

- Areas with a relatively flat topography – As a significant portion of Banyule is subject to undulating terrain it is less likely that cycling will be adopted in these areas by new cyclists. As such, flatter terrain areas should generally be considered a higher priority;
- Traffic volumes and speeds – On-Road paths where cyclists are encouraged to travel adjacent to high speed and high volume traffic are generally not conducive to a feeling of perceived safety. On connecting routes, local street routes may be prioritised whilst within town centres single lane roads and low-speed environments should be actively encouraged through the introduction of infrastructure and signage. Generally, these routes that can be encouraged to fit these criteria have been identified within the PBN and SCC networks.
- The route / treatment services a significant population – treatments should be focused in areas where usage if encouraged appropriately is likely to be high. This includes residential areas in the vicinity of schools, stations and activity centres.

5 Recommendations

5.1 General

Due to the scale and topography of Banyule and significant differences in the requirements and demand for bicycle facilities within the municipality, Recommendations have been completed on an area and objective basis.

Within the subsequent sections, a summary has been completed for areas within Banyule for identified as:

- General Themes (Municipality Wide)
- Major Activity Centres;
- Neighbourhood / Industrial Centres;
- Off Road SUPs / Trails;
- Stations; and
- Schools.

These summaries provide an understanding of the existing characteristics, key destinations for cyclists and issues and barriers relevant to the area to be overcome have been identified.

Following this, high-level recommendations have been provided for each area. Generally, these have focused on objectives that allow for flexibility and require further development prior to selecting specific treatments. In some instances significant choke points or connection issues have been identified that are important to address.

5.2 General Themes

Table 5-1 outlines the general characteristics, barriers and proposed recommendations that generally apply to the wider Banyule municipal area.

Table 5-1 General Recommendations

Location	Characteristics	Destinations	Issues / Barriers	Recommendations
Banyule	Expansive area Changing Topography Lack of Bicycle Parking at Key Locations Significant physical barriers (i.e. Rivers / Arterial Roads)	**Activity Centres** **Commercial Areas** **Recreational Facilities (Parks / Sports Grounds)** **Schools** **Stations**	> Lack of Cycling Facilities on Primary and Local Streets > Lack of Parking > Lack of Direction and Connectivity > Access and parking at key destinations	> Develop a wayfinding and signage strategy for the Local Bicycle Network that complements the current and planned Open Space Planning Trail signage and coordinate with the planned Banyule Walking Strategy wayfinding signage. It should: – Prioritise local roads and crossings approaching Activity Centres; and – Include directions to bicycle parking facilities and railway stations. > Complete wayfinding signage and marking for the Banyule Local Bicycle Network including route modification where appropriate for route safety and continuity. > Ensure bicycle parking is provided in any new streetscape works, recreational facility or master planning work within activity centres. > Explore, in conjunction with City Futures and Open Space Planning, the development of a neighbourhood centre that could become an exemplar of cycling connections to schools, shops and public transport and also tie into the State Government Strategic Cycling Network and 20 Minute Neighbourhood framework. > Promote and distribute up-to-date information and maps of Banyule bicycle routes, including the Banyule TravelSmart map, across the community using appropriately accessible and sustainable means. > Commitment by Council to fund ongoing data collection (via bike counts or installing sensors) to analyse usage trends to guide the provision of additional or enhanced infrastructure; support effective financial management of assets by prioritising investment and make information on use available to the public.

Activity Centres

Table 5-2 outlines the characteristics, existing barriers and issues and proposed recommendations for Activity Centres within Banyule.

Table 5-2 Major Activity Centre Recommendations

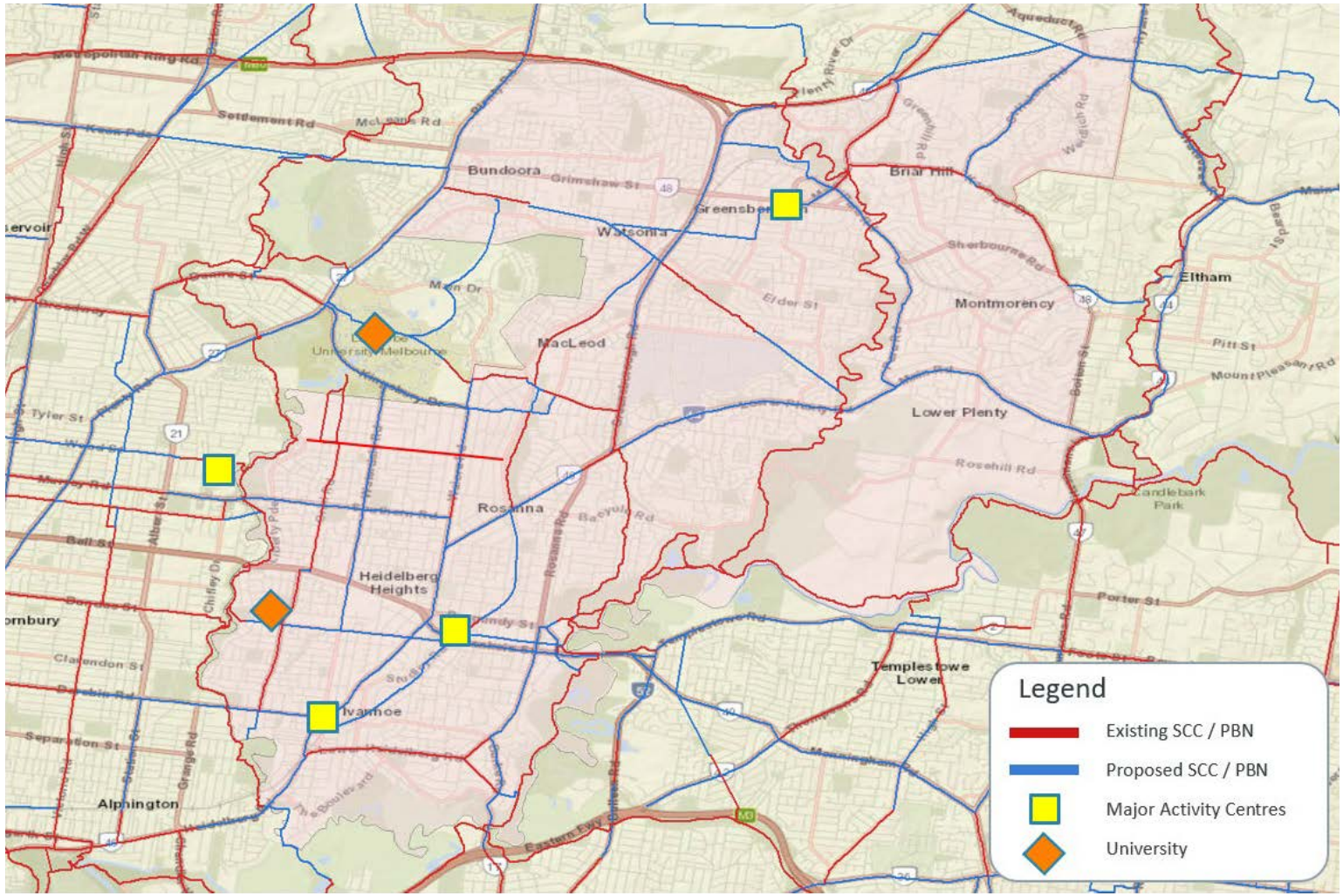
Activity Centre	Characteristics	Destinations	Issues / Barriers	Recommendations
Ivanhoe	Local Commercial and Retail Precinct Large Residential, Educational and Recreational Catchment Moderate 'Rolling Topography'	**Town Centre / Shopping Precinct** **Recreational Facilities (Parks / Sports Grounds)** **Schools** > Ivanhoe Grammar > Ivanhoe Girl's Grammar > Ivanhoe Primary > Mary Immaculate Primary **Stations** > Ivanhoe > Darebin > Eaglemont	> Lack of Cycling Facilities on Primary and Local Streets > Lack of Parking > No connection to surrounding bicycle network (PBN / SCC) > Access and parking at Schools > Access and parking at surrounding Stations	> Advocate for the provision of SSC cycling facilities On-road bike lanes / sharrows through the town centre on Upper Heidelberg Road (this could facilitated by further speed reduction or extending the existing 40km/h zone as appropriate). > Provide cycling connections from activity centre, stations and schools to surrounding bike network including: – Lower Heidelberg Road to the east – Darebin Creek Trail (at the boulevard); – Livingstone Street and Oriel Road to the west; and – Studley Road to the north. > Significantly improve bicycle parking facilities within the activity centre, stations, schools and surrounding recreational facilities.
Heidelberg	Large commercial and retail precinct Health Precinct Busy arterial network Rolling Topography	**Retail and Commercial Precinct** **Austin Hospital** **Heidelberg Station** **Schools** > Heidelberg Primary > Our Lady of Mercy > St Johns	> Lack of Cycling Facilities on Primary and Local Streets > Arterial network and natural barriers (Yarra River) limit connection to surrounding network	> Advocate for the provision of SCC cycling facilities through the town centre on from Studley Road (this could be facilitated by further speed reduction to 30km/h). > Create or formalize existing crossing opportunities for cyclists to and from surrounding areas. Noting significant existing barriers include: – Banksia Street; – Rosanna Road; – Burgundy Street; and – Yarra River > Provide cycling priority intersections where relevant particularly consider: – Banksia Street / Studley Road; – Burgundy Road / Jika Street; and – Studley Road / Stradbroke Avenue.

Activity Centre	Characteristics	Destinations	Issues / Barriers	Recommendations
Greensborough	Undulating topology including throughout town centre Dense retail and commercial precinct Bustling centre surrounded by calm local streets Public Transport Hub	**Greensborough Plaza** **Greensborough Station** **Schools** > Greensborough Primary > St Mary's > Greensborough College	Topography Space allocation on Main Street Surrounding Traffic Volumes	> Advocate for the provision of SCC cycling facilities through the town centre on Main Street (this could be facilitated by further speed reduction to 30km/h). > Increase bicycle parking availability within activity centre. > Provide dedicated bicycle connections across Grimshaw Street.
Neighbourhood Centres / Industrial Centres	Various Topography Generally Lower Traffic Main Streets More of a "Local Feel' Some Industrial Areas (Generally Flat)	> Bellfield > Heidelberg West > Rosanna > Macleod > Watsonia > Montmorency > St Helena > Briar Hill > Bundoora	Arterial Network Limited connections east-west through the municipality Limited crossing opportunities across Railway Line and River Size of region and varying difficult topography Understanding of North East Link (NEL) Impacts Indirect local street networks	General Recommendations > Complete LBN routes within neighbourhood centres to be generally included as part of structure planning or streetscape works. > Work with Major Projects to upgrade bicycle connections including Level Crossing Removal and North East Link and Hurstbridge rail line duplication from Greensborough to Montmorency. > Explore opportunities to provide bicycle parking within neighbourhood centres.

5.3 Connecting Links (PBN / SCC)

Figure 5-1 shows the Existing and proposed Principal Bicycle Network and Strategic Cycling Corridor routes. While this map was developed in 2016 the bulk of these planned networks remain unrealised.

Figure 5-1 Existing and Proposed Strategic Cycling Corridor & Public Bicycle Network



Network routes courtesy of DoT (Dated July 2016)

Many on-road bicycle routes throughout Banyule are discontinuous. Corridors such as Oriel Road in Ivanhoe and Bellfield, are close to functionally complete and yet end abruptly approaching key intersections, in this instance Bell Street.

Further, as most of the routes are yet to be realised, very few areas within Banyule are functionally accessible without relying on a high proportion of cycling on-roads without any bike facilities, and there are large areas where no formal route is provided at all.

As a whole, on-road routes need to be significantly and expediently developed.

While ideal, completion of all routes identified within the SCC / PBN to meet the proposed network is unrealistic in the short to medium term. As such, to assist with the prioritisation with the development of on-road connecting links an example strategy for the staged prioritisation is outlined in Table 5-3 below. Generally this high level strategy for the development of the connecting cycling network is based on the benchmarking and prioritisation framework outlined earlier in this strategy and the SCC and PBN routes outlined in Figure 5-1.

Comprising of a mix of improvements to existing facilities, removal of key barriers and introduction of new routes the following corridors have been identified as priorities:

1. Complete the SCC route in the vicinity of the Hurstbridge Railway alignment from Watsonia via Ivanhoe to connect to the CBD cycling including priority sections:
    - Macleod Station to Rosanna Station;
    - Rosanna Station to Heidelberg Station; and
    - Heidelberg Station to Ivanhoe Station.
2. Provide an east-west cycling connection from Bulleen (Manningham) via Heidelberg Station to Thornbury (Darebin) including:
    - A new shared user bridge crossing of the Yarra River at the Main Yarra Trail to connect Heide to Heidelberg; and
    - Provide an on-road bicycle route on Yarra Street or acceptable alternative to connect Yarra crossing to Heidelberg StationComplete the Banyule Shared Trail south of Banksia Street to Burke Road North;
3. Complete the east west power easement trail from Bundoora through Watsonia to the Plenty River Tail in Yallambie including:
    - A grade separated crossing of North East Link and Greensborough Highway at Watsonia.
4. Complete the cycling connection from Eltham to Bundoora via Greensborough Station including:
    - From the Macorna Street overpass (to access RMIT University) to Greensborough Station; and
    - Provide a shared user path along the Hurstbridge rail corridor from Greensborough Station to Eltham Station.

Table 5-3 Connecting Route Recommendations

Item	Objective	Benefits	Recommendation
Incremental Improvements	Identify and connect missing/links at key locations	> Cost-effective > Short-term > Upgrades to existing facilities likely to be more effective in the short-term	> Advocate to the Department of Transport to address LBN routes on an activity centre/ neighbourhood centre basis as part of structure planning or streetscape works. > Provide kerb ramps on Livingstone Street at Darebin Creek Trail. > Provide wayfinding signage for cyclists from the end of the shared user path on Greensborough Hwy at Yallambie Road to connect to the LBN into Greensborough (as an interim measure prior to the completion of the North East Link continuous shared user path). > Paved connection and wayfinding signage to connect Main Yarra Trail and Plenty River Trail at Banyule Flats. > Support the development of open space trails as set out in the Northern Regional Trails Strategy.
North-South Activity Centre Route	Completion of on-road north-south routes connecting activity centers from Ivanhoe to Greensborough	> Upgrades facilities within and adjacent to activity centers > Provides a more direct route to stations and the CBD for commuting cyclists > Allows for tie-ins and connections with off-road routes > Requirements synergise well with other objectives within this strategy	> Provide on-road bike lane and local streets connecting Studley Road through to a local bike route along streets adjacent to the Hurstbridge line (i.e. Beetham Parade / Ellesmere Parade / Wungan Street). > Develop a crossing at Watsonia or utilize existing Nell Street crossing across Greensborough Road. > Connect Watsonia to Greensborough via a series of comprehensive wayfinding and local road network facilities. > Advocate to the State Government for implementation of a safe direct Strategic Cycling Corridor from Watsonia Station via the Hurstbridge rail line / Heidelberg Road corridor (including protected bike lanes) to the CBD using the following alignments or acceptable alternatives. – Section 1: CBD to Heidelberg Road Ivanhoe (outside Banyule). – Section 2: Upper Heidelberg Road through Ivanhoe to Studley Road. – Section 3: Studley Road to Heidelberg Station/ Burgundy Street. – Section 4: Heidelberg to Rosanna in rail corridor (or acceptable alternative). – Section 5: Rosanna Station to Macleod Station along Ellesmere Parade and McNamara Street. – Section 6: Macleod Station to Watsonia Station in rail corridor or upgrade section along Wungun Street. > Advocate for the completion of Strategic Cycling Corridor 3 along Oriel Road - especially addressing the provision of cyclist crossing infrastructure at Bell Street at Oriel Road. > Advocate to the State Government for improvement of the Strategic Cycling Corridors from the M80 shared trail via Plenty Road and La Trobe University to Alphington especially addressing the lack of cycling crossing facilities at Bell Street. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridors from La Trobe University via Heidelberg Heights to Ivanhoe.

Item	Objective	Benefits	Recommendation
East-West Route	Completion of east-west cycling links across lower Banyule	> Provides much needed east-west connection across Banyule > Allows access to adjacent direct north-south links within Darebin for commuters and reactional cyclists > Synergises well with north-south connections > Likely relatively cost-effective	> Investigate the introduction of a new local bicycle network route (LBN13) to facilitate connections from Darebin Creek Trail along Banksia Street at Studley Road to the Main Yarra Trail. Provide on-road bike lanes on Banksia Street between Darebin Creek and Studley Road, also deemed a Strategic Cycling Corridor. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from Eltham Station via Greensborough Station utilising the Hurstbridge Rail alignment to the M80 shared user trail in Bundoora (to access RMIT University). > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from the M80 shared trail in Eltham North via Greensborough Station and La Trobe University to Reservoir. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from along the Power Easement Trail from Plenty River Trail at Yallambie through Watsonia to Plenty Road Bundoora. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from Lower Plenty to Plenty Road via La Trobe University utilising Lower Plenty Road and Kingsbury Drive. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from the Hurstbridge rail line pedestrian crossing at St James Road Rosanna to Preston. > Advocate to the State Government for provision of a safe direct Strategic Cycling Corridor from the Main Yarra Trail/ Banyule Shared Trail in Heidelberg via Heidelberg Station and Activity Centre and crossing Darebin Creek at Banksia Street.

5.4 Off-Road Shared User Paths & Trails

Table 5-4 outlines the characteristics, existing barriers and issues and proposed recommendations for key off-road bicycle routes within Banyule.

Table 5-4 Off-Road SUPs & Trails Recommendations

Route	Characteristics	Destinations	Issues / Barriers	Recommendations
Main Yarra Trail / Plenty River Trail	Generally Flat Winding (indirect – not great for commuting) Typically Paved	**Heidelberg Activity Centre** **Greensborough Activity Centre** **Montmorency Neighborhood Centre** **Recreational Parks and Activity Areas**	Wayfinding signage at key decision locations Wayfinding to off-road paths Provision of on-road paths on adjacent network Unpaved connection between Main Yarra Trail and Plenty River Trail at Plymouth Street	> Develop a wayfinding signage plan in conjunction with neighboring municipalities to identify locations where signage can be improved including linking to the on-road network. Identify connection points with LBN / SCC. > Realign the Main Yarra Trail at the Banyule Flats to Plenty River Trail via a direct and paved route as set out in the Northern Regional Trails Strategy 2016. > Investigate environmentally appropriate lighting options in order to promote and allow for safe commuting at night. > Provide additional bicycle parking at key activity destinations such as playgrounds, ovals, tennis clubs. > Continue to advocate to the State Government for the provision of a SUP crossing of the Yarra River from Heidelberg to Banksia Park in the municipality of Manningham as set out in the Northern Regional Trails Strategy 2016. > Establish further connections across the Yarra River to the municipality of Manningham as outlined in the Northern Regional Trails Strategy 2016 to Birrarung Park (Templestowe) and to Bulleen Park in Bulleen. > Undertake a feasibility study exploring trail improvements to avoid steep sections of the Plenty River Trail and to bring the trail up to Australian Standards.
River Gum Walk / Greensborough Road SUP Banyule shared Trail	Generally downhill from north to south	**Watsonia Neighborhood Centre** **Heidelberg Activity Centre** **Warringal Parklands** **Main Yarra Trail**	Concludes abruptly at Yallambie Road Arterial Network Doesn't connect directly to any key destinations	> Continue to advocate to the State Government for the completion of this Strategic Cycling Corridor connection from Lower Plenty Road to Greensborough. > Continue to advocate to the State Government for the provision of an improved underpass of Banksia Street *(Noting that the Main Yarra Trail and Banyule Shared Trail are the same trail in this location).* > Continue to advocate to the State Government for the provision of an extension of the Banyule Shared Trail south of Banksia Street to connect to Bourke Road North adjacent to The Boulevard in East Ivanhoe as set out in the Northern Regional Trails Strategy 2016.
Darebin Creek Trail	Generally Flat	**Ivanhoe Activity Centre** **Alphington**	Limited River Crossings	> Complete the upgrade of the trail including stages 1 to 5 as part of the Northern Regional Trails Strategy 2016 and Banyule Open Space Plan 2016.

	Winding (indirect – not great for commuting) Completely Paved	**Northland**	Wayfinding at key decision locations Provision of on-road paths on adjacent network	> Develop a wayfinding signage plan in conjunction with neighboring municipalities to identify locations where signage can be improved including linking to the on-road network. Identify connection points with LBN / SCC.
Power Easement Trail SUP (Morwell Avenue)	Generally downhill from west to east	**Bundoora / Plenty Road** **Watsonia Neighborhood Centre** **Plenty River Trail (Potential)**	Many missing links Does not connect across Greensborough Road Limited on-road network adjacent	> Complete missing links along the Power Easement Trail including connections to Greensborough and to Lower Plenty Road. Consider installation of wayfinding signage and the use of on-road bike lanes where appropriate. > Include wayfinding signage and cycling priority treatments to facilitate access between Dilkara Avenue and Morwell Avenue. > Continue to advocate to the State Government for the provision of a grade separated crossing at Watsonia Station across Greensborough Hwy/ NEL to make the trail continuous.

An existing opportunity to improve connections to the off-road network are outlined within the Figure 5-2 below:

Figure 5-2 Missing link on Main Yarra Trail / Plenty River Trail – Banyule Flats Realignment

5.5 Railway Stations

Topography and distance from the CBD makes commuting solely by bike to the city impractical for many Banyule residents. However, if appropriate facilities are available, hybrid 'pedal and ride' commutes are viable alternatives.

As population density increases throughout Melbourne and roads become more congested, provision of a comprehensive network of bicycle routes leading towards stations and bike parking (but not additional car parking) will assist in making cycling a much more attractive mode to travel to the station.

End-of trip facilities such as 'Parkiteer' or other secure bicycle parking, more accessible hoop parking areas, lighting and security should be provided at all stations within the municipality. Currently, it is understood that the following stations lack secure bicycle parking facilities:

- Darebin;
- Ivanhoe;
- Eaglemont;
- Macleod; and
- Montmorency.

Railway stations' on-road bicycle facilities should connect to the nearest surrounding Local Bicycle Network (LBN) and Public Bicycle Network (PBN). As railway stations within Banyule are generally located within the vicinity of activity centres and often schools, providing on-road cycling facilities surrounding stations typically serves multiple purposes and is therefore considered to be a highly efficient way of improving the bicycle network. Examples of improvements have been outlined on an activity centre basis within the previous section.

Finally, the expected disruption of the road network within the municipality and on key arterial routes to the CBD as a result of NELP and other major projects provides an opportunity for mode shift away from private vehicles provided the appropriate facilities are in place.

Table 5-5 outlines the characteristics, existing barriers and issues and proposed recommendations for railway stations within Banyule.

Table 5-5 Rail Station Recommendations

Station	Characteristics	Catchment	Issues / Barriers	Recommendations
Darebin Station	Outside of Town Centre (South of Ivanhoe) Undulating Minor Station	Small Residential catchment	Heidelberg Road Extremely limited Car Parking	> Increase accessibility to and from station. > Improve quality and accessibility of underpass. > Significantly increase bicycle parking with a mix of rack and secure parking facilities.
Ivanhoe Station	Within Ivanhoe Town Centre Relatively 'hilly' on approaches Residential surrounds, commercial and educational precinct	Moderate residential catchment Destination for retail, commercial	Accessibility across station (existing stair case overpass) Limited Car Parking North-south connection across Heidelberg Road Limited cycling facilities approaching from the north	> Advocate for the provision of the Strategic Cycling Connections to Darebin Station (south) and Eaglemont and Heidelberg Station (north) as well as the connection north to Latrobe University > Provide wayfinding signage from local bike routes to direct cyclists towards the station. > Provide a DDA compliant ramp overpass/underpass also suitable for cyclists. > Advocate to the State Government to provide a DDA compliant ramp overpass/underpass also suitable for cyclists. > Significantly increase bicycle parking with a mix of rack and secure parking facilities. > Improve surrounding on-road bicycle network, particularly across Ivanhoe Town Centre (Livingstone Street & Norman Street).
Eaglemont Station	Generally Residential Local commercial precinct	Generally residential Local commercial catchment to south of rail line	Accessibility across Studley Road Accessibility across Upper Heidelberg Road Extremely limited Car Parking	> Increase wayfinding signage within vicinity of station and on-road bike paths to the north and south of the railway. > Significantly increase bicycle parking and parking security via a mix of rack and secure parking facilities – ensure accessibility near station and conspicuity via wayfinding signage to both sides of the rail.
Heidelberg Station	Large commercial and retail precinct Health Precinct Busy arterial network Rolling Topography	Major destination Moderate residential catchment Potential growth with improved accessibility	Arterial network Extremely limited Car Parking Topology Yarra River / Plenty River	> Advocate for the provision of the Strategic Cycling Connection to Eaglemont and Ivanhoe Stations (south) and Rosanna Station (north). > Provide wayfinding signage and local bike routes to direct cyclists towards the station. Improve wayfinding signage required to improve conspicuity of long-term bicycle parking within the existing 'Parkiteer' cage.

Station	Characteristics	Catchment	Issues / Barriers	Recommendations
				> Advocate for the completion of the Strategic Cycling Corridor connection to Manningham (east) and Darebin (west).
Rosanna Station	Undulating 'Local Feel'	Large Residential Catchment Moderate local commercial precinct	Lower Plenty Road Local bicycle network	> Advocate for the provision of the Strategic Cycling Connection to Heidelberg Station (south) and Macleod Station (north). > Provide wayfinding signage and local bike routes to direct cyclists towards the station.
Macleod Station	'Hilly' 'Local Feel'	Moderate residential catchment Latrobe University	Large residential catchment Moderate car parking	> Advocate for the provision of the Strategic Cycling Connection to Rosanna Station (south) and Watsonia Station (north). > Advocate for the provision of the Strategic Cycling Connection to La Trobe University (west) and Lower Plenty /Yallambie (east). > Provide wayfinding signage and local bike routes to direct cyclists towards the station.
Watsonia Station	Undulating 'Local Feel	Large Residential Catchment Large neighbourhood activity centre	Access across Greensborough Road and Grimshaw Street It is noted that existing barriers apply more so to vehicles and can be overcome by suitable cycling connections	> Provide wayfinding signage across station to existing parkiteer (no directions on western side of railway). > Focus on wayfinding and connections to east and north across Greensborough Road and Grimshaw Street to increase size of cycling catchment. > Existing car parking provision at capacity, reliance could be greatly reduced following the provision of exceptional cycling connectivity nearby and parking at the station.
Greensborough Station	Very steep within vicinity of station Major activity hub 'Local feel' on surrounding network	Predominantly commercial in immediate vicinity. Sprawling residential catchment to north and south	Access across Grimshaw Street Car dependent area due to size, location and topography Cultural shift required	> Provide wayfinding signage from local bike routes to direct cyclists towards the station. > Provide river crossing across Plenty River between Railway Road and Poulter Avenue for cyclists / pedestrians noting that this may also assist with providing a safe connection for students to Montmorency secondary college and associated.
Montmorency Station	'Hilly' Local environment	Sprawling residential catchment to north and south	Generally car dependent area due to size, location and topography Low car parking availability – greatly exceeding capacity	> Provide wayfinding signage to local bike routes to direct cyclists towards the station. > Significantly increase bicycle parking and parking security via provision of a 'parkiteer' cage.

5.6 School Cycling

Driving to school has a significant impact on peak hour traffic, parking congestion and safety around schools. Increasing active transport, including walking, scooting and cycling to and from schools, can lessen these impacts. It provides significant co-benefits in getting kids active, reducing air pollution and greenhouse gas emissions and positively influences transport choices for life.

This Strategy aims to encourage school communities to increase their knowledge and support for cycling through the provision of infrastructure and participation in targeted activities. These include:

- Engaging and supporting schools to provide bike education and safe travel programs to students;
- Supporting schools to seek funding for on-site bike parking and, where necessary, end-of-trip facilities;
- Supporting and promoting national and state campaigns and events including Ride to School Day; and
- Providing active transport wayfinding materials to Banyule primary schools including maps and footpath decals.

There are a number of exemplar programs currently in operation within Victoria. One of these has been established within the neighbouring municipality of Darebin. In addition to supporting and promoting events such as Walk (or Ride) to School Month, Bike-Ed and school travel plans Council has established a program called 'Octopus Schools' which annually selects a school who has applied to support active travel programs based on the schools' needs.

It is recommended that Council continue to work with schools on an individual and area-wide basis to overcome these barriers and increase cycling participation within this cohort. Table 5-6 outlines issues and barriers understood to be experienced by schools within Banyule, example locations and potential treatments to address these.

Figure 5-3 Car Space Compared to Bicycle Parking (Translation 1 Car = 10 Bikes)

Table 5-6 School Cycling Recommendations

Barrier	Issues	Demographic / Target	Locations	Comment	Recommendations
Education / Information	Many cyclists don't understand the relevant on and off-road rules The benefits of cycling for health, the environment and transportation	All Students, Parents and Teachers	All Schools	Education can be focused at all levels, particularly for cycling as the laws change slightly depending on age and may form a fantastic basis for on-road education as senior school student seek to gain their car license. Further cycling education can be readily tied in with other subjects (i.e. sport, physics or environmental sciences)	> Advocate for schools to provide road safety education to children including road rules for cyclists. > Advocate for bike-ed to be provided within schools. > Encourage schools to promote the environmental and health benefits of active transport to their communities including staff and families. > Encourage schools to publicise maps of identified active routes to school on the school intranet; and include in communications with families and in orientation materials. > Link Banyule schools to available government and community programs promoting safe active school travel such as: Ride2School/Walk2School. > Partner with primary and secondary schools to develop transport strategies including sustainable travel to school plans, behavior change campaigns and 'transition to secondary school' personalised travel planning sessions for Grade 6 student.
End of Trip Facilities	Security Safety Council's indirect responsibility	All Students and Teachers	All Schools	Regardless of the quality of surrounding environment leading to the school, without the provision of adequate end of trip facilities, students are unlikely to cycle to school	> Encourage schools to provide end of trip facilities to support cycling to school including: – Bike parking in the form of hoops, cages or hangers; – Mike maintenance facilities; and – Showers. > Investigate and provide information on funding opportunities for school cycling infrastructure including bike fleet giveaway and end-trip-facilities.

Barrier	Issues	Demographic / Target	Locations	Comment	Recommendations
Road Safety	Vehicle speed on-road Intersections, roundabouts and SUP crossings	All Students and Teachers	**Examples:** The Boulevard Lorimer Street, Greensborough Hawdon Street, Heidelberg Waterdale Road Warncliffe Road	Local roads are typically safer for and are generally perceived to be safer for cyclists. Given, cycling to school typically needs to be 'approved' by parents, ensuring that routes on local roads are available and are safe should be a priority	> Prioritise completion and signage of LBN's near schools. Where possible consider providing off-road routes including upgrading footpaths to SUPs. > Implement traffic calming measures and speed reductions on local roads, consider 30km/h and increase extents of 40km/h area. > Provide education and dedicated signage directed at children for safe routes and consider extending provision of school traffic supervisors at key locations. > Ensure footpaths are well-maintained and corner splays remain visible.
Arterial Road Safety	Arterial Road on-road paths Road crossings Vehicle speed on-road	Senior School Students (age 13+) and Teachers	**Examples:** Upper Heidelberg Road Grimshaw Street	Cycling on busy arterial roads may be seen as unsafe by parents and students of all ages may not feel comfortable	> Address key locations identified near schools. These locations will form part of the wider recommendations to improve the cycling network.

6 Implementation

6.1 General

Throughout the duration of the development of this strategy including the existing conditions assessment and development of the draft strategy it has been apparent that a bicycle strategy cannot be implemented uniformly within a municipality encompassing the size, topography and characteristics of Banyule.

As such, whilst 'Section 4 – Considerations' has outlined the available tools to implement within a strategy, and 'Section 5 – Recommendations' has outlined the characteristics and requirements to improve each existing environment and key cycling area within Banyule, this section will focus on breaking down the requirements and outlining strategies and projects to address the municipalities needs as follows:

- Corridor Strategy: Aimed to improve connectivity of the bicycle network across Banyule including connecting Major Activity Centres and Neighbourhood Centres and to provide more direct routes to key destinations for commuters;
- Area Strategy: Aimed to develop connectivity from the key corridors to and through the local areas. promoting the development of cycling catchments within a region; and
- Cycling Culture Strategy: Aimed at building a strong cycling culture within Banyule, including directly addressing the direct needs of an area, group or destination.

6.2 Corridor Strategy

The Corridor Strategy focuses primarily on the development of infrastructure allowing for travel through Banyule comprises the following three (3) key areas and objectives:

- Major Projects: Significant corridor projects that aim to connect activity centres and regions directly and efficiently. Within Banyule these corridors are generally key on-road SCC and PBN routes;
- Small Projects: Small projects that can be completed on an incremental basis, aimed at addressing key issues, removing barriers along existing and proposed bicycle routes, improving accessibility, safety and amenity;
- Off-Road to On-Road: Improving cycling corridors through Banyule by leveraging off the existing off-road network by adding and improving connections between the on and off-road network.

6.2.1 Major Projects

The completion of major projects to complete key missing links within the existing SCC and PBN will require significant corridor projects including the involvement from key stakeholders including DoT, PTV and Government.

To assist with ensuring that major cycling projects can be developed, a 'Prioritisation Framework' should be established generally based on the proposed SCC and PBN routes to form project by project list ranking for implementation.

This framework should form the basis of discussion with key stakeholders and should be highly detailed including aspects such as cost of construction, network constraints and impacts.

Generally, the following key considerations should be considered for the prioritisation framework:

- Destinations – does the route allow for cycling access to key destinations (i.e. stations, schools, CBD) and connect well to the local network to allow for the return home;
- Routes – Is the route already mostly constructed, or is it located predominantly on Council operated land;
- Funding – Is the project budget within Council's capabilities, or can funding be received from state government; and

- Synergies – What existing or proposed synergies are there with the proposed cycling project and future cycling projects.

Whilst in some instances it is understood that major projects may form part of surrounding major projects including the Hurstbridge Line Upgrade and North East Link, in these instances strong advocacy will still be required for cycling infrastructure to be included not as an afterthought or following the project completion.

6.2.2 Small Projects

Continual small incremental improvements to improve the cycling network at key locations allow Council to address issues and barriers at locations whilst remaining cost effective and consistent. Particularly as Council projects are typically funded under budgets allocated on a financial year basis it is important that Council develops a detailed list of small projects to be implemented on an incremental basis.

In order for these to maintain community involvement these projects may be informed by previous community consultation, comments or from forums such as 'BikeSpot' which has allowed cyclists to pinpoint areas where they have felt unsafe.

To ensure that Council remains ready when funding becomes available maintain a priority list of bicycle network improvements that are 'shovel ready' utilising the following guidance:

- Provide a framework that allows for the consideration of improved cycling facilities or improvements as existing assets are maintained or upgraded;
- Identify routes and treatments where minimal investment would be required (i.e. streets of suitable width that signage and linemarking only would be required);
- Develop a list of key constraints for cyclists on the network and potential treatments such as:
  - Paving existing gravel / dirt paths;
  - Cycling priority at intersections or pedestrian crossings; and
  - New paths to improve access at key locations.
- Provide and update an existing record of cycling assets including on-road routes, off-road routes, maintenance facilities and parking;
- Provide an ongoing community feedback tool so that the public can identify potential improvements or suggestions;
- Identify a comprehensive list where cyclists have felt unsafe or incidents have been known to occur and develop a list of safety improvements.

6.2.3 Off-Road to On-Road

To increase the utilisation, and accessibility of both the on-road and off-road network it is proposed to significantly leverage off the well-established existing trail network by providing more accessible and well signed access locations that allow for smooth transitions between each network.

Areas of focus include:

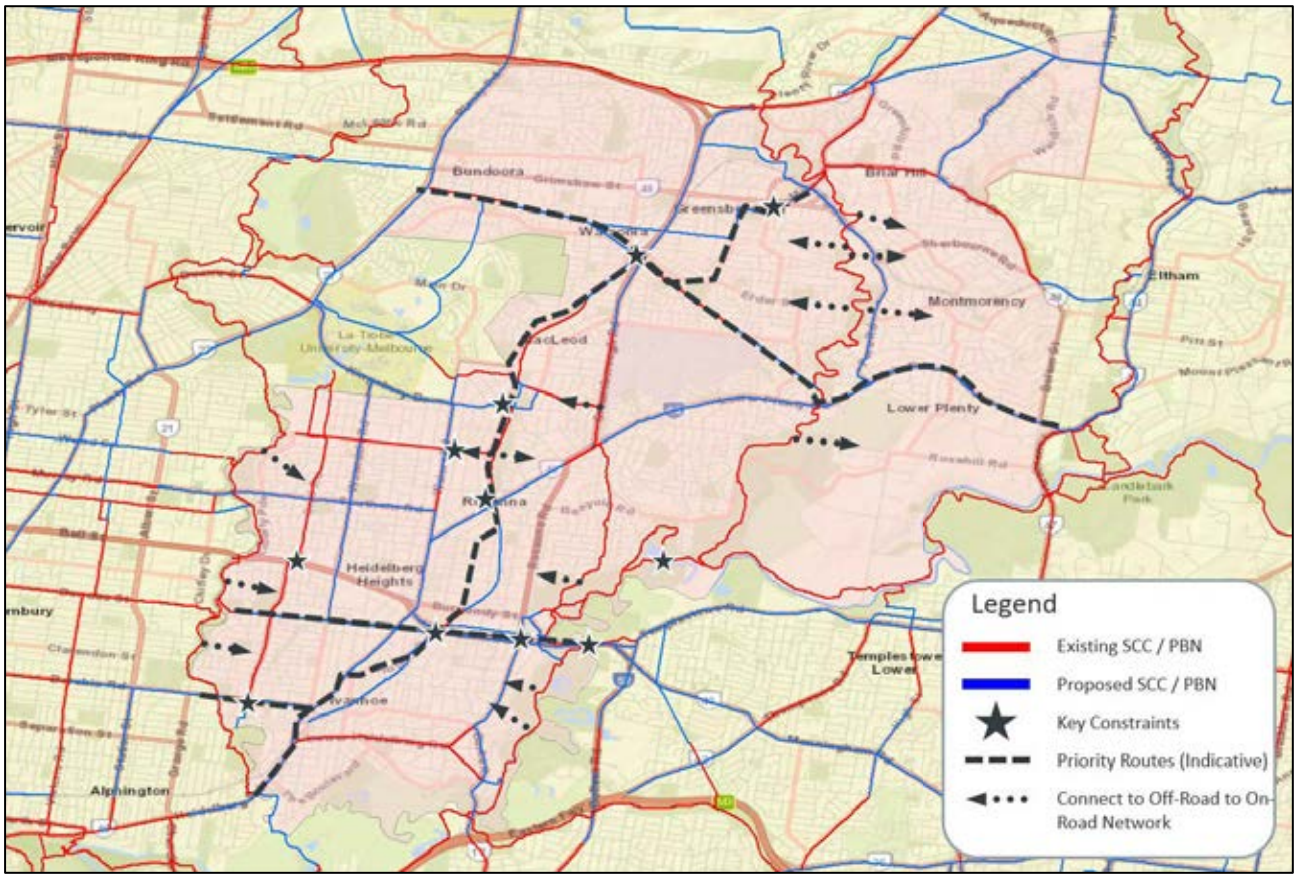
- Providing additional and more cycling friendly links between the on and off-road network including consideration of:
  - Kerb ramps;
  - Priority signals / crossings at arterial roads;
  - Dedicated on-road cycling paths on road bridges over rivers.
- Ensuring wayfinding signage is provided and conspicuous to direct cyclists to key destinations at decision points on the off-road network;
- Pave missing connecting links (i.e. Yarra Main Trail to Plenty River Trail) identified within the off-road network to make routes more accessible for commuting cyclists; and
- Provide parking, lighting, cyclist counters and bike repair stations more frequently at key locations.

6.2.4 Summary

Figure 6-1 below outlines the major projects, key constraints including small projects and indicative locations to improve connections between the off-road and on-road networks.

Overall this figure provides a proposed corridor plan to be developed, all treatments proposed are indicative only and subject to change following further consultation with the community and key stakeholders.

Figure 6-1 Indicative Corridor Level Plan



6.3 Area Strategy

In addition to the Corridor Strategy outlined above, it is proposed to also address the requirements of the local cycling network which in addition to forming a catchment for each corridor, will have its own destinations and local routes.

To assist with the development of the Area Strategy, a proposed breakdown of areas has been identified and shown within Figure 6-2. It is noted that these areas are indicative only and may be subject to change.

Precinct Areas

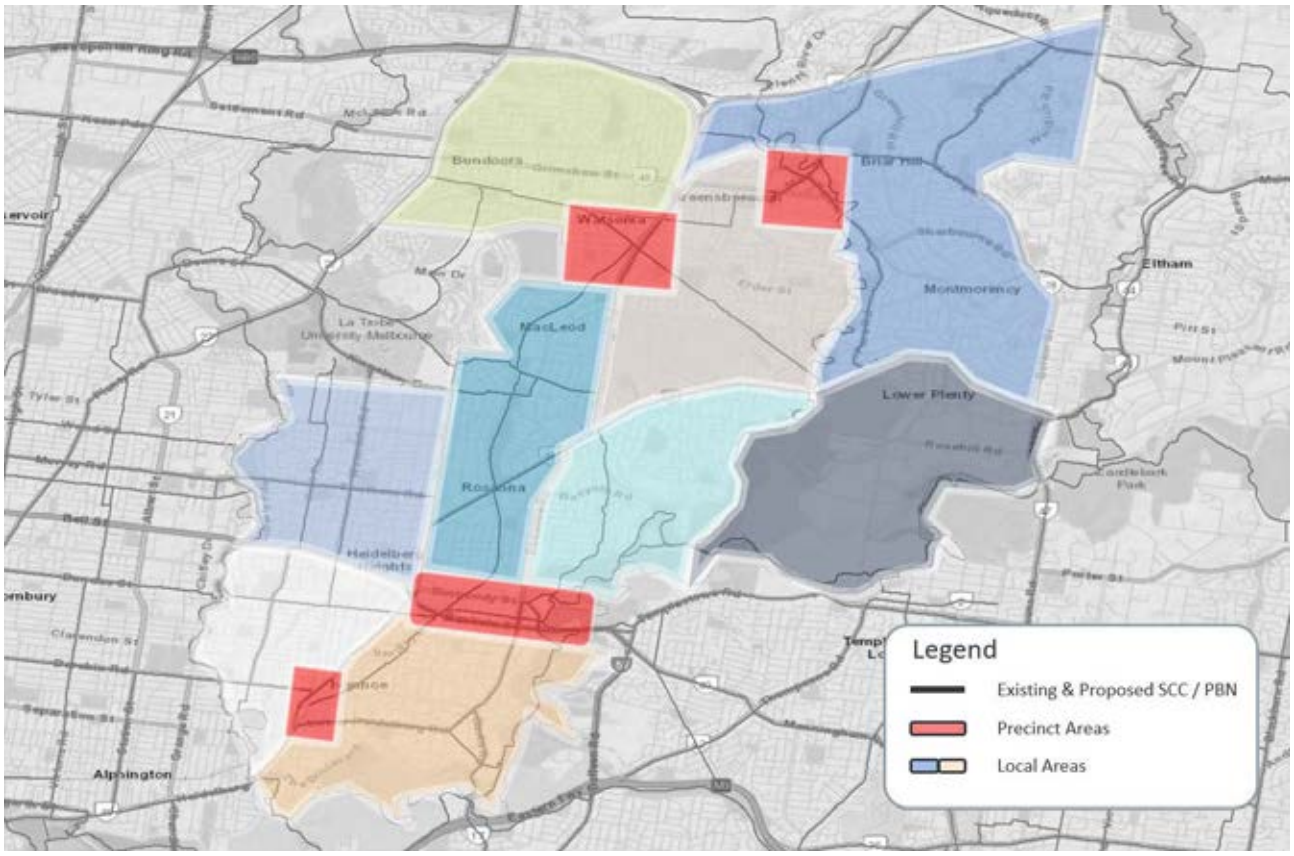
Precinct Areas are generally Major Activity Centres and areas where key cycling improvements will require treatments which interface with the arterial network. As such, the type of treatments and strategies employed in these areas differs significantly from treatments and strategies required in the more residential local areas.

Precinct Areas should each be addressed individually, however likely require extensive consultation with DoT / VicRoads, community, business and other key stakeholders

Local Areas

Local areas encompass the remaining, generally residential areas within Banyule. These have included neighbourhood centres such as Rosanna and Macleod where it is envisaged a typical local area cycling treatments such as sharrows, priority crossings and traffic calming treatments will be required.

Figure 6-2 Proposed Precinct and Local Areas



6.3.2 Implementation of Area Strategy

Banyule City Council, through its previous bicycle strategy and bicycle route review, has identified a significant number of improvements necessary to support the effective use of its Local Bicycle Network.

However, many of the identified actions remain outstanding and, where applied, have typically been suggested on an 'ad hoc' basis which is not conducive to building a developing a strong cycling network and culture within wide area. Instead, it is recommended for Council to identify Local Areas or Precincts as outlined above, where funding should be focused until the cycling network within the area has been established. Subsequently, neighbouring local areas or precincts should be focused as residents within adjacent areas are also likely to make use of the improved nearby facilities.

Simply, the partial development of facilities previously completed does not encourage or support the development of a cycling culture in an area, instead an area-based strategy should be implemented as follows:

- Ensure connecting routes (i.e. SCC & PBN) within vicinity are well developed and allow for travel to key areas;
- Ensure destinations (i.e. Precinct Areas, Stations, Schools) provide an appropriate environment (i.e. traffic calming) and suitable end of trip facilities to meet the increased demand;
- Consult and advocate within the local area to provide local cycling facilities to provide efficient, convenient and safe access to connecting routes and destinations and to grow enthusiasm and a cycling culture within the Local Area; and
- Continue to advocate and encourage a cycling culture through regular events and promotion of cycling initiatives.

6.4 Cycling Culture

6.4.1 General

Building a cycling culture within Banyule will involve a multifaceted approach to ensure that all road and trail users are familiar with and understand the numerous benefits of cycling, feel safe to adopt cycling as a regular and accommodate cyclists so that road and trail spaces can be used in harmony.

Figure 6-3 Group of Cyclists – Yarra Main Trail, Banyule

6.4.2 Advocacy

The implementation of cycling infrastructure within an area, advocacy and consultation should be undertaken to inform the community of the change and build excitement to use the new facilities. Advocacy to increase cycling should be ongoing and continuous should include aspects as outlined in 'Section 4 – Considerations' including:

- Advocating to the Department of Transport for the completion or delivery of on road bicycle infrastructure on Principle Bicycle Network routes in Banyule, with priority for the subset of Strategic Cycling Corridors (safe for all ages and abilities);
- Advocating for a focus on improving cycling facilities alongside the development of major State Government infrastructure projects including North East Link and the Hurstbridge Line upgrade;
- Advocating for replacement of car parking by bicycle parking at the entrance of key shopping locations;
- Advocating with key stakeholders including DoT, Metro Trains, LXRA, PTV to provide end of trip facilities and cycling treatments within the vicinity of stations, particularly at stations lacking existing bicycle parking facilities, car parking availability and accessibility;
- Promoting State and Federal events such as 'Ride to School' and 'Ride to Work Day' and cycling related kid's initiatives; and
- Advocating and exploring opportunities to revise the planning scheme to so that additional provision of cycling facilities in any new developments are required, including considering e-bike charging stations.

6.4.3 Education and Information

Develop a plan to allocate Council grants aimed at the provision of facilities and cycling events including:

- Create an exemplar online resource within the Council website for cycling. Include links to routes, bike facilities including bike parking, travel smart travel, bike groups, training schools, transport to schools and other education and supporting resources;
- Provide opportunities for training and education for cyclists of all ages, experiences and include specific training targeted at encouraging cycling as a mode choice for women;
- Encourage participation and organise cycling focused events including 'Ride to School / Work', trail days and triathlons; and
- Investigate opportunities for on-going collection of cyclist-related data including the provision of bike counting devices within the municipality and participation in organised programs, for example Bicycle Network's Super Tuesday counts.

6.4.4 Grants and Facilities

Develop a plan to allocate Council grants aimed at the provision of facilities and cycling events including:

- Investigate grant funding and support opportunities for local schools and community groups to develop Green/safe Travel Plans;
- Significantly promote the availability of Council grants in order to reach as many groups as possible;
- Select applications for grants based on improving Council cycling benchmarks outlined in Section 3 (i.e. volumes, gender ratio, school students);
- Provide e-bike trials and investigate the opportunity to provide publicly available e-bike charging areas within Council facilities; and
- Construct recreational facilities such as skate parks, off-road trails, public velodromes and mountain bike routes directly aimed at providing destination based cycling activities.

Figure 6-4 Bicycle Parking located in front of Supermarket, Fitzroy North

7 Action Plan 2022 - 2027

The objective of the Banyule Bicycle Strategy is to make cycling safer, attractive and accessible to everyone in the community, now and into the future.

The key actions to implement this goal are listed below. These actions are listed in sections categorised according to the four key objectives of the strategy:

1. Major projects & advocacy
2. Network connectivity
3. Safe and inclusive design
4. Cycling for all

The estimated time frame and financial resources required to develop and implement each action is listed as well as the key stakeholder responsible for delivery. A specific action to cost and prepare necessary project briefs for each item is included in Section 7.5 Action Plan Implementation.

7.1 Objective 1 - Major Projects & Advocacy

Position Banyule as a champion of active transport in the north-eastern metropolitan area by advocating to the State and Federal governments and other partners for improved connections to be funded and delivered in line with major infrastructure projects.

These connections include delivery of the State Government's priority C1 and C2 Strategic Cycling Corridor (SCC) network and improvement of safe cycling infrastructure on State-controlled arterial roads.

A prioritized project list of cycling connections has been developed as part of previous North East Link Program advocacy work to highlight Banyule's preferred C1 and C2 Strategic Cycling Corridors for delivery. The Banyule Cycling Connections Projects List and associated Maps is provided at Appendix B of this report.

7.1.1 Advocacy

Support ongoing advocacy efforts by:

Action 1.1

Seeking and supporting State Government trials of innovative road treatments such as pop-up separated bicycle lanes.

Action 1.2

Develop supporting cases for priority list items included at Appendix B to ensure a pipeline of projects that are 'shovel ready' to maximise State and Federal government direct investment. Preparatory work may include feasibility studies, concept and construction plans, permits, cultural heritage assessments and environmental approvals.

Action 1.3

Ensure the priority items of the Northern Regional Trails Strategy 2022 once adopted are included in Council advocacy considerations.

Action 1.4

Develop cycling advocacy factsheets to highlight missing links in the existing cycling network that need addressing.

7.2 Objective 2 - Network Connectivity

Achieve an integrated cycling network that will support all users to move around according to their needs. Increase opportunities for safe cycling to key local education, recreation and shopping centre destinations within Banyule.

7.2.1 Wayfinding and Signage

Action 2.1

Develop a wayfinding and signage strategy for the Local Bicycle Network that complements the current and planned Open Space Planning trail signage and achieves a seamless user experience between on- and off-road routes.

It should:

- Clearly identify the cycling route at each end and at junctions along the way
- Indicate change of direction and where routes continue at a decision point.
- Direct users to secondary destinations along the route (train stations, connecting trails and amenities)
- Include dedicated subset of signage for primary and secondary students to access local schools.
- Cater to pedestrians and cyclists, different speeds of travel, user types and mindsets (familiar/unfamiliar).

Key references include:

- Austroads Research Report AP-R492-15 – Bicycle Wayfinding
- Wayfound Victoria Guidelines
- Department of Transport guidelines

7.2.2 Complete the missing links of the Local Bicycle Network (LBN)

Complete wayfinding signage and marking for the Banyule Local Bicycle Network (LBN) including route modification where appropriate for route safety and continuity.

Action 2.2

Assess the existing LBN routes 1-12 using an assessment criteria framework that considers accessibility; safety and comfort; network integration and path performance and update route alignments as appropriate.

Action 2.3

Develop concept plans for LBN routes to implement line marking, signage and other road safety infrastructure that is currently not in place.

Action 2.4

Implement completed concept plans of LBN routes prioritizing completion and signage of LBNs near schools. Where possible consider providing off-road routes including upgrading footpaths to shared use paths

Action 2.5

Investigate the development of LBN 13 within Bellfield to facilitate connections from the Darebin Creek Trail along Banksia Street and through Heidelberg to the Main Yarra Trail.

Action 2.6

Provide an ongoing community feedback tool so that the public can identify potential improvements to existing routes or suggestions for new routes or destination-based cycling activities.

7.3 Objective 3 - Safe and Inclusive Design

7.3.1 Improve the safe cycling experience throughout Banyule

Increase opportunities for safe cycling by prioritising low-stress road environments and improving bicycle infrastructure, including on and off-road lanes acknowledging that improving streets for people riding bicycles also improves general liveability and the use of these public spaces.

Where appropriate on local roads:

- Consider traffic calming measures including speed reduction to 40km/h or 30km/h in residential areas and around schools
- Consider removal of parking on roads with moderate or greater vehicle movements to accommodate exclusive bicycle lanes.

Action 3.1

As part of activity centre structure planning processes, utilise the Department of Transport's Movement & Place framework as to assess and improve interactions between pedestrians, cyclists, and other transport modes.

Action 3.2

Conduct formal safe access route audits for active transport to Banyule's primary and secondary schools. Develop a prioritised list of route improvements for implementation as required.

Action 3.3

Investigate the application of area-wide speed reduction to 40kmh (and where appropriate 30kmh) in local streets by:

- Continuing to advocate for 40kmh zones in activity centres, train stations and around schools, and
- Identify locations and develop communication campaigns to trial the feasibility of 30kmh zones.

Action 3.4

Banyule Open Space Plan 2016-2031 and Urban Forest Strategy 2022-2031: develop and prioritise a list of implementation recommendations, including improving consistency in trail surface and assessing and safeguarding thermal comfort levels of bicycle routes throughout the network.

Action 3.5

Increase funding for Open Space shared path maintenance and renewal including an annual provision for minor cycling related works.

7.3.2 Increase bicycle parking, e-bike charging stations and repair availability

Council will seek opportunities to increase bicycle parking availability, focusing on its own facilities, schools, businesses and retailers by:

- Setting aside kerbside or on-road parking space.
- Replacing inappropriate bicycle parking infrastructure, or infrastructure that is in poor condition.

Council will give priority to proposals that:

- Are in convenient locations where the bicycle parking is likely to be well used
- Are visible, easily accessible and illuminated
- Include opportunities to gain people's attention.

Action 3.7

Undertake an audit of bicycle parking and end of trip facilities at all Council facilities including offices, playgrounds, halls, libraries, sporting grounds and pavilions within each of the nine wards within Banyule.

Prioritise provision of bicycle parking at these facilities where none currently exists and increase provision through renewals and new developments in line with the Banyule Sustainable Building guidelines.

Action 3.8

Develop information resources to assist schools to provide and enhance end of trip facilities (including bicycle parking and maintenance spaces) supporting student, staff and visitor cycling.

Action 3.9

Work with the Department of Transport and Major Projects Victoria agencies to increase and improve the quality and accessibility of bicycle parking at train stations.

Action 3.10

Support community bicycle parking requests that meet priority criteria by up to 50 hoops annually.

Action 3.11

Audit the provision of bicycle parking and increase provision where necessary in conjunction with any activity centre streetscape upgrade works. Consider the use of kerb outstands or on-road bicycle parking racks to increase prominence of parking.

Action 3.12

Investigate the provision of bicycle repair and e-bike charging stations at key locations including activity centres, along cycling routes and as part of open space upgrades. Ensure the locations of these and bicycle parking locations are made publicly available.

Action 3.13

Investigate opportunities to strengthen Banyule's planning policy framework to support the increased uptake of more sustainable transport including provision of bicycle infrastructure in new developments.

7.4 Objective 4 - Cycling for all

Council acknowledges the important role it plays in supporting and promoting cycling as a safe, healthy and sustainable option for everyone within the community. Encouraging people to be active and take more local trips by bicycle requires behavioural change 'nudges' including making it easy, attractive and social. It also requires a commitment for ongoing promotion and education about cycling opportunities available for the local community.

7.4.1 Education and participation

Support Banyule schools, individuals and groups to increase skills and knowledge about cycling through participation in targeted activities. Programs such as skills and road safety sessions for children and parents, riding for women, and those new or returning to cycling.

Action 4.1

Develop and support an annual cycling education program to complement existing community and schools' events, focusing on developing skills, road safety awareness and confidence. This program should:

- Collaborate with up to 8 school, community and local bicycle stakeholder groups annually to develop programs to address cycling education gaps.
- Provide regular updates to all Banyule schools and community groups on active travel grants, road safety initiatives and including bicycle skills training.
- Investigate opportunities to strengthen road safety and road rule awareness among drivers and bicycle riders.
- Encourage schools to promote the environmental and health benefits of active transport and provide information on identified active transport routes on the school intranet and include in communications with families and in orientation materials.
- Promote events and publish results of programs via Council online and print publications.

Action 4.2

In line with the Banyule Community Climate Action Plan explore ways to incentivise the use of zero or low emissions transport modes including bicycles, e-bikes and opportunities to partner with organisations providing e-bike trials.

Investigate opportunities for Council to develop a bicycle infrastructure grant or give-away program for schools and community groups to support the development of green travel plans and the provision of bicycle parking and maintenance facilities.

Action 4.3

Increase participation of cycling within the community particularly:

- Support the uptake of cycling with beginner cyclists, women and older adults by trialling a program of regular local rides for beginners on Banyule's trails and safe streets.
- Investigate provision of 'give it a go' opportunities for people to trial diverse types of bicycles, including e-bikes, and become familiar with cycling particularly at Council-run festivals and events.
- Encourage participation and organise cycling focused events including 'Ride to School / Work,' days.
- Investigate opportunities to support delivery bike uptake amongst traders including increasing bike parking for traders servicing food deliveries by bike.

Action 4.4

Investigate and trial the implementation of CoDesign/VicHealth Play Streets or similar at 3 primary school, community group or residential street locations.

Action 4.5

Continue to demonstrate climate leadership by supporting Council staff to commute to work and local destinations by bicycle through the Banyule Corporate Emissions Reduction Plan, the Green Travel Plan and other initiatives.

7.4.2 Build a stronger bicycle brand for Banyule

Support the Banyule community and visitors to have access to information on cycling routes, facilities and opportunities. Celebrate cycling and riders in the community.

Action 4.6

Develop a communications plan to emphasise the benefits and increase the profile of active and sustainable transport within Banyule.

Look for opportunities to profile and promote 'cycling champions,' community members that are riding regularly - including school children, women, older adults and cycling groups.

Action 4.7

Develop an active and sustainable transport webpage that is an anchor point for cycling information within Banyule including online mapping, event Information and links to cycling, walking and public transport options.

Action 4.8

Support and encourage local bicycle clubs and user groups and expand membership to new riders particularly women and juniors.

Action 4.9

Annually publish a review of completed community projects that contributed to strengthening of the bicycle riding brand.

7.4.3 Measure cycling participation and perception

Support regular data collection to establish an evidence base to guide decision-making, determine targets for ridership and evaluate programs.

Action 4.10

Trial the introduction of bicycle count technology on main routes such as Main Yarra Trail, Darebin Creek Trail, Plenty River Trail and shared use paths within the Hurstbridge Rail Corridor.

Action 4.11

Undertake bi-annual counts via range of methods including school bicycle counts, Bicycle Network Super Tuesday and Super Saturday counts, counts at railway stations and primary schools participating in active transport programs.

Action 4.12

Include questions in Banyule Household Survey about cycling uptake and experience.

Action 4.13

Annually publish a table of bicycle counting projects along with their results including overall trip numbers; proportion of female and school-aged cyclists and popular routes to determine changes in cycling demand.

7.5 Action Plan Implementation

The successful implementation of this strategy will require:

- Commitment of necessary resources to undertake the network improvement, facilities provision, advocacy and cultural development work
- A strategic approach to physical works and funding applications

Ongoing review of the bicycle implementation plan in relation to strategic objectives

- A whole-of-Council approach to ensure effective implementation of this strategy.

7.5.1 What is Council responsible for?

Council relies predominantly on rates revenue and is responsible for the planning, delivery and maintenance of active transport infrastructure within City-controlled reserves, parks and roads. This includes about 85 per cent of Victoria's road network and most bicycle and pedestrian paths. However, in order to plan, design and deliver an effective active transport network, Council will need to work collaboratively with all levels of government.

An important function for Local Government is to advocate for local transport needs to other levels of Government and importantly, the private sector, for example, private bus and train operators –to help build business cases for enhanced service levels and assist in ushering these business cases through Government and ultimately deliver these enhanced services to the people of Banyule.

State and Federal Governments have significant legislative and financial powers over most of the transport policy, funding, and delivery of services and infrastructure. The relevant State and Federal Government departments and agencies control approvals for any path infrastructure located on, for example, the arterial road network, within railway corridors, in managed reserves/parks, and along some waterways.

Action 5.1

Develop project briefs and charters of actions to secure funding as part of Council's Capital Works Program and Initiatives budget planning.

Action 5.2

Create a multi-disciplinary team of Council officers to meet quarterly to guide implementation of this Strategy, review progress and resolve community requests for additional infrastructure.

Action 5.3

Investigate the creation of an Active Transport Advisory Committee for Banyule to meet quarterly to exchange ideas and advice and provide a conduit to the community.

Action 5.4

Explore, in conjunction with Council's urban design and open space planning teams, the development of a neighbourhood centre that could become an exemplar of cycling connections to schools, shops and public transport and tie into the State Government Strategic Cycling Corridor network and 20 Minute Neighbourhood framework

APPENDIX

A

BACKGROUND REPORT AND LITERATURE REVIEW

Background Report

Banyule Bicycle Strategy

V190811

Prepared for
Banyule City Council

29 May 2020

Banyule
CITY COUNCIL

Cardno

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1 Introduction

1.1 General

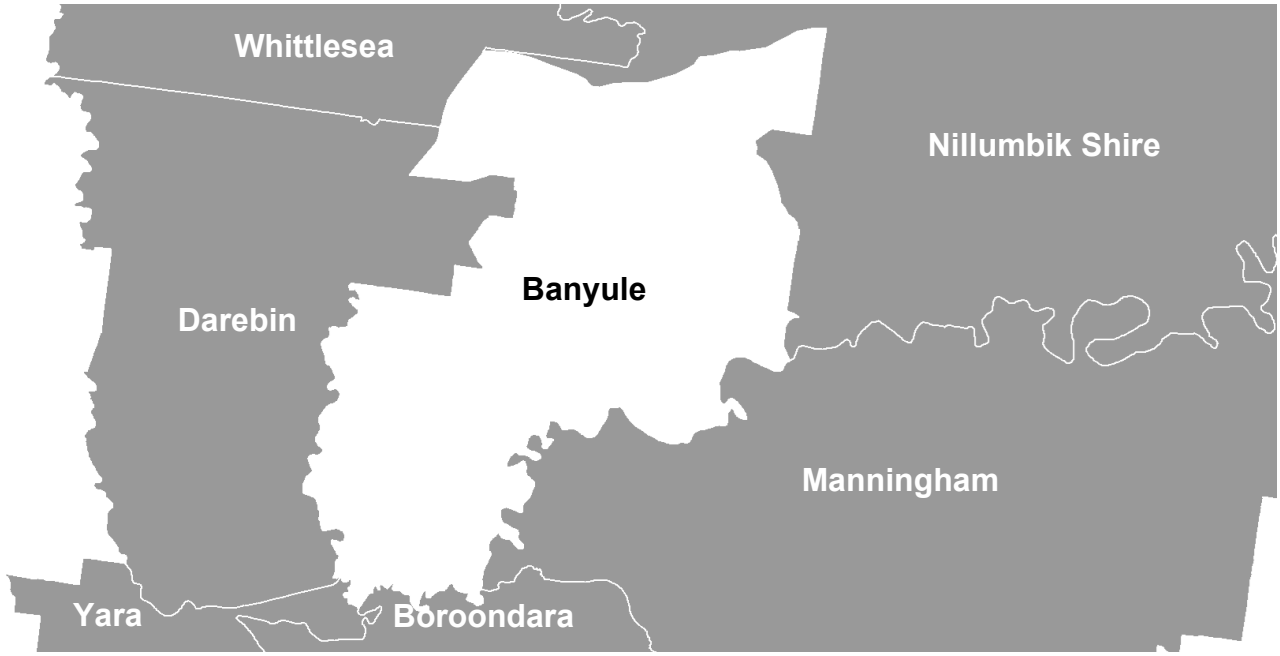
Cardno Victoria Pty Ltd (Cardno) has been commissioned by Banyule City Council to aid in the review and development of a new bicycle strategy. This background report sets the current context of cycling within the City of Banyule and provides early identification of issues and opportunities. This context will be used to inform the development of the updated bicycle strategy, to be undertaken in the following stages.

As part of this assessment, Cardno has undertaken an inspection of the municipality from the perspective of a cyclist to gain an understanding of opportunities, constraints and difficulties throughout the area.

1.2 Background

The Banyule local government area is located approximately 7km to 21km northeast of central Melbourne. Figure 1-1 shows the municipality in the context of surrounding councils. The Yarra River runs along the south-eastern boundary and Darebin Creek runs along the western boundary. Three Major Activity Centres (MACs) are located within this area, being Heidelberg, Ivanhoe and Greensborough. The La Trobe National Employment and Innovation Cluster (NEIC) is situated to the immediate west of the Banyule boundary, with the Metropolitan Ring Road and Greensborough Bypass located to the north. Banyule is primarily a residential area with a varying topography and includes expansive areas of open space particularly along the Yarra and Plenty River valleys. Other key land uses within the municipality include major health campuses, retail and commercial uses, industrial uses, educational institutions and leisure facilities.

Figure 1-1 Banyule Local Government Area



Based on the 2016 Australian Bureau of Statistics (ABS) census data, the population of Banyule is increasing at a 0.6% growth rate per annum with a median age of 39 years, higher than the median for both Victoria and Australia. Banyule is identified as having an ageing population which is forecast to continue over the next 30 years, resulting in an increase in the demand of health and aged care services.

In order to minimise the associated cost impact to all levels of government and maintain community wellbeing, it is vital to provide a high level of access to public open space for low-impact recreation as well as good quality active mode infrastructure which decreases reliance on private vehicle transportation. At present, car dependency is identified as being high in Banyule, coupled with a current lack of provision and connectivity of cycling infrastructure. A number of major projects of state significance are planned or occurring within the municipality, providing both an obstacle and an opportunity with respect to the cycling network.

Improving cycling infrastructure is beneficial from a public health perspective with additional environmental sustainability benefits associated with reduced private vehicle usage. Banyule City Council is committed to

environmental sustainability, having declared a climate emergency in October 2019 and adopted an ambitious target of carbon neutrality by 2028.

1.3 Purpose of the Banyule Bicycle Strategy

The development of the Banyule Bicycle Strategy (BBS) will significantly contribute towards creating a safe, convenient and accessible network of cycling infrastructure for all ages and abilities. Consideration is to be given to linkages with other transport modes and key destinations, while complementing Banyule's natural environment, community character and the community's overall standard of living.

As an overview, the purpose of the BBS is to provide a framework of objectives and key strategies for achieving this vision. These objectives and strategies will be developed as the BBS progresses beyond this background review phase.

1.4 Referenced Documents

A number of background documents and studies have been considered in preparing the BBS, including:

- Victorian Bicycle Strategy 2018-2028;
- Movement & Place (M&P) Framework 2019;
- Northern Regional Trails Strategy 2016;
- Banyule Council Plan 2017-2021;
- Banyule Integrated Transport Plan (BITP) 2015-2035;
- Banyule Bicycle Strategy 2010-2020;
- Banyule Bicycle Route Review 2018 (draft);
- Neighbouring Council Bicycle and Transport Strategies;
- Strategic Cycling Corridors – Overview Document for Councils 2019;
- Bicycle Facilities at Banyule Rail Stations – Report 2019; and
- Banyule Safe Travel Plan 2016 – 2026.

Key Strategies are summarised in Chapter 2 and discussed further with other background documents in Literature Review.

2 Literature Review

Council has provided Cardno with considerable local and strategic planning documentation and studies for consideration as set out in the previous reference document list. These can be broadly grouped in the following categories:

- Strategic and State Strategies;
- Local and Neighbouring Strategies; and
- Relevant transport studies.

A thorough analysis of these documents has been undertaken and is included in Literature Review. The key strategies relevant to the BBS are summarised in this section.

2.1 Victorian Bicycle Strategy 2018-2028

The Victorian Bicycle Strategy 2018-28 vision is to increase the number, frequency and diversity of Victorians cycling for transport by investing in a safer, lower-stress, better-connected network, prioritising strategic cycling corridors, and by making cycling a more inclusive experience.

Key actions within the Strategy relate to a Strategic Cycling Corridors (SCC) network and include:

- Working with state government agencies, local councils and industry to review and update guidelines for SCCs to ensure a consistent approach and understanding of what a high-quality network of cycling infrastructure looks like;
- Prioritising investment in high quality infrastructure for SCCs with the current and potential highest levels of demand with the goal of making cycling an attractive mode of transport for people of all ages, especially those who are curious about cycling but are concerned about interactions with vehicles, i.e. “interested but concerned people”; and

- Working with local councils to connect SCCs on local streets, arterial roads, highways, rail corridors and green spaces. Working closely with local councils to plan, identify and deliver improvements to SCCs and to support the 20-minute neighbourhood concept, especially for cycling to schools, train stations and activity areas. It is noted that the 20-minute neighbourhood concept derives from *Plan Melbourne* and is about giving people the ability to meet most of their daily needs within a 20-minute walk from home, with safe cycling and local transport options.

2.2 Northern Regional Trails Strategy 2016

It is anticipated the northern region of Melbourne will experience rapid growth, reaching a population of 1.6 million people in 2050 (Victoria in Future, 2014). The northern municipalities including Banyule are already facing challenges in ensuring that infrastructure is properly planned, funded and delivered to support social, economic and environmental outcomes. As the urban footprint of the north expands and becomes increasingly dense due to the increase in population, the availability of public realm space will pose a major challenge.

The predicted shift in demographic profile that is forecast to directly relate to population growth would exacerbate the space constraint issue. It is expected that the population will age significantly over the next 30 years, placing increased demand on health and aged care services. In order to minimise the associated cost impact to all levels of government and maintain community wellbeing, it will be vital to provide a high level of access to public open space for low-impact recreation and exercise options such as off-road trails.

Thus, the Northern Regional Trails Strategy 2016 was established to provide a framework for the future development and maintenance of a recreational off-road trail network. The Strategy defines a vision and plan for the future of off-road recreational trails in Melbourne's north. The objective of the strategy is to:

- Leverage existing recreational off-road assets to build a cohesive, integrated, regional trail network;
- Address existing gaps in the network by extending existing corridors; and
- Implement new trail corridors in response to urban development, densification and population growth.

2.3 Banyule Integrated Transport Plan 2015-2035

The aim of the Banyule Integrated Transport Plan (BITP) 2015-2035 is to aid the development of a safe transport system that supports an accessible, sustainable and active Banyule. In relation to the Banyule Bicycle Strategy Review, the BITP proposes a range of Strategic Directions (SD) and Actions (A) that should be considered in the updating of the Banyule Bicycle Strategy as listed below:

- SD1: A consistent and strategic approach will be used to manage cycling.
  - A1 Review and update the Banyule Bicycle Strategy.
  - A2 Review the existing cycling network to identify missing routes, gaps and deficiencies.
  - A3 Support the implementation of the Northern Regional Trails Strategy to improve links through and beyond Banyule.
  - A4 Advocate to VicRoads and to the State Government for the completion of the Principle Bicycle Network across Banyule.
- SD2: The cycling network will cater for all ages and abilities.
  - A5 Develop and extend the existing bicycle network of links between our key destinations, and work with neighbouring councils and the State Government to strengthen the suburban bicycle network.
  - A6 Develop a bicycle accessibility map to help promote riding routes within and beyond Banyule.
  - A7 Provide end of trip facilities at key destinations, including bicycle parking and charging points for electric bicycles.
  - A8 Improve cyclist navigation through wayfinding and directional signs.
  - A9 Consider the needs of cyclists in all transport infrastructure upgrades and street maintenance programs.
- SD3: Council will promote a cycling culture.
  - A10 Support schools to participate in Bicycle Network's Ride to School program.
  - A11 Promote cycling as a fun, practical and healthy transportation choice through the development and implementation of behaviour change programs.

- A12 Co-fund the provision of Parkiteer cages at railway stations in conjunction with Public Transport Victoria.

2.4 Banyule Bicycle Strategy 2010 – 2020

In January 2010, a previous iteration of the Banyule Bicycle Strategy was prepared which assessed the current cycling needs and infrastructure within the municipality to identify priorities for cycling facility provision. This strategy provided a suite of actions to focus on throughout the region to improve cycling conditions as outlined below:

- To plan for increasing transport sustainability in Banyule and minimise the impacts of private vehicles, traffic congestion and pollution on Banyule's environment;
- To provide a safe, continuous, direct and convenient bicycle network and related infrastructure which encourages cycling for journey to work and recreational purposes;
- To promote linkages between cycling and other modes of transport, and between off and on-road bicycle networks;
- To establish and promote the hierarchy of transport models for access to Activity Centres and other key facilities in Banyule;
- To promote the health and well-being benefits of cycling;
- To complete the Principal Bicycle Network in Banyule by 2019;
- To fund planning, design, construction and maintenance of bicycle projects and programs at an adequate level;
- To develop measures to track progress on improving bicycle programs, participation, safety and infrastructure; and
- To educate cyclists, pedestrians and motorists about safe operating behaviours.

Some actions recommended by this strategy to meet these aims have proved difficult to achieve. This has been largely due to competing priorities within both Council and state government. The new strategy will endeavour to provide guidance and prioritise actions that will attract widespread support and be achievable.

2.5 Banyule Bicycle Route Review 2018

Banyule City Council commissioned Trafficworks to undertake a review of all Local Bicycle Network (LBN) routes within the municipality. Included within this review was an investigation into the existing conditions included within the LBN and other routes that contained bicycle facilities that did not form part of the LBN.

A number of the findings outlined within this assessment have been relied upon as part of this report including summaries of the route characteristics, existing conditions and LBNs throughout the region.

Furthermore, Trafficworks provided recommendations to which LBN routes should be modified, rerouted or abandoned, and infrastructure improvements that can be made on each route. These recommendations and background investigation have been used as a valuable input to the development of this strategy.

3 Site Inspection

To build on the understanding of the cycling network and environment within Banyule, particularly from a cycling perspective, Cardno representatives undertook an extended site inspection on 23 January 2020. Across its duration, the following routes and destinations were inspected as indicatively outlined in Figure 3-1.

- Ivanhoe town centre & Railway Station;
- Heidelberg town centre & Railway Station;
- Greensborough town centre & Railway Station
- Watsonia Railway Station;
- Heidelberg Park;
- River Gum Walk Trail;
- Greensborough Road shared user path;
- Grimshaw Street;
- Plenty River Trail
- Metropolitan Ring Road Path;
- Plenty Road shared user path
- Oriel Road;
- Livingstone Street;
- Darebin Creek Trail; and
- The Boulevard.

Figure 3-1 Site Inspection Route

During the site inspection, the following was generally observed:

- Within town centres bicycle priority is lacking with dominant on-street car parking and limited provision of bicycle lanes or markings.
- The topography and distance from the CBD are of a challenging nature for cyclists commuting from Banyule.
- There is high car parking demand that could be accommodated with increased bicycle parking facilities at Banyule's railway stations.
- Last-mile bicycle routes connecting to railway stations are generally limited. For example, at Heidelberg station, whilst on-road bicycle lanes are provided on the adjacent Mount Street and Studley Road, there are limited facilities on Banksia Street & Burgundy Street connecting to these local streets;
- There are many examples of discontinuous bicycle routes in Banyule. Some examples include heading southbound on Plenty Road at Yulong Park (Figure 3-4) and heading northbound on Greensborough Road at Yallambie Road;
- Off-road shared paths typically do not connect seamlessly to on-road facilities creating a number of missing links; and
- Wayfinding generally was lacking and did not sign connections sufficiently. This includes signage at the end of off-road facilities, linking between nearby facilities and directional signage to key destinations.

Figure 3-2 Heidelberg Road, Heidelberg

Figure 3-3 Main Street, Greensborough

Figure 3-4 Plenty River Trail at Greensborough Bypass

4 Existing Conditions

4.1 Demographic Information

The population of Banyule has increased from 118,306 in 2011 to 121,865 in 2016, indicating an average population increase of 0.6% per annum. In comparison, Victoria has seen a 2.1% per annum increase in population during this time period.

The median age for Banyule remained at 39 between 2011 and 2016, above Victoria's median age of 37. Figure 4-1 illustrates that Banyule has a greater proportion of residents over 55 and a lower proportion of residents under 35 compared to Greater Melbourne, highlighting an older population which signifies the need for increased Disability Discrimination Act (DDA) compliance, active transport infrastructure, and decreased reliance on private transportation for healthy and active lifestyles to support older residents.

Figure 4-1 Age-Sex Pyramid[1]

Based on the *'idcommunity'*[2] profile prepared for Banyule, around 71% of working residents commute outside of Banyule, with 36% living and working in Banyule. This indicates that although there is a significant proportion of people travelling outside of Banyule for work purposes, there is still a reasonable proportion of local residents employed within Banyule.

[1] https://profile.id.com.au/banyule
[2] https://profile.id.com.au/banyule

The method of travel to work was derived from the 2016 Census Data (ABS, 2016). As illustrated in Figure 4-2, the car is the preferred method of travel to work, with 63% of residents utilising a vehicle, followed by train (15%). Residents which cycled to work made up 1% of those travelling to work. Of the 1%, 85% were male and the majority of cyclists (58%) were between the ages of 30 and 49 years.

Figure 4-2 Method of Travel to Work

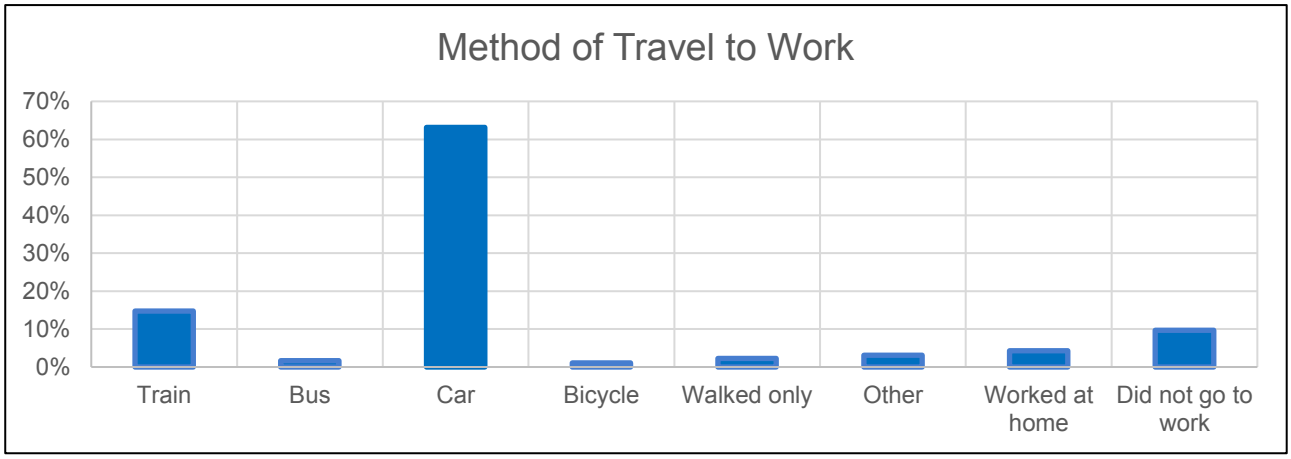
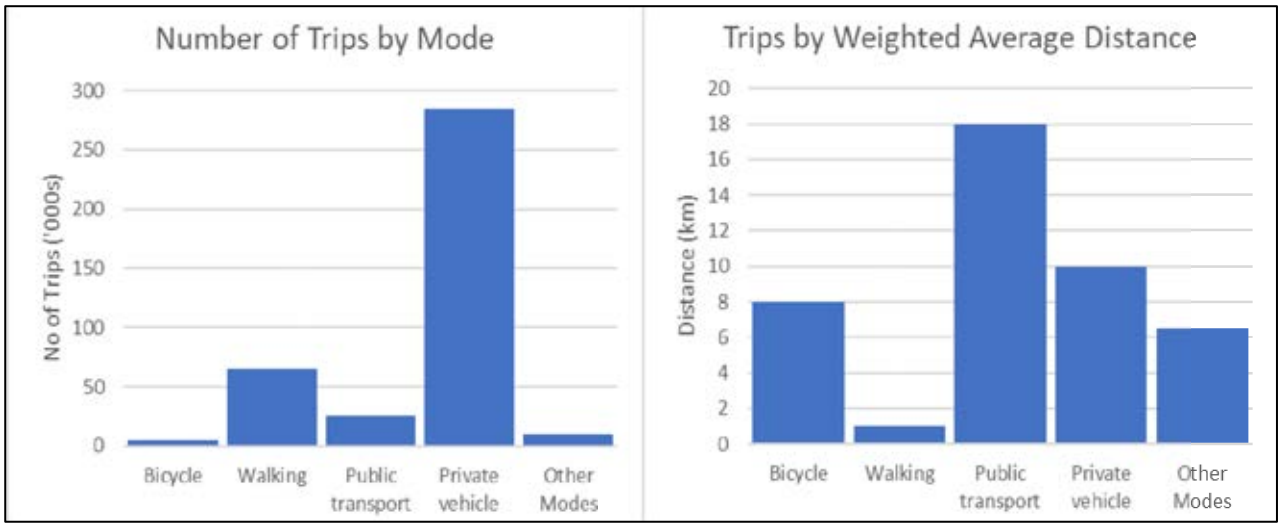


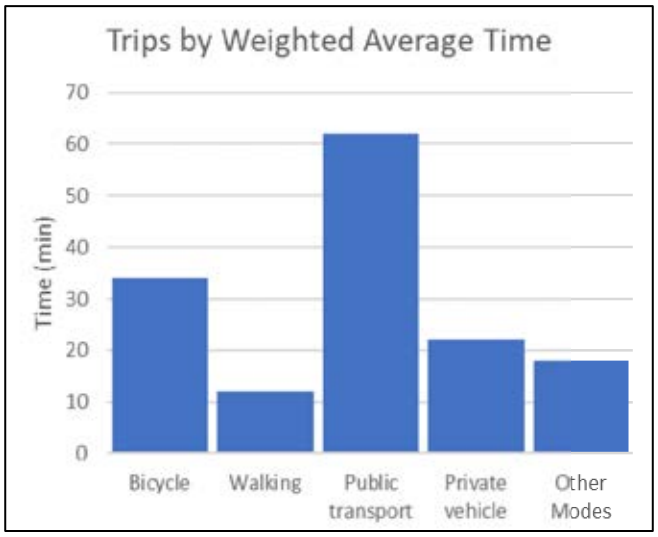
Figure 4-3 illustrates that on a daily basis, an average of 390,000 trips occur within Banyule with a majority being via private vehicles while cycling representing the lowest number of trips. It is also noted that a cyclist's average trip distance is approximately 8km and for a duration of 35 minutes. To relate this in a geographical context, the distance between the south-western and north-eastern extent of Banyule is approximately 14km, whilst the Melbourne CBD is approximately 7km southwest of the southern border of Banyule.

Cycling within Banyule and to surrounding municipalities, including the City of Melbourne, is readily achievable. However, to support this, cycling infrastructure that is as safe and direct as possible needs to be provided.

Figure 4-3 Banyule Typical Weekday Mode Share by Number of Trips[3]



[3] Victoria Integrated Survey of Travel and Activity (VISTA) for period 2012-2016



4.2 Topography

Banyule is described as having an undulating topography, with the elevations typically higher in the north than in the south. From a cyclist's perspective, the undulating terrain is more notable in the eastern and northern portions of the Municipality surrounding Greensborough and Montmorency where gradients in excess of 5% are common.

In combination with typically lengthy commuting distances required from Banyule residential areas to key employment centres (i.e CBD, La Trobe University) the surrounding topography is considered to create a significant barrier for daily commuting trips.

4.3 Cycling Infrastructure

Key public realm infrastructure for cycling typically includes on-road and off-road paths, bicycle parking and wayfinding signage. Broadly speaking, Banyule has good provision of off-road paths for cycling, however there is a lack of on-road facilities and connections to these off-road paths. The absence of on-road paths is notable towards and through the centre of Banyule's MACs, being Ivanhoe, Heidelberg and Greensborough.

The abovementioned MACs are also generally lacking in bicycle parking hoops in easily accessible public areas. The best example found was along Greensborough Walk in Greensborough, however it is noted that cyclist wayfinding signage is not provided along Main Street to this location. In terms of train station bicycle parking, Secure bicycle parking has been provided at Greensborough, Heidelberg and Watsonia Railway Stations via 'Parkiteer' storage cages managed by Bicycle Network. Bicycle parking, albeit limited in some cases, comprises bicycle hoops at the remainder of railway stations. A shortfall has been identified at Macleod, Ivanhoe and Montmorency.

Provision of effective cycling-related wayfinding signage in Banyule is also considered to be sporadic. Whilst there are some good examples, there are also key locations where more could be done to assist cyclists in finding connecting cycle routes. Furthermore, there are also examples where wayfinding signage suggests routes which are discontinuous, or where an alternative route may be more appropriate.

Examples of the variety of facilities provided throughout Banyule are outlined in Figure 4-4 below.

Figure 4-4 Existing Bicycle Infrastructure

Wayfinding Signage (Sparkes Reserve)

Off-road shared path (Greensborough Road) – Northbound route ends abruptly

Off-Road Shared Path and Trail (Banyule Flats)

Ivanhoe Centre (Upper Heidelberg Road)

4.4 Cycling Routes

Banyule consists of a combination of Principal Bicycle Network (PBN), Strategic Cycling Corridors (SCC), Local Bicycle Network (LBN) and the off-road trails as shown in Figure 4-7 and Figure 4-9 below.

Principal Bicycle Network (PBN)

The PBN is a network of existing and proposed bicycle routes that provide access to key destinations in the Melbourne metropolitan area. It was established in 1993 to guide State and local government investment in bicycle facilities that support cycling as a form of transport.

The PBN is generally aligned along the arterial road network and major collector roads within Banyule, focused on connecting to 'anchor' destinations such as activity centres. As noted during the site inspection, the quality of infrastructure along the PBN varies greatly with some areas yet to be sufficiently developed to facilitate the proposed function.

Strategic Cycling Corridors (SCC)

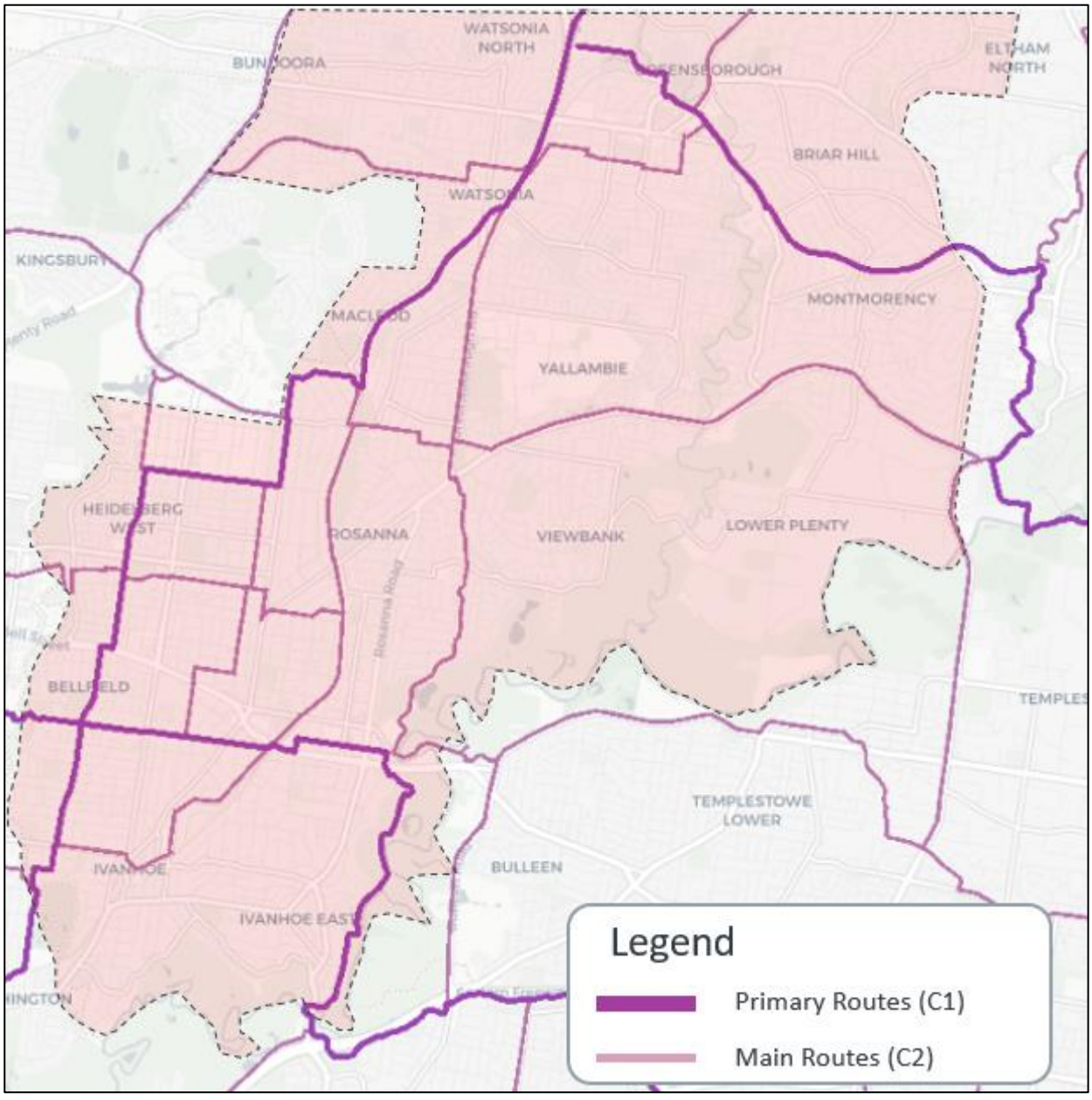
The SCC's network was first developed in 2015 by VicRoads. The network seeks to provide a safe alternative transport mode which will result in a lower-stress transport experience compared to other modes of transport. SCCs are destination focus and priorities the safety of the rider, followed by the directness of the route. SCC's are a subset of the PBN and are the most important routes for people cycling for transport as they link up important destinations (*Victorian Cycling Strategy 2018-28).*

The Movement and Place Framework has been developed by Department of Transport (DoT) which sets out the approach to transport planning in Victoria. As part of this Framework, the SCC network comprises two classifications:

- Primary Routes (C1): Primary Routes provide a core network of Strategic Cycling Corridors that connect places of state significance - the Central City, Metropolitan Activity Centres (MACs) and National Employment and Innovation Centres (NEICs) within the Metropolitan Melbourne.
- Main Routes (C2): Main routes are Strategic Cycling Corridors that provide additional connections to state significant destinations, as well as connections to major activity centres and key railway stations within metropolitan Melbourne.

Primary Routes and Main Routes aim to provide a space for cyclists to utilise, irrespective of age and ability.

Figure 4-5 Movement and Place Strategic Cycling Corridors



Courtesy of Department of Transport

Local Bicycle Network (LBN)

There are twelve local on-road bicycle advisory routes that have been developed and partially implemented over the last fifteen years. These routes have been designed to complement the PBN, SCC and trail network and provide safe bicycle routes across the municipality accessing key destinations including activity and neighbourhood centres, schools and railway stations.

Currently along each route there are typically a number of barriers that may discourage less confident cyclists. These include intersections with arterial roads and connections to roads from off-road shared paths. Additionally, wayfinding signage that would assist cyclists to navigate both these barriers and the LBN routes themselves is rarely provided.

For example, along LBN3 from Heidelberg West to Fairfield, at the intersection with Oriel Road and Livingstone Street (Figure 4-6), the existing cycling facilities abruptly end and cyclists have to negotiate the intersection without any signed or formalised guidance.

Similarly, at the intersection of Bell Street and Oriel Road, northbound and southbound cyclists are confronted with crossing a six-lane staggered intersection with high traffic volumes, with no directional signage or guidance provided.

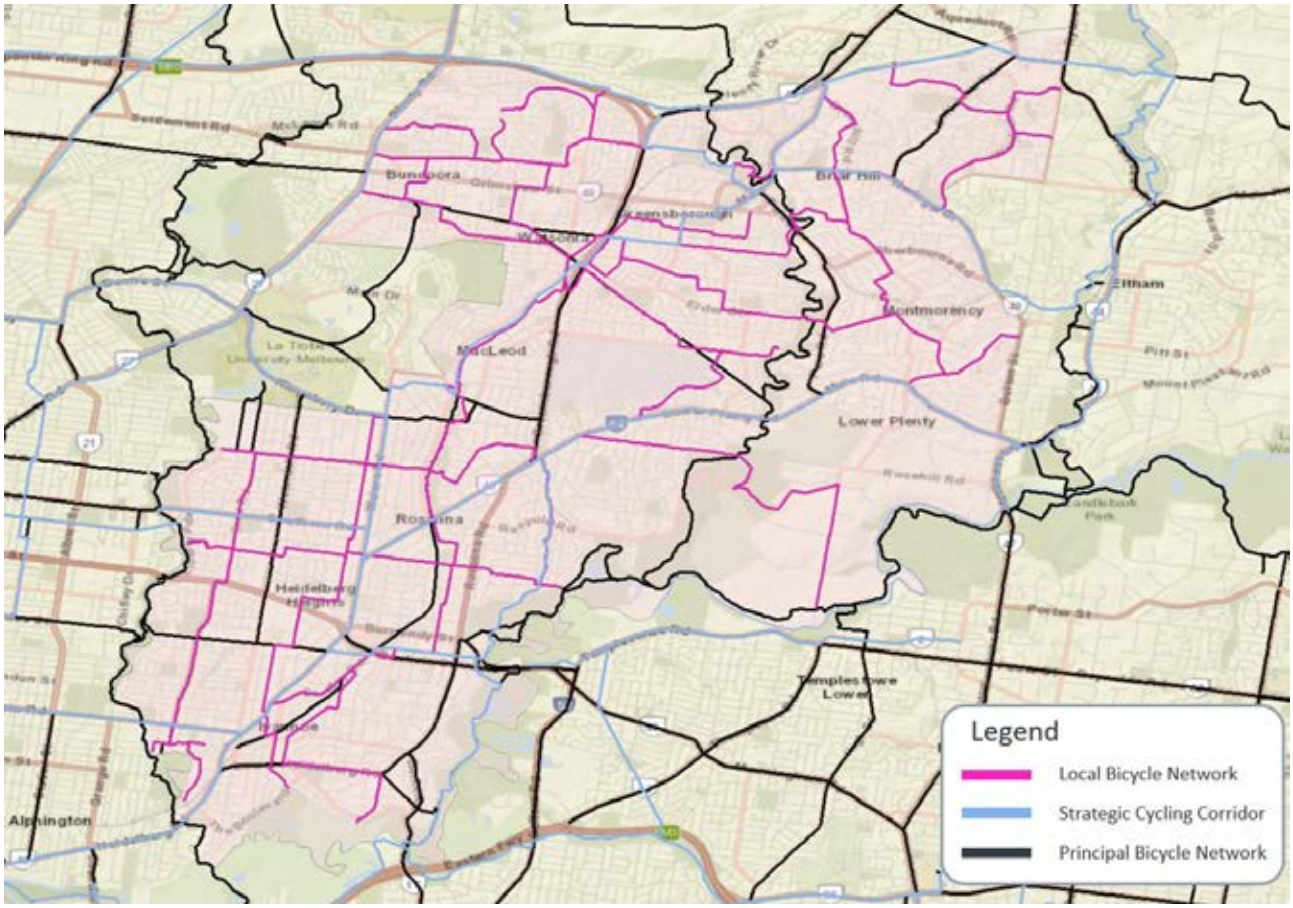
Figure 4-6 Livingstone Street and Oriel Road Intersection

4.4.2 Route Maps

As illustrated in Figure 4-7, the Banyule cycling network consists of prospective and existing PBN and SCC links traversing the municipality and running around its periphery, providing both internal and external connections. Both the PBN and SCC are complemented by the LBN which connects to residential areas and activity centres. It is noted that while this map presents a comprehensive network of bicycle infrastructure the reality is that many of the routes exist in theory only with inadequate facilities along others. Further there are opportunities to provide additional cycling routes that would introduce travel time and safety benefits to cyclists.

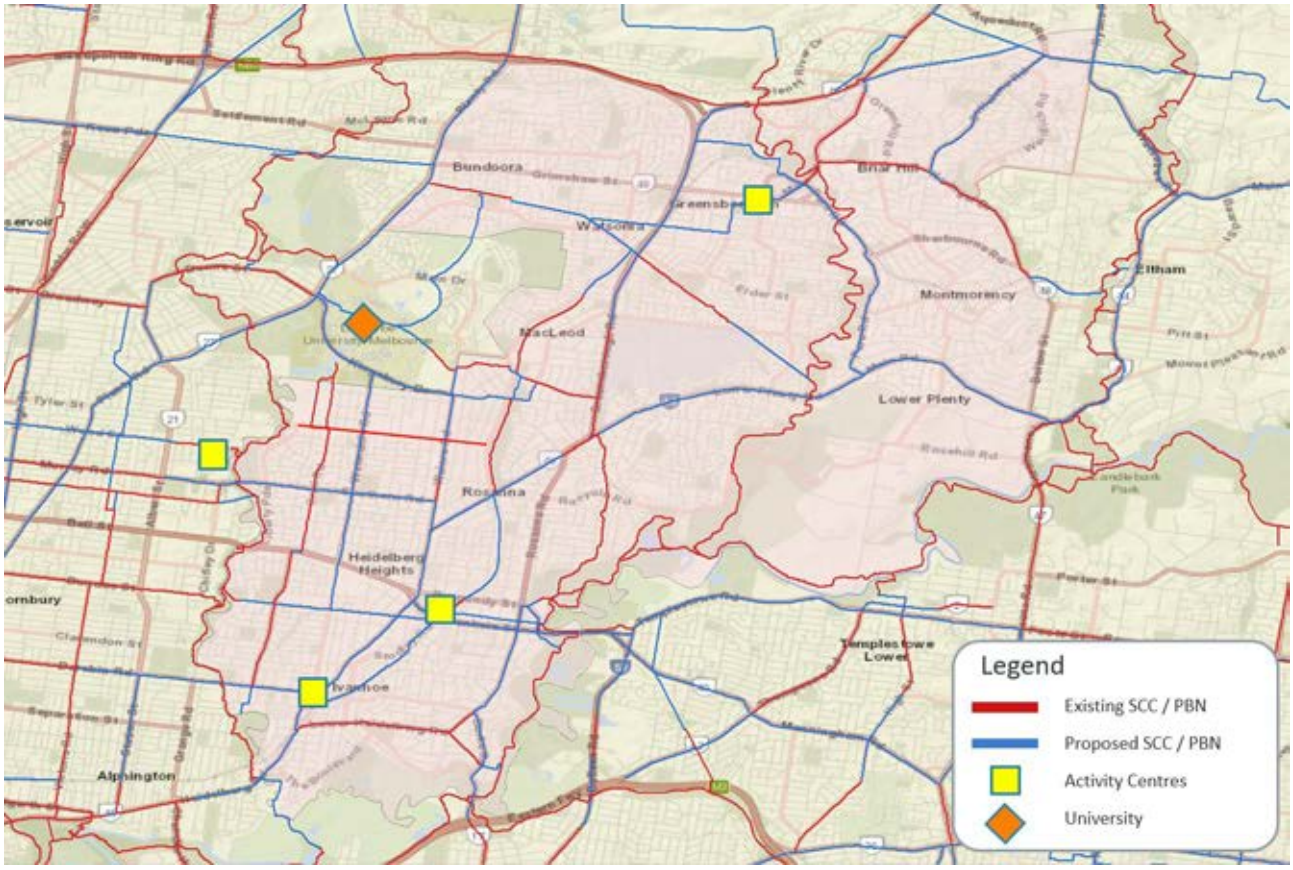
Figure 4-8 reinforces this by outlining which PBN and SCC routes are considered by the Department of Transport/VicRoads to be in place and include satisfactory facilities. As shown, there are significant gaps throughout the network, including within the proximity of major activity centres. As such it is considered that this map provides a better picture of the difficulties confronting cyclists within Banyule, with direct routes generally not available. It is noted that although these maps were last dated in 2016, based on observations during our site inspection, this figure continues to provide an accurate representation of the existing network.

Figure 4-7 Proposed Cycling Network Map



Network routes courtesy of Department of Transport (Dated July 2016)

Figure 4-8 Existing and Proposed Strategic Cycling Corridor & Public Bicycle Network



Network routes courtesy of Department of Transport (Dated July 2016)

Off-Road Bicycle Route Network

Off-road bicycle routes are completely separated from the road network. They can be sealed or unsealed and provide improved safety benefits for cyclists due to separation from vehicular traffic. It is noted that within the municipality most of this off-road infrastructure is shared with pedestrians. Where this shared infrastructure is sealed it is known as a shared user path (SUP).

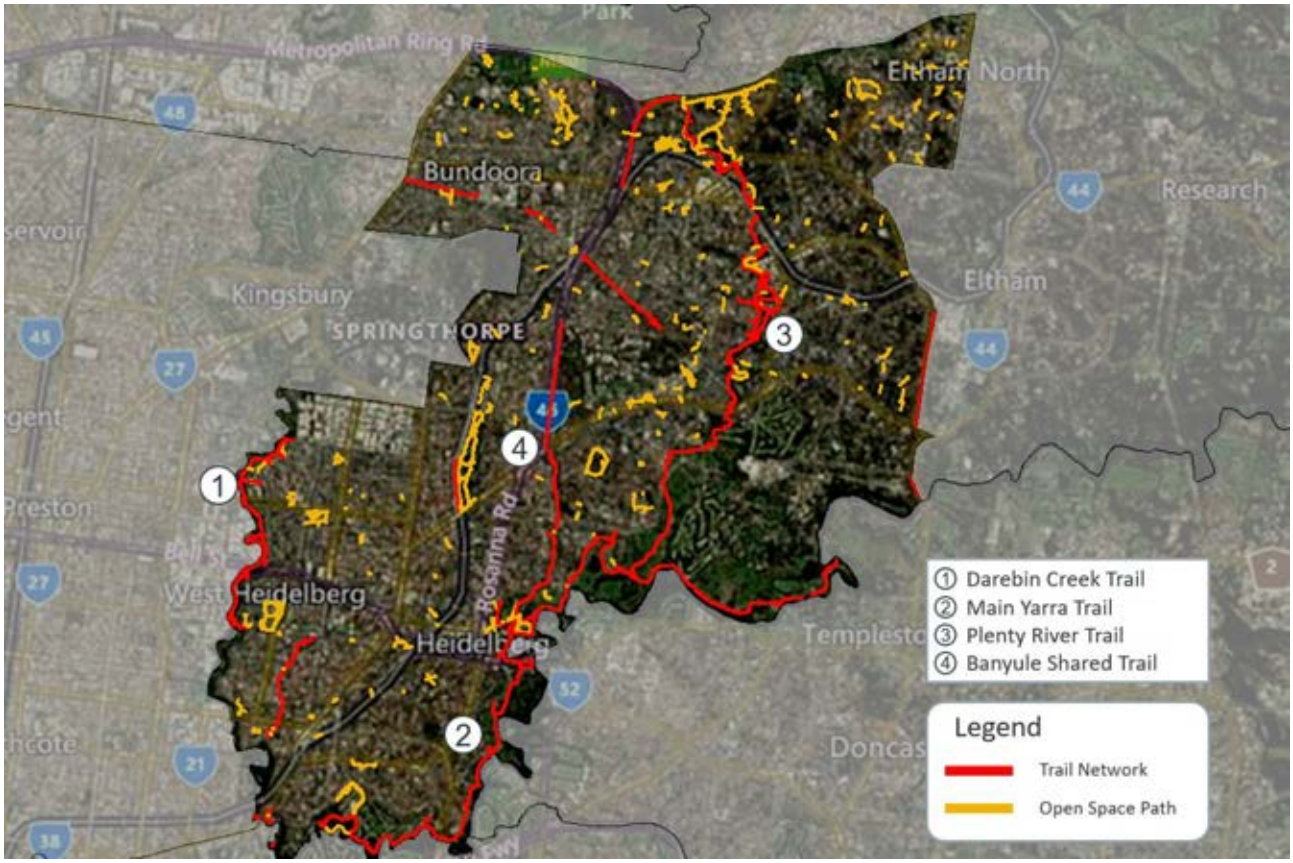
Banyule has an off-road bicycle network consisting of approximately 38km of mainly unsealed trails including the following key routes:

- Darebin Creek Trail (upgrade in progress);
- Main Yarra Trail;
- Plenty River Trail (upgrade proposed); and
- Banyule Shared Trail.

Figure 4-9 shows both the trail and open space path network within Banyule. The trail network is serviceable for both cyclists and pedestrians, while open space paths are generally only suitable for pedestrians.

As shown in Figure 4-7 and Figure 4-9 on paper a substantial cycling network exists within Banyule, however in reality there are significant gaps in the network allowing for opportunities to improve both the convenience and safety of cyclists. For instance, for commuters heading towards Melbourne's Central Business District (CBD), there are instances where a direct off-road route could be implemented to reduce the travel distance and time for commuters and improve safety by reducing conflict points between vehicles and cyclists.

Figure 4-9 Off-Road Trails and Open Space Paths Map



While off-road routes provide a safer environment for cyclists, often they do not provide a direct link to destinations. This reduces the desire of cyclists to use the off-road network, as they are still required to ride on sections of road unprotected. During the site inspection, it was observed that this led to awkward interactions where cyclists would be required to travel, potentially illegally, on footpaths for moderate distances prior to re-joining the subsequent facility. Further shared-use infrastructure can create the potential for conflict where the path width is too narrow for volume of use or where users do not understand, or choose to ignore, accepted norms of behaviour including:

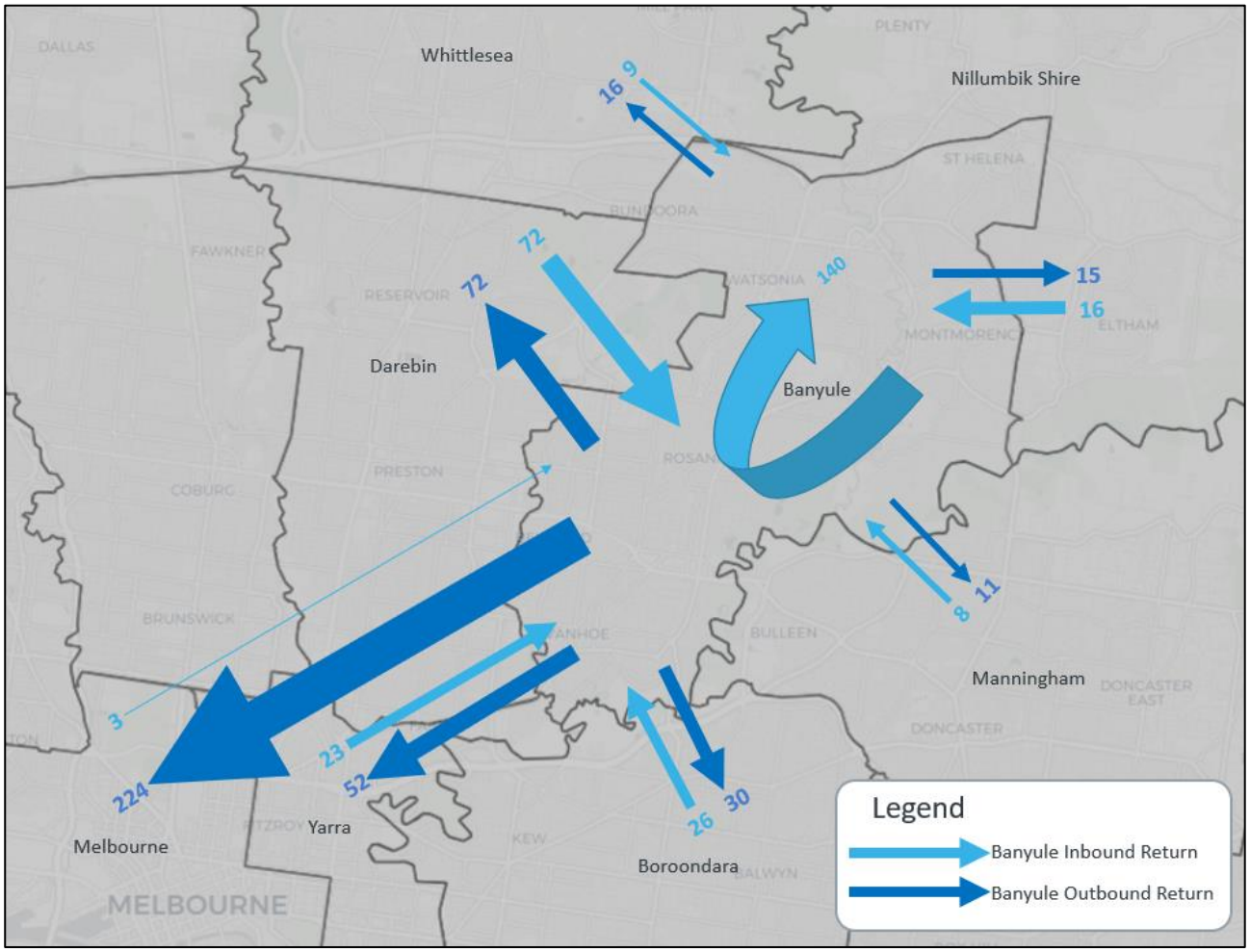
- On the part of cyclists: riding at high speed, overtaking too close, and failure to signal before overtaking; and
- On the part of pedestrians: blocking the path, unpredictable movements and crossing the path without looking.

4.5 Cycling Movements and Counts

Figure 4-10 illustrates the proportion of cycling return commuter trips to and from Banyule by their destination, including trips wholly within Banyule that was derived from the 2016 Census Data (ABS, 2016). The number of employed persons and their method of travel to work information were extracted for the study area. The following comments are made in relation to this data:

- The City of Melbourne is a relatively high trip generator for cycle commuting as shown by the number of return trips when compared to the external trips to the neighbouring Local Government Areas. This is expected, given the employment opportunities associated with a CBD;
- The second largest attractor of cycle commuting for Banyule residents is trips internal to Banyule;
- Return trips to Darebin are also relatively high, matched by the number of residents who commute by cycling from Darebin to Banyule; and
- Around 64% of people working within Banyule resides at a different local government area with reference to *'idcommunity'* profile data. As depicted in Figure 4-10, the three highest inbound cycling movements originated from Darebin, Boroondara and Yarra.

Figure 4-10 Cyclists commute trips from Banyule (daily), by destination[4]

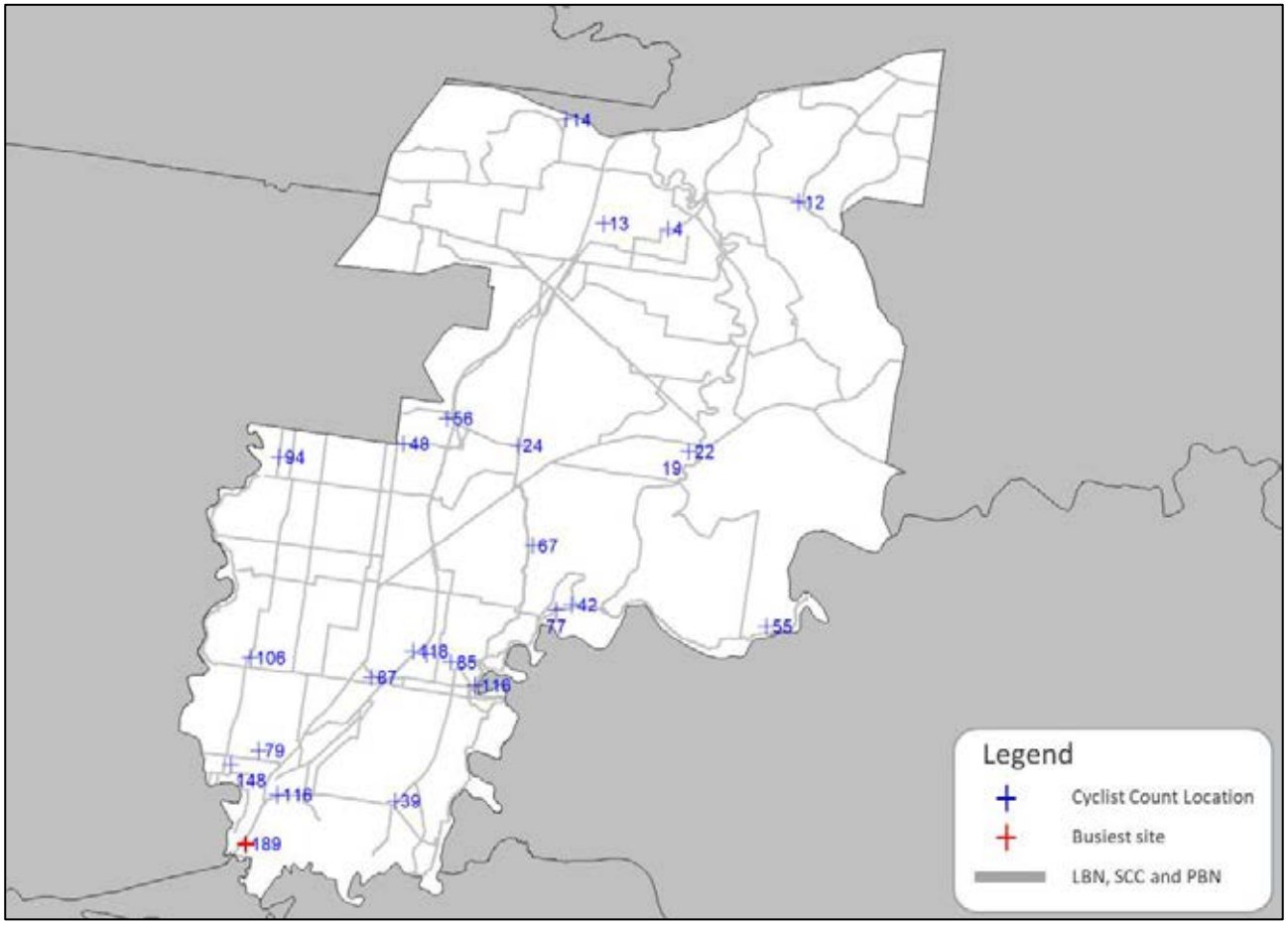


[4] ABS Journey to Work data, Census of Population and Housing, 2016

Figure 4-11 shows the 2017 AM cycling counts for 25 sites within Banyule. This information was sourced from the Super Tuesday Commuter Bike Count that was conducted on Tuesday 7 March 2017 for two hours from 7am to 9am, with a total count of 1,719 trips during this time period. Super Tuesday counts collect active travel data for Local Councils, including gender, time and directional flow. Based on this survey information, it is noted that:

- Overall cycling trip increase of 5% compared to 2015 survey counts which is an equivalent of 2.5% per annum indicating a positive result in gaining cycling health benefits and reducing vehicle congestion etc;
- Female riders represented 15% of bicyclists across the municipality which is below the average female ridership in Victoria (22%); and
- Out of the 25 sites, the busiest site was at the intersection of Heidelberg Road and The Boulevard with an average of 95 trips per hour.

Figure 4-11 2017 Morning Peak (AM) Cyclist Counts[5]



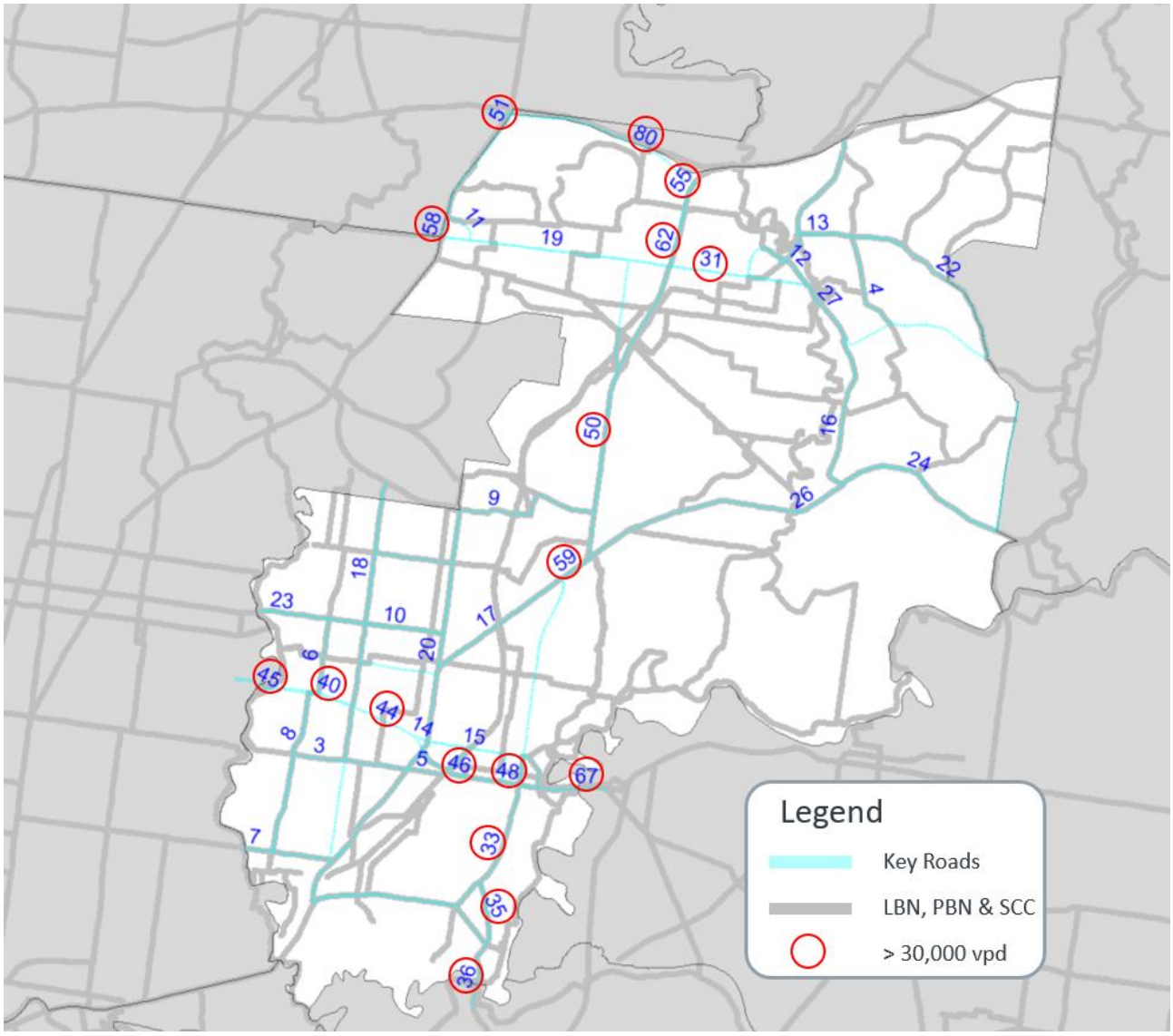
[5] Super Tuesday Survey Counts 2017

4.6 Vehicle Volumes

Traffic volumes were also considered for the review of the cycling network within Banyule as vehicles pose the most severe risks to cyclists utilising on-road infrastructure. Figure 4-12 below shows the 2019 Annual Average Daily Traffic (AADT) for key roads within Banyule. The below locations had AADT above 30,000 vehicles.

- Greensborough Highway (PBN);
- Metropolitan Ring Road (SCC);
- Rosanna Road – Not Designated;
- Lower Heidelberg Road (LBN);
- Manningham Road/Banksia Street (PBN);
- Burke Road (PBN);
- Grimshaw Street (LBN/SCC);
- Plenty Road (SCC); and
- Bell Street – Not Designated.

Figure 4-12 2019 AADT ('000s), Banyule[6]



As illustrated in Figure 4-12, there are a number of key planned and existing cycling routes where the corresponding vehicle volumes on the same road is significant, at 50,000 vehicles per day or greater. Due to the significant safety implications, it will be important that these routes in particular provide either horizontal or vertical segregation between vehicles and cyclists. For example, the provision of a stepped cycle track (ie. a track with some form of grade separation) would introduce major safety benefits to cyclists as well as motorists.

[6] VicRoads Open Data, 2019

4.7 Crash Statistics

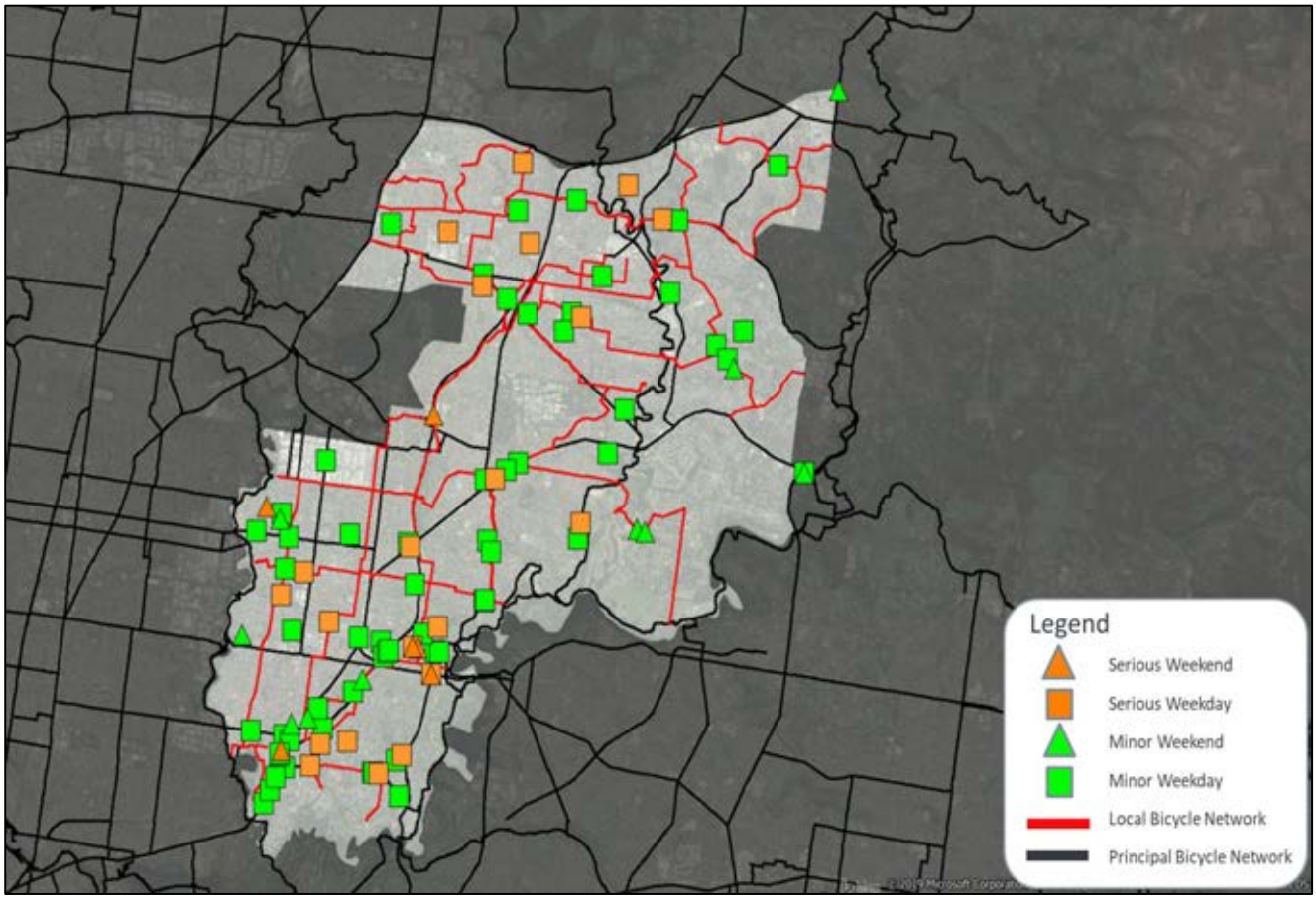
An assessment of the crash history for the study area was undertaken by analysing crash data for the past five calendar years obtained from VicRoads Road Crash Information database. Principally focused on on-road incidents, the database contains all reported casualty crashes, which include the categories of Fatal, Serious Injury and Other Injury crashes. Non-injury or property-damage only crashes are not included in this database. As such, if a crash is not reported it will not be presented within the Crash Stats database.

The categories of crash severity are defined as follows:

- > **Fatal Injury** – one or more persons are killed in the crash, or die within 30 days from injuries sustained in the crash.
- > **Serious Injury** – one or more persons are admitted to hospital as a result of injuries sustained in the crash.
- > **Other Injury** – one or more persons are given medical treatment for injuries sustained in the crash.

A total of 977 crashes were reported for this time period, of which 98 crashes (approximately 10%) were associated with cyclists, and 19 crashes where both a cyclist and pedestrian were involved. This data is presented in Figure 4-13.

Figure 4-13 Reported Motor Vehicle Crashes with Cyclists (2014-2018), Banyule



Note: Each point designating a 'Serious Weekend / Weekday' or 'Minor Weekend / Weekday' incident generally indicates a single crash. If two or more crashes have occurred and reported at the same location (i.e. intersection), and meet the same categories (i.e. serious/minor, weekend/weekday) than these may be captured by a single point.

In relation to Figure 4-13, the following points are made:

- > A majority of the crashes occurred on a weekday (approximately 83% of cyclist related crashes);
- > 91% of bicycle crashes involved a collision with a vehicle;
- > Out of the total cyclist associated crashes, no fatal crashes were reported and were only deemed serious and minor, at a proportion of 27% and 73% respectively;
- > Crashes are generally spaced throughout Banyule, with particularly high-risk areas located within and between the southern border of council area and the Heidelberg Town Centre ;

- Cyclist associated crashes occur 23 times per year on average, with similar serious to minor crash ratios over the 5-year period (as depicted in Figure 4-14);
- 35% of cyclist associated crashes reported that a party involved was under the influence of alcohol, however the reports do not indicate which party;
- A majority of the cyclist crashes occurred during daytime (approximately 71%) indicating that lighting around cycling facilities is unlikely to be a critical factor;
- There is a high proportion of crashes that occurred within the 50km/h and 60km/h road sections as illustrated in Figure 4-15. This poses a very high risk to cyclists as they are highly vulnerable to injury or death in such environments;
- Approximately 56% of the recorded cyclist crashes occurred at intersections and 44% at non-intersection locations; and
- Only 1% of crashes were reported at off-road locations. As noted previously, as crash stats data relies on reported incidents, these are often not presented at off-road facilities.

Figure 4-14 Recorded crashes over the period 2014-2018

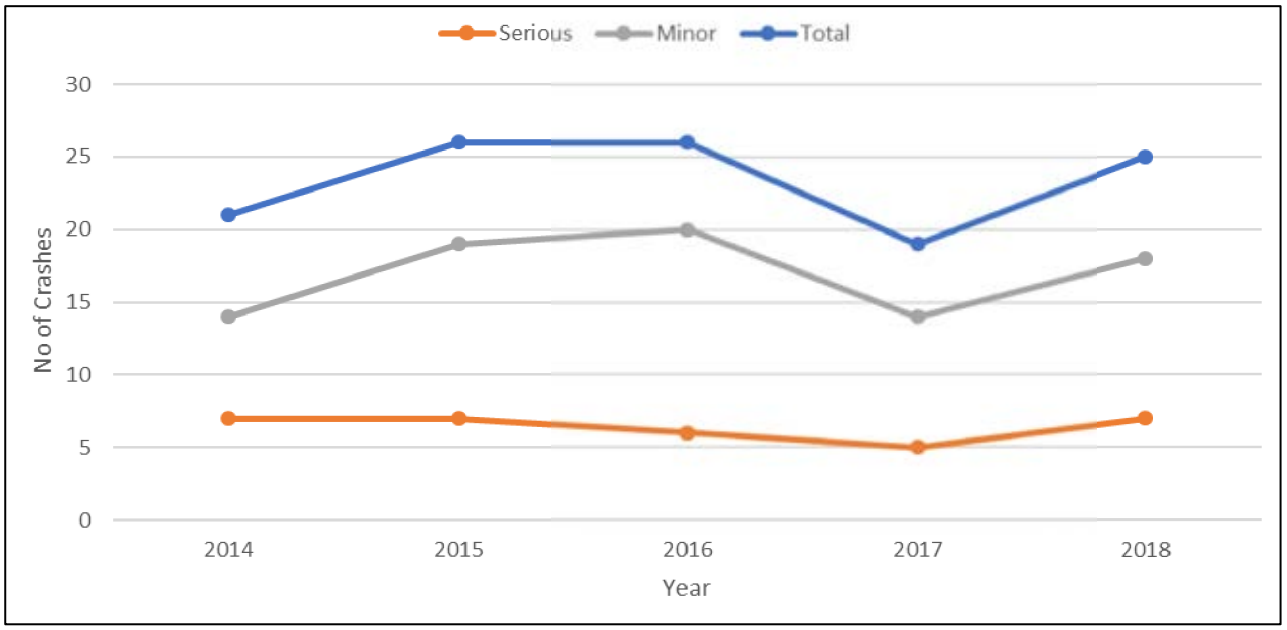
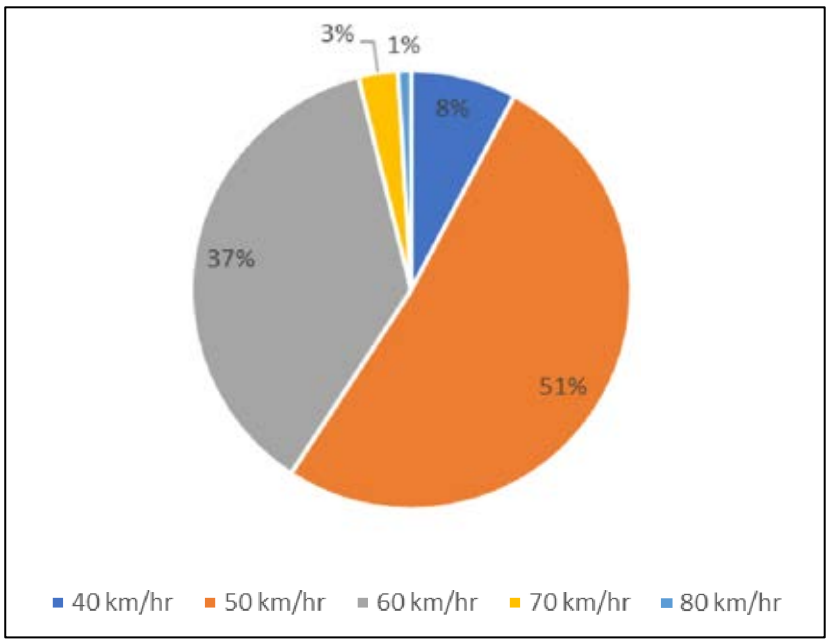


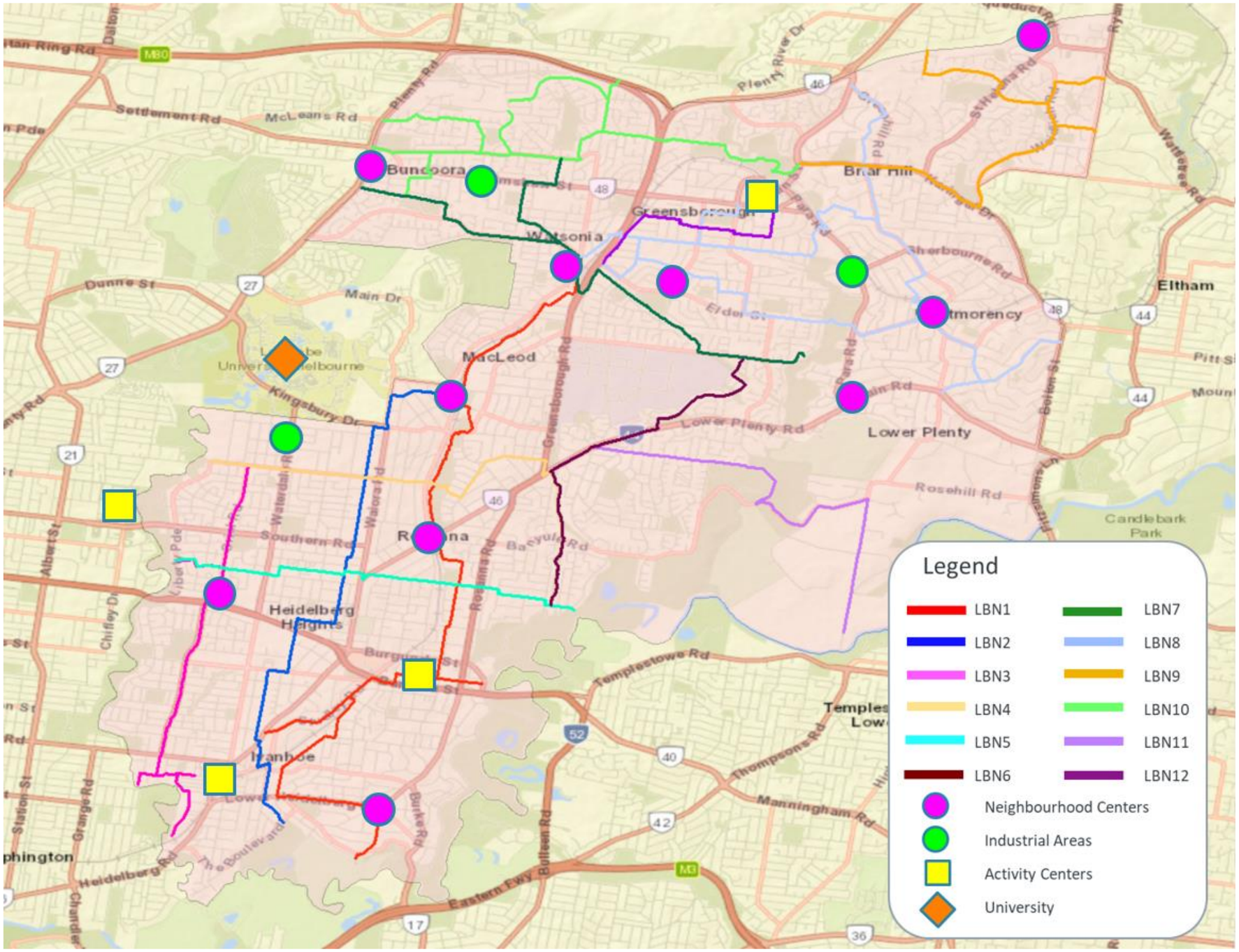
Figure 4-15 Crash proportions by road speed zones



5 Local Bicycle Route Infrastructure

There are 12 LBNs within Banyule as illustrated in Figure 5-1 below. The objective of these routes is to provide a continual cycling network within the municipality linking the residential areas to key destinations such as activity centres.

Figure 5-1 Local Bicycle Network, Banyule



5.1 LBN Route Characteristics

A review of the LBN was carried out in 2018 to understand its current fit for cyclists, including the safety of routes and links to key destinations, off-road trails and the PBN/SCC networks within Banyule. A high-level summary of the LBN characteristics is summarised in Table 5-1 below. Detailed infrastructure characteristics can be found in the *Draft Banyule Bicycle Route Review Report 2018*, prepared by TrafficWorks.

Table 5-1 Route Characteristics[7]

Local Bicycle Network	Route ID	Length (km)					Road width (m)	Speed limit (km/h)	Pavement Condition	Street Lighting	Bicycle Linemarking	Wayfinding Signage
		Route	Off-Road	Off-Road (%)	Unsealed Road	Unsealed (%)						
Watsonia to East Ivanhoe	LBN1	12.44	1.44	12%	1.44	12%	10	50	Good	Yes	Low	Very Low
Macleod to Ivanhoe	LBN2	7.31	0	0%	0	0%	8	55	Good	Yes	High	Very High
Heidelberg West to Fairfield	LBN3	6.29	0	0%	0	0%	14	50	Good	Yes	Moderate	Moderate
Heidelberg West to Viewbank	LBN4	5.83	2.32	40%	0.3	5%	10	60	Good	Partial	High	Moderate
Heidelberg West to Banyule	LBN5	4.41	0.2	5%	0	0%	8	50	Good	Yes	Very High	Very Low
Yallambie to Heidelberg	LBN6	4.61	2.71	59%	0	0%	5	60	Good	Partial	Low	Low
Bundoora to Yallambie	LBN7	8.38	3.43	41%	4.95	59%	7	50	Good	Yes	Low	Moderate
Montmorency to Watsonia	LBN8	15.85	0.79	5%	0	0%	7	50	Good	Yes	No	No
Greensborough to Diamond Creek	LBN9	6.8	0	0%	0	0%	11	50	Good	Yes	Low	No
Greensborough to Bundoora	LBN10	11.36	1.38	12%	0	0%	8	50	Good	Yes	No	No
Plenty River Trail to Main Yarra Trail	LBN11	5.44	0	0%	0.51	9%	5	50	Fair/Good	No	Moderate	No
Watsonia to Greensborough	LBN12	2.48	0.08	3%	0	0%	6	50	Good	Yes	Very High	High

[7] Banyule Bicycle Route Review, Traffic Works 2018

To summarise the information presented in Table 5-1:

- The LBN routes are predominantly on road, with the road speed environment associated with these LBNs typically 50km/h, indicating that there is a risk of cyclists being involved in a fatal or serious crash with a vehicle;
- Generally, the roads are sealed with good pavement condition, with widths between 5 and 14 metres;
- Only 14% of the LBN provides off-road cycle paths; and
- Street lighting is only partially provided along LBN4 and LBN6, with no lighting provided along LBN11.

5.2 Cycling Route Connectivity

In terms of recognising constraints, there are known barriers to implementing a fully integrated cycling network, including main roads such as Bell Street, Rosanna Road, Greensborough Highway, rail infrastructure such as the Hurstbridge railway line and geographical features such as rivers and steep terrain.

The cycling network within Banyule has been mapped to show the connections to key destinations and other trip attractors and generators, such as schools and train stations.

Figure 5-2 illustrates cycling routes and key destinations within, or in close proximity to, Banyule including Northland Activity Centre and the proposed route to La Trobe University located in the City of Darebin. As intended, the primary role of LBN is to provide the links between neighbourhoods and key destinations such as Activity Centres.

Figure 5-3 illustrates cycling routes in relation to schools and railway stations within Banyule. However, it also highlights the need to improve local connectivity, for example to Viewbank primary and secondary schools. It is also noted that the LBNs do not necessarily provide localised school cycling links between residential areas and schools.

Although at first glance it appears that there is healthy connectivity between the key destinations via the LBN, SCC and PBN networks, there are a number of issues across the network as a whole that significantly impact this connectivity and cyclist safety including

- Not all routes have been completed or provided with satisfactory facilities to accommodate cyclists. These aspects include:
  - Provision of dedicated bike lanes / off-road share paths;
  - Wayfinding signage; and
  - Pavement condition particularly along the kerbside lane.
- Missing links and connections across key arterial roads;
- Many routes require cyclists to mix with on-road traffic at some point along its length; and
- Although the LBN is typically located on local streets – routes are often unmarked and discontinuous.

Figure 5-2 Existing and Proposed Cycling Routes and Key Destinations

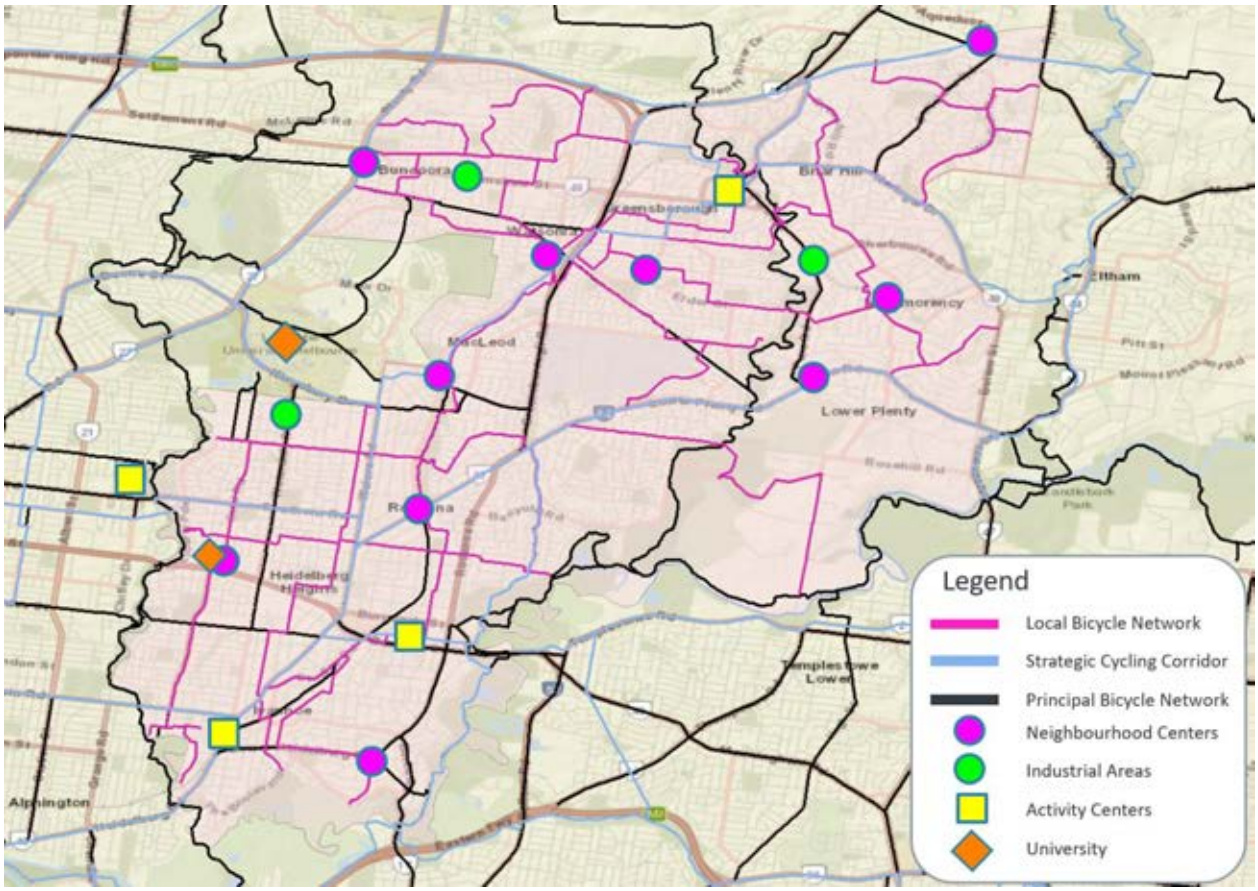
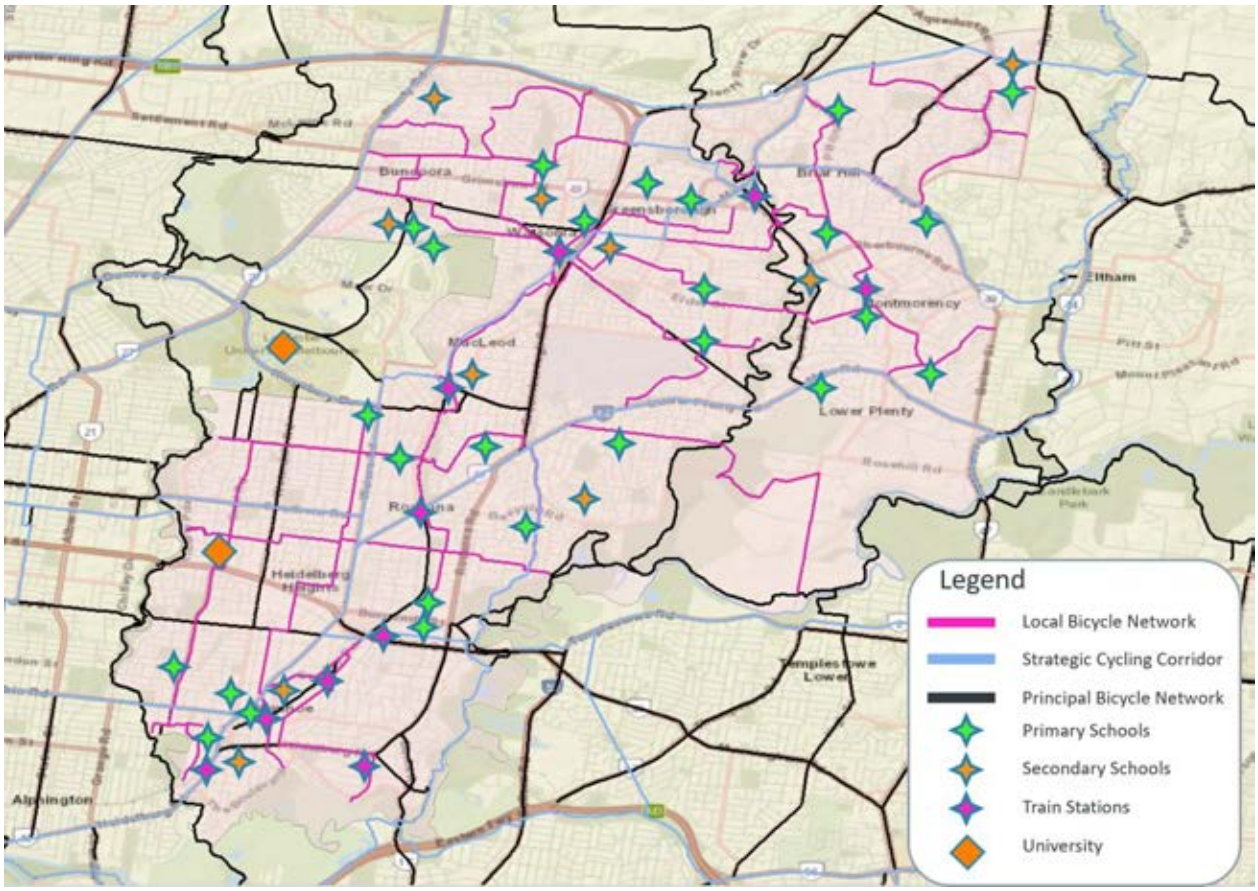


Figure 5-3 Existing and Proposed Cycling Routes and Schools and Railway Stations



6 Major Infrastructure Projects

This section discusses the known as well as the proposed key developments and changes that might have some impacts on the cycling infrastructure within Banyule and adjoining local government areas. It is noted that as these projects are State funded and delivered cycling infrastructure proposed at this point is indicative only and will not be confirmed until final construction plans are released for public exhibition.

Table 6-1 List of key developments/changes with potential impacts

Project	Description	Comments
Hurstbridge Line Upgrade Stage 2	The project includes building a new station at Greensborough, duplication of 3km track between Greensborough and Eltham and the duplication of 1.85km of track between Diamond Creek and Wattle Glen.	The duplication of Hurstbridge Line is predicted to increase the demand of patronage utilizing public transport. This will potentially increase the number of cycling trips to train stations. However, this positive externality could be offset by an increase in local traffic congestion attracted to more frequent train timetable. It is understood that a new bicycle path has been proposed (but not committed to) between Greensborough and Montmorency in conjunction with the rail line duplication. Council will continue to advocate to the State government to deliver this route.
M80 Ring Road Upgrade	The M80 Ring Road Upgrade project aims to increase capacity and improve safety on the freeway, creating more reliable travel times. These upgrades such as additional capacity, improved freeway management systems (including overhead speed limits, ramp signals etc.) will be applied to a road corridor stretch of 13km.	The project will increase capacity for a section of the M80 Ring Road to the Macorna Street bridge within Banyule. However its contribution to easing congestion is limited due to the Greensborough Road bypass, where traffic feeds in and out of the M80 Ring Road, remaining unimproved. There is no commitment to improving existing bicycle infrastructure within this project for Banyule, noting that the existing shared use path on the north side of the M80 will be retained as part of the project.
North East Link	This project will deliver three major projects in one: **North East Link** – Completing the ring road between the Eastern Freeway and the M80 Ring Road, connecting the growing northern and south-eastern suburbs. **Eastern Freeway upgrades** – Overhauling the Eastern Freeway with new lanes and new technology for up to 40% faster vehicle trips. **Doncaster Busway** – Launching a new Doncaster Busway with dedicated express bus lanes along the Eastern Freeway from Doncaster towards the City.	Although still in the design and development stage, this project will create opportunities to build new, and improve existing walking and cycling links through Melbourne's northeast. This includes the completion of the commuter cycling route to the city along the Eastern Freeway as well as the expansion of the Strategic Cycling Corridor network in the northeast with new on-road routes to Greensborough, Watsonia, Heidelberg, La Trobe University and connections to local shops and attractions like the Heide Museum of Modern Art. Whilst trails parallel to North East Link are expected to be improved, there is potential for east-west connectivity to be compromised.
Fitzsimons Lane Upgrade	The Fitzsimons Lane upgrade is part of the broader Northern Roads Upgrade project and involves works at key intersections along Fitzsimons Lane to reduce congestion, improve safety, walking and cycling connections in the local area. These works include signalizing intersections and adding additional lanes.	The upgrade proposes to include a new walking and cycling path along the eastern side of Fitzsimons Lane between Porter and Foote Streets in Templestowe (City of Manningham). An on-road cycle lane is also included at the Main Road/ Fitzsimons Lane intersection (on Main Road), excluding the southern end of the intersection (Fitzsimons Lane) due to space and safety constraints.

7 Benchmarking

The following benchmarking concepts are introduced to begin contemplating some broad targets that Banyule City Council can seek to achieve through the establishment and implementation of a bicycle strategy. These benchmarking concepts will be further developed and defined as the strategy progresses

7.1 Gender Ratio

A high proportion of female cyclists is a strong indication of the health of a city's cycling environment. The higher the proportion, the better the cycling infrastructure. In the top international cycling cities, women tend to comprise around 50% of cycling numbers.

7.2 Road Speed

30km/h road speed is quite common in European cities for local and residential streets where cycling infrastructures exists. The prevailing justification is that the severity of injuries to pedestrians and cyclists in collisions involving motor vehicles is much less than at 50 km/h, and that lowering link speeds has a marginal impact on vehicle journey times in cities, compared with delays at intersections. From a local context, we are beginning to see inner-city municipalities trial and adopt 40km/h road speed limits, to improve the safety and comfort for cyclists. Yarra City Council have also recently been trialling 30km/h road speed limits in portions of Fitzroy and Collingwood, with the 12-month trial resulting in Council recommending to retain areas of 30km/h road speed limits permanently.

7.3 Fit-for-Purpose

Ensuring that cycling infrastructure, such as on-road cycle lanes and shared user paths, are fit for purpose. There are many factors which inform this, however main considerations include providing sufficient widths and quality of infrastructure to ensure that the bicycle passage is maintained and provides an appropriate level of comfort and safety.

A key aspect of this is the provision of suitable infrastructure is to ensure safety depending on the cycling environment. For example, on arterial roads separated bike lanes with structures to prevent car ingress; on local roads, signage and road markings to increase awareness. Whilst in fast paced off-road paths, suitable drainage and non-slip surfaces may be required to reduce the chance of off-road incidents.

8 Stakeholder Engagement Workshop

A community engagement workshop was held at Banyule City Council on Wednesday 5 February where a number of stakeholders were present and provided comments on the current and future Banyule bicycle network. The workshop was organized and jointly hosted by Cardno & Banyule City Council, and had approximately 30 attendees from DoT, TfV, local Bicycle User Groups (BUG), council members, Bicycle Network and other local groups. For stakeholders that could not attend, feedback was also received via e-mail and over the phone.

Comments were sought on the positive and negative aspects of the existing bicycle network within Banyule as well as any opportunities that these groups see for improvement throughout. Likely, due to the composition of attendees there were a number of policy related comments, calling for clarity regarding the prioritization of road space, as well as prioritisation of transport modes within the Council. Key aspects to building a reliable bicycle network included identifying crucial routes and conflicts, as well as SCC's consultation and approval which involves working with Council to fund cycle infrastructure.

Several positive comments were received regarding the bicycle infrastructure within Banyule Council including The Heide Park trail being described as 'lovely riding' and Oriel Road mentioned as a great on-road bike path particularly given the low traffic volumes. Creek trails and off-road trails were also praised and recognized as an excellent recreational asset.

Further workshop feedback has been reviewed and summarized below.

Parking

There is a strong demand for additional bicycle parking infrastructure which includes:

- Increased parking at schools, town centres, parks and railway stations;
- Increased secure parking spaces such as Parkiteers at train stations and shopping centres;
- A greater focus on end of trip facilities at key destinations including water facilities, parks, schools, and neighbourhood houses; and
- Alternative bicycle hoops to cater for bicycles with trailers and cargo bicycles.

Additionally, stakeholders suggest a policy shift calling for a better balance between car parking and bicycle storage at train stations. Stakeholders hope to see fees for Parkiteers removed, and paid parking for vehicles at train stations which may shift commuters to use bicycles instead of drive. Clifton Hill bicycle parking was identified as a good parking system and may be used as a potential bench mark for future projects.

Signage

Signage for pedestrians and cyclists was highlighted regularly by stakeholders as a major issue to be addressed. There was positive feedback in regards to the updated signage, such as along Darebin Creek, however there is a demand for improvement across the network. Signage should be consistent with the signage across Melbourne as well as incorporate maps of the bicycle network, public toilet signage and connections to other council networks. Signs should also include local small business closely accessible to the bicycle network, which would support small businesses while also improving the community as a whole.

A number of areas were highlighted as having poor signage such as the Yarra Trail, northbound tracks (Darebin Creek Trail near Gona Street) and signage to and from the Heide Museum of Modern Art.

Signage along roads where bicycle infrastructure exist should also be improved to encourage bicycle awareness.

Community Engagement

There are calls for increased community engagement in regards to cycling within the Council. Suggestions included:

- Increase education about the laws of cycling, such as that families and those with medical conditions are legally allowed to ride on the foot path;
- Community bicycle training and classes for residents seeking 'learn to ride' opportunities for all age groups varying from children to adults;
- Create beginner friendly or road cycling training routes to improve their cycling skills;

- Pilot / demonstration routes marketed as user friendly to facilitate recreational riding which should be from local streets to neighborhood destinations such as parks, libraries, schools etc.
- Promote cycling opportunities at schools, stations, universities and the work place. Provide incentives to those who cycling to these destinations; and
- Connect local cycling groups, collaborate with leisure centres and exercise clubs to promote cycling.

Opportunities

With infrastructure projects occurring within the Banyule Council such as the North East Link, the Hurstbridge Line Upgrade and Level Crossing Removal Project, opportunities exist to upgrade cycling infrastructure concurrently with these projects. In particular, multiple stakeholders requested utilising the Hurstbridge Line Upgrade Project to incorporate shared paths along the duplication. There is also a strong community call for Hillside Road near Rosanna Railway Station to be used as a key bicycle route.

Additional opportunities are available which may promote cycling within Banyule City and improve the safety of cycling within the Council:

- Create a mobile bicycle application which illustrates the local bicycle network, and the safest route to travel based on a variety of factors;
- Provide cycling information on the Council website;
- Install more bicycle counters along key cycling routes to promote cycling as a method of commute;
- Implement electric bicycle hires schemes at railway stations;
- Provide charging stations for electric scooters/bicycles, improve education regarding the laws surrounding electric bicycles and promoting electric bicycles as an alternative transport mode;
- Extend 40km/hour speed limits to key cycling routes to increase safety for drivers and cyclists;
- Plant additional trees along trails to create comfortable riding conditions;
- Convert pedestrian paths with low pedestrian volumes into shared paths e.g. Southern Road;
- Provide fixiteer stations along key cycling routes;
- Increase lighting on trails and paths to make them safer at night;
- Increase bicycle lanes within town centres;
- Improves access to parking for cyclists at schools, stations and shopping centres;
- Improve and maintain bicycle lane marking;
- Fix and maintain damaged tarmac, particularly along key bicycle routes; and
- Maintain off-road paths, particularly after heavy rainfall weather events.

Gaps in the Network

Gaps in the network are a major factor for cyclists, particularly for commuters as they result in extended commuting times, force cyclists to ride along dangerous roads to meet up with the connection, and deter many people from using cycling as a mode of commute.

In order to reduce gaps in the network, greater connectivity is required between major activity centres, neighbouring council networks, La Trobe University, community facilities such as parks, sports fields and skate parks, schools and hospitals.

Gaps in the network also include sections where bicycle infrastructure exist, but is unsafe or unusable. Examples of this include faux bicycle lanes (line marked bicycle lanes where vehicles are legally allowed to park across), sections of bicycle lanes disappearing and reappearing (Banksia Street and Oriel Road acknowledged as a major issue) and a lack of bicycle infrastructure to assist cyclists crossing major roads. A number of locations where stakeholders have identified gaps in the network are below:

- Altona Street bicycle lanes do not continue east of Waterdale Road;
- Limited river crossings across Darebin Creek to connect Banyule to Darebin and Alphington conveniently;
- No connection across Darebin Creek at Wood Street, Dundas Street;

- Poor connection between Greensborough / Montmorency / Eltham. The Hurstbridge Line Upgrade may provide an opportunity;
- Limited cycling facilities on Banyule Road & Rosehill Road;
- Poor connection to Donaldson Creek Reserve Track from Waterdale Road;
- Lack of formal bike path at the offshoot of the Main Yarra Trail down Dora Street;
- The Banksia Street underpass is in poor condition, complicated to navigate and very steep;
- A number of locations where it is difficult for cyclists to cross main roads are: Waiora Road / Davies Street, Waiora Road / Lower Plenty, Henry Street / Grimshaw Street Banksia Street near Heidelberg Station and the railway crossing at St James Street.

Furthermore, Banyule's distance to the CBD makes it a second tier cycling suburb. Cyclists who have great distances to cover require the most direct route to the city which is often along the busiest roads, especially as gaps in the network prolong the journey in many cases. In order to increase the number of riders commuting to the city, greater connectivity is required to reduce the commute time while still maintaining a high level of safety.

9 Identification of Issues & Opportunities

This section discusses the early issues and opportunities that have been identified at this stage of the project, considering all background work undertaken to date including site visits and stakeholder engagement.

9.1 Issues

- Anticipated rapid growth in the northern region reaching a population of 1.6 million people in 2050 (Victoria in Future, 2016) coupled with the ageing population of Banyule highlights the need for associated open public realm space, health and aged care services;
- A significant number of paths have missing links throughout the network. Currently, cyclists have to navigate roads without satisfactory cycling facilities, take detours or dismount and walk along the pedestrian footpaths.
- Particularly within town centres, there is typically no road space allocated to cyclist facilities throughout Banyule, there also appeared to be limited bicycle parking available in retail precincts;
- Female riders represented 15% of Banyule's bicyclists across the municipality which is below the average female ridership in Victoria (22%). Although the cyclist numbers recorded in Banyule shows an increasing trend, across Australia shows a decreasing profile indicating the current cycling infrastructure at some locations does not cater for all ages and genders;
- A majority of the cycling associated crashes occurred during weekdays, which could be related to cycle commuting to work. Generally, the crashes are disbursed across the network, with a particular high-risk area within and between Heidelberg Town Centre and the southern border of the council area. In addition, around one-third of cyclist crashes reported that a party involved was under the influence of alcohol highlighting a need for safer bicycle infrastructure and increased education around driving under the influence;
- Physical barriers to bicycle network connectivity such as major road, rail lines, rivers and topography;
- General concern regarding the impact of the North East Link project to cycling connections and breaking any momentum; and

9.2 Opportunities

- There is an opportunity to increase the number of commuters to the CBD through the provision of high-quality cycling facilities and more direct cycling routes within Banyule, given the demand for this commuting movement. Based on *'idcommunity'* profile data, only 1% of the working residents preferred to use cycling as their main method of travel versus 63% using a car. This presents an opportunity to introduce means to encourage a modal shift from vehicles to cycling;
- There is also an opportunity to provide direct cycling routes through realignments and provision of missing links;
- There are numerous opportunities to provide additional and more direct routes to improve travel time as well as safety particularly for cyclists;
- The identification of key trip attractors and the bicycle infrastructure network provides an opportunity to prioritise key areas, for example ensuring safe connections to schools and recreational facilities;
- Improving safety by reducing the road speed limits in appropriate locations, particularly within and around town centres. This would improve safety benefits with minimal effect on vehicle travel times;
- There are opportunities to increase bicycle parking and connections to train stations and schools, where car parking in many areas is at or is close to capacity, bicycle parking provides an alternative option;
- Promote and implement grass roots community measures to and increase the uptake of cycling; and
- Investigate opportunities to provide additional end of trip facilities to encourage and facilitate cycling.

Literature Review

Banyule Bicycle Strategy

V190811

Prepared for
Banyule City Council

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D01	31/10/2019	Draft	Maselusi Amiatu	Todd Mexted
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Table of Contents

1 Literature Review

The purpose of this literature review is to identify the overarching stratgies guiding cycling in Banyule and understand where the current cycling provision is at odds with these strategies. It will also assist in developing an appreciaiton of the interface with adjoining municipalities and any relevant strategies in this regard.

1.1 State and Regional Strategies and Framework

1.1.1 Victorian Bicycle Strategy 2018 - 2028

The Victorian Bicycle Strategy 2018-28 vision is to increase the number, frequency and diversity of Victorians cycling for transport by investing in a safer, lower-stress, better-connected network, prioritising strategic cycling corridors, and by making cycling a more inclusive experience.

Key actions within the Strategy that relate to the Strategic Cycling Corridors (SCC) network include:

- Working with State Government agencies, Local Councils and industry to review and update guidelines for SCCs to ensure a consistent approach and understanding of what a high-quality network of cycling infrastructure looks like;
- Prioritise investment in the SCCs with the current and potential highest levels of demand. Investing in high-quality infrastructure for SCCs to make cycling on them an attractive mode of transport for people for all ages, especially interested but concerned people; and
- Working with Local Councils to join up SCCs on local streets, arterial roads, highways, rail corridors and green spaces. Working closely with Local Councils to plan, identify and deliver improvements to SCCs and to support the 20-minute neighbourhood concept, especially for cycling to schools, train stations and activity areas.

1.1.2 Movement & Place (M&P) Framework 2019

The Movement and Place (M&P) Framework is a new tool that was developed by VicRoads based on local and global guidelines and best practice to meet the future challenges in the transport network. M&P offers progressive means of working so that a variety of considerations and outcomes in land-use and transport planning are better integrated.

The key to this new approach is categorising streets for active modes first, and recognising that various streets have different classification, for instance residential streets perform a different role to major arterial roads. The process will also help to identify how best to accommodate more than one transport type into a street.

Streets are traditionally classified by their ability to move traffic and provide access for cars. By embracing this M&P approach based on local context, the needs of different users, and positive social, economic and environmental outcomes, is consistent with Banyule's current Bicycle Strategy objectives.

1.1.3 Northern Regional Trails Strategy 2016

It is anticipated the northern region will experience rapid growth reaching a population of 1.6 million people in 2050 (Victoria in Future, 2014). The northern municipalities including Banyule City Council, are already facing challenges in ensuring that infrastructure is properly planned, funded and delivered to support social, economic and environmental outcomes. As the urban footprint of the north expands and becomes increasingly dense due to the increase in population, the availability of public realm space will pose a major challenge.

The predicted shift in demographic profile which is forecast to directly relate to population growth would exacerbate the space constraint issue. It is expected that the population will age significantly over the next 30 years, placing increased demand on health and aged care services. In order to minimise the associated cost impact to all levels of Government and maintain community wellbeing, it will be vital to provide a high level of access to public open space for low-impact recreation and exercise options such as off-road trails.

Thus, the Northern Regional Trails Strategy 2016 was established to provide a framework for the future development and maintenance of a recreational off-road trail network. That is, it defines a vision and plan for the future of off-road recreational trails in Melbourne's north. The objective of the strategy is to:

- Leverage existing recreational off-road assets in the north to build a cohesive, integrated, regional trail network;
- Address existing gaps in the network by extending existing corridors; and
- Implement new trail corridors in response to urban development, densification and population growth.

1.2 Local Strategies and Studies

1.2.1 Council Plan 2017-2021

The Council Plan sets out the key directions and main objectives to achieve their vision of a green, sustainable and vibrant Banyule for a healthy, connected and inclusive community. The plan has the following strategies of relevance to the update of Banyule's Bicycle Strategy:

- Support sustainable transport by providing shared trails that help to link key public open spaces and community facilities; and
- Support sustainable transport by encouraging walking, cycling and public use.

The key initiatives associated with the above strategies include:

- Plan for and deliver a major shared path bicycle link through Banyule from the Plenty River Trail to Plenty Road;
- Continue the off-road path renewal and development of the Banyule Shared Trail Network (for walking and bicycles) through the implementation of the Northern Regional Trails Strategy (NRTS) and the shared trail asset management plan; and
- Implement travel behaviour change programs to improve walking, cycling and public transport use in priority areas.

1.2.2 Banyule Integrated Transport Plan (BITP) 2015 – 2035

The aim of the Banyule Integrated Transport Plan (BITP) 2015-2035 is to help build a safe transport system that supports an accessible, sustainable and active Banyule. In relation to the Banyule Bicycle Strategy Review, the BITP proposes a range of Strategic Directions (SD) and Actions (A) that should be considered in the updating of the Banyule Bicycle Strategy as listed below:

- SD1: A consistent and strategic approach will be used to manage cycling.
  - A1 Review and update the Banyule Bicycle Strategy;
  - A2 Review the existing cycling network to identify missing routes, gaps and deficiencies;
  - A3 Support the implementation of the NRTS to improve links through and beyond Banyule;
  - A4 Advocate to VicRoads and to the State Government for the completion of the Principle Bicycle Network across Banyule.
- SD2: The cycling network will cater for all ages and abilities.
  - A5 Develop and extend the existing bicycle network of links between our key destinations, and work with neighbouring councils and the State Government to strengthen the suburban bicycle network;
  - A6 Develop a bicycle accessibility map to help promote riding routes within and beyond Banyule;
  - A7 Provide end of trip facilities at key destinations, including bicycle parking and charging points for electric bicycles;
  - A8 Improve cyclist navigation through wayfinding and directional signs;
  - A9 Consider the needs of cyclists in all transport infrastructure upgrades and street maintenance programs;
- SD3: Council will promote a cycling culture.
  - A10 Support schools to participate in Bicycle Network's Ride to School program;
  - A11 Promote cycling as a fun, practical and healthy transportation choice through the development and implementation of behaviour change programs;
  - A12 Co-fund the provision of Parkiteer cages at railway stations in conjunction with Public Transport Victoria.

1.2.3 Banyule Bicycle Strategy 2010 – 2020

The Banyule Bicycle Strategy aims to:

- To plan for increasing transport sustainability in Banyule and minimise the impacts of private vehicles, traffic congestion and pollution on Banyule's environment;
- To provide a safe, continuous, direct and convenient bicycle network and related infrastructure which encourages cycling for journey to work and recreational purposes;
- To promote linkages between cycling and other modes of transport, and between off and on-road bicycle networks;
- To establish and promote the hierarchy of transport models for access to Activity Centres and other key facilities in Banyule;
- To promote the health and well-being benefits of cycling;
- To complete the Principal Bicycle Network in Banyule by 2019;
- To fund planning, design, construction and maintenance of bicycle projects and programs at an adequate level;
- To develop measures to track progress on improving bicycle programs, participation, safety and infrastructure; and
- To educate cyclists, pedestrians and motorists about safe operating behaviours.

1.3 Neighbouring Council Bicycle and Transport Strategies

For the purpose of reviewing the Banyule Bicycle Strategy, a review of the neighbouring Council's bicycle strategies was undertaken to understand the issues and opportunities at the interface with adjoining Municipalities.

1.3.1.1 Darebin Cycling Strategy 2013 – 2018

The primary aim of the Darebin Cycling Strategy 2013 - 2018 is to encourage people travelling within or through Darebin to make more of their trips by bicycle. To achieve this, the strategy has set the following objectives:

- Foster a culture of cycling where the bicycle is the first choice for trips between 2 and 7 km;
- Create a cohesive high-quality network of cycle friendly routes accessing popular destinations both within Darebin and the larger Metropolitan network that are suitable for use by all abilities, ages and backgrounds;
- Express a long-term commitment to building a culture of cycling and engage key partners and stakeholders in prioritising investment in cycling; and
- Continue to improve the safety of cycling.

1.3.1.2 Manningham Bicycle Strategy 2013

The Manningham Bicycle Strategy 2013 is an overarching document, which sets out the vision, considering relevant strategic and local context and makes recommendations regarding the sets of interventions identified to encourage greater uptake of cycling as a viable and safe mode of transport. The key strategy objectives set out in the strategy include:

- Improve on-road and off-road cycling infrastructure, to connect to key destinations and generators;
- Improve end of trip facilities at key destinations and improve bicycle facilities on key routes; and
- Undertake educational and promotional activities to increase the community's awareness of cycling as a viable form of transport for both commuting and recreational purposes.

1.3.1.3 Whittlesea Bicycle Plan 2016 – 2020

As stated in the Whittlesea Bicycle Plan 2016 – 2020, "*The City of Whittlesea Bicycle Plan 2016 – 2020 is Council's commitment to increasing cycling participation of residents and visitors of the City of Whittlesea. Council recognises the importance of a strong plan to support cycling that will result in a range of benefits including economic, environmental, health, access and mobility, and community inclusion*". To achieve this vision and commitment, the strategy outlines the key directions:

- Make cycling safer;
- Encourage and promote cycling;
- Build and main a high-quality network; and
- Monitor cycling into the future.

1.3.1.4 City of Yarra Bicycle Strategy 2010 – 2015

The City of Yarra Bicycle Strategy 2010 – 2015 sets out a long-term vision for cycling in the City of Yarra. It recognises that there are different mobility needs within the City of Yarra community. To achieve the vision, the Strategy maps out a series of objectives as listed below:

- Better on-road and off-road bicycle network;
- Better local streets for cycling;
- Better bicycle network maintenance and accountability;
- Better bicycle safety by reducing conflict and better end of trip facilities – bicycle parking;
- Better Council use of bicycles;
- Better recruitment and retention of cyclists; and
- Better policies, innovation and relationships.

1.4 Other Transport Studies

1.4.1 Strategic Cycling Corridors – Overview Document for Councils (2019)

The Strategic Cycling Corridors Overview Document have mapped out five principles that underpin the metropolitan SCC network which include:

- Destination based;
- Safe;
- Direct;
- Integrated; and
- Connected.

The five principles aims to encourage people to cycle rather than using a car for short trips and support the development of 20-minute neighbourhoods.

1.4.2 Bicycle Facilities at Banyule Rail Stations – Report 2019

The Banyule rail stations report provides an overview of an audit that was done on bicycle facilities located at and within the vicinity of each of the nine rail stations located on the Hurstbridge Line within the City of Banyule. Recommendations from this audit have identified rail stations that require additional bicycle facilities to accommodate current demand. It is noted however that the provision of bicycle hoops presents other challenges such as difficulties identifying suitable installation locations and associated cost impacts.

1.4.3 Banyule Safe Travel Plan 2016 – 2026

Banyule Safe Travel Plan (BSTP) 2016 – 2026 vision is to provide pathways for safer journeys and moving freely via people-friendly streets. To support this vision, BSTP have identified the following objectives which are relevant to the Banyule Bicycle Strategy Review:

- Improve the safety of walking, cycling and travelling by public transport in Banyule;
- Remove barriers to safe, convenient and confident local journeys on foot, by bike, and by bus, tram and train;
- Reduce towards zero the negative impacts of vehicle road traffic on the health, safety and well-being of local people and visitors to Banyule, and on the long-term health of the planet;
- Reduce the number, distance and speed of vehicle journeys within Banyule;
- Integrate safe travel thinking into all policy, planning and operational decisions within Banyule Council;

- Seek to embed safe travel thinking into decisions made by Council's partners;
- Shift community awareness towards a clearer appreciation of the negative effects of private vehicular transport in Banyule; and
- Obtain active support and participation by individuals, community groups and businesses in efforts to achieve safe travel.

APPENDIX

B

CYCLING CONNECTIONS PROJECTS LISTS, MAPS, AND ACTION PLAN SUMMARY

Banyule Cycling Connections Project List

A prioritized project list of cycling connections has been developed as part of previous NEL advocacy work to highlight Banyule's most preferred Strategic Cycling Corridors for delivery. The Banyule Cycling Connections Project List is provided below. Two maps are also provided. Figure 2 shows Banyule's prioritized Cycling Connections Project List routes and Figure 2 shows the State Government's set of C1 and C2 Strategic Cycling Corridors within Banyule.

Priority ranking	Route	Section	Description	Responsibility
1	Banyule (Watsonia) to City (Melbourne CBD)	1A	CBD to Heidelberg Road at Darebin Creek (outside Banyule)	Department of Transport
		1B	Heidelberg Road from Darebin Creek to Upper Heidelberg Road	Department of Transport
		1C	Upper Heidelberg Road through Ivanhoe to Studley Road.	Department of Transport
		1D	Upgrade Studley Road lanes to Heidelberg Station	Department of Transport
		1E	Heidelberg to Rosanna in rail corridor	Department of Transport / VicTrack/Metro
		1F	Rosanna Station to Macleod Station along Ellesmere Parade and McNamara Street	VicTrack/Metro
		1G	Macleod Station to Watsonia Station in rail corridor or upgrade potentially with section along Wungun Street.	Department of Transport
2	Manningham via Heidelberg Station to Darebin.	2A	Construct a shared user bridge over the Yarra River to link Banyule to Manningham. (Funded)	North East Link Project/ Parks Victoria / Manningham City Council
		2B	Provide an on-road bicycle route on Yarra Street or acceptable alternative, including a shared use	Banyule City Council

			path, to connect the Yarra crossing to Heidelberg Station.	
3	Banyule Shared Trail – Heidelberg to Burke Road	3A	Provide a sealed route from Banksia Street to Burke Road North via The Boulevard to connect to the Eastern Freeway (in addition to the more western proposed NEL SUP alignment via Bulleen Road to the Eastern Freeway).	Department of Transport/ Parks Victoria / Banyule City Council
		3B	Provide a grade separated crossing at Banksia / Jika Street to link to the new Banksia Street to Burke Road North route (in 2A) to provide a direct and safe alternative to the existing underpass below the Manningham Road Bridge.	Department of Transport/ Parks Victoria
4	East – West Power Line Easement Trail	4A	Complete the shared user path between Plenty Road Bundoora and the NEL crossing point.	North East Link Project/ Banyule City Council
		4B	Provide a grade separated crossing (overpass) at NEL - adjacent to Richards Ave	North East Link Project
		4C	Upgrade and complete the shared user path to Plenty River Trail at Yallambie from the NEL crossing point.	North East Link Project/ Banyule City Council
5	Watsonia Nth to Eltham via Hurstbridge Rail Corridor	5A	Provide the connection to the Macorna Street overpass (to access RMIT University) from the Hakea Street NEL crossing link.	Department of Transport / North East Link Project / Banyule City Council
		5B	Upgrade the connection to Greensborough Station from the Yando Street NEL crossing link.	Department of Transport/ Banyule City Council
		5C	Provide a shared user path along the Hurstbridge rail corridor from Greensborough Station to Eltham Station.	Department of Transport
6		6A		

	La Trobe University to St Helena via Greensborough Station		Provide the connection to La Trobe University via Nell Street West or an acceptable alternative (e.g. Wattle Drive) from Nell Street overpass.	Department of Transport / Banyule City Council
		6B	Upgrade the connection to Greensborough Bypass Trail from the Nell Street overpass.	Department of Transport/ Banyule City Council
7	La Trobe University to Lower Plenty	7A	Upgrade the connection From La Trobe University via Macleod Station railway crossing via Erskine Road to the NEL crossing.	North East Link Project/ Banyule City Council
		7B	In addition to the Drysdale Street easement path provide new bicycle lanes along Lower Plenty Road to the Diamond Creek Trail and Fitzsimons Lane.	Department of Transport
8	Plenty River Trail		Improvements to the Plenty River Trail from Viewbank to Greensborough By-Pass.	Banyule City Council
9	Main Yarra Trail – Banyule Flats		Improvements to the Main Yarra Trail at Banyule Flats.	Banyule City Council

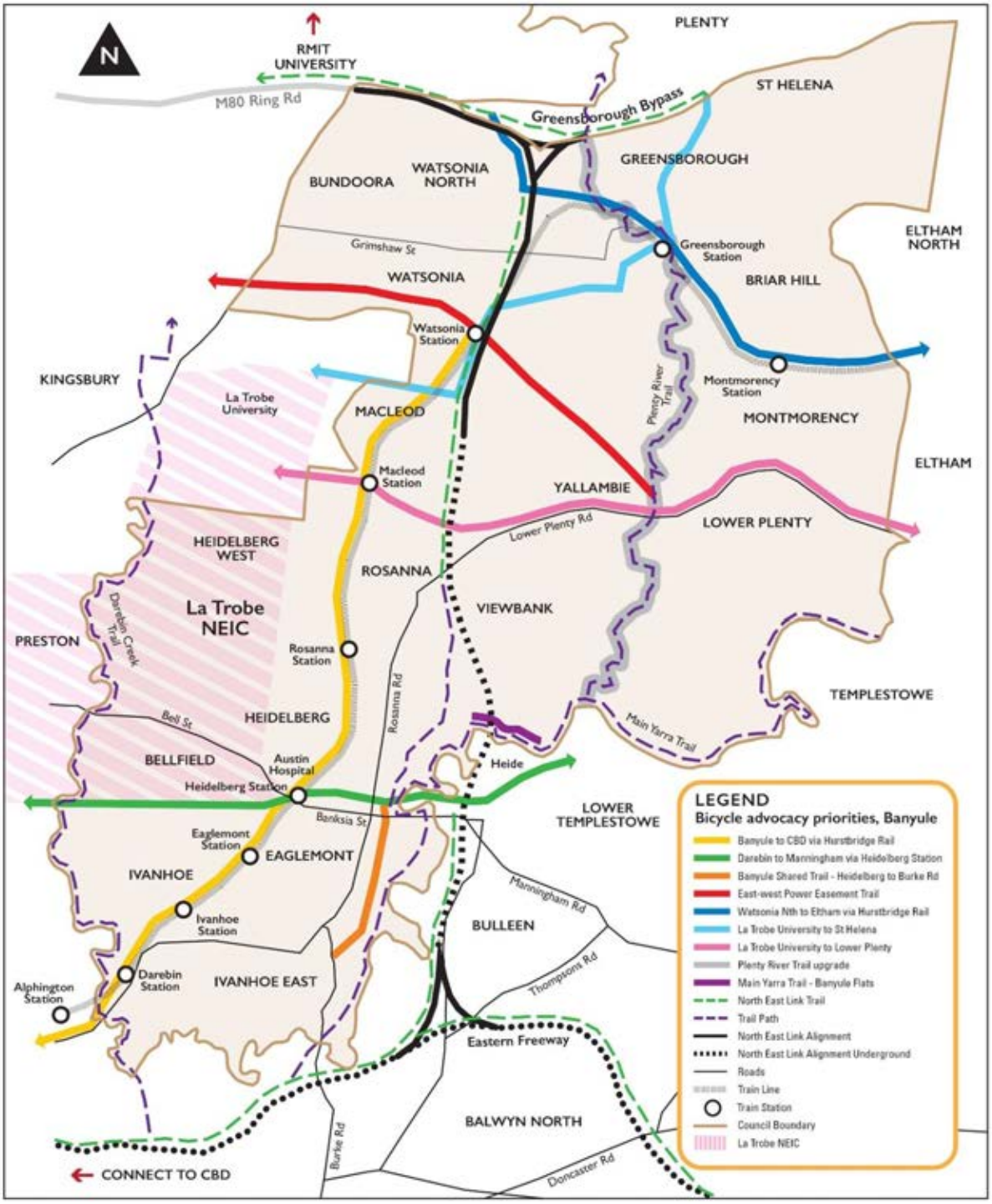

Figure 1 – Banyule's prioritized Cycling Connections Project List routes, 2021

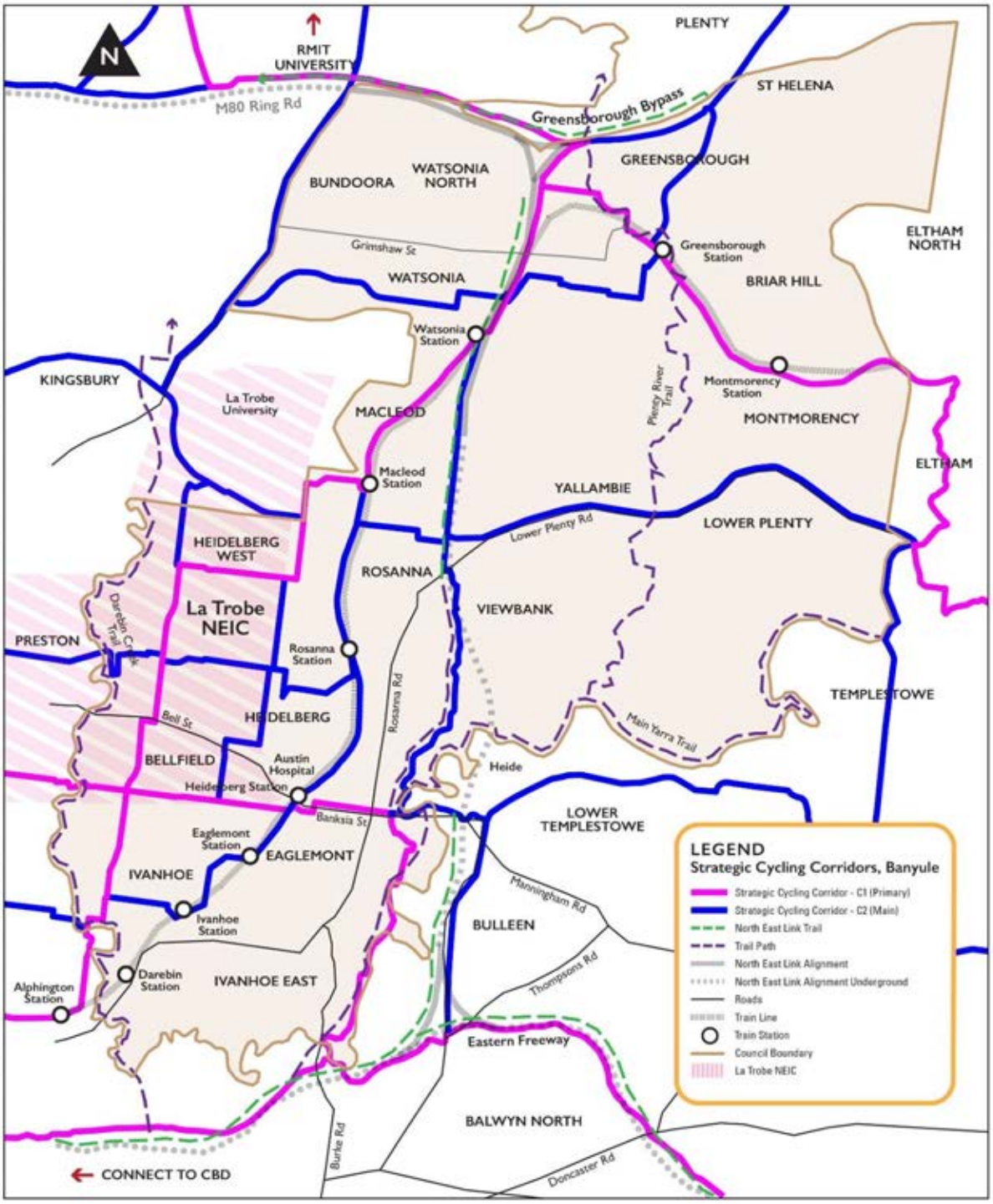

Figure 2 Strategic Cycling Corridors, Banyule as adapted from Department of Transport, 2022

Summary Action Plan

The following table identifies the key actions to implement the objectives of the Bicycle Strategy. These actions are categorised according to the main objectives that they support. The estimated timeframe, indicative financial resources and key collaborations required to develop and implement each action are also listed.

Action	Timeframe	Resources	Key stakeholders & partnerships
OBJECTIVE 1 – MAJOR PROJECTS & ADVOCACY			
Action 1.1 Seek and support government trials of innovative road treatments such as pop-up bike infrastructure	Ongoing	0	State Government Banyule City Council
Action 1.2 Pipeline of 'shovel ready' projects	Long	$$	Banyule City Council
Action 1.3 Updated Northern Regional Trails Strategy priority projects	Short	0	Banyule City Council
Action 1.4 Major Project cycling advocacy factsheets	Short	$	Banyule City Council Neighbouring LGAs
OBJECTIVE 2 - NETWORK CONNECTIVITY			
Wayfinding and Signage			
Action 2.1 Develop a wayfinding and signage strategy for the Local Bicycle Network	Short	$	Banyule City Council Department of Transport Neighbouring LGAs
Complete the missing links of the Local Bicycle Network (LBN)			
Action 2.2 LBN routes 1-12 assessment	Short	$$	Banyule City Council
Action 2.3 Concept plans for LBN routes	Medium	$$	Banyule City Council State Government
Action 2.4 Implement linemarking and signage of LBNs. Prioritise near schools.	Medium	$$	Banyule City Council Schools Communities

Action 2.5 Investigate potential LBN 13	Short	$	Banyule City Council
Action 2.6 Community feedback tool	Ongoing	0	Banyule City Council
OBJECTIVE 3 - SAFE AND INCLUSIVE DESIGN			
Improve the safe cycling experience throughout Banyule			
Action 3.1 Movement & Place assessments of activity centres	Ongoing	$	Banyule City Council
Action 3.2 Safe access audits for primary and secondary schools.	Long	$$	Banyule City Council
Action 3.3 30/40kmh area wide investigation.	Ongoing	0	Banyule City Council
Action 3.4 Banyule Open Space Plan 2016-2031 & Urban Forest Strategy 2022-2031	Short	0	Banyule City Council
Action 3.5 Increase funding for shared use path maintenance and renewal	Short	$$	Banyule City Council
Increase bicycle parking, charging and repair availability			
Action 3.7 Bicycle parking at all Council facilities	Medium	$$	Banyule City Council
Action 3.8 Bicycle parking at schools	Long	$	Banyule City Council State Government
Action 3.9 Bicycle parking at railway stations	Long	$$	Banyule City Council State Government
Action 3.10 Community bicycle parking requests	Ongoing	$	Banyule City Council
Action 3.11 Bicycle parking in activity centres	Medium	$	Banyule City Council Traders Associations Banyule Community
Action 3.12 Bicycle repair and e-bike charging stations	Medium	$	Banyule City Council

Action 3.13 Planning policy framework initiatives	Ongoing	0	Banyule City Council
OBJECTIVE 4 – CYCLING FOR ALL			
Educate the community about bicycle participation			
Action 4.1 Bicycle skills program	Short-Medium	$$	Banyule City Council
Action 4.2 Bike infrastructure grants program	Short-Medium	$	Banyule City Council Banyule Community
Action 4.3 Bike-riding promotion and events program	Short-Medium	$$	Banyule City Council
Action 4.4 Play Streets trial	Medium	$$	Banyule City Council Banyule Community Schools Communities State Government
Action 4.5 Corporate Emissions Reduction Plan and Green Travel initiatives	Ongoing	0	Banyule City Council
Build a stronger bicycle brand for Banyule			
Action 4.6 Communications plan	Short-Medium	$	Banyule City Council
Action 4.7 Website / online mapping & cycling information	Short	$	Banyule City Council
Action 4.8 Strengthen links with riding groups	Ongoing	0	Banyule City Council Banyule Community
Action 4.9 Annual review of activities	Ongoing	0	Banyule City Council
Measure cycling participation and perception			
Action 4.10 Bike count technology trial	Medium	$$	Banyule City Council Neighbouring LGAs State Government
Action 4.11 Supplementary counts	Short-medium	$	Banyule City Council Bicycle Network

Action 4.12 Banyule Household Survey	Short-medium	$	Banyule City Council
Action 4.13 Publish bicycle data	Ongoing	0	Banyule City Council
IMPLEMENTATION			
Action 5. 1 Project briefs and charters	Ongoing	0	Banyule City Council
Action 5.2 Cross-council collaboration	Ongoing	0	Banyule City Council
Action 5.3 Active Transport Advisory Committee	Short	0	Banyule City Council Banyule Community
Action 5.4 Exemplar sites	Short-Medium	0	Banyule City Council Banyule Community Traders Associations Schools Communities

Key

Priority Rating		**Timeframe**	
0	Already resourced/Budgeted	Short term	2021-24
$	$0-$50,000	Medium term	2021-27
$$	$50,001-$250,000	Long term	2021-31
$$$	$250,001 +	Ongoing	

APPENDIX

C

BANYULE CONSULTATION SUMMARY PAPER

Consultation Summary Paper

Banyule Bicycle Strategy

Banyule
City Council

Contents

Introduction

Throughout 2020 and 2021 Banyule City Council has been working to deliver a new municipal bicycle strategy. This strategy will guide Banyule becoming a municipality that:

- Enhances the natural environment and liveability of our places by supporting cycling as a key form of zero-emission transport.
- Implements a network of safe, convenient and accessible cycling routes with linkages to other transport modes and key destinations.
- Embraces the health, social, economic and environmental benefits of cycling.
- Encourages and promotes a cycling culture for all ages and abilities.

The development of the Banyule Bicycle Strategy has included three key phases of consultation – two supporting the exploration of issues and opportunities for cycling within the municipality and one seeking feedback after the release of the draft strategy. These are outlined below.

Phase One – Initial consultation: Banyule Bicycle Route Review

In May 2018, Banyule City Council commenced preparatory work to inform the development of a new municipal bicycle strategy. This early work included a review of the existing Banyule Local Bicycle Network (LBN) involving an audit of the routes for completeness, usability and safety. It also included updated GIS mapping of all routes.

Council also conducted a preliminary community consultation via the engagement website, Shaping Banyule, promoted in the *Banyule Banner* and by the distribution of postcards. The consultation sought feedback on cycling journeys within Banyule and asked:

- What makes them special?
- What would make a positive difference to your ability to undertake these journeys?

Phase Two – Stakeholder workshop and BikeSpot 2020

Work on the development of the draft strategy commenced in November 2019 and on Wednesday 5 February 2020 a stakeholder workshop was held at Council. The workshop was organized and jointly hosted by the transport consultants, Cardno and Banyule City Council, with 30 participants, including members of the Banyule Bicycle User Group (BUG), Department of Transport, Bicycle Network, Banyule Councillors, representatives of Council service units (Open Space Planning, Transport Engineering, Community Programs, Assets and City Services), members of the community and representatives of neighbouring Councils. For stakeholders that could not attend, feedback was also received via e-mail and telephone contact. Comments were sought on the positive and negative aspects of the existing bicycle network within Banyule as well as any opportunities that these groups see for improvement throughout the municipality.

From 31 March to 31 May 2020 Banyule City Council also participated in BikeSpot 2020. This project, developed by the online engagement firm, CrowdSpot, and the Amy Gillett Foundation, asked Victorians to share their perceptions of cycling safety at various locations by adding a Safe or Unsafe spot to a web-based interactive map and providing comments.

Phase Three - Public Exhibition of draft Banyule Bicycle Strategy

The draft Banyule Bicycle Strategy was presented to Banyule City Council at the ordinary meeting held on 1 March 2021. Council resolved to approve the public exhibition of the draft strategy for a period of six weeks. The initial engagement period was scheduled from 24 May to 5 July 2021. This was extended to 30 July 2021 to allow for the rescheduling of activities cancelled due to restrictions associated with Victoria's fourth COVID-19 lockdown.

The public exhibition period and consultation activities were advertised via the *Banyule Banner* and via postcards and posters printed and distributed to Council Service Centres, libraries, leisure centres and bicycle retailers.

The primary purpose of phase three was to obtain community and stakeholder input on the draft Banyule Bicycle Strategy and identified issues, opportunities and recommendations.

Feedback response summary

The table below summarises the consultation undertaken across the three phases and the associated attendee/response numbers.

Date	Type of Consultation	Attendees or Responses
	Phase One	
Mar – Aug 2018	Shaping Banyule – community perspectives on cycling	125
	Phase Two	
Feb 2020	Stakeholder workshop	30
	Written responses	2
Mar-May 2020	Bike Spot 2020	182
Phase Three		
May – July 2021	Shaping Banyule – draft Bicycle Strategy survey responses	25
	Drop-in consultation session - Greensborough	5
	Drop-in consultation session – Ivanhoe	7
	Pop-up engagement – Darebin Creek Trail	50
	Pop-up engagement – Main Yarra Trail	25
	Pop-up engagement – Rosanna Parklands	10
	Written and general responses	8

Phase One – Initial consultation: Banyule Bicycle Route Review

A total of 125 comments were submitted by 75 contributors to the Banyule Bicycle Route Review.

Key themes emerging and sample comments from this work are summarised in the table below.

Table 1 Themes – What you told us about cycling in Banyule

Theme	Comments	Sample comment
Safe cycling paths/connections	45	'We would ride to school every day if we had better bike lanes and cycling facilities.'
Safe cycling lanes on road	23	'I want my wife and kids to be able to safely ride everywhere without fear of cars or drivers yelling 'get off the road'.'
Surface treatment	14	'Trail upgrade needed from Plenty River through to Warringal Park (swamplands). Upgrade connection from Martins Lane to Main Yarra Trail – now gravel.'
Direct and safe routes	12	'A way to ride with kids from Greensborough to Diamond Creek that doesn't turn a 5km trip into a 20km trip would be useful.'
Safe road crossings	6	'I follow suggested routes but end up stuck at road crossings with no lights and no way to get across. Join up the different sections'
Bicycle wayfinding signage	5	'Better signage directing people to bike paths and to designated bike routes. More complete bike lanes on roads without breaks or interruption.'
Remove steep gradients	5	'Some bike paths are ridiculously technical, steep gradients and tight blind bends. Difficult for riding even for experienced cyclists.'
Bike repair /rest stations	3	'Have bike hubs with more bike hoops and repair stations. Also, more water fountains on bike paths.'
Mountain bike trails	3	'Develop cross country mountain bike trails and a decent BMX track linked to bike paths. Normalise for kids that they can have adventures.'
Separate pedestrians and cyclists	3	'High quality off-road routes separated from pedestrians and dog walkers. Priority at crossings with roads and well-shaded.'
Bicycle parking	2	'Provide more parking for bicycles in prominent locations.'
Cycling map	2	'Better maps of the paths with links to other councils so you can create a route all the way to the city.'
Rail line trail	2	'Include a bike path from Greensborough to Eltham via Montmorency with the rail duplication'
Cycling festival	1	'An annual festival to celebrate the joys and benefits of cycling.'
Trail lighting	1	'More safety lights and cameras. Riding to work in darkness is fearsome for females.'
Total	125	

In addition, written correspondence included the following general comments:

- When the Banyule Bicycle Strategy is renewed it needs new proposals. The proposals of the 2010- 2020 strategy have proven to be ineffective.

- Cycling in Banyule is challenging due to major barriers both natural and manmade. Those barriers include Rosanna Rd, Bell Street, Greensborough Highway, Hurstbridge railway line, Yarra River and hills.
- Poor connectivity of bicycle routes.
- Absence of bicycle parking hoops and other facilities.
- Inconvenient and dangerous road crossings.
- Designated on-road bicycle routes are dangerous as they exist currently.
- Cycling to work and shops in Banyule is not a pleasant experience.
- Need safe main road crossings for cyclists.
- Cyclists shouldn't need to dismount at Pedestrian crossings of railways or roads. Eg. at Rosanna Rd/St James, Brown St/Upper Heidelberg and at Dora St/Banksia St.
- Routes that form part of the Local Bicycle Network should have 40km/hr speed limits.
- Utilise safer streets parallel to main arterials where possible.
- Island refuges on main roads greatly facilitate safe crossing by bicycle.

A copy of the full document 'What you told us about cycling in Banyule – Nov 2018' is available from Council by email request to enquiries@banyule.vic.gov.au.

Phase Two – Secondary consultation: stakeholder workshop and BikeSpot 2020

Stakeholder workshop

Phase two activities included a stakeholder workshop in February 2020. Key themes identified in workshop participants' comments and through written correspondence are listed below.

- Greater connectivity is required to get to, and between, major activity centres, connections to neighbouring councils, La Trobe University and community facilities such as parks, sports fields, schools and hospitals.
- Bicycles and pedestrians should be prioritised in activity centres making it safer and easier for people to access local facilities and services.
- On-road sharrows (share lane markings) and bike images alert drivers to the possible presence of cyclists on local roads but do not do much to calm traffic. More assertive traffic calming measures are needed i.e. speed limit reductions, speed humps, bollards, Copenhagen lanes.
- Signage for pedestrians and cyclists was highlighted regularly by stakeholders as a major issue to be addressed.
- Quality of trail surfaces vary markedly across the municipality; loose gravel is particularly difficult for cyclists.
- The absence of shade trees along key routes is a barrier to summer riding.

> 'If Council is serious about their declaration of a climate emergency, a greater commitment to provide both on- and off-road cycling infrastructure is needed. As a community we easily make room for car infrastructure but expect safe cycling lanes to fit around everything else including car parking.'

- There is a strong demand for increased bicycle parking at schools, activity centres, sporting facilities, parks and railway stations.
- Additional amenities such as drinking fountains, bicycle repair stations, e-bike charging stations, outdoor seats, toilets are necessary along key routes.
- Currently there is no straightforward way to find Information about cycling within Banyule, including trails and the Banyule Local Bicycle Network (LBN) routes. Like the way other councils promote their 'shimmy' routes this can be included on the Banyule website and on printed maps.
- Increased promotion of cycling within the municipality including skills development and road rules education, identification of beginner routes and promotion at schools is required.
- It is also important to address the gender imbalance in cycling within Banyule and to actively engage and encourage under-represented groups to participate.
- Key State government initiatives including creation of 20-minute neighbourhoods, Movement and Place mapping and Strategic Cycling Corridors should be reflected in Council's approach to improving cycling conditions within the municipality.
- There is an ongoing opportunity to advocate for cycling infrastructure to be included within major transport projects such as North East Link Projects (NELP) and the Hurstbridge Railway Line Upgrade.

BikeSpot 2020

The BikeSpot 2020 project findings confirmed that a lack of safety or feeling unsafe is a major barrier to people riding bicycles. The project found that cyclists, of all confidence levels, find both traffic speeds and lack of separation from traffic highly stressful. 'No bicycle lanes' (18%); 'Dangerous intersection' (16%) and 'Unsafe bicycle lanes' (11%) were the top three categories of unsafe spots nominated overall. 'Traffic speed', "Too much vehicle traffic' and 'Car dooring' were the categories that attracted the highest ratings of cyclist stress.

Within Banyule, 182 locations were nominated within the municipality, of which nine were considered safe. The top ten locations, all of them nominated as unsafe spots, are shown in Figure 1 below.

Figure 1 City of Banyule – top ten spots, BikeSpot 2020

The top three categories of unsafe spots were 'Poor surface' (18%); 'Dangerous intersection' (16%) and 'Other unsafe' (16%). That 'Poor surface' rated so highly can be attributed to the municipality's reliance on trail-based shared use paths as the main form of off-road cycling infrastructure. Key comments within this category reflected concern with gravel surfaces, gradients and tree-roots. 'Dangerous intersection', 'No bike lanes', and 'Narrow' were the key categories of unsafe spots that caused the highest levels of stress for Banyule participants.

The full list of categories with sample comments is detailed in the table below.

Table 2 'Unsafe Spot' comments- BikeSpot

Category	Spots	Sample comments
Poor surface	32 (18%)	HEIDELBERG, Banksia Street - 'Main Yarra Trail underpass. It's so steep going downhill and such a tight curve I have trouble maneuvering around even when there's no other people. Often end up hopping off the bike to walk down' (Somewhat confident rider, 25-29 yo) EAGLEMONT, The Boulevard - 'Could this be the worst paved road in Australia? Seriously, it has the be seen to be believed. It's hard to imagine a worse paved road surface.' (Very confident rider, 40-44 yo)
Dangerous intersection	28 (16%)	ROSANNA, Lower Plenty Road - 'Eastbound on Lower Plenty Road you need to stop in the right lane and wait for a break in traffic to continue onto St James. Very exposed to fast moving cars accelerating from the traffic lights. Eastbound you need to cross a lane of fast-moving traffic coming over a blind crest to get to the right turn.' (Somewhat confident rider, 55-59 yo) HEIDELBERG WEST, Oriel Road & Bell Street - 'Bike lane ends, no lane across intersection of Bell, lots of traffic, poor driver behaviour, unsafe road surface (dips) all make riding across the intersection to continue on Oriel feels very unsafe.' (30-34 yo rider)
Other unsafe	28 (16%)	GREENSBOROUGH, Para Road - 'The rail section between Greensborough and Montmorency desperately needs a bicycle and pedestrian path along the railway reserve. Cycling on alternative roads is just not safe or suitable in this area.' (Somewhat confident rider, 40-44 yo) GREENSBOROUGH, Plenty River Trail - 'It's a great trail, but as a female travelling on my own, I feel unsafe as that part of the trail is quite isolated from houses particularly where the trail leaves the side of the Ring Road and goes under the bridge.' (Somewhat confident rider, 55-59 yo)

No bicycle lanes	25 (14%)	GREENSBOROUGH, The Circuit - 'There are no bike lanes on this road, and the footpath is too narrow to ride on safely at several points as the barrier between the road and path encroaches significantly. Running into the barrier at any speed would cause great injury. Going slow is difficult because of the steepness of the path. There is no other way to get to the north side of the railway line as you need the underpass.' (Somewhat confident rider, 35-39 yo) HEIDELBERG, The Boulevard - 'Cyclists riding North from the Yarra Flats have no safe access to the pedestrian crossing at Banksia St. A bike lane and bike traffic lights are required to allow cyclists to cross the very busy Banksia St in both directions.' (Very confident rider, 65-69 yo)
Narrow	23 (13%)	HEIDELBERG, Burgundy Street - 'Key shopping precinct, and link road between major roads and routes. Usable road below the Austin Hospital pedestrian bridge narrows drastically to single car width, just as the gradient steepens (riders speed drops) & drivers accelerate uphill.' (Very confident, 35-39 yo) GREENSBOROUGH, Plenty River Drive - 'The path until this point is a wide shared path, at this busy section it is way too narrow.' (Very confident, 35-39 yo)
Cycle lane ends	11 (6%)	IVANHOE, Livingstone Street - 'The bike lane ends well before this intersection. If children then go onto the footpath to try and cross safely it is still unsafe, as the traffic light pole is over a metre away from the area to cross. It's very easy for a child to accidentally drop their bike over the raised gutter and fall onto the road where cars make a sharp turn.' (Very confident rider, 35-39 yo) WATSONIA, Devonshire Road - 'Congested roundabout with no safe cycle access. Cycle lane ends and there is no clear path for cycles to cross from this point to Watsonia station and further across Greensborough Highway.' (Interested but concerned rider, 45-49 yo)
Poor driver behavior	9 (5%)	MACLEOD, Wungun Street - 'Weekly challenge of unsafe car behaviour overtaking bike coming into roundabout - no doubt this is not particular to this street but fairly common everywhere. Bike lane ends and cars race to overtake bike within 10m of roundabout. Evasive action taken a number of times' (Somewhat confident rider, 40-44 yo) HEIDELBERG, Rosanna Road - 'Utes and light commercial vehicles buzz you at speed. No compliance to 1m clear space.' (Very confident rider, 55-59 yo)
Traffic speed	7 (4%)	HEIDELBERG WEST, Bell Street - 'No bike lane and very fast traffic as well as steep road. This and Burgundy Street are our only way to access the train station, and both feel like a life risk!' (Somewhat confident rider, 45-49 yo)

		GREENSBOROUGH, Greenhill Road - 'Cyclists connecting the Greensborough Bypass Trail and Greenhills road must cross busy Diamond Creek Road. Traffic volumes and speed make this hazardous for cyclists.' (Very confident rider, 65-69 yo)
Busy – too much vehicle traffic	6 (3%)	GREENSBOROUGH, Grimshaw Street - 'There is a 950m stretch of main road with no traffic lights. There are 3 bus services running along it, and NEL construction will mean it gets busier. There is no safe way to cross this busy road around McDowell Street especially in peak times. To get to parks, schools and shops from the south means hoping for a break in traffic and running across or going the long way. The footpath is unsafe to use too.' (Somewhat confident rider, 35-39 yo) IVANHOE, Livingstone Street, 'This is the most dangerous point on my commute home. A lot of bikes cross the Darebin Creek bridge and come up Belmont Rd, turning right into Livingstone to access the Oriel Rd bike lane. But from 4pm-6pm, this section of Livingstone is relentlessly busy with heavy traffic at 60kph in both directions.' (Very confident rider, 45-49 yo)
Car dooring	4 (2%)	HEIDELBERG, Burgundy Street - 'Be careful of car doors. Drivers do not check?' (Interested but concerned rider, 40-44 yo) EAST IVANHOE, Lower Heidelberg Road - 'Cars not leaving sufficient room, cars pulling out.' (Very confident rider, 65-69 yo)
Total	173	

Quiet streets and separated infrastructure were the key elements of a positive cyclist experience within Banyule correlating with metropolitan Melbourne overall.

Table 3 'Safe Spot' comments- BikeSpot

Category	Spots	Sample comments
Off road path	3 (33%)	ELTHAM, Bolton Street – 'new off-road path towards Grand Boulevard has improved this tricky-to-navigate section'. (Very confident rider, 40-44 yo) HEIDELBERG, River Gum Walk – 'Nice mostly wide path, is a great alternative to Beverley Road and Rosanna Road.' (Very confident rider, 35-39 yo)
Quiet streets	4 (44%)	GREENSBOROUGH, Santon Street – 'Local bike route offers a safe, comfortable ride'. (Somewhat confident rider, 50-54 yo) IVANHOE, Abercorn Avenue - 'Nice back way to bypass Heidelberg Road across the Darebin Creek. Generally, not much traffic and if so well behaved locals.' (Very confident rider, 25-29 yo)
Good driver behaviour	2 (22%)	WATSONIA, Watsonia Road - 'There is not a lot of fast-moving traffic and drivers are very conscious of bike riders'. (Somewhat confident rider, 15-19 yo)

		IVANHOE, Lower Heidelberg Road - Great bike lane up a slow climb, cars turning out onto LHR are generally well aware of cyclists coming up the hill, good visibility (Very confident rider, 35-39 yo).
Total	9	

Men submitted the majority of spots within Banyule at 63%, women 29% and 8% preferred not to nominate a gender. This is representative of the overall report and cycling participation generally. Ages varied between the contributors with the greatest activity coming from 25-29 year old and 50-54 year old women and 35-44 and 50-54 year old men. Finally, the majority of spots within Banyule, in line with other regions across Victoria, were submitted by people that described themselves as 'Very confident' cyclists (54%). However, Banyule also a significant number of 'Somewhat confident' cyclist contributors as well (38%).

Phase Three – Public Exhibition: draft Banyule Bicycle Strategy

Shaping Banyule

Consultation material including the draft strategy, results of phase one and two engagement activities and a survey were hosted on the Shaping Banyule website. The survey sought community feedback on the strategy's:

- Overall Direction
- Key identified themes of:
    - Network connectivity;
    - Safe and inclusive design
    - Cycling for all

In all the bicycle strategy engagement site was viewed 956 times by 511 unique visitors. Of these, 25 contributors completed the survey and left feedback. Support for the Overall Direction was strong with 22 positive comments as follows:

- Incremental steps are well chosen.
- The overall direction is great. I'm not sure, however, how some of it will be achieved, particularly safer bike lanes on roadways, as many roads are currently too narrow to service motorised vehicle traffic, particularly around the Olympic Village precinct. This is exacerbated by redevelopment causing increased street parking which is narrowing the roads even further.
- Not enough focus on the opportunities for / potential benefit of electric bikes & scooters, in particular for areas of Banyule with challenging topography.
- Could more clearly identify low-cost / pilot opportunities that are within the scope & authority of council and can be provided in the short term.
- Overall, I think the foci of this plan are good, but it could be fleshed out more.

> 'The focus on linking up the main areas with safe and dedicated riding tracks is spot on. For me to cycle more, I need to be able to get to my kid's school, and the shopping centre. Currently there are only a few bike symbols on the ground, and a lot of cars that rat-race through those same streets. The footpaths are often not wide enough to safely ride on at high foot-traffic times (school pickup) either. '

- The need for safe, accessible and easy bike parking options is also essential. Making sure that bicycle parking has at least a few big enough spaces for cargo bikes (families may use bigger bikes if the facilities were there to make a trip to the shops easy) is important though. If there is bike parking at Greensborough Plaza, I have not seen signage to it in the 12 years I've been here. Woolworths does not have any parking that I would deem safe enough to ride to with my cargo bike either. You will need to work with businesses to enable riders.
- I am interested in seeing tangible targets and actions that are measurable and implementable. I want to understand what Council's input is to establish timelines, budgets and goals. I want to know when all the linkages will be fixed, the numbers of fix-it bike stations installed each year and when we will see bike lanes or the reduced speed limit trials/
- Very pleased to see 'missing links' are at the top of the agenda. My commute to Austin Hospital takes me on beautiful bike paths until about 1-2km away, and then through treacherous heavy traffic - a huge safety concern. I expect more people would cycle (less traffic!) if only it were safer the whole way.
- >90 pages. hard to get my head around. a couple of thoughts following my ride down the Plenty River trail from Kalparrin Gardens to the Yarra today, and last weekend and today near The Boulevard in Heidelberg:

- The Plenty River trail links a lot of sporting facilities and ovals through Greensborough-Eltham and then on to Heidelberg. On a Sunday with junior footy games on, it's almost impossible to ride past the ovals with spectators, dogs, prams. (and at Greensborough there are new light towers going up in the middle of the path!)

> 'It would be great to have a properly made cycle path along the Boulevard (above flood level). Impossible to ride on the dreadful state of that road. and last weekend with the Yarra flooding, we couldn't ride on the Main Yarra Trail. If you want to actually get from Banksia St to Burke Road at reasonable speed, the Main Yarra Trail with walkers and dogs etc is never a good bet.'

Of the 3 contributors that disagreed, their key areas of concern were:

- A focus on cycling for transport is unnecessary in Banyule as most cyclists are recreational riders.
- The draft strategy doesn't include adequate details of any proposed upgrades to the Plenty River Trail.
- Cyclists should be registered and required to use off-road cycle paths where they are available.

Support for the key themes was strong across the majority of participants with comments summarised in the table below.

Table 4 Comments - Phase 3 - Shaping Banyule

Category	Comments
Network connectivity	• Lack of connectivity is a real barrier for getting safely around safely by bicycle (2 comments). • Council should prioritise improving network connectivity that is within its control/scope. Yes to ongoing advocacy to State but Council often has influence as to when these elements will be addressed so needs to commit resources to things that can be done now. • Improve cycling connection between Greensborough and Watsonia, existing routes are going to be cut in half by construction of NEL. 'Living in Heidelberg West there is poor connectivity to areas to the east and west of my area including Northland Shopping Centre and the Darebin Creek trail. I would like to see a safe bicycle route along Southern Road.' • Include a bicycle lane along The Boulevard connecting East Ivanhoe to Heidelberg Road (2 comments) • Banyule's Local Bicycle Network routes need more focus – there are some good 'shimmy' routes like Darebin's that avoid the main roads.
Safe and Inclusive design	• Banyule should adopt Netherlands-level bicycle infrastructure as a standard. • Greater emphasis on safe crossings on busy roads. For example, Upper Heidelberg Rd/Waiora Rd north of Bell Street. Also Grimshaw Street between The Circuit and Greensborough Road. • Advocate for a change in the hierarchy of road users to put pedestrians and cyclists ahead of cars and drivers when planning roads. Separate lanes to make riders feel safer, are essential I feel to getting the community to change our culture, and support the advocacy stated above.

'Linking neighbourhood area cycling with walking for families / children (eg. side-shimmy streets, lower speed limits & enhanced pedestrian crossings to encourage kids to walk & ride to school). Improving these suburban networks will also improve overall safety & encourage their parents to allow their children to travel by foot.'

- Bicycle parking around local activity centres is needed and something that Council could implement simply and at low cost relative to major infrastructure projects. How can I be encouraged to ride there if there is nowhere to park when I get there?
- There's a need to engage with businesses, especially small and medium, about providing bike-riding facilities for employees (especially at big shopping centres like Greensborough Plaza, for example), so that it becomes a viable option. What if Council supported/assisted with planning, for communal bike-riding changerooms and parking, shared between multiple businesses?
- Ensure there are public toilets, rubbish bins and effective lighting available on all shared use paths and through underpasses (3 comments).
- Introduce a shoulder (bike lane) on Banyule Road, Hently Road, Cleveland Avenue, Bonds Road and Rosehill Road.
- Safe and Inclusive Cycling and Cycling for all means we need a network that is not along main roads and / or bike paths that are separated with kerbs. The recommendations are too narrow and will not facilitate cycling for all.

Cycling for all

- Championing this is important to ensure that all people get the opportunity to cycle safely, not only those who are very strong or risk averse.
- Banyule's goal should be to significantly increase the number of cyclists using on-road infrastructure.
- I am an older and inexperienced female cyclist who is lacking in confidence. Bicycle workshops that are run outside of business hours (I still work) would be really appreciated and would make my road use when cycling much safer for me and other road users.

'It's not just about training new riders, but also about making it easy for them to continue. What about support for local bike-fixing initiatives, like at CERES? I think it's mentioned somewhere in the report too, that fix-it stations should be installed, but it needs to be stated in this theme that putting these stations (perhaps like the one I saw at Diamond Creek's Open Playspace) at regular intervals, so that if people get a flat tyre it's not a huge deal to fix it up, will help support riders and reduce opportunities for them to opt out because it's too hard.'

- Develop a fun and engaging 'Tour of Banyule' family event connecting all bike paths with check-in points, entertainment and rest-stops along the way.

Anything else to be included in this strategy?

- Improved and consistent signage is needed between municipalities including reminders to all users to behave responsibly on shared use paths (2 comments).

- Greater consideration of the opportunity provided by growth in ownership of e-bikes; including bulk-buy discount purchase opportunities (2 comments).
- Collaborate with neighbouring Councils to deliver direct routes for commuters across municipal boundaries rather than relying on the State Government (2 comments).
- Work with neighbouring Councils to improve crossing points between municipalities ie. address safety concerns about lack of visibility and sharp bends in the approach to the Abercorn Avenue footbridge over the Darebin Creek

> 'Need for Council to be pragmatic and focus on improving routes and connections that offer the greatest benefits ie. Improve the intersection of Livingstone, Upper Heidelberg and Waterdale Roads; improve the links through Livingstone Street and Banksia Street.'

- Rethinking green spaces to be more inclusive of bicycles – including the area around Greensborough War Memorial Park.
- Greater emphasis within reserves on areas to improve skills and confidence – including jumps and pump tracks.
- Use of Strava heatmaps as an official data source to track routes and usage of recreational cyclists.
- Improving footpaths for other wheel-based travel including scooters, wheelchairs, prams etc. - more focus on opportunities that enhance cycling AND enhance other mode options, besides driving.

In-person activities

Two drop-in public information sessions at the Council offices in Greensborough and Ivanhoe and pop-up engagement activities on the Darebin Creek Trail, Main Yarra Trail and in the Rosanna Parklands were held across the eight-week period. Unfortunately, two further in-person pop-up sessions on the Plenty River Trail were rescheduled and then had to be abandoned due to the sixth COVID-19 lockdown introduced by the Victorian State Government in late July 2021.

Feedback gathered from these activities highlighted general support with the key themes, objectives and recommendations of the draft Strategy. A summary of the feedback is provided below:

- Very supportive of improvements to Darebin Creek Trail (10 comments).
- Need for separated bicycle infrastructure on busy sections of key trails i.e. Main Yarra Trail (2 comments).
- Need for wider shared paths to accommodate increased use and COVID-19 distancing requirements (3 comments).
- Concern at gravel surfaces and maintenance of some sections of trail network.
- Concern that sections of Plenty River Trail are dangerous with steep gradients, narrow bridges and poorly maintained gravel surfaces (2 comments).
- Concern at proposed alignment of Main Yarra Trail in the vicinity of Banyule Flats.
- Walkers expressing concern about cyclist speed and lack of warning on approach (3 comments).
- Cyclist concern that the public are often unaware that shared paths are different from footpaths and behave inappropriately (4 comments).
- Request for more cycling skills opportunities for school-aged children including support for programs within schools (3 comments).
- Request for support for secure bike parking within schools.

- More toilets, water fountains, fix-it stations along trails (6 comments).
- Support for consistent wayfinding signage across trails (3 comments).
- Support for more wayfinding signage for on-road routes (2 comments).
- More information on on-road routes generally.
- Car dooring is a significant safety concern (4 comments).
- Poor lighting on trails reduces access for female riders in winter as it gets dark early (2 comments).
- Concern at on-road bike lanes ending abruptly before intersections (2 comments).
- Concern at poor road surfaces – Upper Heidelberg Road, Ivanhoe.
- Concern at dangerous intersections – Lower Plenty and Waiora Road, Rosanna (2 comments).
- Need for improved cycling connections between activity centres within Banyule.
- More bike parking needed at shopping centres and community facilities.
- Support for more bike parking at Ivanhoe railway station.
- Extension of Heidelberg Road 'pop-up' bike lanes needed.
- Cycling lanes to remove parking lanes and not traffic lanes.
- Support for collaboration with other LGAs to deliver projects of mutual benefit – including the Nillumbik Aqueduct Trail and extension to the M80 trail.

Written feedback

Eight written responses were received during the public exhibition period from neighbouring councils and members of the community. A summary of feedback, addressing key themes, is provided in the table below.

Table 5 Comments - Phase 3 - Written feedback

Theme	Comments
Darebin Creek Trail	• The recent upgrade of the Darebin Creek Trail is a good example of how an old and sub-standard trail can be improved benefitting many users. (3 comments) • Consistent signage along the full length of the trail is an example of cooperation between multiple Councils to provide uniform and useful wayfinding signage that should be copied across other trails. • A crossing of the Darebin Creek is necessary in the vicinity of Southern Road to facilitate access to Northland SC. • Feeder link to the trail is necessary north of Bell Street to facilitate safe access south to Thornbury High School for students living within Banyule. • A crossing of the Darebin Creek south of Heidelberg Road is needed to allow Ivanhoe residents to access the Darebin Creek Trail and Alphington. • A trail extension is necessary on eastern side of Darebin Creek between Livingstone Street and Banksia Street.
E-Bikes	E-bikes can be useful mobility tools for older people.
Events	• Consider working with Yarra Plenty Regional Libraries to promote bicycle-themed events. • Darebin CC runs a program of regular activities promoted by an e-newsletter that also keeps the community updated on cycling news and events. This is an ongoing program embedded within the culture of the municipality and includes a monthly bicycle check event and low cost/subsidised bike skills workshops.
Infrastructure	• Would like to see pop-up bike lanes on Heidelberg Road extended into Banyule. Also see this type of trial occur at other locations within Banyule.

	• Recommended use of bicycle hoops with crossbar as these provide added stability for bicycles. • Other LGAs (ie Boroondara) have bicycle repair stations located at leisure centres and libraries. They also include maps on their website showing locations of these and bike parking. • Bike Counters - would highly recommend a trail counter be installed within Banyule sections of all key trails – Main Yarra, Darebin Creek and Plenty River.
Main Yarra Trail – bridge crossings	In 2019 Manningham CC endorsed the 'Yarra River Corridor Concept Plan' which outlines the municipal vision for the future use of passive and organised recreational open space along the river corridor from the Eastern Freeway in Bulleen to Finns Reserve in Templestowe Lower. The concept plan identifies three proposed SUP bridge crossings over the Yarra River at Birrarung, Bulleen and Banksia Parks which will significantly enhance pedestrian and bicycle connectivity between Banyule and Manningham. These three crossings feature in the draft Banyule Bicycle Strategy however since the draft's development a commitment has been secured via the NELP to deliver the Banksia Park crossing. It is recommended that Banyule and Manningham jointly prioritise advocacy seeking a commitment to deliver the remaining Birrurung and Bulleen Park bridges. (2 comments)

Maintenance	• Trail maintenance is a significant consideration for Council and Government agencies but is underfunded and under resourced by all.
	  ○ The Main Yarra Trail is in very poor condition and the Banksia Street underpass is one of the worst hazards anywhere in Melbourne. The upgrade of this trail, apart from the Banyule concrete sections, needs to be prioritised.
	  ○ The Plenty River Trail (joint responsibility with Parks Victoria) is also in very poor condition in many sections between the Main Yarra Trail and Greensborough Bypass. The sections from Lower Plenty Rd to just south of Palara Crt and north of Willinda Park to Whatmough Park are in the worst condition.
	• The gravel section from the Main Yarra Trail to Martins Lane (maintained by Parks Victoria) is in a poor state. Contains sections that are difficult and dangerous because of very steep inclines, deep ruts and accumulations of loose gravel. Needs to be replaced with a new and level connection and is well maintained (2 comments).

Regional connections	Once better connections between Banyule and Manningham Trails are built (3 bridges across the Yarra) consistent wayfinding signs, maps, etc should be implemented and would be great for the Northern Region and Eastern Region Councils to work together on this.
Schools	Specific programs supporting active transport to schools have been successful in other LGAs. These include the Octopus Schools program (Darebin) and school holiday activities including workshops helping older children to transition from riding on the footpath to riding on the road.
Shared use paths (SUPs)	• There is ongoing concern at conflict on shared use paths attributed to a lack of awareness or concern for others. This has intensified during the COVID-19 lockdowns with usage of these spaces increasing markedly. • Shared use paths are unsuitable for cycling with increases in foot traffic. Would like to see dedicated and safe (separated) on-road bicycle lanes introduced in preference to SUPs.

Trail requests	• There is a need for a new trail from Bonds Rd across the Plenty River and joining Plenty River trail at Martins Lane utilising the Melbourne Water pipe track. This would be a useful and safe link for residents in Lower Plenty to access the full trail network. • Prioritise an off-road connection between M80 trail and Plenty River trail. • Collaborate with Nillumbik Shire Council on the development and extension of the Aqueduct trail from the Diamond Creek Trail to the M80 Ring Road trail via Pipeline Track in Plenty Gorge Park. • Pave a section of The Boulevard from Banksia Street to Bourke Road to create a separate dedicated bicycle route, leaving the balance of the road in its current poor state of repair. The Boulevard is wider than the Main Yarra Trail along this stretch and can accommodate both modes, creating a direct and safe route for commuter cyclists without increasing car use of this space.

Conclusion

The Banyule Bicycle Strategy has been developed to guide Banyule becoming a municipality that:

- Enhances the natural environment and liveability of our places by supporting cycling as a key form of zero-emission transport.
- Implements a network of safe, convenient and accessible cycling routes with linkages to other transport modes and key destinations.
- Embraces the health, social, economic and environmental benefits of cycling.
- Encourages and promotes a cycling culture for all ages and abilities.

The community was invited to provide feedback on the draft Banyule Bicycle Strategy through both online and face-to-face methods. During this time approximately 470 pieces of individual feedback were received. These responses have been analysed and it has been found that there is a consistency in the overall feedback.

There has been positive support for the draft Bicycle Strategy with overall support for the direction and key themes of the Strategy. Positive feedback was obtained in relation to the Improvements recently completed on the Darebin Creek trail and extent of the recreational shared use path network within the municipality.

However, the community agrees that there is significant work to be done to achieve a safe and comfortable cycling environment for all, including beginners, women and those that consider themselves 'interested but concerned' cyclists. Most contentious issues revolve around the maintenance of the trail network and the provision of safe and continuous on-road bicycle infrastructure and safe crossing points.

Other issues raised by community members include the need for improved wayfinding and information provision, increased bicycle parking and amenities and support for cycling education and events.

This feedback will inform the development of the final Banyule Bicycle Strategy and action plan.