Alpine Shire Council

Cycling Safety Strategy Report

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10 July 2019

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1 INTRODUCTION

The Alpine Shire Council is located in north-eastern Victoria, approximately 260 kilometres north-east of Melbourne's CBD, covering an area of approximately 4,800 km^2.

Visitation to the region has increased steadily over the last five years, with the region experiencing 15% year-on-year growth in tourism. A significant proportion of that growth is attributable to cyclo-tourism with the region being popular amongst recreational cycling, road cycling, mountain biking and trail use. Tourism is expected to continue growing over the coming years, with significant investment from Tourism North East and the associated "Ride High Country" campaign anticipated to result in further increases to cyclo-tourism.

In addition, greater use of cycling as a mode of transport amongst the region's residents has driven increased demand on the municipality's cycling infrastructure.

Council has identified that this growth is driving creation of increased friction with cars and cyclists sharing the municipality's roads, and that further growth may result in unwanted impacts to road user safety and enjoyment.

As a result, Council has initiated the development of a Cycling Safety Strategy, which will aim to identify key issues facing road and path users, recommend infrastructure improvements, and outline educational approaches to both cyclists and drivers to improve safety outcomes.

This Cycling Safety Strategy aspires to make roads safer for all cyclists, ranging from training cyclists, to commuters and school children, and identify best-practice management of roads and cycling infrastructure.

The report adopts the "Safe Systems" approach, a road safety philosophy that acknowledges the fragility of vulnerable road users, and the fallibility of human decision making, with a view to avoiding completely fatalities and serious injuries on our roads. The core tenants of this approach are Safe Roads and Roadsides, Safe Speeds, Safe People and Safe Vehicles, all of which will be analysed and discussed in detail.

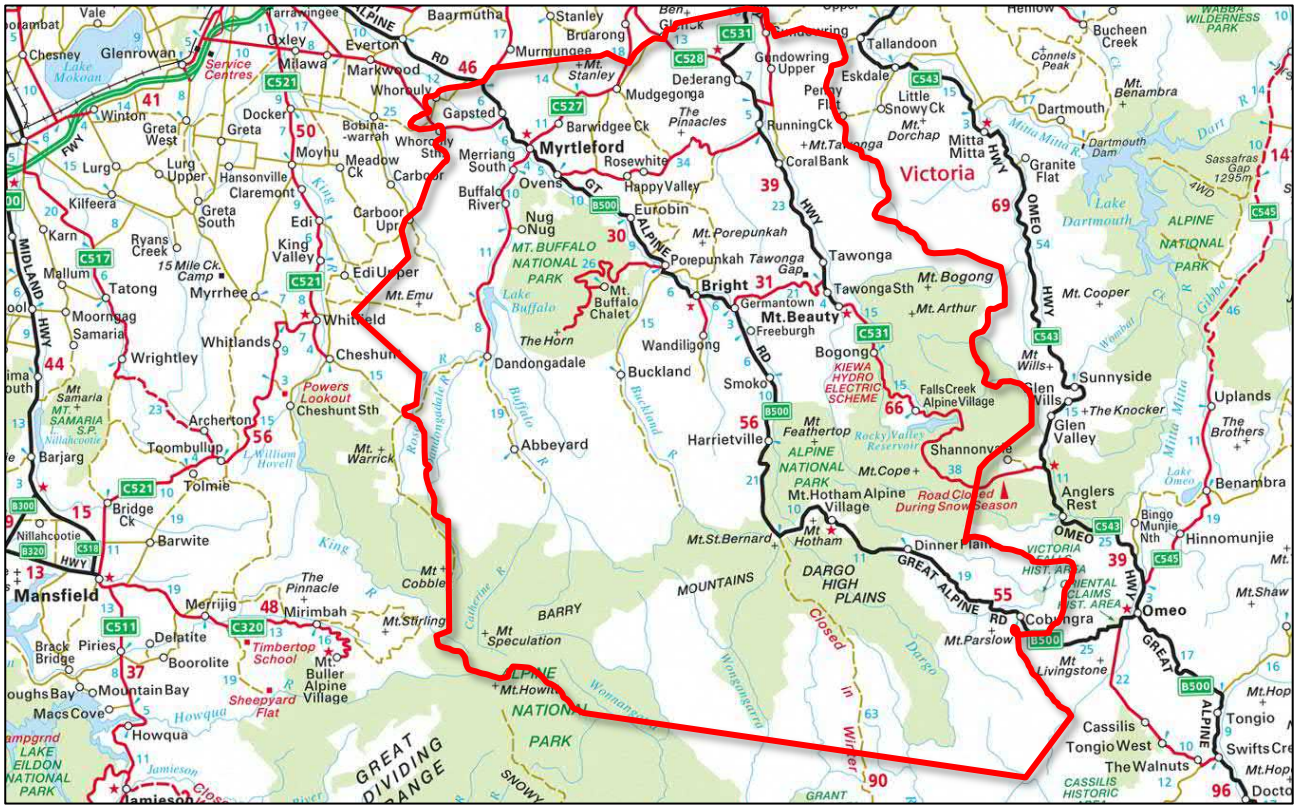
2 EXISTING CONDITIONS

2.1 Site Location

The Alpine Shire is located in Victoria's north-east and extends from Wonnangatta in the south to Gapstead and Dederang in the north, and from Nug Nug and Dandongadale in the west to Towonga and Dinner Plain in the east.

A view of the municipal boundary is provided in Figure 1 below.

Figure 1 Site Location



The Shire is home to approximately 12,000 permanent residents, largely located within the towns of Bright, Dinner Plan, Mount Beauty and Myrtleford. Notably, the Shire also includes popular alpine destinations of Falls Creek, Mount Hotham, and Mount Buffalo.

2.2 Road Network

The municipality's road network is relatively limited for its size, with road alignments heavily influenced by the surrounding mountainous terrain.

Primary vehicle routes through the municipality include the Great Alpine Road, the Kiewa Valley Highway, and the Tawonga Gap Road. Each are under the control and management of VicRoads.

The **Great Alpine Road** is the major arterial through the shire, extending south-east from Wangaratta through Myrtleford, Bright and Harrietville before continuing over Mount Hotham through to Bruthen. The carriageway remains fairly consistent along its length, providing a single carriageway of one traffic lane in each direction, and typically spray-sealed shoulders.

A view of the typical cross-section is provided in Figure 2 below.

Figure 2 Great Alpine Road Cross-Section

The **Kiewa Valley Highway** runs between Wodonga and Mount Beauty and, similar to the Great Alpine Road, provides for two-way traffic within a single carriageway, with intermittent narrow spray sealed shoulders.

A view of the typical cross-section is provided in Figure 3 below.

Figure 3 Kiewa Valley Highway Cross-Section

Tawonga Gap Road runs east-west between Germantown and Tawonga South, and provides one of the few east-west connections between the Kiewa Valley and Ovens Valley. It typically provides one traffic lane in each direction, and provides overtaking lanes in the uphill direction periodically.

The road has an elevation gain of approximately 500 metres, and is a popular route for cyclists training in the area.

A view of the typical cross-section is provided in Figure 2 below.

Figure 4 Tawonga Gap Road Cross-Section

Table 1 below provides a summary of the composition of other key roads within the municipality.

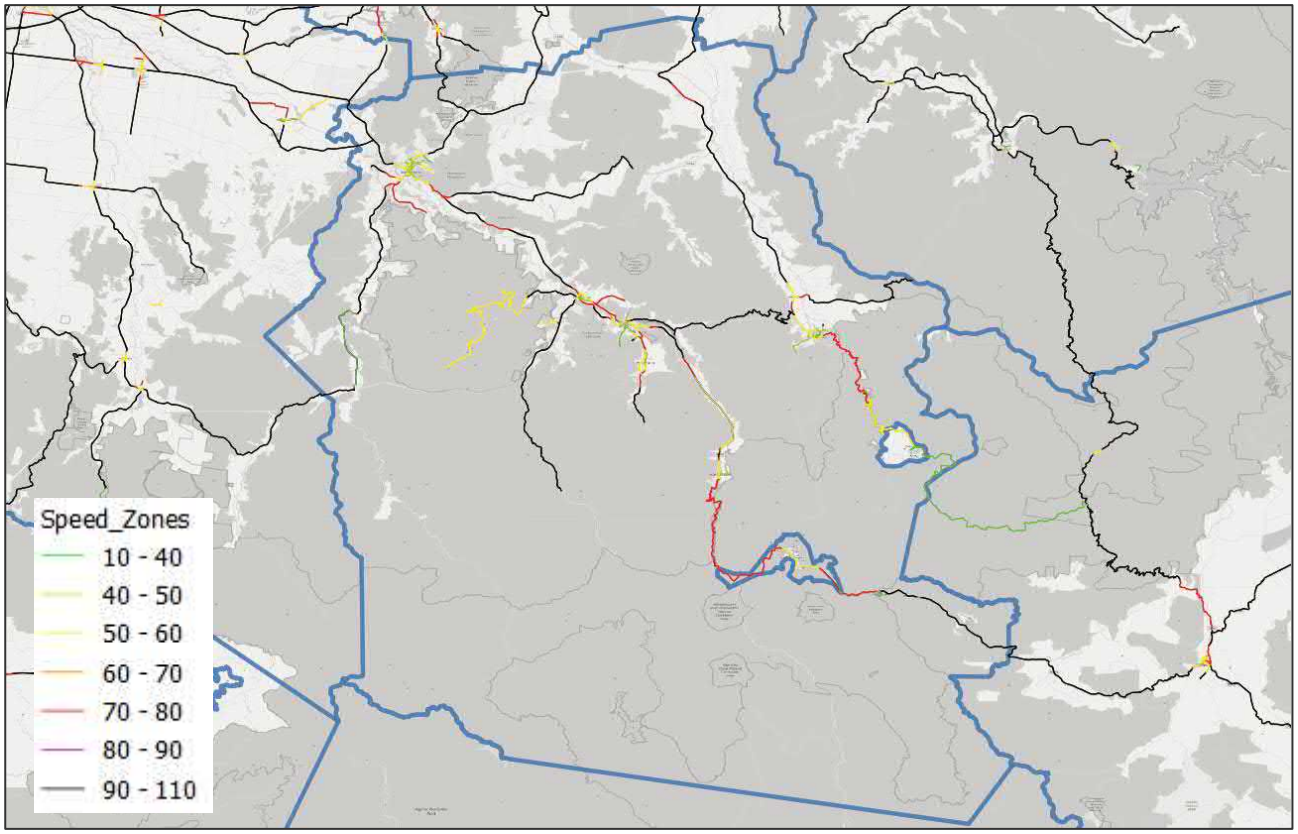
Table 1 Road Composition Summary

Name	*Carriageway*	*Shoulder*	*Speed Limit (km/h)*	*Under Management of*
Great Alpine Rd	2 lanes, 2 way	Intermittent	80-100	VicRoads
Kiewa Valley Hwy	2 lanes, 2 way	Intermittent	100	VicRoads
Tawonga Gap Rd	2 lanes, 2 way	None	80	VicRoads
Gavan St	2 lanes, 2 way	Parking	50-60	VicRoads
Happy Valley Rd	2 lanes, 2 way	None	100	VicRoads
Buffalo River Rd	2 lanes, 2 way	None	80-100	VicRoads
Buckland Valley Rd	2 lanes, 2 way	None	100	Council
Morses Creek Rd	2 lanes, 2 way	None	50-100	Council/VicRoads
Myrtleford-Yackandandah Rd	2 lanes, 2 way	None	60-100	VicRoads
Bogong High Plains Rd	2 lanes, 2 way	None	40-80	VicRoads
Mount Buffalo Rd	2 lanes, 2 way	None	60	VicRoads
Dederang Road	2 lanes, 2 way	None	100	VicRoads
Tunnel Gap Road	2 lanes, 2 way	None	100	Council

As is typical of rural areas, speed limits on most roads are high, with 80-100km/h speeds generally in place along major roads, reducing in areas of higher activity.

Posted speed limits along the alpine roads are reduced, with the upper sections of Mount Buffalo Road subject to a 60km/h speed limit, the Mount Hotham ascent (Great Alpine Road) subject to a 80km/h speed limit, and the Falls Creek ascent (Bogong High Plains Road) restricted to between 60-80km.h. A view of all speed limits across the municipality is provided in Figure 5 below, sourced from Victoria's open data directory. It is noted that the Tawonga Gap Road has recently had a speed reduction from 100km/h to 80km/h.

Figure 5 Speed Zones

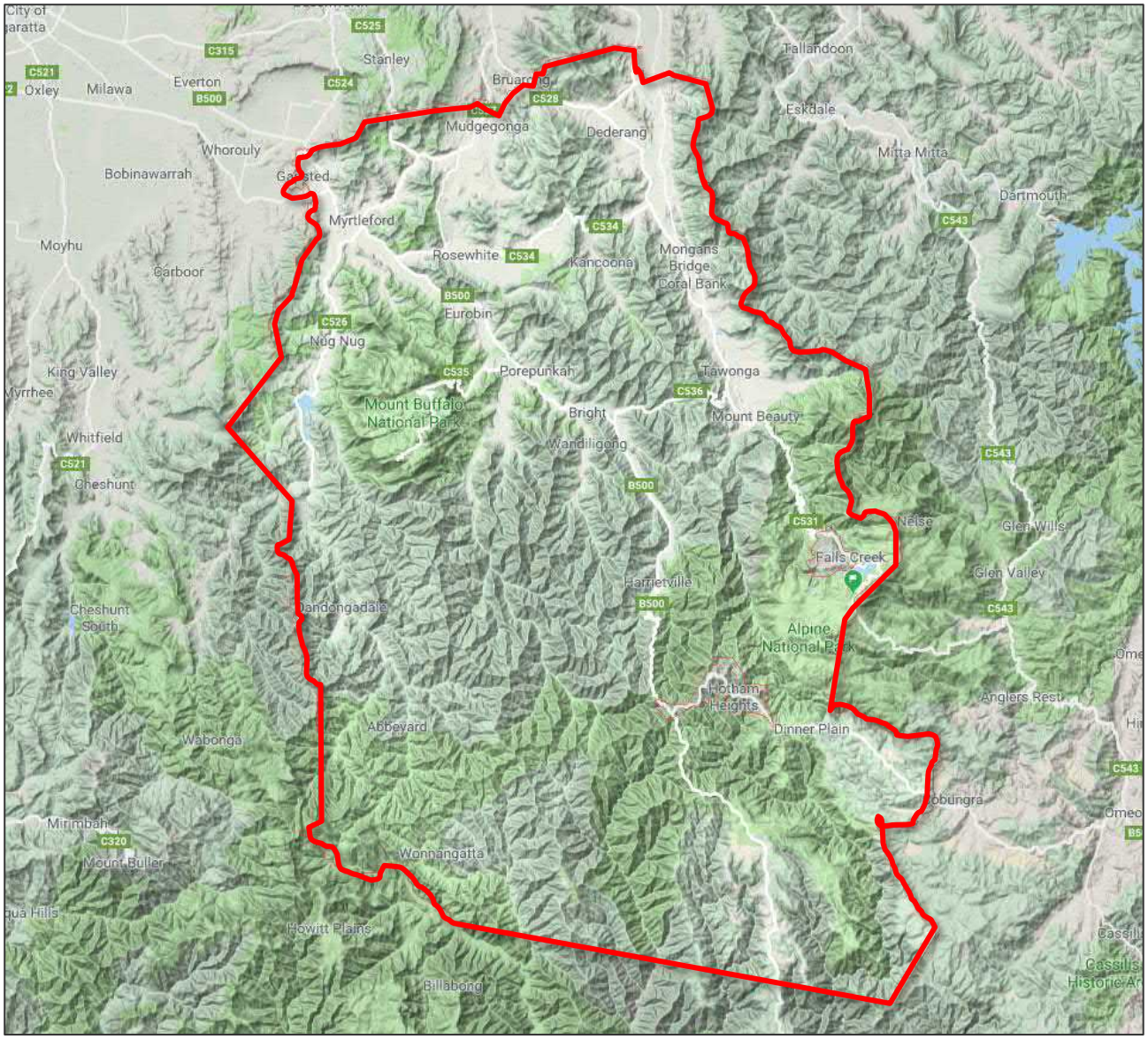


2.3 Topography

The Alpine Shire region is characterised by mountainous terrain, separated by valleys in which the townships are located. Figure 6 below gives a visual indication of the Shire's topography.

The mountainous terrain is a drawcard for training cyclists in particular, but means that many cyclists on the alpine roads will be travelling at much lower speeds, particularly on the long and steep ascents of Mount Buffalo, Falls Creek, Mount Hotham and Tawonga Gap.

Figure 6 Alpine Shire Topography



2.4 Crash Statistics

Crash history information for the municipality was obtained through VicRoads CrashStats (the Victorian accident statistics and mapping program) for the latest 5-year period (September 2013 – December 2018 inclusive). This database includes all road crashes resulting in a police report resulting from injury or property damage.

Within the Alpine Shire (and Falls Creek and Mount Hotham alpine areas), there were a total of 297 crashes including:

- 8 fatalities;
- 107 serious injuries; and
- 182 other injury or non-injury crashes.

Of those crashes, 28 involved bicycles, including:

- 0 fatalities;
- 14 serious injuries (including two within one crash); and
- 16 other injury or non-injury crashes.

A map view of the crash locations across the shire is provided in Figure 7. Serious injury crashes are designated by orange markers, and other injury crashes with green.

Notable information from the cyclist crash data is summarised below:

- 4x crashes were recorded on the western side of Tawonga Gap Road including
  - 3x "off carriageway" crashes not involving another vehicle (the direction of the crash; uphill or downhill, is not detailed)
  - 1x head on collision with a vehicle
- 5x crashes were recorded along Gavan Street in central Bright;
  - 3x crashes involved moving vehicles
  - 1x crash was a 'dooring'
  - 1x crash was a loss of control not involving another vehicle
- 1x "off carriageway" crash on Mount Buffalo Road not involving another vehicle
- 4x crashes were recorded along Bogong High Plains Road
  - 2x head-on collisions with a vehicle at the same location
  - 1x additional head-on collisions with a vehicle
  - 1x "off carriageway" crashes not involving another vehicle

The bulk of occurred in Summer (12), with six during Autumn and nine during spring. No cycling crashes have been recorded during winter.

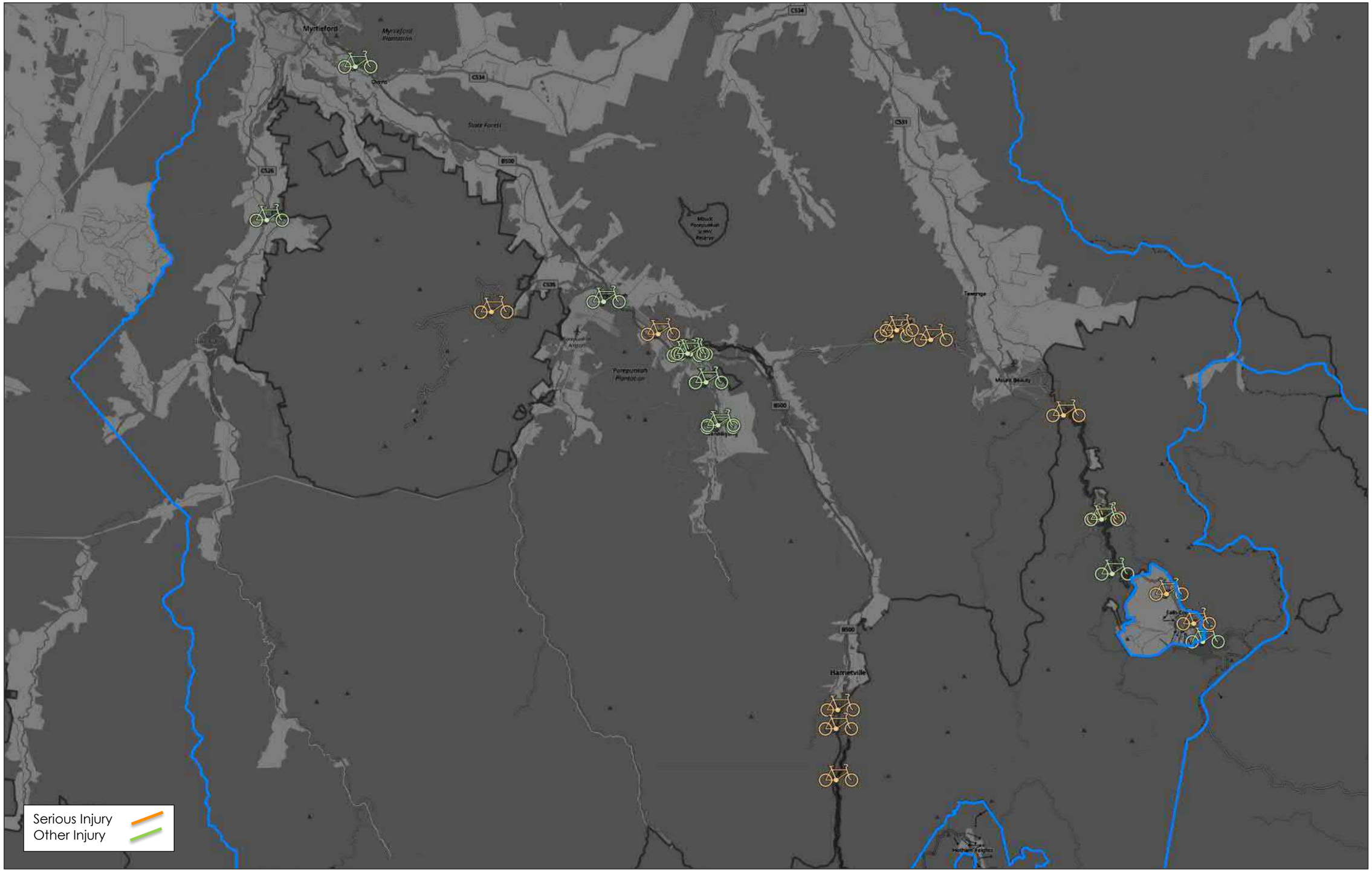
Whilst the crash statistics database includes valuable crash data, it is noted that single-vehicle crashes are significantly underreported. As a result it is quite likely that a number of crashes are not included on the database.

Further the lack of crash data in any specific location does not necessarily indicate that no safety issue exists, rather that the probability of it occurring is low.

Across the state, crash data suggests that the majority (>80%) of bike rider crashes occurred in metropolitan Melbourne, but almost half of all fatalities (48%) occurred in regional Victoria.

The most common crash types for cyclists state-wide are vehicles from the same direction (rear-end), which is also the most common means of a fatality, with 25% of fatal crashes as a result of rear-end collisions.

Figure 7 Bicycle Crash Locations



2.5 Traffic Volumes

Council has provided a database of all daily traffic volumes collected within the municipality. These are shown in Figure 8 to Figure 12 below.

Figure 8 Bright Daily Traffic Volumes

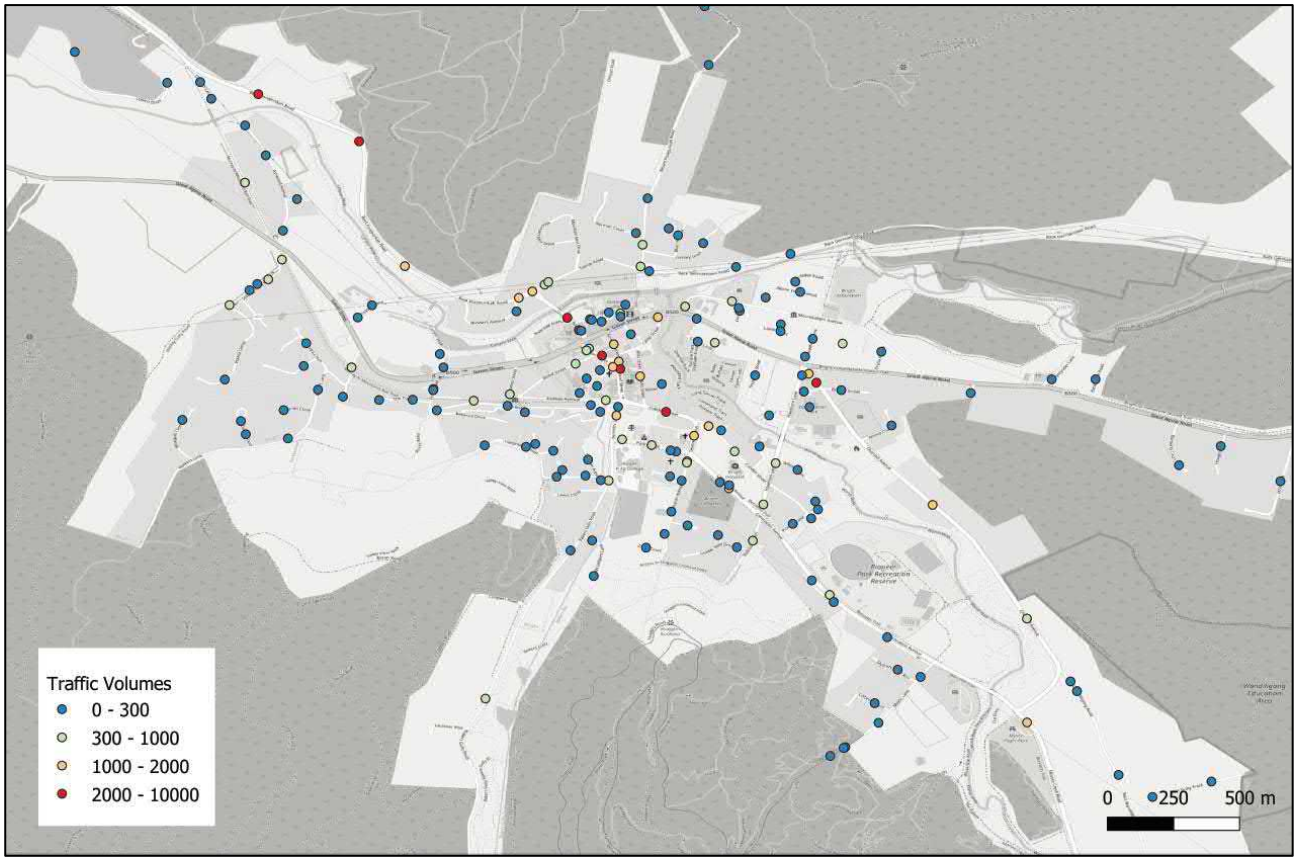


Figure 9 Harrietville Daily Traffic Volumes

Figure 10 Mt Beauty Daily Traffic Volumes

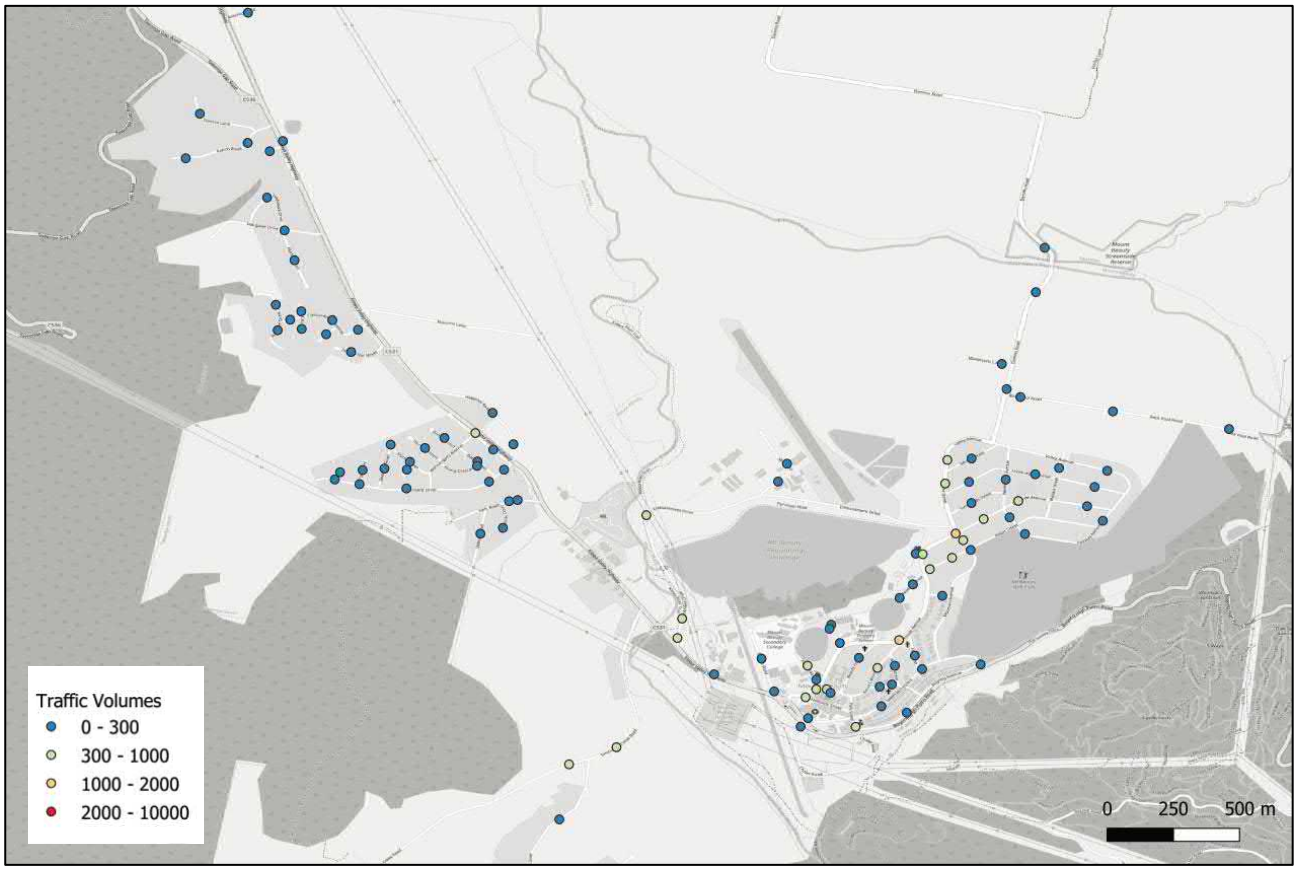


Figure 11 Myrtleford Daily Traffic Volumes

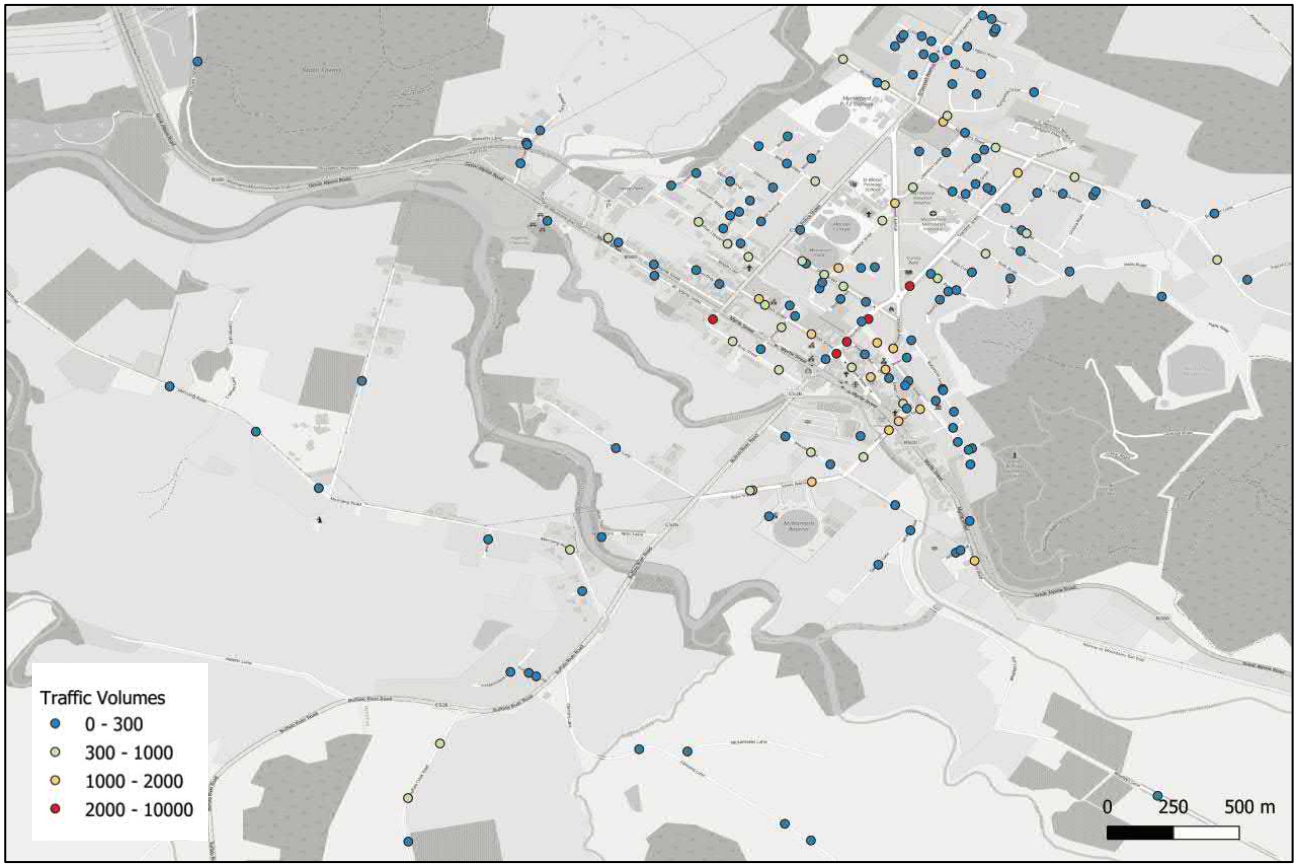
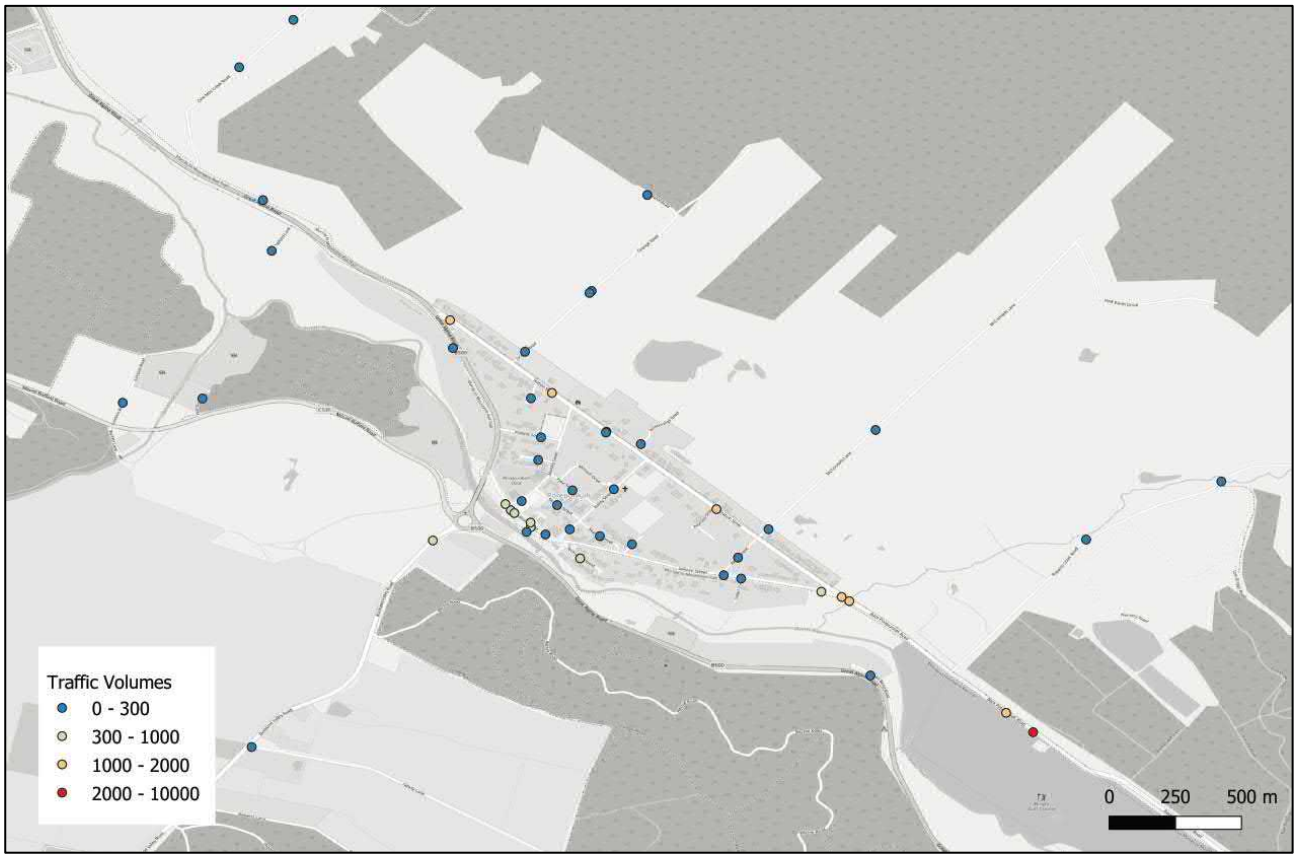


Figure 12 Porepunkah Traffic Volumes



2.6 Cycling Routes

2.6.1 Shared Trails

The Alpine Shire has a vast network of shared pedestrian and cyclist trails

The "Murray to the Mountains Rail Trail" is the largest and runs south-east from Wangaratta along a former railway reservation, through the Alpine Shire, terminating in Bright. The trail is a popular route among recreation cyclists.

A number of other smaller trails are scattered throughout, including:

- Bright to Harrietville Shared Trail
- Bennetts Trail (Bright to Wandiligong)
- Railway Avenue Shared Trail
- Canyon Trail (Bright)
- Mount Buffalo Shared Trail
- Over River Loop (Myrtleford)
- Mount Beauty to Tawonga Shared Trail
- Pebble Beach Trail (Mount Beauty)
- Mount Beauty Pondage Trail

It is noted that most shared paths are relatively narrow in width.

The network of trails within each major township are shown in Figure 13 to Figure 17 below, derived from Council's GIS database. It is noted that not all paths are identified.

Figure 13 Bright Shared Trail Network

Figure 14 Harrietville Shared Trail Network

Figure 15 Mount Beauty Shared Trail Network

Figure 16 Myrtleford Shared Trail Network

Figure 17 Porepunkah Shared Path Network

2.6.2 Cycle Lanes

There are limited formal cycling facilities within the shire, with the only on-road bike lanes located in Bright along Gavan Street between Prices Lane and Anderson Street, and in Myrtleford between Standish Street and Lewis Avenue.

Whilst sealed shoulders are provided along a number of main roads, they are not formally bike lanes, which are required to be designated by bike lane start/end signage, and associated line marking.

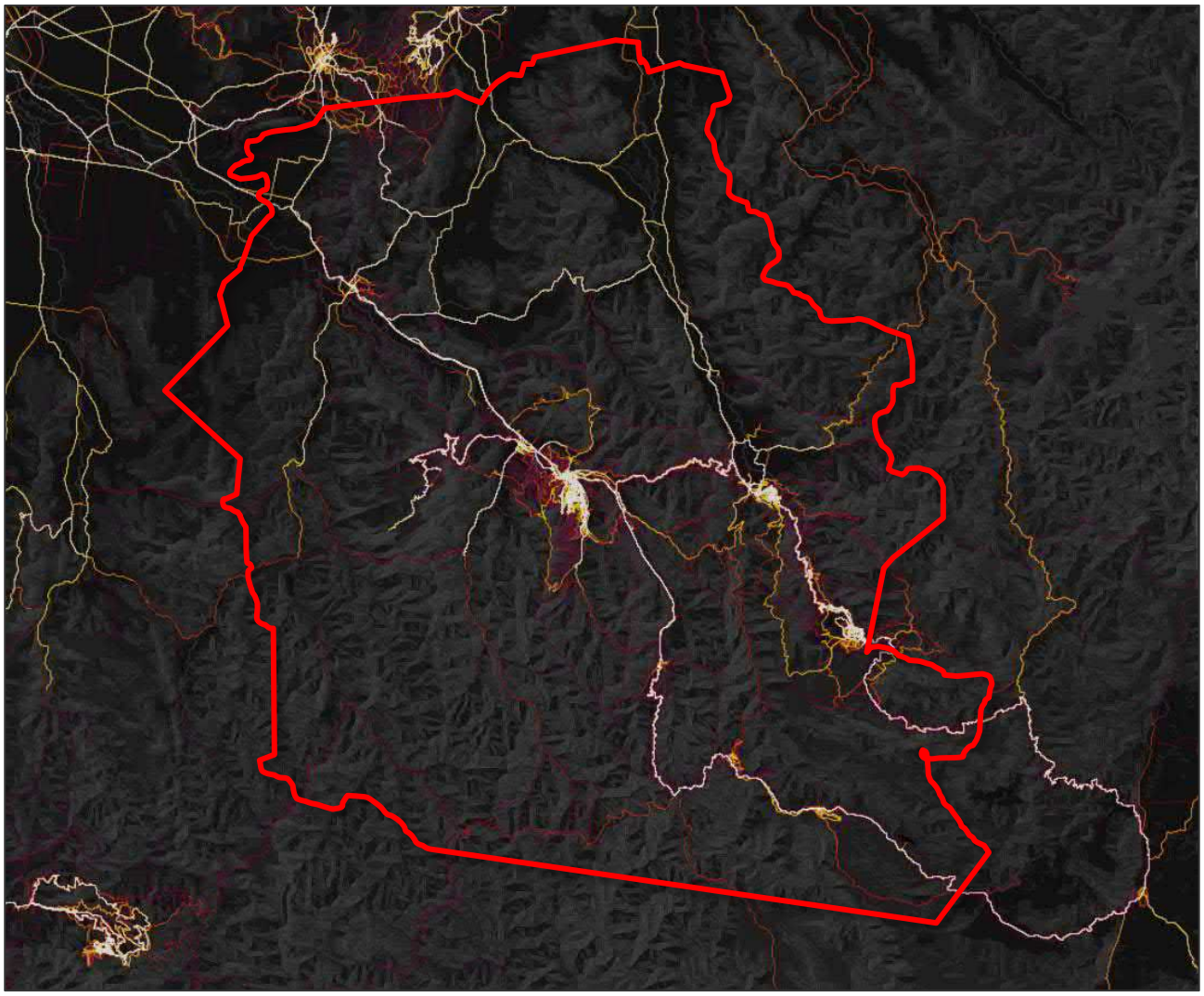
2.6.3 Strava

Strava is a social network and training tool for cyclists, runners and swimmers. Users record their physical activity using a dedicated GPS device or utilise the mobile app, and upload the file to their profile.

Strava anonymised this information and makes it available through their "Global Heatmap" tool, showing aggregated all public activities over the last two years across the world.

A view of the cycling heatmap in proximity to the study area is provided below in Figure 18. Routes of higher usage are brighter in colour.

Figure 18 Strava Cycling Heatmap



As shown above, primary cycling routes in and out of the study area comprise:

- Great Alpine Road;
- The Murray to Mountains Rail Trail;
- Mount Buffalo Road;
- Bogong High Plains Road;
- Buckland Valley Road; and
- Tawonga Gap Road.

It is noted that this information includes all cycling activities recorded on the platform, inclusive of weekend trips, and all trips throughout the day. Additionally, the data is skewed towards sports cyclists, given that the bulk of commuter and recreational cyclists will not be tracking their rides.

Further, the above data includes activities associated with cycling club racing events (Tour of Bright), and other events including the Peaks Challenge and Alpine Classic, which will likely skew the popularity of particular roads.

2.7 Legislative Conditions

2.7.1 Road Rules

Under legislation, bicycles are classified as vehicles and are entitled to use road space as a motorised vehicle does.

In general terms, cyclists are required to follow all the same road rules as drivers, but are subject to the following additional rules:

- Cyclists may ride on a footpath if under the age of 12, or accompanying a child under the age of 12;
- Cyclists are required to utilise an on-road bicycle path unless impractical to do so;
- There is no legal requirement to utilise an off-road bicycle path or shared path if one exists adjacent to a road;
- If there is only one traffic lane in the direction of travel a cyclist must ride as near as possible to the left side of the road where this is safe and practical;
- Cyclists may travel two abreast (riding next to another cyclist) on any road;
- Cyclists may only travel more than two abreast when overtaking;
- Cyclists riding two abreast on a multi-lane road may overtake other cyclists riding two abreast;
- When riding two abreast or overtaking, a cyclist must be less than 1.5 metres apart from the adjacent cyclist;
- When riding at night, a cyclist must display a flashing or steady white light on the front of the bicycle, a flashing or steady red light on the rear of the bicycle, and a red reflector on the rear of the bicycle;

It is noted that the above is not an exhaustive list of all bicycle-related road rules.

2.7.2 Minimum Passing Distances

Across Australia, many states and territories have introduced or are trialling minimum distances for drivers when passing a bike rider.

Currently, the Victorian road rules require a driver overtaking another driver or the rider of a motorbike or bicycle to leave "sufficient distance" and overtake only when safe to do so. A specific distance isn't defined.

In general terms, the Victorian road rules do not permit overtaking manoeuvres across a continuous central dividing line, a broken dividing line to the right of a single continuous dividing line, or two parallel continuous dividing lines. The only exception to this rule is to avoid an "obstruction", provided that all of the following criteria are met:

- The driver has a clear view of any approaching traffic;
- It is necessary and reasonable, in all the circumstances, for the driver to drive to the right of the centre of the road to avoid the obstruction; and
- The driver can do so safely.

It is noted that the road rules are vague on the interpretation of an "obstruction", defining an obstruction in the following manner "includes *a traffic hazard, but does not include a vehicle only because the vehicle is stopped in traffic or is travelling more slowly than other vehicles*".

It is our interpretation that this clause of the road rules does not permit the overtaking of cyclists unless there are other factors beyond their speed that warrants overtaking.

The current rules therefore create a potential for close passing manoeuvres within the lane, or illegal passing manoeuvres that provide comfortable passing distances.

The Transport Accident Commission (TAC) cite that "there is insufficient evidence that the introduction of (minimum passing distance) legislation would improve safety" and have instead opted to undertake a community education campaign.

Other Australian states have adopted minimum distance passing laws, typically requiring that drivers allow a minimum passing distance of one metre (or 1.5 metres in speed zones over 60km/h) when passing a cyclist on the road. These laws are typically accompanied by exemptions from road rules that would otherwise restrict drivers from crossing road centreline.

An education campaign with the message that *a metre matters* has brought attention to the need for greater clearance (Amy Gillett Foundation, 2009). However, with no legal lever for enacting.

It is likely that there is also a role for enforcement to shift driver behaviour when overtaking cyclists.

3 BACKGROUND INFORMATION

3.1 The Safe System

The 'Safe System' is a road safety philosophy that is based on the principles that road users are fallible and will make mistakes, but that no one should be killed or seriously injured when a crash occurs. To prevent injuries and fatalities, the road system must be forgiving so that the forces of collisions do not exceed the limits that a human body can tolerate.

There are four key principles that form the basis of the Safe System philosophy:

1. People make mistakes that can lead to road crashes
2. The human body has a limited physical ability to tolerate crash forces before harm occurs
3. A shared responsibility exists amongst those who plan, design, build, manage and use roads and vehicles and provide post-crash care to prevent crashes resulting in serious injury or death
4. All parts of the system must be strengthened to multiply their effects; and if one part fails, road users are still protected.

The Safe System is comprised of four 'pillars' shown below which, when combined, significantly reduce the potential harm to all road users.

1. Safe Roads and Roadsides
2. Safe Speeds
3. Safe People
4. Safe Vehicles

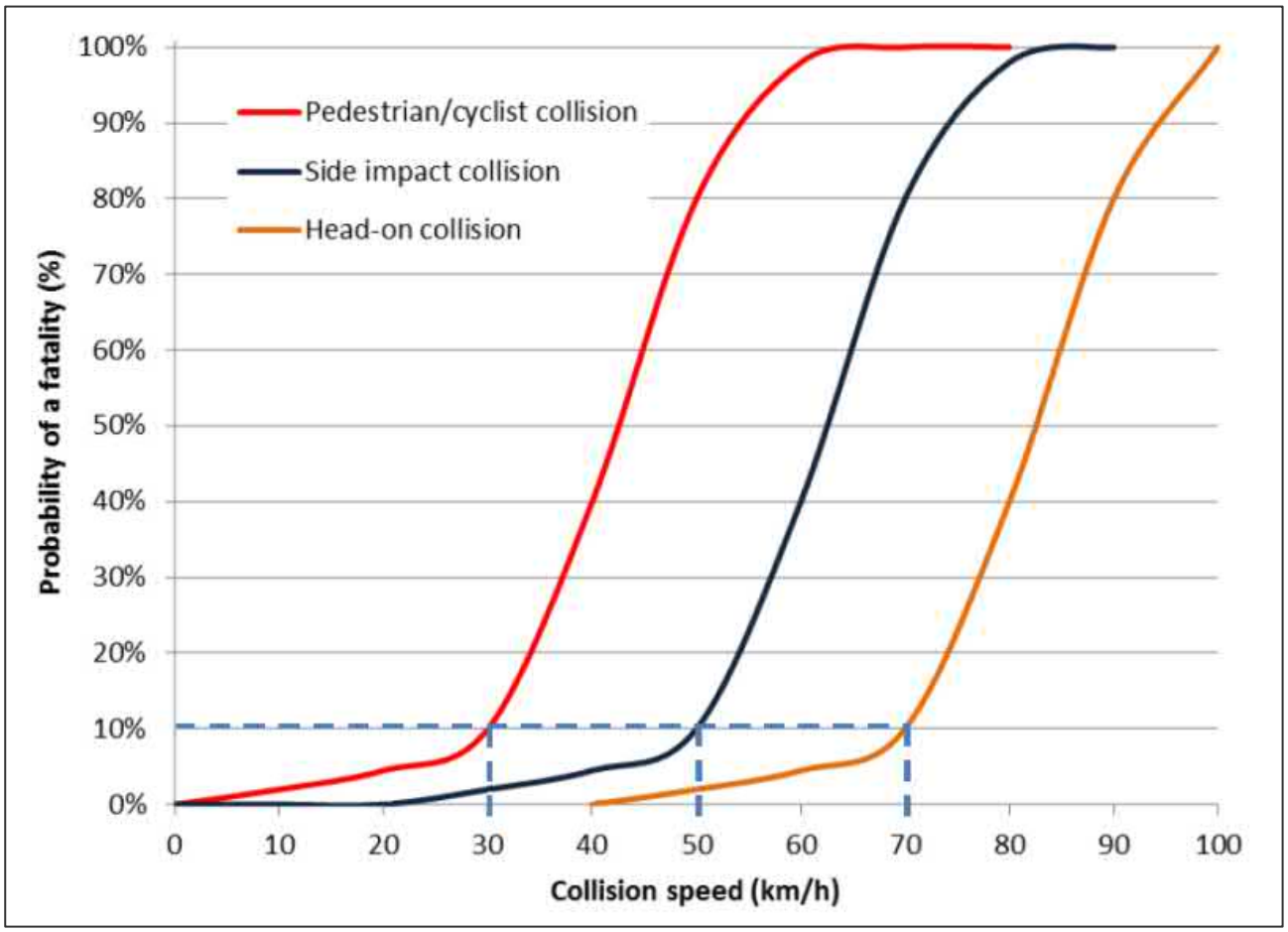
This approach has been formally adopted within the National Road Safety Strategy, and incorporated into Austroads design guides and technical documentation.

As part of development of this Cycling Safety Strategy, there will be limited opportunity to influence the safety of vehicles on the road network, however some influence may be made on the remaining three pillars of the Safe System.

Cyclists (in addition to pedestrians and motorcyclists) are considered vulnerable road users, and are not physically protected in the event of a collision. The human body has a finite capacity for surviving an impact, and speed must be managed to ensure that forces in collisions do not exceed the limits of human tolerance.

Figure 19 below shows the relationship between collision speed and the probability of fatality for vehicle occupants. Notably for cyclist collisions, the probability of fatality markedly increases at collision speeds in excess of 30km/h.

Figure 19 Relationships between collision speed and probability of a fatality for different vehicle crash configurations



As road infrastructure has been optimised for motor vehicle use, vehicle speeds are rarely at or less than 30km/h, and in rural environments like the Alpine Shire many roads have speed limits of 100km/h.

Fundamentally, the most desirable outcome would be to provide separation between vulnerable road users such as cyclists and other vehicular traffic. However if this is not possible, it will be necessary to minimise impact speeds to minimise the potential for serious injury or death amongst cyclists.

In many cases though it will not be practical to completely eliminate all potential sources of injury or death, due to low volumes of cyclist or vehicle traffic, or limited funding allocation. Notwithstanding, every attempt should be made to eliminate them where practical.

3.2 Rider Types

Cyclists can be broadly included amongst one of four categories, each with different objectives, desires and riding behaviour:

- Sporting - Cycling trips where the trip itself is the primary objective, such as for fitness, often for long distances at high speeds and sometimes in large groups ("bunches"). People cycling for this reason generally prefer on-road, direct routes.
- Touring - People riding around to explore an area, sometimes for many days at a time.
- Commuter and utility - People riding for a specific purpose e.g. to work, the shops.
- Recreation – People riding for enjoyment

A trained sporting cyclist is likely to maintain speeds up to and exceeding 30km/h on flat terrain, whilst untrained or recreational cyclists will ride at considerably lower speeds.

On-road cycling routes will be generally more suitable for people wanting to move fast (e.g. training) and the off-road path would be more suitable for cyclists who want to feel safe and be away from high speed traffic, sometimes at the expense of speed or convenience.

3.3 Road Improvements

It is understood that funding has been allocated for extension of the rail trail from Germantown to Harrietville.

The configuration or alignment of the trail is not known at this stage.

3.4 Code of Conduct for Training Cyclists

The *Code of Conduct for Training Cyclists* is a document developed by Victoria Police in collaboration with cyclist groups, VicRoads and the Transport Accident Commission (TAC).

It provides information for training cyclists on best-practice and legal requirements for riding in traffic, riding with others, with a view to encourage safe riding by cyclists, particularly when riding in groups.

A copy of the document is provided in Appendix A.

3.5 North East Victoria Cycling Optimisation Master Plan

The North East Victoria Cycling Optimisation (NEVCO) Master Plan is a strategic document prepared by Urban Enterprise for Tourism North East and Regional Development Victoria, that outlines priority actions to support the establishment of North East Victoria as a cycling destination.

With respect to cycling safety, the report notes the following:

> *Road cyclist safety has been identified as an ongoing concern for the region and the need for infrastructure to improve rider safety is critical for the future growth of road cycling in the North East. This has been verified with market testing which clearly identifies the link between perceived cycle safety and visitation for cyclists.*
>
> *In particular, the sealing of road shoulders on key routes and sealing of back-roads would improve safety for all road users.*

Additionally, the report identifies the High Country Safe Road Cycling Program as a high priority, which would provided for safety improvements in the region, including

- Road shoulders between Bright and Harrietville; and
- Cyclist warning signals for motorists on all major climbs: Mt Buller, Mt Hotham, Mt Buffalo, Falls Creek and Tawonga Gap (similar to Deans Marsh Road, near Lorne).

3.6 Victorian Cycling Strategy 2018-2028

The Victorian Cycling Strategy is a strategic document published by Transport for Victoria which provides an outline for a better network of cycling facilities, and making cycling a more inclusive experience.

The document encourages a Safe System approach to improve ride safety, and identifies the following goals and strategic approaches:

- Goal: Invest in a safer, lower-stress, better-connected network
  - Provide a lower-stress cycling experience
  - Prioritise strategic cycling corridors for investment
  - Update guidelines for strategic cycling corridors
  - Integrate cycling and public transport
  - Work with local councils to address gaps in strategic cycling corridors
  - Incorporate new cycling infrastructure in major transport projects
  - Improve outcomes for cyclists in planning
- Goal: Make cycling a more inclusive experience
  - Improve awareness and acceptance of cycling as a mode of transport
  - Increase the participation of underrepresented groups
  - Support cycling to school
  - Plan for emerging technologies
  - Support recreational cycling and sport, tourism and community events

3.7 Literature Review

3.7.1 Road Environment

In general terms, there are six key requirements for a good cycle route:

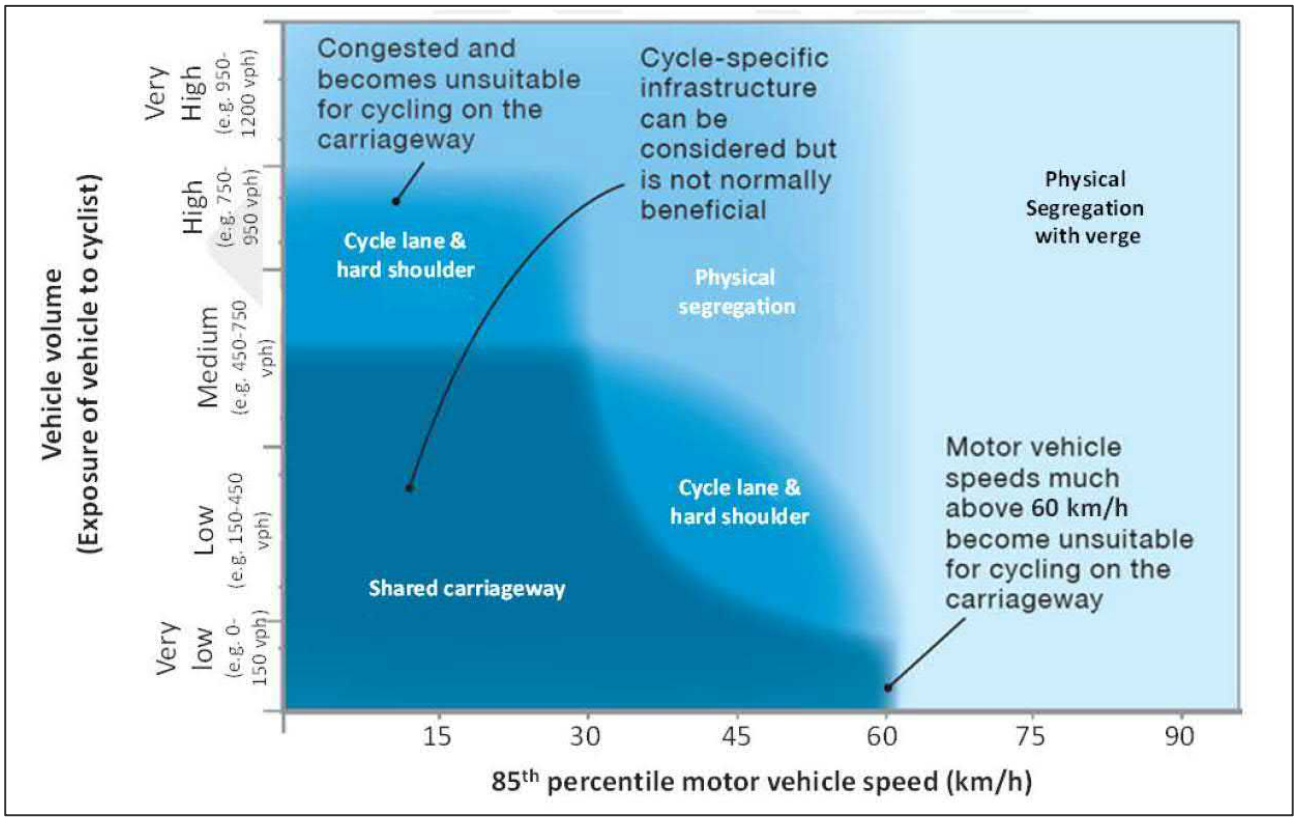
1. Space to ride - This includes a 1m wide design envelope free of obstacles and wide enough to cater for the expected number of people.
2. A smooth surface, free of debris - Cyclists require a smoother surface than is acceptable for motor vehicles.
3. Speed maintenance - Bicycles can be effective as a means of transport if cyclists do not have to slow or stop often, as it takes significant effort and time to regain speed.
4. Appropriate sight lines to path surface - Bicycle routes should be designed in the same way as roads, with sight distances and curves that are appropriate for the users.
5. Connectivity - This refers to facilities that are continuous and provide connections to places people want to ride.
6. Information - Cyclists should be provided with information about upcoming destinations and distances to them.

To attract a more diverse range of people to cycling, it's important to make cycling a more comfortable experience. Separating cyclists and motor vehicles makes cycling more comfortable by reducing traffic stress. It also improves the cyclist's comfort by reducing their exposure to traffic noise and pollution.

Figure 20 below provides a guide on appropriate cycling infrastructure for varying speeds and traffic volumes.

It is noted that providing completely separated cycling facilities is not necessarily practical in all situations, particularly within rural and regional areas.

Figure 20 Guidance on the separation of cyclists and motor vehicles



Source: Cycling Aspects of Austroads Guides (2017) p15

The greatest road safety benefit will be achieved by separating cyclists from high speed vehicles. However cyclists are lawful road users and they shouldn't be restricted from roads unless alternatives are good quality, lower speed, just as direct and do not present a higher overall risk to cyclists.

It is noted that shared-use paths, while good for recreational cycling, often don't provide a good experience for people cycling for transport because they are indirect, lack adequate lighting and require cyclists to share space with pedestrians.

Other factors that make cycling a more comfortable experience are:

- Placing routes through attractive and safe locations
- Providing wider and smoother paths that allow for side-by-side cycling and overtaking in comfort
- Keeping existing paths well-maintained
- Minimising delays for cyclists, particularly at intersections and crossings
- Providing good lighting and foot rests.

3.7.2 Cyclist Crashes

As identified above in Section 2.4, the majority of bike rider crashes occur in metropolitan Melbourne, but almost half of all fatalities (48%) occurred in regional Victoria.

Higher speed limits in rural areas have been reported to be a major contributing factor. Travelling at higher speeds reduces the reaction time available to cyclists and drivers to avoid a crash, and once a crash occurs, there is a direct proportional relationship between the speed prior to collision and the injury, that is the higher the speed prior to crash, the more severe the injury.

3.7.3 Regional & Rural Cycling

There are regional-specific cycling safety issues that cannot be addressed with generic metropolitan-centric strategies. For example, in regional areas, the majority of roads are higher speed than in metropolitan areas, and therefore a regional-specific approach is warranted.

Poor road surfaces, lack of sealed road shoulders and narrow, winding roads with poor sightlines in high-speed zones often means that drivers and cyclists must share roads that are ill-designed for mixed modes. Yet in regional and rural areas, these are often the only available roads for drivers and cyclists.

For bike riders in regional areas to be able to cycle safely and to access the same benefits from cycling as bike riders in metropolitan areas, research suggests the following actions:

- Improvements to the quality of the roads;
- Increased and connected cycling facilities, including on-road lanes and off-road paths;
- A review of speed limits, with particular attention to the standard of the road;
- An education campaign to correct current misinformation about bicycle rider and driver rights and responsibilities;
- Permanent roadside signage, particularly in relation to regularly used commuter/recreational training cycling routes;
- Greater police enforcement of dangerous driving and non-compliant bicycle rider behaviour;
- A collaborative approach to road use, particularly in relation to bunch riders and commercial heavy vehicles; and
- Increased education for heavy-vehicle drivers about how to interact safely with vulnerable road users.

One of the problems that have been identified for local authorities in reducing crashes in rural areas is the size of the geographical area – specifically that crashes are rarely in clusters, where a targeted countermeasure may reduce risk. Instead, crashes in rural areas tend to be spread across large areas.

3.8 Education

Education and training play a vital role in preparing road users to enable them to make safe and responsible choices as road users.

Whilst it is sensible to fund physical infrastructure improvements which will directly and rapidly reduce the likelihood of injuries, it is equally important that adequate funding also be allocated to education and training as part of a longer-term strategy.

Most risk reduction strategies involve a component of behaviour change. Even some engineering solutions will not result in health improvements unless people are willing to, and know how to, change their behaviour. Long-term behavioural change implies a voluntary change in behaviour, and to do this education is the key strategy.

The key issues to be addressed in an education campaign, the tactics to create these campaigns, and the methods of promoting them have been detailed below. Furthermore, a number of examples of road safety campaigns have been included for reference.

3.8.1 Key Issues

The **Bike it Baw Baw** study (Johnson and Le, 2012) investigated road cyclists safety in the Baw Baw Shire. Through surveys the study identified a number of issues which could be targeted by education campaigns. These issues are detailed below.

Cyclists are legitimate road users

Many cyclists and drivers do not recognise cyclists as having the right to use the road. However, cyclists are protected by the Victorian Road Safety Rules Act (2009) and are entitled to ride on the road. The belief that cyclists do not belong on the road, can be linked to aggressive behaviour towards them.

Cycling related rules and guidelines

While cyclists have a much higher knowledge of rules and guidelines for cycling, both cyclists and drivers recorded lack of awareness of the following rules and guidelines:

- Cyclists are legally allowed to ride two abreast;
- There is no restriction on the maximum group size of cyclists;
- Drivers should provide 1m when overtaking at speeds up to 60km/h; and
- Drivers should provide at least 1.5m when overtaking at speeds over 60km/h.

Understanding the behaviour of cyclists helps road users navigate sharing the road with them better.

3.8.2 Tactics and Methods

The **Bikes Belong Foundation** has provided 'A Review of Bicycle Safety Campaigns' (2009) which provides guidelines on the tactics of education campaigns, as well as the methods which may be used to distribute them.

Tactics

Education campaigns should veer away from simply informing road users, aiming to convince both cyclists and drivers alike of appropriate behavioural changes. Furthermore, education campaigns should have the dual-goal of aiming to increase on-road safety for cyclists, while also encouraging higher cycling participation rates.

- Acronym based informational campaigns should be avoided; and
- Violent campaigns of cyclists being hit should be avoided.

Instead, campaigns should:

- Be emotionally-targeted;
- Aim to personalise and humanise cyclists;
- Speak to both cyclists and drivers; and
- Aim to make cycling look safe, fun and mainstream.

Methods

There are a number of methods for promoting a road safety campaign, some examples are:

- Pamphlets;
- Posters and stickers;
- Memorial rides;
- Radio messages;
- Including a bicycle safety component in driver education;
- Reducing motorist violation fines if they participate in a cyclist safety course; and
- Including bicycle safety in school PE programs, including neighbourhood bike rides.

3.8.3 Examples

There are many examples of road user education strategies employed within Australia and overseas that have aimed to inform both drivers and cyclists of their legal rights and obligations in a shared road environment.

Discussion of notable examples is provided below, with campaign images attached within Appendix C.

Share the Road

The **New Zealand Transport Agency** (NZTA) ran a campaign in 2015 targeting motorists through radio advertising messages, with a view to personalise and humanise people cycling "so that motorists see cyclists as real people who have a right to share the road safely".

More information can be obtained at the following link: https://www.nzta.govt.nz/safety/driving-safely/sharing-the-road/share-the-road-advertising/

The NZTA also has documentation that speaks directly to cyclists, providing tips for cyclists on urban and rural roads, in addition to a guide for biking to school safely. All three documents are attached within Appendix B.

Might be a Mate

The **Road Safety Commission of Western Australia** (RSCWA) developed the "Might be a mate" education campaign which aimed to increase awareness of cyclist safety across the community. The key messages focused on a range of practical measures (such as safe passing distances) with an overarching safety message targeted at both cyclists and motorists on television, radio and billboard media.

The overall communication objective was safety and respect, emphasising the need for all road users to respect one another on the road and take collective responsibility for keeping everyone safe, whether driving or riding.

More information can be obtained at the following link:
https://www.rsc.wa.gov.au/Campaigns/Might-be-a-Mate

Post-implementation research suggested that 79% of those who saw/heard it agreed 'drivers must allow more room on the road for cyclists' and that 86% agreed they need to be aware of cyclists on the roads as it 'Might be a Mate'.

Ride Right

The **Ride Right** campaign was developed by the Amy Gillet Foundation in 2012 with funding from the TAC, to develop an awareness campaign that targeted key road user behaviours important for improving bicycle rider safety. With a grant from the TAC ($25,000) a series of messages were created that could be easily and affordably reproduced and would achieve cut through in the information saturated public spaces.

This campaign was targeted at cyclists, connect with riders on a different emotional level, and utilising humour and satire to engage people with the messages.

Bike it Baw Baw

Following a study undertaken on safety concerns of cyclists and drivers when travelling on the roads in the Baw Baw Shire area, **Baw Baw Shire Council** launched a six-part advertising campaign in the local newspaper to address the issue of cyclist legitimacy, driver safety and cyclist behaviour

Signage was increased in the Baw Baw Shire area to promote cycling facilities and boost cycling legitimacy, including stencils spray painted under bike racks and local artists' guerrilla knitting of bike parking racks.

Brochures and stickers were also developed to promote sharing the road and these will be distributed at community and cycling events.

Approximately 1,000 copies of the Code of Conduct for Training Cyclists have been printed for distribution to bunch riders through cycling clubs and Council.

Roadside signs to increase driver awareness of the presence of cyclists on the road were installed alongside the main road into Warragul, the largest township in the Baw Baw Shire.

International Examples

A number of international examples of posters, billboards and cut outs have been included in Appendix C. These campaigns are all targeted at humanising cyclists.

4 SAFETY CONCERNS

Following an extensive inspection of the study area, and targeted stakeholder engagement with community and user groups, key safety concerns were identified that warrant improvement, ranging from specific locations to precinct-wide issues.

A summary of key issues that are broadly distilled into the four "Safe System Pillars" is provided below.

4.1 Safe Roads and Roadsides

Broadly speaking, there is a lack of formal cyclist infrastructure throughout the municipality, with the exception of the rail trail and limited shared path network.

Cyclists and drivers will generally feel more comfortable sharing the road when there are cycling-related line markings on the road, or where specific infrastructure is provided to separate the two modes. With the exception of a short section of Great Alpine Road in Bright and in Myrtleford, there are no formal on-road cycling facilities.

Infrastructure should be tailored towards its intended users. For example, experienced training cyclists are likely unwilling to use an off-road path such as the rail trail, as it does not allow for high-speed riding, and would be likely to prefer a wide shoulder on a main road unless a very high-standard alternative was provided. In contrast, an inexperienced recreational cyclist would likely prefer completely separate cycling facilities that sacrifice speed or efficiency in favour of safety.

It is noted that the existing trail network is typically narrow in width (approx. 2 metres) which is not appropriate for high-volume routes accommodating two-way pedestrian and cyclist traffic.

Road cross-sections, particularly that of the Great Alpine Road and Kiewa Valley Highway were inconsistent across their lengths. Road shoulders varied widely in terms of width and surface quality, and were regularly not even present, forcing cyclists to use the main carriageway.

An example of the varying cross-section along Great Alpine Road between Myrtleford and Bright is provided in Figure 21 below.

Figure 21 Great Alpine Road Cross-Section Variation

Where a shoulder is provided, the surface is typically of a poor standard to encourage use by cyclists, with the surface typically comprising a rough spray-seal[1] with coarse aggregate. Larger aggregate generally feels rougher to cyclists and they may choose to ride in the traffic lane where

[1] A spray-seal has a layer of bitumen sprayed and then covered with an aggregate. This is distinct from an asphalt surface that is a mix of aggregate, bitumen and sand which is applied as a layer by machine. Asphalt results in a smoother and more durable road surface than a bitumen-sealed road, but is more expensive to produce.

the surface has been smoothed by vehicles. The recent should works to Great Alpine Road between Germantown and Harrietville is an example of this, illustrated in Figure 22 below.

Figure 22 Spray-seal Surface

Road maintenance was also raised as an issue, with many sections of road shoulder covered in debris, forcing riders onto the main carriageway.

There numerous rail trail crossings of the Great Alpine Road and the connecting side roads. In most cases, the crossings of Great Alpine Road are not immediately obvious to drivers, and require pedestrians and cyclists to cross multiple lanes concurrently, with no opportunity for staging crossing of northbound or southbound lanes.

A typical example of the trail crossing is provided in Figure 23 below.

Figure 23 Murray to Mountains Trail Crossings

Ideally, road crossings would be designed to minimise the crossing distances, and provide opportunity to stage crossings within a physical island.

With the exception of new overtaking lanes on Tawonga Gap Road, there are limited passing/overtaking opportunities on alpine ascents, potentially resulting in increased frustration and delay for drivers following slower cyclists.

Notwithstanding the above general issues encountered across the municipality, there are a number of specific locations that were identified, summarised below:

- Gavan Street, Bright - Abrupt termination of on-road bike lanes adjacent to Prices Lane;
- Mount Buffalo Road, adjacent to Eurobin Falls – Considerable parking and pedestrian activity at Eurobin Falls, with no warning provided on the approaching descent;
- Bakers Gully Road, Bright – School students use the shared path connection from the bike store across Bakers Gully Road and poor sight distance is provided for drivers approaching from the south;
- Great Alpine Road, east of Bright – Shared path runs alongside multiple driveway crossovers, presenting risk of conflicts between path users and drivers;
- Kiewa Valley Highway, Tawonga South - Shared path runs alongside multiple driveway crossovers, presenting risk of conflicts between path users and drivers;
- Hawthorn Lane / Churchill Avenue / Delaney Road – Cyclists travelling north up Hawthorn Lane are not provided a convenient connection to Delaney Road and travel through the intersection instead;
- Simmonds Creek Road / Kiewa Valley Highway – No crossing facilities are provided for a connection between Simmonds Creek Road and the paths on the opposite side of Kiewa Valley Highway;

4.2 Safe Speeds

As identified in Section 3.1, the risk of a cyclist or pedestrian fatality increases exponentially at collision speeds in excess of 30km/h. The entire road network within the Alpine Shire has posted speed limits in excess of 30km/h, and most major roads have posted speed limits of 80 or 100km/h.

It is clear then that cyclists are at-risk of fatality with any lapse in judgement or mistake from a driver on the vast majority of the shire's roads.

This speed differential is amplified on mountainous roads where cyclists will be travelling at considerably lower speeds than vehicle traffic. Both the Mount Hotham and Falls Creek ascents are both subject to a posted limit of 80km/h for most of their lengths, and ascending cyclists may travel as low as 10km/h.

The Austroads Guide to Road Design (Part 4A – Unsignalised and Signalised Intersections) suggests that a vehicle travelling at this speed would require an absolute minimum stopping distance of approximately 100 metres after observing a slow-moving cyclist or hazard on the road, which would not be provided in many locations along the winding alignment of both roads.

It is worth noting that due to the winding nature of these roads, vehicle speeds are generally expected to be below the 80 km/h posted speed limit, particularly in tighter sections when the horizontal road geometry may inhibit sightlines between vehicles and slow moving cyclists. The advisory speed for mast corners is already lower than 60 km/h, and often as low as 25 km/h. As such, a reduced speed limit is unlikely to have a significant effect on the speed differential between cyclists and motorised vehicles if the speed limit is not regularly being met or exceeded.

Indeed, it is considered that the existing 80 km/h speed limit provides benefit for drivers safely passing slow moving cyclists on the straighter sections with broken centre lines (which exist on both Falls Creek and Mount Hotham) as it allows drivers to pull into the oncoming traffic lane to leave a suitable passing width and return to the correct lane in less time and distance than would be needed with a lower speed limit.

Speed differentials between cyclists and motorist are considerably reduced within the local streets of the Shire's townships where reduced speed limits of 40 and 50km/h generally apply. In this context, shared use of the road space does not warrant such a concern as lower volumes mean the likelihood of a car and bike accident is low, however the risk of injury still remains high if an accident were to occur.

4.3 Safe People

4.3.1 Obstructive Riding

Many riders visiting the area are unfamiliar with the roads, and the generally accepted practices for riding alpine roads. Anecdotal advice from consultation sessions indicates that many new cyclists to the region ride two (or more) abreast along roads, and cause frustration and delays for following motorists by not allowing them to pass.

The safety benefits of riding two abreast are that it increases the 'size' of the cyclists making them more visible on the roads and requires drivers to 'overtake' cyclists prompting a greater likelihood that drivers will change lanes to overtake as they would a vehicle, rather than squeeze past in the same lane. Additionally, the traffic lane width on more elevated sections of the Great Alpine Road and Bogong High Plains Road would require drivers to cross the centre line to leave a comfortable gap while passing cyclists riding in single file. As such cyclists riding two abreast actually decrease the length of the bunch and reduce the amount of time a driver would need to spend on the other side of the road when passing.

Whilst cyclists are within their rights to do so, and this is generally seen as the safer approach, this can be frustrating for drivers, particularly along alpine roads where cycling speeds are relatively low, prompting potentially dangerous passing manoeuvres or causing unnecessary delays.

It is noted that current Victorian road rules do not permit drivers to drive over a solid or double centreline when passing a cyclist or group of cyclists (as discussed in Section 2.7.2).

4.3.2 Dangerous Riding

Crash statistics data presented above indicate a number of cyclist crashes on alpine roads (including Tawonga Gap Road, Bogong High Plains Road, and Mount Buffalo Road), with and without the involvement of other vehicles.

Whilst a relationship between these crashes and dangerous descending cannot be directly drawn without detailed crash information, anecdotal information provided during consultation sessions indicates that many sporting cyclists tackle alpine descents at high speeds, increasing the probability and severity of a crash.

It is also possible that road surface conditions such as gravel, leaf litter or sticks, or poor-quality road repairs such as "tar snakes" (which can melt in the heat and cause two wheeled vehicles to lose traction) contributed to these single vehicle accidents.

4.3.3 Use of Cycling Infrastructure

It is understood that there is a perception of cyclists not using cycling infrastructure when travelling within the traffic lanes instead of on the road shoulder or bike lane where it exists.

This perception is driven partly by unwillingness of cyclists to utilise sub-standard infrastructure, discussed in further detail below.

4.3.4 Driver Behaviour

There were many examples of driver behaviour raised during consultation sessions, and identified during site inspections that contribute towards poor cyclist safety.

Aggressive driver behaviour may include cutting a cyclist off, passing very closely (a "punishment pass"), shouting at, or even throwing things at a cyclist. Anecdotally, these types incidents are understood to be rare within the municipality, but do occasionally occur.

This behaviour may be caused by misunderstanding of the legitimacy of cyclists as road users, lack of understanding of road rules, or other reasons entirely.

A number of issues were also raised in consultation sessions relating to a lack of driver understanding or competence. These include:

- Not understanding how much space should be provided when passing a cyclist and passing too close;
- Overtaking around a blind corner, or across double centrelines;
- Misjudging a cyclist's speed; and
- Underestimating the time or space required for an overtaking manoeuvre;

4.4 Safe Vehicles

As noted in Section 3.1, there is limited opportunity for this project to influence the safety of vehicles.

Existing vehicles are not inherently unsafe, however vehicle safety is constantly advancing as new technologies are incorporated into their design. As older vehicles in the fleet are replaced, these new technologies (such as curtain airbags, traction control, intelligent speed assist, anti-locking braking systems and electronic stability control) will become commonplace.

5 ACTIONS

The ultimate goal of this report is to provide recommendations for a safer cycling environment within the Alpine Shire, which is primarily represented by a reduced risk of driver and cyclist conflicts.

The risk of any conflict is a product of road user exposure, crash likelihood and crash severity, and as a result a number of actions have been identified with the aim of reducing one or more elements of this equation.

These actions fall under the banner of planning (e.g. developing networks), engineering (e.g. space on roads), education (e.g. advertising campaigns), encouragement (e.g. behaviour change) and enforcement (e.g. policing).

In addition to improving safety for existing cyclists in the municipality, adopting these actions will also serve to increase the attractiveness of cycling to new riders.

5.1 Safe Roads and Roadsides

5.1.1 Separating Cyclists and Vehicles

Considerable research has been undertaken in the past on the form of cycle infrastructure, and how that impacts on rider confidence and usage. A high-quality, safe, and low-stress route will encourage usage by cyclists of all ability.

In the event of a crash, pedestrians and cyclists are more vulnerable than vehicle occupants because they have little or no protection. Well designed and maintained paths will help in the safety of pedestrians and cyclists and also encourage more walking and cycling as the best way to stay healthy and get around.

Targeted research undertaken by the City of Melbourne identified highest user confidence in facilities physically separated from parked and moving vehicles. This research also identified highest confidence if these facilities were continued to intersections.

Ways in which space can be provided on high speed roads include:

- Using exclusive bicycle lanes - These should be at least 2 metres wide, increasing in width with increasing vehicle speeds. Bicycle lanes wider than 2.5 metres should be separated from the general traffic lane in some way (e.g. painted buffer zone, raised separator, off-road) to discourage drivers from using the bicycle lane as a general traffic lane;
- Using sealed shoulders – Sealed shoulders should be at least 2.0 m on high speed roads (80km/h) and ideally 2.5m on roads with posted speed limits of 100km/h. Additional width should be provided where there are a large number of heavy vehicles. As previously noted, sealed shoulders should be of a suitable construction for use by cyclists.

The benefits of sealing a high-speed road shoulder are broader than just improving the route for cyclists. This includes:

- Improving road safety for vehicle occupants by increasing the space available for errant vehicles to correct, and reducing the risk of rolling or collision with fixed objects
- Reducing maintenance costs
- Extending the life of the road;
- Controlling the amount of moisture under the pavement;
- Removing the drop off at the edge of the traffic lane;
- Providing space for slower road users such as tractors and agricultural vehicles;

Where traffic lanes are currently wider than 3.5 metres, reducing their width and using the surplus space at the edge of the road for cyclists instead may be a better overall use of the existing road width.

On lower speed roads in urban areas, fully separated facilities would ideally be provided, but shared facilities may be appropriate in some contexts.

Where constraints restrict the provision of sealed shoulders along the entire length of a high-speed road, critical points may be prioritised (e.g. horizontal or vertical curves that restrict the sight distance). Alternatively, providing a bicycle lane or shoulder in the uphill direction due to the greater difference in speed between cyclists and motor vehicles and to account for the 'wobble' effect of uphill cyclists

Further, it is acknowledged that cyclist volumes in more remote locations will likely not warrant the financial investment required to deliver significant infrastructure investments detailed above. Noting this, locations that meet the following criteria should be prioritised:

- Higher cycling volumes;
- High speed differential (high speed limit, or uphill steep gradients); and
- High crash rates.

In order to minimise exposure of cyclists to potential crashes, efforts should be made to identify alternative cycling routes to the Shire's main roads.

One option may be to encourage cyclists to avoid travelling on high speed zone routes when there is likely to be high traffic volumes, however, this may not a viable option particularly when there is no alternative route. It is inevitable that cyclists and drivers will share roads with high speed limits and options need to be available to ensure the safety of all road users.

The above issues discussion notes that the existing trail network is not appropriate for use by training cyclists, and is generally too narrow for shared two-way travel for cyclists and pedestrians. In order for this to be an attractive option for training cyclists, it is recommended that the path is widened to a minimum of 3 metres width.

It is acknowledged that most cyclists will naturally select routes subject to lower traffic volumes, or selectively ride outside of peak traffic periods.

Having regard to the above, the following actions are recommended:

A1 *- Where the separation (bicycle lane, shoulder, or other treatment) of cyclists and drivers is not practical (due to lack of funding, physical constraints or other reasons), introduce signage and line marking to remind drivers of likely shared use of the road. This includes but is not limited to:*

- Buckland Valley Road (Council)
- Buffalo River Road (VicRoads)
- Myrtleford-Yackandandah Road (VicRoads)
- Gavan Street (VicRoads)
- Happy Valley Road (VicRoads)

A2 *– Encourage cyclists to utilise secondary roads with lower traffic volumes and speeds, including*

- Back Porepunkah Road
- Roberts Creek Road
- Damms Road
- Snowy Creek Road

A3 *- Investigate the upgrade of Back Germantown Road (full seal and formalise river crossing) to provide an alternative connection from Bright to Tawonga Gap Road.*

A4 *– Investigate increasing the width of the Murray to Mountains Rail Trail between Bright and Porepunkah to a minimum of 3 metres to cater for greater cycling volumes, and provide an attractive alternative for training cyclists.*

***A5** – Modify shared trail crossings of main roads to provide; reduced crossing widths, opportunity for staged crossings with median storage, and provide greater visibility to approaching motorists. Concept plans for improvements to shared trail crossings at the following locations are attached within Appendix D:*

- Great Alpine Road (Myrtleford);
- Great Alpine Road (Eurobin);
- Great Alpine Road (Bright Rotunda);
- Hawthorn Lane / Churchill Avenue / Delaney Road;
- Kiewa Valley Highway (adjacent to caravan park);

***A6 –** Investigate opportunities for improving the shared path crossing at the Simmonds Creek Road / Kiewa Valley Highway intersection*

In addition to the more general cycling safety issues identified above, site inspections and consultation also identified issues with particular locations:

***A7** – Investigate relocating the existing Children Crossing on Bakers Gully Road to better align with crossing desire lines south of Park Street*

***A8 –** Modify line marking of on-road bike lane adjacent to Prices Lane on Gavan Street, Bright*

A concept plan of proposed alterations to the Gavan Street arrangement is provided in Appendix D.

It is acknowledged that many of the main roads within the municipality are under the control and management of VicRoads, and as a result Council do not directly have the ability to influence road construction or maintenance. Implementation of the above actions will therefore require ongoing discussion and negotiation with VicRoads.

5.1.2 Road Construction

Bicycles should be considered when surfacing or resurfacing a road and shoulder. This may result in using a smaller aggregate size to improve the surface, smoothing the cycling surface and providing additional space for cyclists.

Stone sizes less than 14 mm provide a more comfortable ride for cyclists, however the Austroads Guide to Road Design Part 3 suggests the use of a 10mm seal within 20 km of towns where cyclists are expected. It is acknowledged that smaller aggregates are more expensive to use, and for road authorities managing hundreds of kilometres of road, this adds up to a significant cost.

Some innovative solutions are being used by Australian and New Zealand road authorities to avoid sealing the entire carriageway with 10 mm aggregate but still improving the shoulder for cyclists. These include:

- Using a smaller aggregate size on the shoulders than in the traffic lanes
- Using sand seals in the shoulder when only the traffic lanes are resurfaced to fill voids and improve the surface quality
- Using a mix of smaller sized aggregates to make a smoother surface
- Using a double spray seal with a larger stone for the base (e.g. 14 mm) and a smaller stone size for the top layer (e.g. 7 mm)
- Alternating between aggregate sizes in subsequent seals (e.g. use 14 mm one year and then 10 mm for the next resurfacing).

Another alternative approach is the use of a slurry seal in leigh of a spray-seal. Slurry seal is a mixture of well graded crushed aggregate, mineral filler, emulsified bitumen and water applied to a pavement as a surface treatment. It is commonly used as a thin wearing course or corrective treatment on lightly trafficked pavements, typically on residential streets, bicycle paths or pedestrian areas, and provides a surface of uniform texture, free of loose stones associated with

sprayed seals and with the ability to correct minor shape variation in the underlying surface. VicRoads have technical documentation for its use on their arterial roads.

Having regard to the above, the following actions are recommended:

***B1** - Where practical, when sealing road shoulders utilise alternative treatments to conventional aggregate spray-sealing including sand seals, double spray-seals, or slurry seals*

***B2** - When spray-sealing road shoulders, utilise a spray seal with a maximum stone size of 10 mm, and preferably as small as 7mm*

***B3** - In areas of recent roadworks, redirect vehicles to use the shoulder immediately after it is (re)sealed for a short period to smooth the surface. The strength of the shoulder will need to be considered as often it is not designed to support high volume, high speed traffic.*

***B4** – Construct road shoulders to an equal or greater surface condition than the main carriageway.*

5.1.3 Road Maintenance

In addition to ensuring the surface construction is appropriate for cyclists, another practice to improve high speed roads for cyclists is to regularly sweep areas along identified bicycle routes that collect debris. This may include shoulders and bicycle facilities that are not swept in routine maintenance (e.g. a separated bicycle lane).

Furthermore, as cyclists use smaller tyres than vehicles, they are more affected by surface finish, potholes and drop-offs. As a result, minimum standards for repairs should be established for cycling routes to be employed by Council and VicRoads.

***C1** - Increase frequency of shoulder and bike lane sweeping to four times per year for popular cyclist routes*

***C2** - Develop minimum standards for road repairs on roads subject to high cyclist volumes, including aggregate size, surface finish and quality etc. to ensure a smooth, even surface is retained*

As is the case above, many of the above actions will directly impact VicRoads assets and will require their approval.

5.1.4 Signage & Line Marking

Four signs have been developed by VicRoads that may be used to sign rural cycling circuits, but only following an official approach from a cycling club that is affiliated with Victoria Cycling Incorporated or Cycle Sport Victoria. The combination of signs that should be used depends on whether the circuit is used for training, for training and racing, or for racing only.

Figure 24 Cyclist Training Route Sign (W6 – V11)

This sign is for rural training circuits, and should be displayed at the beginning of each section of road on the circuit and repeated at approximately 5 km intervals, or just beyond significant intersections, to ensure that motorists are reminded of the presence of cyclists. There are existing examples of their use within the municipality.

"Sharrows" are pavement markings consisting of a bicycle symbol and two chevron markings and may be used on the approach to a roundabout where a bicycle lane or similar facility terminates prior to the roundabout, and cyclists are required to merge into the main traffic lane. The intention of sharrows is to position cyclists into the centre of the traffic lane and to encourage them to mix with through traffic.

An example of sharrow pavement marking is shown below.

Figure 25 Sharrow Pavement Marking

Having regard to the above, the following actions are recommended:

D1 *– Identify hazardous road features such as crests or blind corners, or where horizontal or vertical curvature may inhibit sight distances and install advisory speed signs to reduce driver speeds, and/or signage to provide advance warning to motorists of reduced sight distance or dangerous road conditions. This may include supplementary signage that instructs drivers not to overtake.*

D2 *- Install speed reduction and warning signage on the Mount Buffalo Road descent on approach to car parking areas for Eurobin Falls, Rollasons Falls, and Mackeys Lookout to advise descending cyclists of upcoming pedestrian and driver activity*

D3 *– Where not already in place, install Cyclist Training Route Signs along all roads identified in Section 2.6.3 in accordance with the VicRoads requirements*

D4 *- Where no opportunity for on-road cycle lanes exists (due to spatial constraints or otherwise), install sharrow line marking to emphasise and legitimise shared use of the road space. This should include Gavan Street between Anderson Street and Camp Street, and in Myrtleford at the termination of on-road cycle lanes.*

5.2 Safe Speeds

As outlined above, high traffic speeds (>80km/h) along many roads within the Shire present a near certain fatality in the event of a collision. While speeds are lower within local streets and town centres, they still remain high enough to result in a high probability of fatality or serious injury.

In addition to resulting in improved cyclist safety, the following actions will also result in safety benefits for drivers and pedestrians, with lower vehicle speeds also resulting in safety improvements for side-impact and head-on vehicle collisions, which have considerably increase probability of fatalities above 50 km/h and 70 km/h respectively.

Any change to speed limits would require that the reasoning for those changes is clearly communicated to the community.

Having regard to the above, the following actions are recommended:

***E1** – Review 100km/h speed limits across the Shire's main road in conjunction with crash data and, if feasible, reduce to 90 or 80km/h if there is no shoulder in place. This should include:*

- Great Alpine Road between Bright and Tawonga Gap Road (VicRoads)
- Great Alpine Road between Porepunkah and Bright (VicRoads)
- Great Alpine Road in proximity to shared trail crossings (VicRoads)
- Buckland Valley Road south of Devils Creek Road (Council)
- Buffalo River Road (VicRoads)
- Happy Valley Road (VicRoads)
- Kiewa Valley Highway from Tawonga to Coral Bank (VicRoads)

***E2** - Review 80km/h speed limits across Falls Creek, Mount Hotham and Tawonga Gap ascents and reduce if feasible and practicable*

***E3** - Implement advisory or mandatory speed reduction signage in areas identified by their alignment, grade, or crash history as being a risk of vehicle/cyclist conflicts or single-cyclist accidents. This should include:*

- Tawonga Gap (Bright side) https://goo.gl/maps/6mU2a2fz8hvB2piL9
- Bogong High Plains Road (Mount Beauty side) https://goo.gl/maps/M2K3s6t2bfGqDjB99

***E4** – Engage with VicRoads to investigate opportunities for speed limit reductions for high-activity areas within Bright (Gavan Street, Ireland Street, Camp Street) and Myrlteford town centre to 40km/h*

***E5** –Engage with VicRoads to seal existing informal turn-out areas on alpine ascents to provide space for vehicles to overtake cyclists (and other slow vehicles).*

***E6** - Where the shared path network crosses roads with a speed limit of 100km/hr, use electronic variable signage to trigger a speed reduction on the road when a cyclist approaches the road crossing.*

As above, many of the above actions will directly impact VicRoads assets and will require their approval.

5.3 Safe People

As identified in Section 4.3, there is a need for educating all road users on their obligations in a shared road user environment.

Key messages that should be conveyed to motorists include:

- Cyclist are legitimate road users and are entitled to ride on the road;
- Cyclists are permitted to ride two abreast and ride in bunches;
- Best-practice passing distances, and the legal rights for motorists to cross road centrelines when doing so;
- Cyclists are humans too; and
- Sometimes it is necessary to be patient when driving behind cyclists.

Key messages that should be conveyed to cyclists include:

- Be considerate of other road users and allow them to pass when safe;
- Ride only two abreast, and minimise the time spent when overtaking other cyclists;
- Ride within your limits on descents;
- Maximise your visibility to other road users by wearing bright clothing and using lights during day and night;
- It may be safe to ride single file on corners, hills and roads with poor sight distance; and
- Utilise alternative, low-traffic routes where available.

This information can be formatted and delivered in numerous ways, including:

- Social media (Facebook, Instagram)
- Internet ads
- Print media (magazine, newspaper);
- Roadside signage (bus stops, billboards)
- Pamphlets;
- Television;
- Radio

The above delivery methods are largely focused on short-term outcomes, but do not address the broader issues of road-sharing that are often not addressed in the early stages of driver education and training. As a result, it is recommended that Alpine Shire Council lobby to relevant parties to encourage a greater focus on driver and cyclist interaction in school programs, and driver training to enable all road users to make safe and responsible choices in the future.

Consultation sessions with the Alpine Shire community indicated that much of the friction between cyclists and drivers is specific to training cyclists.

Training cyclists need to comply with the road rules, by riding no more than two abreast, but must also behave in a considerate and respectful manner to other roads users. There are times bunches will momentarily need to be three abreast, when changing turns at the front of a bunch, or when overtaking other riders, however it is both unsafe and illegal for large bunches to be spread out across the road lane/s.

There is already a Code of Conduct for Training Cyclists (described previously) which provides clear guidelines for the behaviour of bunches on the road. For bunch riders who belong to an official cycling club or organisation, following the Code of Conduct can be encouraged through the club and when on training rides by more senior riders.

It is noted though that the Code of Conduct does not provide information specific to cycling within the Alpine Shire, noting the relatively unique environment of high-speed rural roads, and mountainous alpine ascents.

As a result, a region-specific (Alpine Shire or more broadly branded) Code of Conduct should be developed to provide information for cyclists visiting the region who may not be familiar with best-practice riding on rural and alpine roads.

It can be difficult to convey these messages to individual rides or informal groups who do not belong to an official club or cycling group. As a result, this information will also need to be distributed to riders by other channels.

Many riders who visit the region will be doing so as a result of tourism promotion undertaken by Tourism North East (through their Ride High Country campaign), or as part of an organised cycling event such as the Peaks Challenge, 7 Peaks rides, Great Victorian Bike Ride or Alpine Classic. Every effort should be made to contact these groups to provide information to visiting cyclists on appropriate conduct when cycling within the Alpine Shire and surrounds.

Additionally, this information can be provided within local accommodation, hospitality venues and bike shops, all of which are likely to be frequented by cyclo-tourists.

Having regard to the above, the following actions are recommended:

F1 *- Work with other Councils, resorts and Tourism North East in the region to establish a shared position, and Lobby to the state government for introduction of minimum distance passing laws*

F2 *- Develop or adapt a road-sharing advertising campaign targeted to motorists and deliver it (via online advertising, print media, billboards or other methods) within the Alpine Shire*

F3 *- Liaise with local motorcycle clubs, driving clubs to distribute information pertaining to safe and considerate driving in the Alpine Shire*

F4 *- Develop a region-specific Code of Conduct for training cyclists*

F5 *- Liaise with local cycling clubs, bike shops and cycling event organisers to distribute information pertaining to safe and considerate riding in the Alpine Shire*

6 CONCLUSIONS

The preceding report outlines the context of cycling within the Alpine Shire, and identifies key issues affecting road safety for cyclists and motorists within the community.

This review has sought to identify and mitigate road safety issues, but it is not guaranteed that every deficiency has been identified. Further, if all the recommendations in our plan are followed, this would not guarantee that the roads are 'safe' for shared use; rather, that adoption of the recommendations should improve the level of safety.

As identified previously, it is acknowledged that a number of recommendations will directly influence VicRoads assets, and therefore may not be directly actionable by Council.

Table 2 below outlines all recommendations and their priority for implementation. Priority has been assigned to accord with timeframes identified within Council's Project Pipeline as follows:

- High Priority – Prior to financial year 2022
- Medium Priority – Between financial year 2022 and 2025
- Low Priority – Between financial year 2026 and 2033

but may be subject to change to suit budgetary constraints.

Table 2 Recommended Actions & Priority

No.	Action	Priority
Safe Roads and Roadsides - Separating Cyclists and Vehicles		
A1	Where the separation (bicycle lane, shoulder, or other treatment) of cyclists and drivers is not practical (due to lack of funding, physical constraints or other reasons), introduce signage and line marking to remind drivers of likely shared use of the road. This includes but is not limited to:	High <FY22
	A - Buckland Valley Road (Council)	
	B - Buffalo River Road (VicRoads)	
	C - Myrtleford-Yackandandah Road (VicRoads)	
	D - Gavan Street (VicRoads)	
	E - Happy Valley Road (VicRoads)	
A2	Encourage cyclists to utilise secondary roads with lower traffic volumes and speeds, including ➢ Back Porepunkah Road ➢ Roberts Creek Road ➢ Damms Road ➢ Snowy Creek Road	High <FY22
A3	Investigate the upgrade of Back Germantown Road (full seal and formalise river crossing) to provide an alternative connection from Bright to Tawonga Gap Road.	Low FY26-33
A4	Investigate increasing the width of the Murray to Mountains Rail Trail between Bright and Porepunkah to a minimum of 3 metres to cater for greater cycling volumes, and provide an attractive alternative for training cyclists.	Low FY26-33
A5	Modify shared trail crossings of main roads to provide; reduced crossing widths, opportunity for staged crossings, with median storage, and greater visibility to approaching motorists at the following locations.	High <FY22
	A -Great Alpine Road (Myrtleford);	
	B - Great Alpine Road (Eurobin);	
	C - Great Alpine Road (Bright Rotunda);	
	D - Hawthorn Lane / Churchill Avenue / Delaney Road;	

	E - Kiewa Valley Highway (adjacent to caravan park);	
A6	Investigate opportunities for improving the shared path crossing at the Simmonds Creek Road / Kiewa Valley Highway intersection	High <FY22
A7	Investigate relocating the existing Children Crossing on Bakers Gully Road to better align with crossing desire lines south of Park Street	High <FY22
A8	Modify line marking of on-road bike lane adjacent to Prices Lane on Gavan Street, Bright	High <FY22
Safe Roads and Roadsides - Road Construction		
B1	Where practical, when sealing road shoulders utilise alternative treatments to conventional aggregate spray-sealing including sand seals, double spray-seals, or slurry seals	High <FY22
B2	When spray-sealing road shoulders, utilise a spray seal with a maximum stone size of 10 mm, and preferably as small as 7mm	High <FY22
B3	In areas of recent roadworks, redirect vehicles to use the shoulder immediately after it is (re)sealed for a short period to smooth the surface. The strength of the shoulder will need to be considered as often it is not designed to support high volume, high speed traffic.	High <FY22
B4	Construct road shoulders to an equal or greater surface condition than the main carriageway.	Medium FY22-25
Safe Roads and Roadsides - Road Maintenance		
C1	Increase frequency of shoulder and bike lane sweeping to four times per year for popular cyclist routes	Medium FY22-25
C2	Develop minimum standards for road repairs on roads subject to high cyclist volumes, including aggregate size, surface finish and quality etc. to ensure a smooth, even surface is retained	High <FY22
Safe Roads and Roadsides - Signage & Line Marking		
D1	Identify hazardous road features such as crests or blind corners, or where horizontal or vertical curvature may inhibit sight distances and install advisory speed signs to reduce driver speeds, and/or signage to provide advance warning to motorists of reduced sight distance or dangerous road conditions. This may include supplementary signage that instructs drivers not to overtake.	High <FY22
D2	Install speed reduction and warning signage on the Mount Buffalo Road descent on approach to car parking areas for Eurobin Falls, Rollasons Falls, and Mackeys Lookout to advise descending cyclists of upcoming pedestrian and driver activity	High <FY22
D3	Where not already in place, install Cyclist Training Route Signs along all roads identified in Section 2.6.3 in accordance with the VicRoads requirements	Medium FY22-25
D4	Where no opportunity for on-road cycle lanes exists (due to spatial constraints or otherwise), install sharrow line marking to emphasise and legitimise shared use of the road space. This should include Gavan Street between Anderson Street and Camp Street, and in Myrtleford at the termination of on-road cycle lanes.	Medium FY22-25
Safe Speeds		
E1	Review 100km/h speed limits across the Shire's main roads and, if feasible, reduce to 90km/h, or 80km/h if there is no shoulder in place. This should include:	High <FY22
	A - Great Alpine Road between Bright and Tawonga Gap Road (VicRoads)	
	B - Great Alpine Road between Porepunkah and Bright (VicRoads)	
	C - Great Alpine Road in proximity to shared trail crossings (VicRoads)	

	D - Buckland Valley Road south of Devils Creek Road (Council)	
	E - Buffalo River Road (VicRoads)	
	F - Happy Valley Road (VicRoads)	
	G - Kiewa Valley Highway from Tawonga to Coral Bank (VicRoads)	
E2	Review 80km/h speed limits across Falls Creek, Mount Hotham and Tawonga Gap ascents and reduce if feasible and practicable	High <FY22
E3	Implement advisory or mandatory speed reduction signage in areas identified by their alignment, grade, or crash history as being a risk of vehicle/cyclist conflicts or single-cyclist accidents. This should include:	High <FY22
	A - Tawonga Gap (Bright side)	
	B - Bogong High Plains Road (Mount Beauty side)	
E4	Engage with VicRoads to investigate opportunities for speed limit reductions for high-activity areas within Bright (Gavan Street, Ireland Street, Camp Street) and Myrlteford town centre to 40km/h	Low FY26-33
E5	Engage with VicRoads to seal existing informal turn-out areas on alpine ascents to provide space for vehicles to overtake cyclists (and other slow vehicles).	Medium FY22-25
E6	Where the shared path network crosses roads with a speed limit of 100km/hr, use electronic variable signage to trigger a speed reduction on the road when a cyclist approaches the road crossing.	Medium FY22-25
Safe People		
F1	Lobby to the state government for introduction of minimum distance passing laws	High <FY22
F2	Develop or adapt a road-sharing advertising campaign targeted to motorists and deliver it (via online advertising, print media, billboards or other methods) within the Alpine Shire	High <FY22
F3	Liaise with local motor cycle clubs, driving clubs to distribute information pertaining to safe and considerate driving in the Alpine Shire	High <FY22
F4	Develop a region-specific Code of Conduct for training cyclists	High <FY22
F5	Liaise with local cycling clubs, bike shops and cycling event organisers to distribute information pertaining to safe and considerate riding in the Alpine Shire	High <FY22

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Appendix A Code of Conduct for Training Cyclists

Riding in Traffic

Listed below are some commonsense tips which will increase your enjoyment and safety when riding with others.

- **Read the Road Ahead**
  It is vitally important that you scan the environment around you. By being aware of your surrounding environment you will increase your level of safety.
- **Eye to Eye Contact**
  It is an important means of communication as it makes drivers aware of your presence. Be aware of drivers' blind spots, particularly at the side of their vehicles and next to their rear doors.
- **Other Vehicles**
  Be alert for vehicles approaching from behind or pulling out in front of you. Be aware of doors opening by looking out for occupants inside stopped vehicles.
- **Positioning in Traffic**
  Don't weave in and out of traffic. Ride a metre out from the kerb and maintain a straight line. You will be more visible to other motorists. It will also deter other traffic from trying to squeeze past.
- **Be Predictable**
  Give a clear indication of where you are going and take the guess work out of it for others. This can be done by signalling in the direction you intend to travel.
- **Hold Place in Traffic**
  When a line of traffic stops it is courteous to hold your place in the line, the same as other vehicles, rather than ride to the front of traffic.

SHARING THE ROAD MEANS OBEYING THE ROAD RULES, BEING PREDICTABLE AND RESPECTING THE RIGHTS OF OTHERS WHO USE THE ROAD

Examples of Cycling Infringements

- Fail to obey traffic lights
- Fail to obey traffic sign
- Fail to obey stop signal
- Fail to have at least one hand on handlebars
- Ride over double lines
- Fail to wear approved bicycle helmet
- Fail to have lights or equipment
- Ride no more than 2 abreast (unless overtaking refer Regulations)

Further Information

Further information on this brochure and other cycling related matters can be obtained from:

Victoria Police
State Bicycle
Coordination Unit
Victoria Police Centre
637 Flinders Street
Melbourne Vic 3005
Tel: (03) 9247 6666

Or visit:
www.virtualbike.com.au

Cycling Victoria
Darebin International
Sports Centre
281 Darebin Road
Thornbury Vic 3071
Tel: (03) 8480 3000

Or visit:
www.vic.cycling.org.au

DESIGN: BRANDWORLD (www.BrandWorld.com.au)

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Cycling VICTORIA

CODE OF CONDUCT FOR TRAINING CYCLISTS

THE CODE OF CONDUCT HAS BEEN DESIGNED TO ENCOURAGE SAFE RIDING BY CYCLISTS, PARTICULARLY WHEN RIDING IN GROUPS

Riding with Others

Riding in a group requires much more skill and concentration than just riding a bike. It is recommended that groups do not exceed 20 cyclists in total as it becomes extremely difficult for other cyclists and motorists to 'pass the bunch.' It is up to you to either go ahead of the group or drop off back of the group in the event that it comprises more than 20 riders.

- **Be Predictable**
  It is important for you to ride predictably in the group. Sudden changes in direction or behaviour should be avoided. Sudden or abrupt movements will also impact on the reaction time of the other riders in the group and create an unnecessary hazard.
- **Don't Overlap Wheels**
  If your front wheel touches a rider in front this may result in a sudden loss of control and a likelihood of a fall occurring.
- **Maintain a Steady Pace**
  Maintain a constant speed and avoid abrupt or unnecessary use of your brakes. This may cause a collision amongst riders following behind.
- **Communicate**
  Use verbal and non verbal (hand) communication to indicate hazards such as debris, pot holes and approaching vehicles. Communicate your intentions with phrases such as "stopping" or "slowing" or pointing out a hazard.
- **Ride within Your Limits**
  If you don't feel confident enough to ride at the front of a group, you should move towards the rear and indicate your intentions to others. If you feel constantly over extended, it's safer for you to leave the group as over exertion can result in loss of concentration and control.
- **Joining or Leaving a Group**
  This should only be done at the rear of the group once all riders have passed. If the group is unruly, unsafe or behaving illegally you should leave the group immediately.
- **Climbing or Ascending**
  Standing up on the pedals will cause an immediate deceleration of your bike. To minimise the impact on the group, change up a gear to keep up your cadence and maintain pedal pressure. The opposite should apply when you become seated again.
- **Portable Audio Devices**
  Do not use these devices whilst riding. You need to be aware of your total environment and be able to hear what's around you when riding. This is even more critical in a group ride.
- **Hand Positioning**
  Keep your thumbs under the handlebars in case of sudden bumps and make sure your handlebars are parallel with others around you to avoid your bars being hooked by bikes around you.

YOU SHOULD ALWAYS BE FOCUSED ON SAFETY OVER PERFORMANCE WHEN CYCLING IN A GROUP

Regulations

We've all seen cyclists running red lights, riding on the footpath or riding without a helmet. Unfortunately when one cyclist behaves in this manner many other law abiding cyclists are left to cop the criticism from motorists who become frustrated with their behaviour.

There are specific penalties that apply to cyclists who break the law. Here are some examples:

- **Signs and Signals**
  Cyclists must obey traffic control signs and signals applicable to them including red lights, stop and give way signs.
- **Riding 2 Abreast (or 3 abreast briefly if overtaking)**
  Cyclists may not ride more than two abreast unless overtaking, three wide is permissible whilst the passing group is overtaking in single file. Cyclists riding two abreast must not ride more than 1.5 metres apart.
- **Lane Markings**
  Cyclists must use the bicycle lane if there is a bicycle lane on a length of road going in the same direction. Recognise lane markings and do not cross unbroken double white lines.
- **Causing a Traffic Hazard**
  Cyclists must not cause a traffic hazard by moving into the path of a driver or pedestrian without warning or looking.
- **Bike Helmets**
  A cyclist and any passenger must wear an approved bicycle helmet securely fitted and fastened on each of their heads.
- **Following Behind a Motor Vehicle**
  Cyclists must not ride within 2 metres of the rear of a moving motor vehicle continuously for more than 200 metres.
- **Riding at Night**
  Riding at night or in hazardous weather is illegal unless the bicycle or the cyclist has a white light on the front, a red light at the back and a red reflector at the back.
- **Warning Device**
  A cyclist is required to have a bell or similar warning advice, in working order, fitted to their bicycle.

Appendix B NZTA Cycling Guides

Sharing the roads for Safer Journeys

Tips for cyclists

on rural roads

Cycling is great fun and an excellent way to experience rural New Zealand. Here are a few simple tips to stay safe when sharing a rural road.

Be prepared

Plan your route, carry a map if required, sufficient water/ food and basic tools for repairs. Check your bike before you start – brakes, tyres, chain, lights and reflectors.

Be aware

Watch and listen for approaching vehicles, pedestrians, farm animals, potholes and other potential hazards.

Be confident

Know how to safely approach railway crossings, roundabouts, intersections, descents, one lane bridges and loose gravel roads.

Be considerate

Try not to hold up the flow of traffic - if necessary, pull over to allow vehicles to pass.

Be predictable

Signal your intentions clearly and keep to the left.

Be visible

Wear high visibility or brightly coloured clothing. Use front and rear lights at night, in low light and rain.

Be safe

Ride to the conditions and cycle no more than two abreast. Ride single file on corners, hills and roads with less than 200 metres visibility. Leave space between cyclists in front of you and communicate any upcoming obstacles on the road to cyclists behind you.

Sharing the roads for Safer Journeys

Tips for motorists
on rural roads

Cycling is growing in popularity in rural areas. Here are a few simple tips for sharing the road.

Be aware

Watch for cyclists, especially in low light and rain, before passing other vehicles, at intersections and on hills and blind corners. Cyclists may be travelling faster than you expect.

Be patient

Slow down when approaching cyclists, and if need be, wait behind them. Pass slowly and only when safe and ideally leave a space of 1.5 metres.

Be considerate

Cyclists sometimes need to use the traffic lane for their safety, particularly as many rural roads have limited or no shoulders. Please be patient and allow plenty of time and space to carry out a passing manoeuvre. Take special care in larger/longer vehicles as your speed can have a wind blast effect on cyclists.

Be predictable

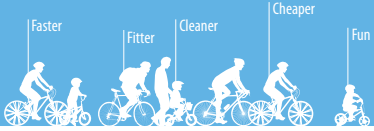
Signal your intentions clearly and keep to the left.

Be safe

Know your blind spots. Take extra care turning at intersections, slow down for narrow or one lane bridges, hills, blind corners and in limited visibility.

Cyclists and motorists have the same rights and responsibilities so for everyone sharing our roads - be friendly!

For more comprehensive information on safety visit the NZTA website. See the *Safety tips for cyclists and truck and bus drivers* leaflet, *The official New Zealand code for cyclists* and *The official New Zealand road code.*



NZ TRANSPORT AGENCY WAKA KOTAHI
Safer Journeys
New Zealand Government

Sharing the road for Safer Journeys

Tips for cyclists
on urban roads

Cycling is great fun and an excellent way to get around. Here are a few simple tips to stay safe when sharing the road.

Be prepared

Plan a safe route and check your bike before you start – brakes, tyres, chain, lights and reflectors.

Be aware

Watch for car doors opening, potholes, rubbish, grates, pedestrians and other hazards.

Be confident

Ride in a straight line, at least one metre from parked cars and take the lane when you have to. Use cycle lanes when you can.

Be considerate

Try not to hold up the flow of traffic - if necessary, pull over to allow vehicles to pass.

Be predictable

Make eye contact with other road users and signal your intentions clearly.

Be seen

Wear high visibility or brightly coloured clothing. Use front and rear lights at night, in low light and rain.

Be patient

Slow down near parked or lined up vehicles. Pass slowly and only when safe.

Sharing the road for Safer Journeys

Tips for motorists
on urban roads

Cycling is growing in popularity for commuting and recreation. Here are a few simple tips for sharing the road.

Be aware

Watch for cyclists, especially in low light and rain, before opening car doors, and at intersections. Cyclists may be travelling faster than you expect.

Be patient

Slow down near cyclists, and if need be, wait behind them. Pass slowly and only when safe and ideally leave a space of 1.5 metres.

Be considerate

Cyclists sometimes need to use the traffic lane for their safety. Please give them time and space to move in and out of the lane.

Be predictable

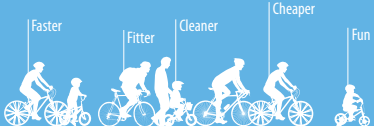
Indicate your intentions in plenty of time and wait for cyclists to pass before you turn at intersections.

Be safe

Take extra care at intersections, roundabouts and driveways. Know your blind spots.

Cyclists and motorists have the same rights and responsibilities so for everyone sharing our roads - be friendly!

For more comprehensive information on safety visit the NZTA website. See the *Safety tips for cyclists and truck and bus drivers* leaflet, *The official New Zealand code for cyclists* and *The official New Zealand road code.*

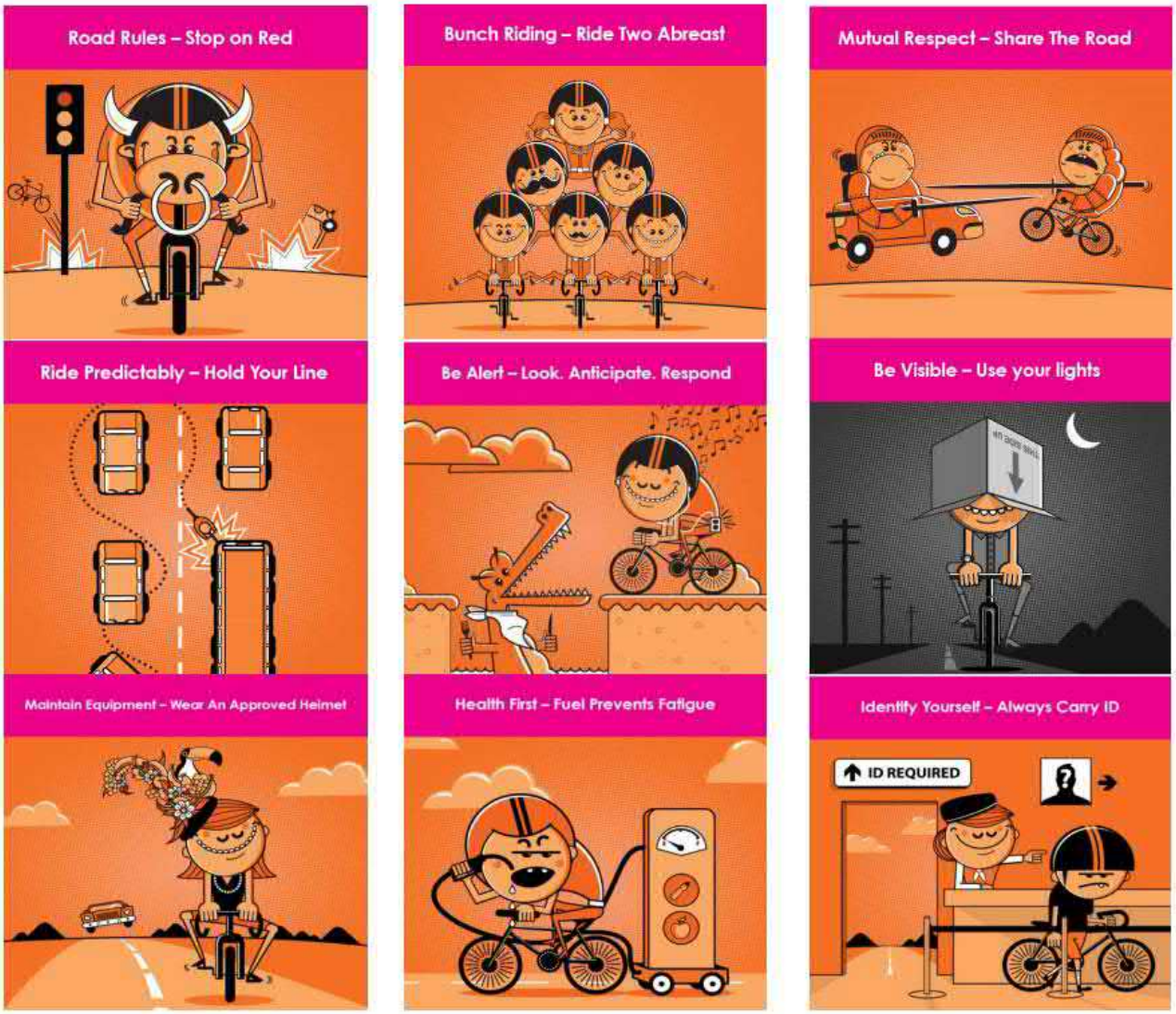


NZ TRANSPORT AGENCY
WAKA KOTAHI

Safer Journeys

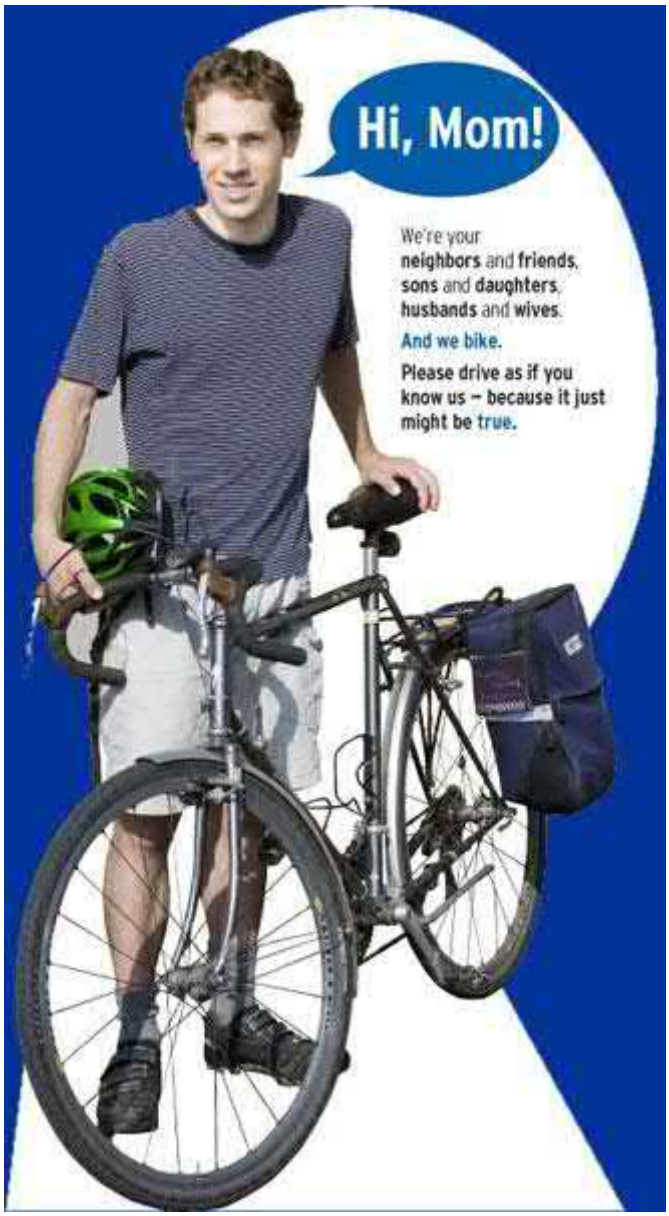
New Zealand Government

Appendix C Road User Education Campaigns



(Source: Bike Right, Amy Gillet Foundation)

(Source: Baw Baw Shire Council, "Bike it Baw Baw ", 2013)

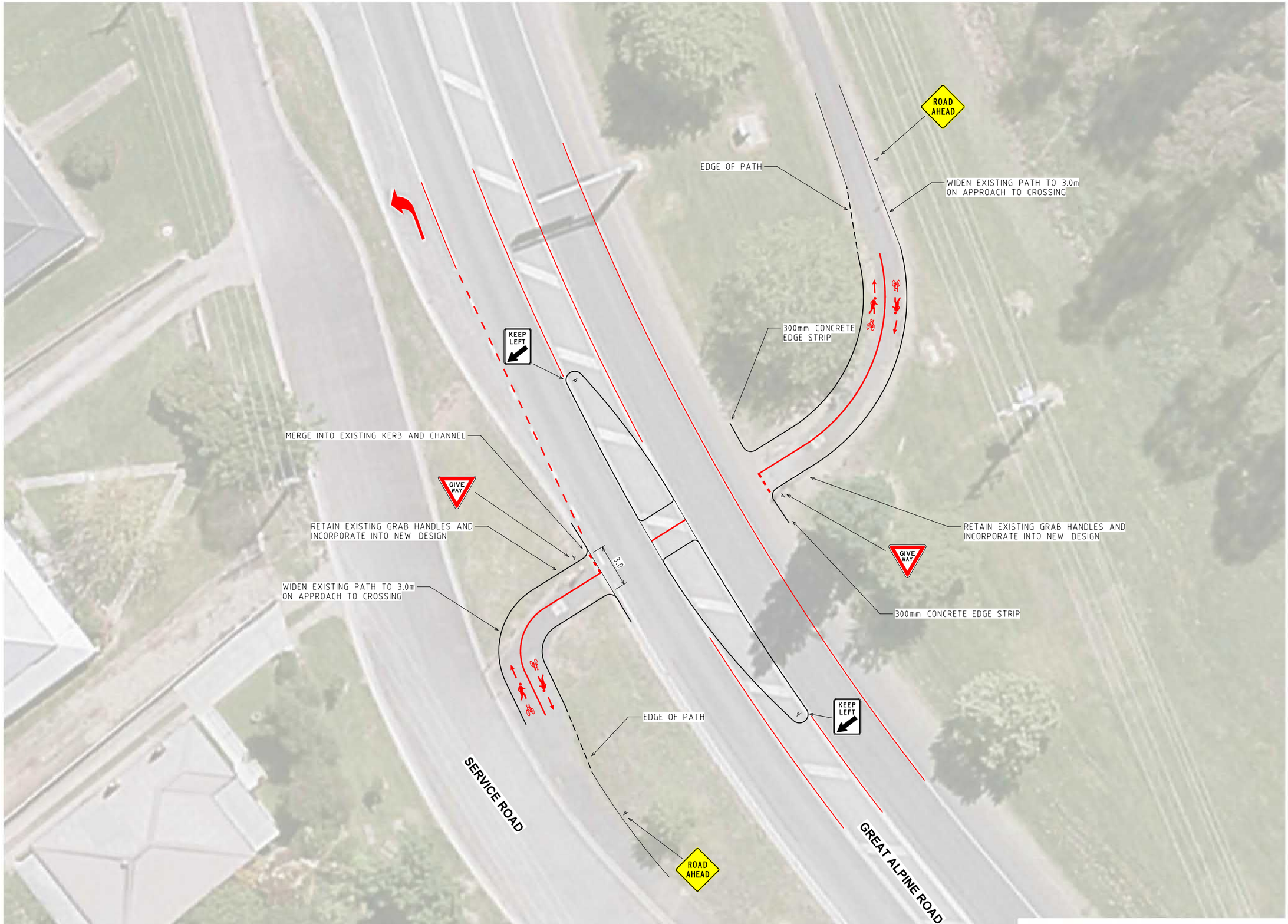


(Source: Washington County Bicycle Transportation, "And We Bike", 2007)

(Source: BikePGH.org, "Travel With Care")

(Source: People for Bikes, 2014)

Appendix D Concept Plans



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onemilegrid
TRAFFIC ENGINEERING

56 Down Street, Collingwood, VIC 3066
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone (03) 9939 8250

Drawing Title
ALPINE SHIRE CYCLE SAFETY STRATEGY
GREAT ALPINE ROAD, MYRTLEFORD
CONCEPT LAYOUT PLAN

Designed	Approved	Melway Ref
DK	JD	n/a

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Project Number	Drawing Number	Revision
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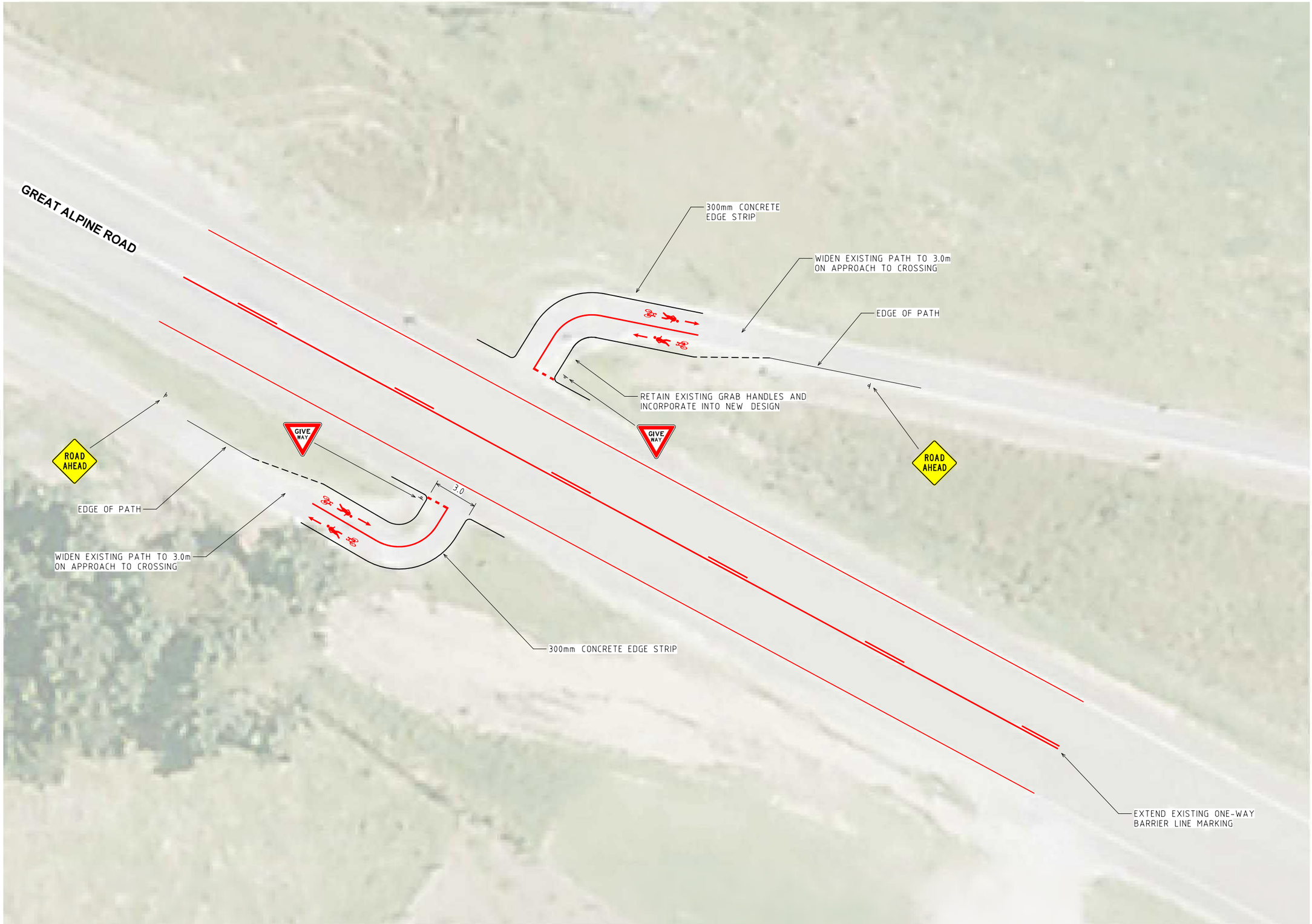

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Scale
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0 1.25 2.5 5

Drawing Title
ALPINE SHIRE CYCLE SAFETY STRATEGY
GREAT ALPINE ROAD, EUROBIN
CONCEPT LAYOUT PLAN

Designed	Approved	Melway Ref
DK	JD	n/a

Project Number	Drawing Number	Revision
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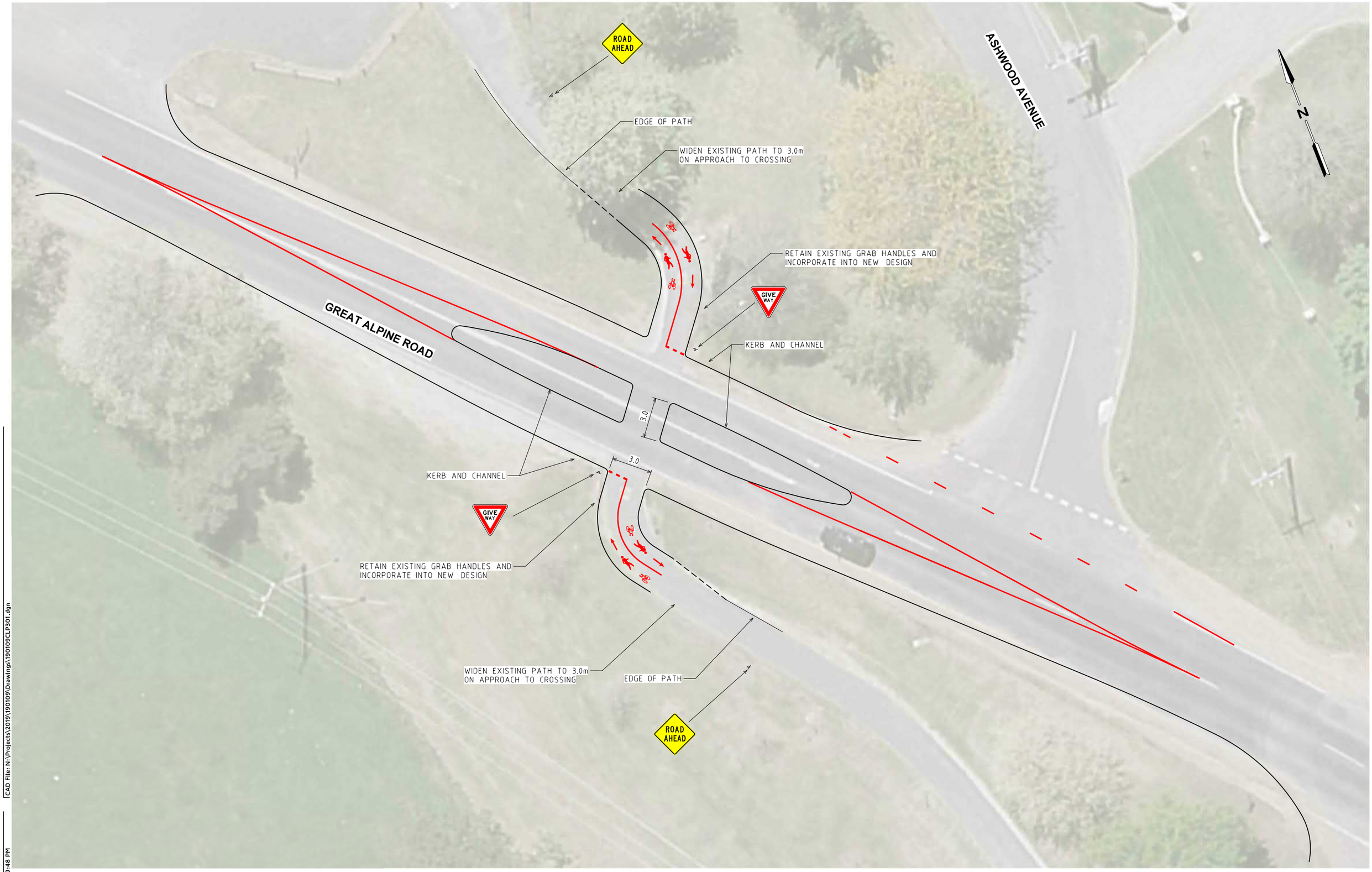

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onemilegrid
TRAFFIC ENGINEERING

56 Down Street, Collingwood, VIC 3066
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone (03) 9939 8250

Drawing Title
ALPINE SHIRE CYCLE SAFETY STRATEGY
GREAT ALPINE ROAD, BRIGHT
CONCEPT LAYOUT PLAN - CENTRAL MEDIAN OPTION

Designed	Approved	Melway Ref
DK	JD	n/a

Scale
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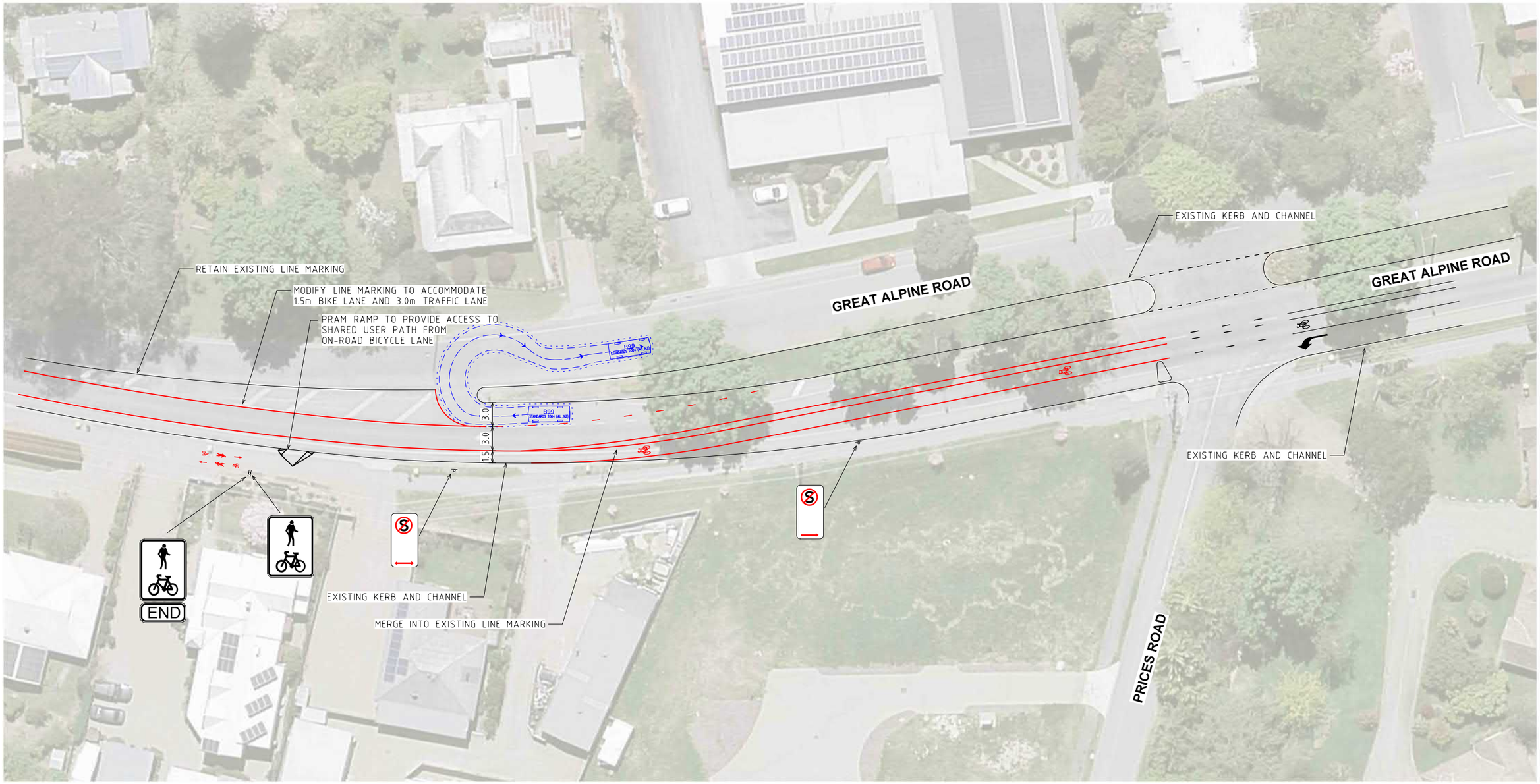
Project Number	Drawing Number	Revision
190109	CLP301	A



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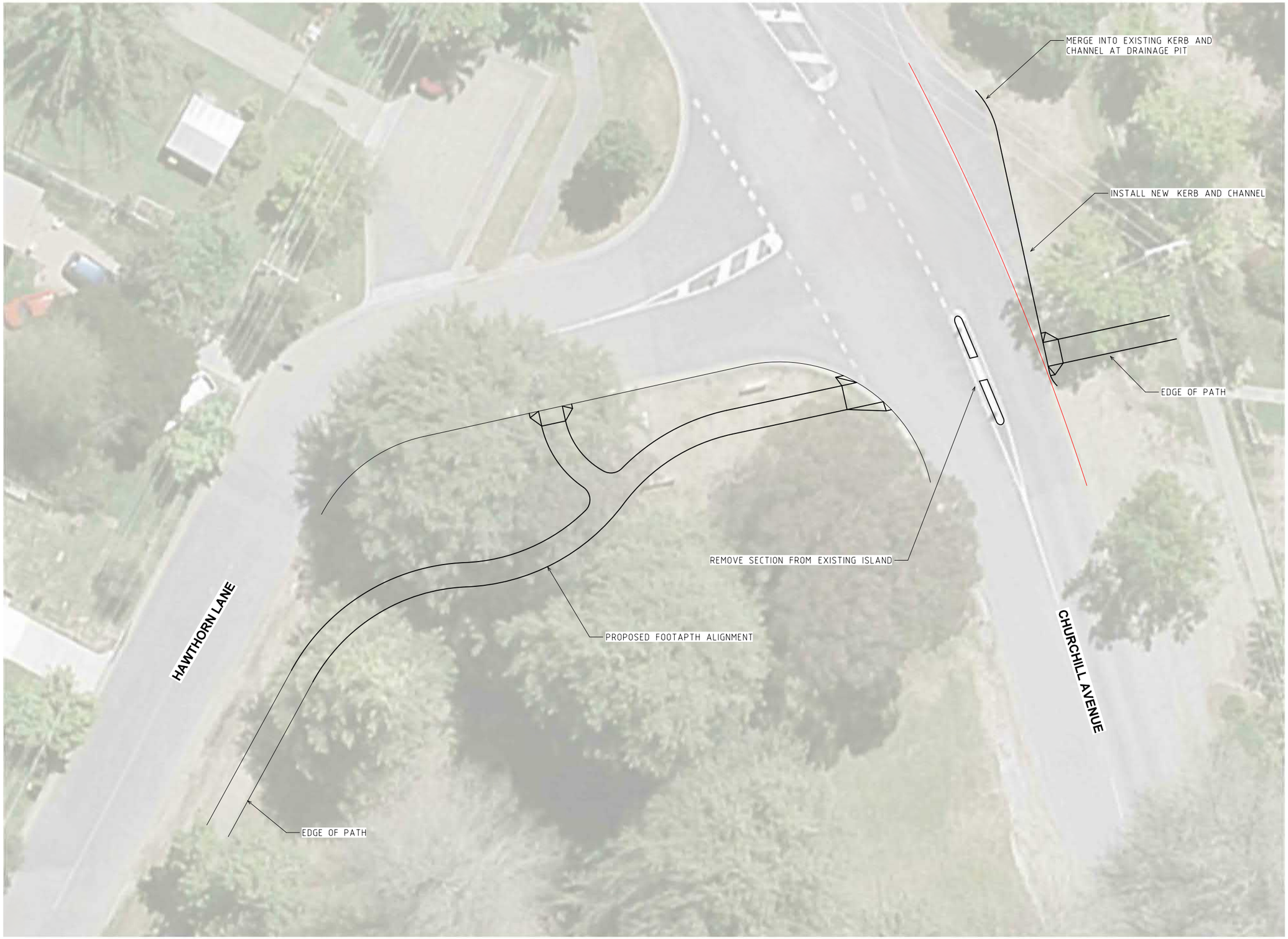
Scale
1:500 @ A3
0 2.5 5 10

Drawing Title
ALPINE SHIRE CYCLE SAFETY STRATEGY
GREAT ALPINE ROAD, BRIGHT
CONCEPT LAYOUT PLAN

Designed	Approved	Melway Ref
DK	JD	n/a

Project Number	Drawing Number	Revision
190109	CLP400	B



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Scale
1:250 @ A3
0 1.25 2.5 5

Drawing Title
ALPINE SHIRE CYCLE SAFETY STRATEGY
CHURCHILL AVENUE, BRIGHT
CONCEPT LAYOUT PLAN

Designed	Approved	Melway Ref
DK	JD	n/a

Project Number	Drawing Number	Revision
190109	CLP500	B