



Alpine Shire Council

Back Porepunkah Road Safety Strategy

ASSESSMENT REPORT

WGA242886

WGA242886-RP-TT-0001_D

31 July 2026



Revision History

REV	DATE	ISSUE	ORIGINATOR	CHECKER	APPROVER
A	18/02/2025	Draft	JA	MV	MV
B	11/04/2025	Final	JA	MV	MV
C	01/12/2025	Final	JA	MV	MV
D	31/07/2026	Final	BCS	MV	BCS

CONTENTS

1	INTRODUCTION	1
1.1	Engagement.....	1
1.2	Purpose & Objectives.....	1
1.2.1	General	1
1.2.2	Limitations	1
1.3	Site Inspection.....	1
1.4	Stakeholder & Community Engagement.....	1
1.5	Documentation Referenced	2
2	PROJECT CONTEXT & DESCRIPTION	3
2.1	Study Area	3
2.2	General	3
2.3	Existing Conditions.....	4
2.3.1	Typical Cross-Section	4
2.3.2	Posted Speed Limits	4
2.3.3	Traffic Volumes & Speeds	4
2.4	Crash Statistics	7
3	BACKGROUND DOCUMENTATION	8
3.1	Alpine Cycling Safety Strategy.....	8
3.2	Alpine Shire Land Development Strategy	9
3.2.1	Overview	9
3.2.2	Forecasted Residential Growth	10
3.2.3	Framework Plans	10
4	SAFE SYSTEM PRINCIPLES	11
4.1	Framework	11
4.2	Safe System Assessment	12
4.3	Safe System Pillars	12
4.4	Project Context.....	13
4.5	Safe System Matrix	13
5	SITE INSPECTION FINDINGS & DESIGN ASSESSMENT	15
5.1	Safer Roads	15
5.2	Safer Speeds	16
5.3	Safer Road Users.....	16
5.4	Desirable Road Design	17
5.5	Turning Lane Warrants	17
6	ACTIONS	20
6.1	Recommendations	20
6.1.1	Safer Roads	20
6.1.2	Safer Speeds	22
6.1.3	Safer Road Users	22
6.2	Implementation Plan	24

6.3 Recommendation Photo References	27
---	----

Figures

Figure 2.1: Aerial View of Study Area & Key Features	3
Figure 2.2: Location of Traffic Speed & Volume Surveys	4
Figure 2.3: Traffic Volume Survey Results – Location 1 – 7-Day Hourly Volume Profile.....	5
Figure 2.4: Traffic Volume Survey Results – Location 2 – 7-Day Hourly Volume Profile.....	5
Figure 2.5: Traffic Volume Survey Results – Location 3 – 7-Day Hourly Volume Profile.....	5
Figure 2.6: Crash Locations, Type & Severity	7
Figure 3.1: Bright & Porepukah Framework Plan.....	10
Figure 4.1: Extract: Portrayal of the Safe System (Austroads)	11
Figure 5.1: Extract: Warrants for Turn Treatments on Major Roads at Unsignalised Intersections (Design Speed 70 km/h – 100 km/h).....	18
Figure 5.2: Extract: Rural Basic (BA) Turn Treatments (Austroads).....	18
Figure 5.3: Back Porepukah Road – Typical Road Pavement Edge.....	19
Figure 5.4: Back Porepukah Road – Roberts Creek Road Intersection	19
Figure 5.5: Back Porepukah Road – Significant Tree adjacent Road Carriageway.....	19
Figure 5.6: Back Porepukah Road – Typical Crossing Design.....	19
Figure 5.7: Back Porepukah Road – Level Difference on Curve in Road	19
Figure 5.8: Back Porepukah Road – Typical Nighttime Light Levels.....	19
Figure 5.9: Back Porepukah Road – At 60 km/h Speed Limit Zone facing Porepukah	19
Figure 5.10: Back Porepukah Road – Typical Position of Cyclist on Road	19
Figure 6.1: Example of Bright Gateway Treatment	22
Figure 6.2: Examples of Cyclist Advisory & Warning Signage	22
Figure 6.3: Recommendation 3b – Realignment of Karnu Court Trail Crossing	27
Figure 6.4: Recommendation 4e – Open Drainage Channel.....	27
Figure 6.5: Recommendation 5a – Informal Turn-Out & Turn-Around Area (Roberts Creek Bridge).....	27
Figure 6.6: Recommendation 5b – Informal Turn-Out & Turn-Around Area (Ovens River Drainage Channel).....	27
Figure 6.7: Recommendation 18 – Typical Pavement Marking Deterioration at Local Road Intersection .	27
Figure 6.8: Recommendation 22 – Typical Property Access & Murray to Mountains Trail Intersection	27

Tables

Table 2.1: Summary of Traffic Speed & Volume Surveys	6
Table 2.2: Summary of Back Porepukah Road Crash Statistics	7
Table 3.1: Extract: ‘Alpine Shire Council Cycling Safety Strategy Report – Table 2: Recommended Actions & Priority’	8
Table 4.1: Project Context	13
Table 5.1: Extract: Single Carriageway Rural Road Widths (m) (‘AGRD Part 3’)	17
Table 6.1: Implementation Plan	24

Appendices

APPENDIX A CONCEPT PLANS

APPENDIX B SPEED LIMIT & SIGN MAPS

1 INTRODUCTION

1.1 Engagement

WGA has been engaged by Alpine Shire Council (Council) to prepare a 'Safety Strategy' report (herein referred to as the 'Strategy') for Back Porepunkah Road, located between the townships of Porepunkah and Bright in northeastern Victoria.

1.2 Purpose & Objectives

1.2.1 General

Council has successfully obtained a grant under the Transport Accident Commission's (TAC's) Local Government Grant Program to complete a Safety Strategy for Back Porepunkah Road.

Council have subsequently engaged WGA to complete a review of existing road operational and safety conditions to prepare the Strategy, informing Council of recommendations in line with Safe System principles for improving the overall safety of the road corridor.

The objectives of the Strategy are to:

- Assess Back Porepunkah Road and its alignment with Safe System principles
- Document concerns that do not align with Safe System principles
- Identify recommendations that will produce or move Back Porepunkah Road toward a Safe System outcome

1.2.2 Limitations

This report has been prepared in line with the Safe System principles, however, does not provide a formal Safe System Assessment (SSA). Similarly, this report does not constitute a Road Safety Audit (RSA), however components and principles of the RSA process outlined in '*Austroads Guide to Road Safety Part 6: Road Safety Audit*' will be implemented for the purpose of the Strategy.

1.3 Site Inspection

A site inspection was undertaken during daylight and nighttime hours on Monday 20 January 2025 between 4:30pm and 9:30pm, respectively. It is noted that the site inspection day coincided with the Victorian school holiday period. The weather conditions were clear and dry during the inspection.

Observed traffic conditions were considered to be typical, with shared paths along the study area seen frequently utilised by pedestrians and cyclists.

1.4 Stakeholder & Community Engagement

The draft Back Porepunkah Road Safety Strategy was issued 18 February 2025 and the initial final version was issued 11 April 2025.

Council subsequently completed community engagement between 11 August and 8 September 2025. This included:

- 564 letters distributed on 12 August 2025 to landowners in Porepunkah and along Back Porepunkah Road
- A media release distributed on 11 August 2025
- The draft strategy, survey questions and a feedback form were published on the Engage Alpine website
- A drop-in session was held in Porepunkah at the Riverside Park (opposite Porepunkah Ski Hire) on 19 August between 3:00 pm – 5:00 pm

Council has prepared a Community Engagement report (draft dated October 2025) which details the outcomes of the community engagement process.

It is noted that a total of 401 respondents to the draft Road Safety Strategy have been recorded, including:

- 385 survey responses (online/Engage Alpine website)
- 15 drop-in session attendees/responses
- One (1) written submission

Following completion of the community engagement process and analysis of a number of key issues, and further internal discussions at Council; WGA worked with Council and have completed a number of updates to Back Porepunkah Road Safety Strategy. Primarily this includes changes to the actions and recommendations discussed in Section 6 and associated maps in Appendix B.

1.5 Documentation Referenced

In the course of preparing the Strategy, WGA has referenced the following documents:

- *'Austroads Guides to Road Safety, Road Designs and Traffic Management'*
- *'Austroads Research Report AP-R509-16: Safe System Assessment Framework'*
- Australian Standards
- *'Department of Transport and Planning Supplements and Road Design Notes'*
- *'Alpine Cycling Safety Strategy'*
- Nearmap aerial imagery
- Google Maps and Street View

2 PROJECT CONTEXT & DESCRIPTION

2.1 Study Area

Back Porepukah Road is a local 'collector' road under the care and management of Council. It is approximately 4.1km in length and runs from Porepukah through to Bright in the southeast. The length of road and thus study area is illustrated in Figure 2.1.

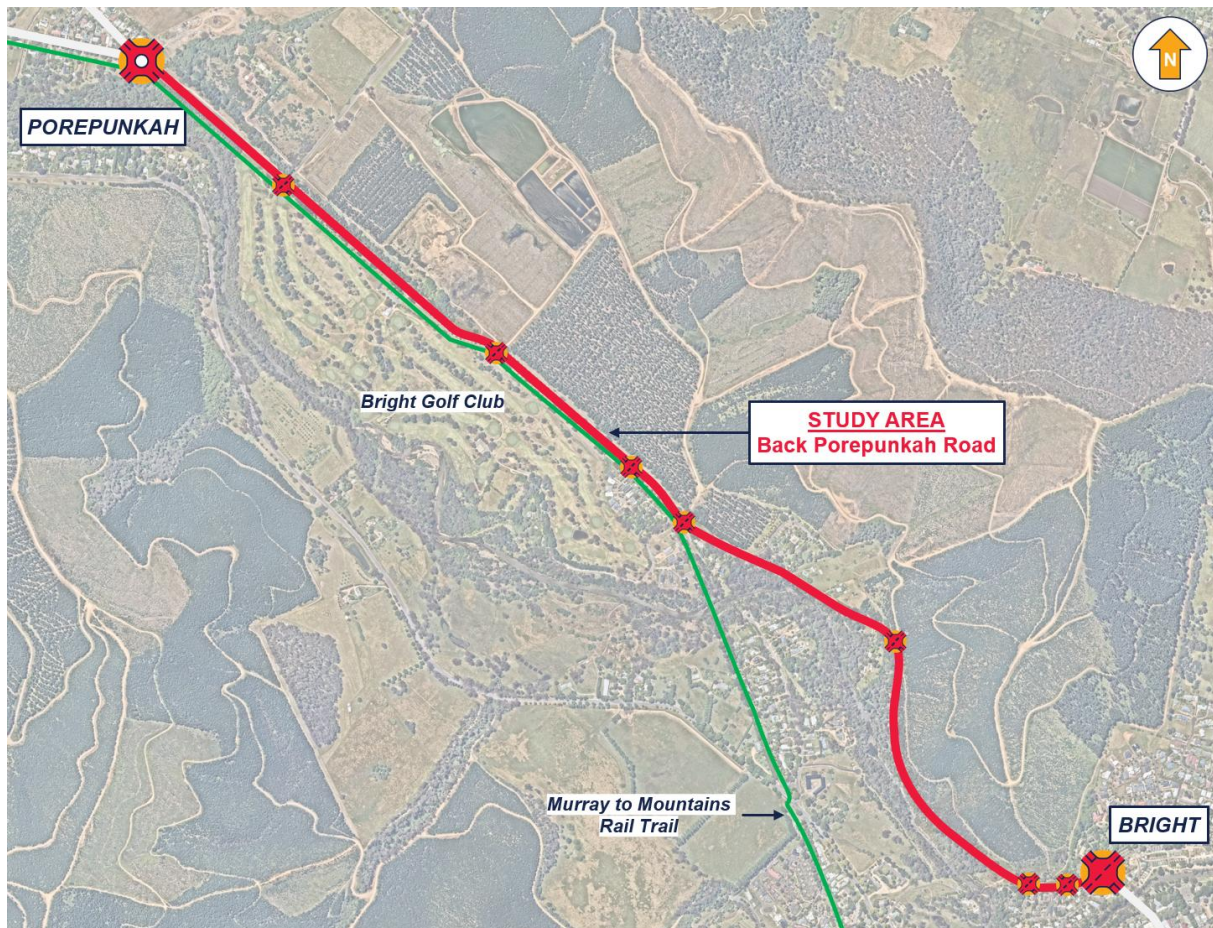


Figure 2.1: Aerial View of Study Area & Key Features

2.2 General

As a collector road, Back Porepukah Road is utilised as a key thoroughfare for traffic between Bright and Porepukah, secondary to traffic utilising the parallel Great Alpine Road as the arterial road. Due to its nature as a direct route between towns and lower vehicle volumes, it is often utilised by cyclists as a safer alternative to the Great Alpine Road for riding. The level of use is also heightened by proximity of the Murray to Mountains Rail Trail, which runs parallel to Back Porepukah Road from Porepukah to its intersection with Tom Briggs Road and Lowen Drive.

With a higher than typical number of vulnerable road users utilising both the Back Porepukah Road carriageway and reserve, concerns regarding the existing safety of the road have been raised, including the number of sharp curves in the road's alignment and lack of road shoulders.

As Porepukah and Bright continue to grow as significant townships within the region, the number of both vulnerable road users and vehicles utilising Back Porepukah Road will increase, and with it, the risk of incidents occurring.

2.3 Existing Conditions

2.3.1 Typical Cross-Section

The following characteristics are applicable to a typical cross-section of Back Porepukah Road:

- Road reserve width varies between 20m – 50m, however typically lies between 20m – 32m.
- Undivided two-way, two-lane with 3.0m wide traffic lanes.
- No road shoulder with gravel and grass verge immediately adjacent traffic lanes.
- Sealed turning lanes only provided at:
 - Lowen Drive for northbound traffic (Basic Left Turn)
 - Star Road for southbound traffic (Channelised Right Turn)

2.3.2 Posted Speed Limits

The following posted speed limits apply to Back Porepukah Road:

- 60 km/h For 165m south of Station Street & Service Street intersection, Porepukah
- 80kmh Between changes in posted speed limit
- 50 km/h For 300m west of Star Road, Bright

A figure illustrating the location of speed signs, including advisory speeds, is provided in Appendix B.

2.3.3 Traffic Volumes & Speeds

24-hour traffic speed and volume surveys (automated tube counts) were undertaken along Back Porepukah Road from Thursday 23 January to Wednesday 29 January 2025 to ascertain peak seasonal conditions at the following locations shown in Figure 2.2.

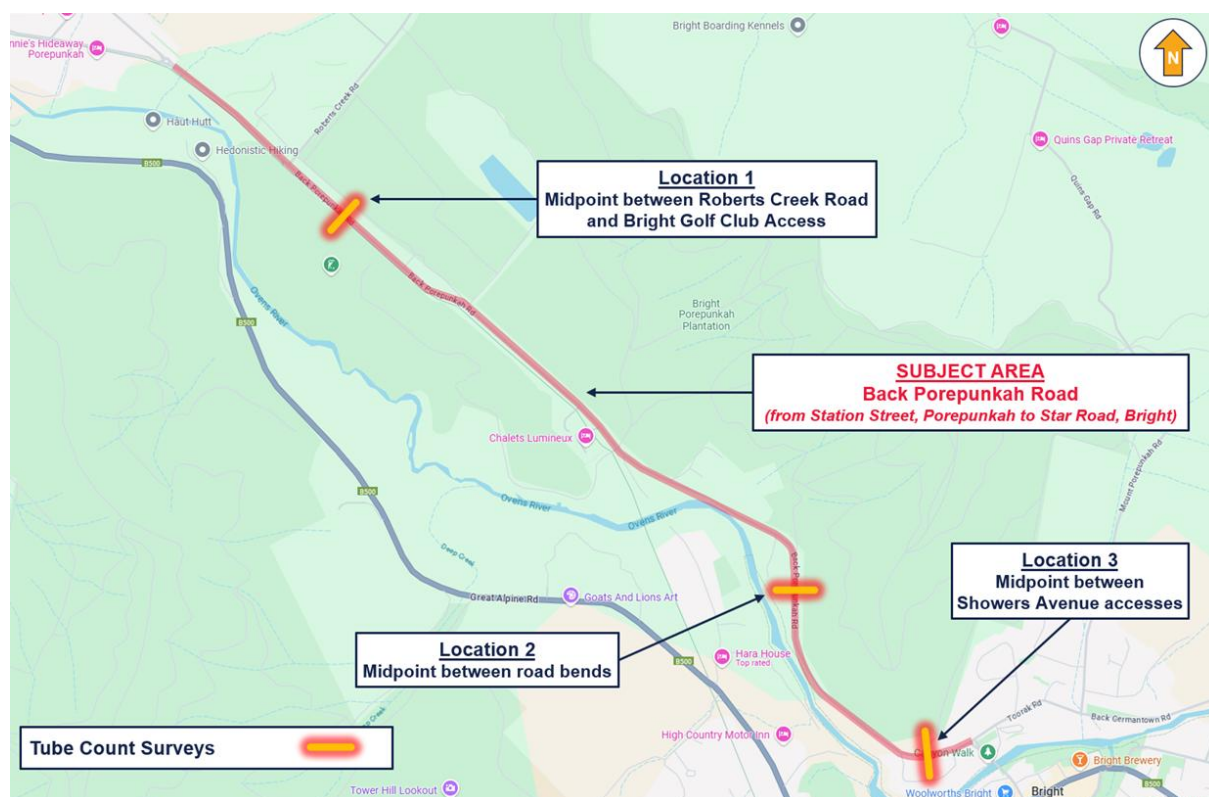


Figure 2.2: Location of Traffic Speed & Volume Surveys

The daily traffic volume profiles for each location are provided from Figure 2.3 to Figure 2.5. These illustrate that the road exhibits a similar volume and peak hour characteristics along the length of the study area. That is, nominal traffic is introduced along its length and the majority of traffic acts as through traffic travelling between Bright and Porepukah.

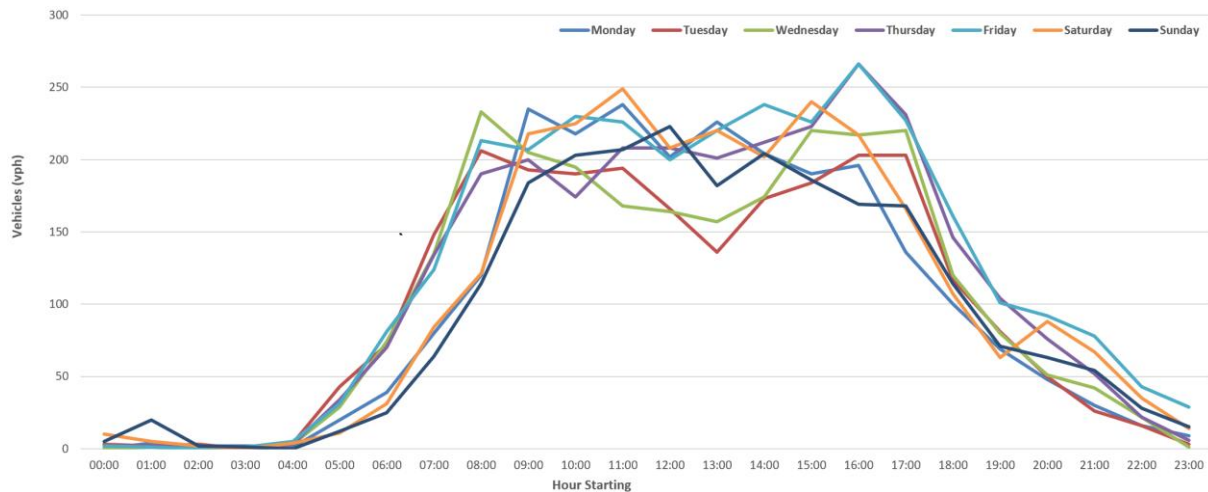


Figure 2.3: Traffic Volume Survey Results – Location 1 – 7-Day Hourly Volume Profile

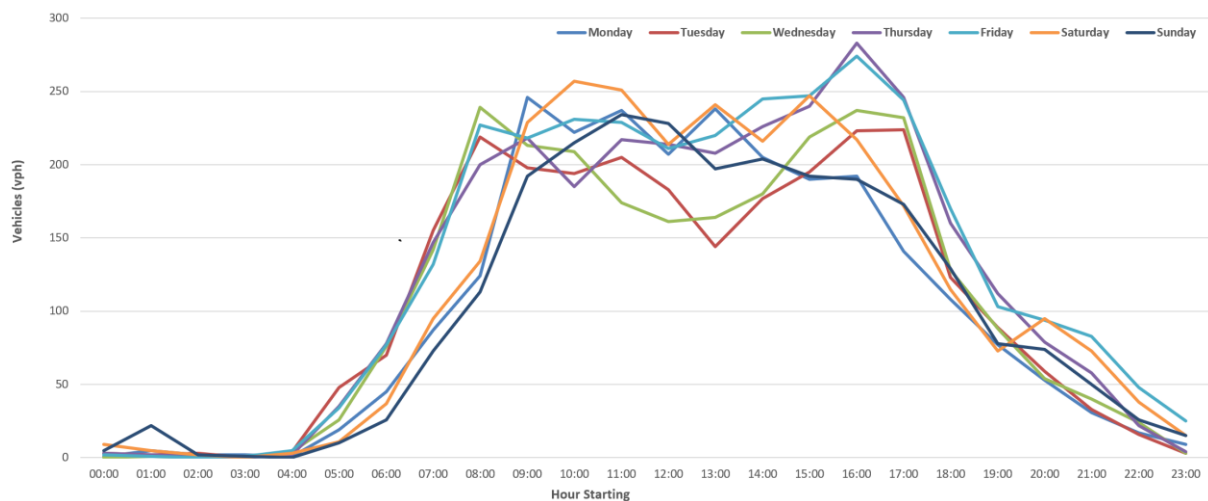


Figure 2.4: Traffic Volume Survey Results – Location 2 – 7-Day Hourly Volume Profile

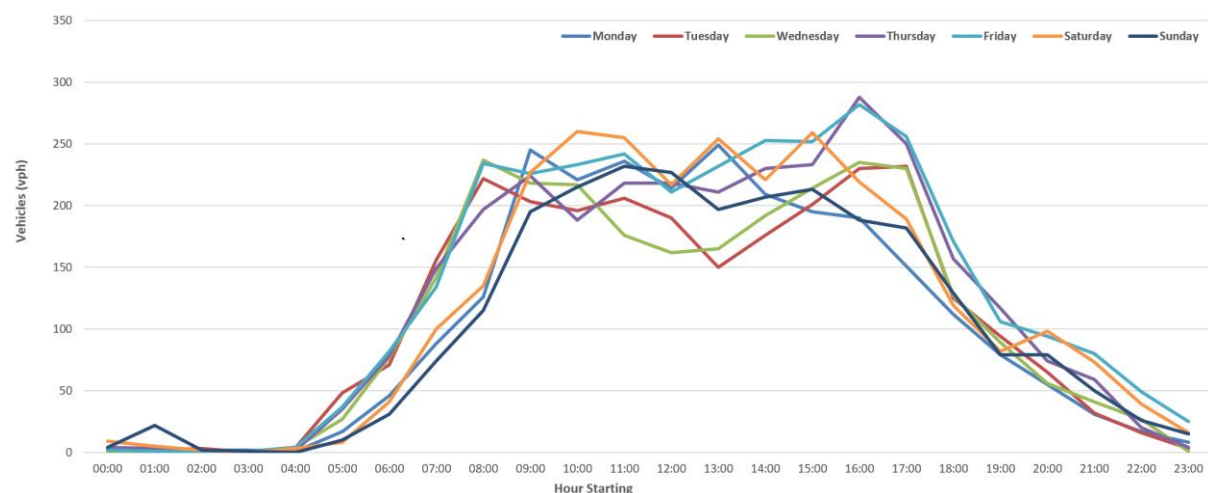


Figure 2.5: Traffic Volume Survey Results – Location 3 – 7-Day Hourly Volume Profile

Given the surveys were completed across the Australia Day long weekend, results are in line with expected conditions showing that Friday was the busiest day with 3,000 – 3,200 vehicles across the day at each survey location.

Hourly traffic volumes are shown to be relatively consistent from 8:00am through to 6:00pm with a definitive peak hour typically occurring in the afternoon around 4:00pm.

A summary of the key results from the traffic speed and volume surveys at each location is provided in Table 2.1, including speed characteristics, specific peak volumes and heavy vehicles percentages.

Table 2.1: Summary of Traffic Speed & Volume Surveys

CHARACTERISTIC		LOCATION		
		1. EAST OF ROBERTS CREEK ROAD	2. SOUTH OF PROPERTY 486	3. BETWEEN SHOWERS AVENUE ACCESSES
Peak Day – Friday 24 January 2025				
Total Volume (AADT)		3,002 vehicles	3,121 vehicles	3,207 vehicles
Peak (Two-way)	AM Hour	10:00am – 11:00am	10:00am – 11:00am	11:00am – 12:00pm
	AM Volume	230 vehicles	231 vehicles	242 vehicles
	PM Hour	4:00pm – 5:00pm	4:00pm – 5:00pm	4:00pm – 5:00pm
	PM Volume	266 vehicles	274 vehicles	282 vehicles
85th Percentile Speed		83.6 km/h	81.1 km/h	63.1 km/h
Average Speed		78.1 km/h	75.6 km/h	56.5 km/h
Heavy Vehicle %		16.4%	12.2%	14.8%
No. Articulated Vehicles		64 vehicles	49 vehicles	51 vehicles
No. B-Doubles		1 vehicle	-	-
7-Day Average				
Total Volume (AADT)		2,568 vehicles	2,700 vehicles	2,753 vehicles
Peak (Two-way)	AM Hour	9:00am – 10:00am	9:00am – 10:00am	9:00am – 10:00am
	AM Volume	208 vehicles	219 vehicles	223 vehicles
	PM Hour	4:00pm – 5:00pm	4:00pm – 5:00pm	4:00pm – 5:00pm
	PM Volume	230 vehicles	242 vehicles	245 vehicles
85th Percentile Speed		85.2 km/h	81.5 km/h	63.7 km/h
Average Speed		79.5 km/h	75.5 km/h	57.1 km/h
Heavy Vehicle %		15.1%	11.3%	13.3%
No. Articulated Vehicles		35 vehicles	28 vehicles	29 vehicles
No. B-Doubles		-	-	-

NOTE: AADT = Annual Average Daily Traffic. The 85th percentile speed is that speed at which 85% of recorded vehicles were travelling slower than. Heavy vehicles are those measured at longer than 5.5m in length.

The following characteristics are of note:

- Volumes are seen to be slightly higher closer to Bright than Porepunkah
- Heavy vehicle percentages are high across the full length of road, however, are more concentrated toward Roberts Creek Road, including a B-Double utilising the road
- 85th percentile speeds are higher than desirable adjacent Roberts Creek Road
- Speeds at Location 2 indicate that generally vehicles are travelling slower at this point than compared to other 'straight' sections
- Speeds at Location 3 are much higher than desirable considering it is located within a 50 km/h speed limit area and located approximately 160m east of the change in speed limit from 80 km/h
 - A review of directional speeds show that eastbound traffic, slowing down from the 80 km/h, is on average 0.4 km/h faster than westbound traffic, highlighting that there is a general lack of compliance with speeds adjacent Showers Avenue

2.4 Crash Statistics

A review of publicly available crash statistics from Department of Transport and Planning collated over the last 10 or so years shows that there have been four (4) reported incidents within the study area as shown Figure 2.6.

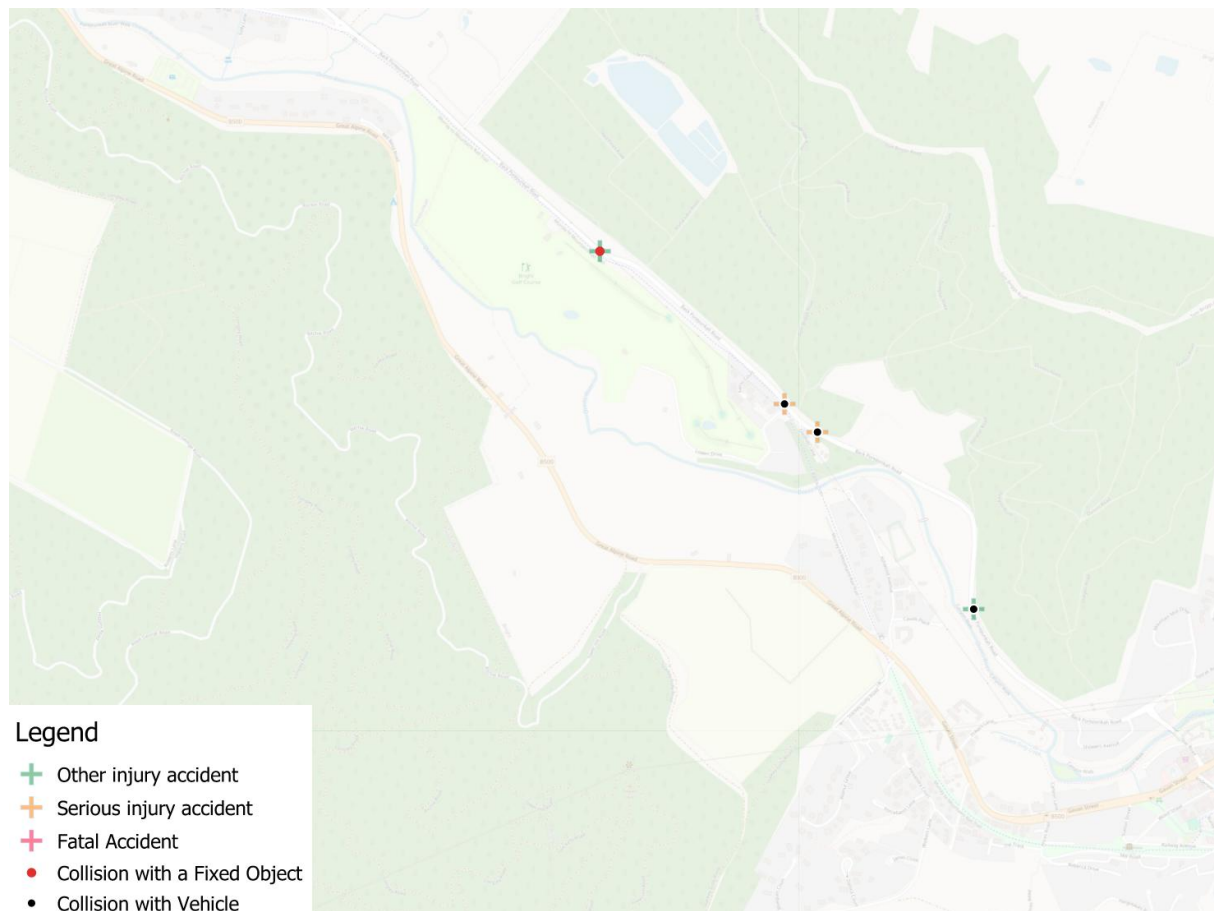


Figure 2.6: Crash Locations, Type & Severity

The recorded crashes within the study area are summarised within Table 2.2.

Table 2.2: Summary of Back Porepunkah Road Crash Statistics

CRASH TYPE	DATE	DCA DESCRIPTION	NO. VEHICLES	NO. PERSONS	SEVERITY	SPEED ZONE
Collision with Vehicle	24 April 2024	Head On (Not Overtaking)	2	2	Other Injury Accident	80 km/h
Collision with Vehicle	18 January 2022	Left Rear	2	2	Serious Injury Accident	80 km/h
Collision with a Fixed Object	25 September 2015	Left off carriageway into object/parked vehicle	1 (Heavy Vehicle)	2	Other Injury Accident	80 km/h
Collision with Vehicle	9 January 2014	Rear End (Vehicles in Same Lane)	2 (1 Cyclist)	2	Serious Injury Accident	80 km/h

Based on the crash data, there is no correlation between incident types, severities and locations.

It is highlighted that this does not implicate the road being safe or relatively incident free, where near misses, aggressive behaviour and general perception of safety and protection is not reported.

3 BACKGROUND DOCUMENTATION

3.1 Alpine Cycling Safety Strategy

A municipal-wide Cycling Safety Strategy was prepared for Council on the back of significant increases in cycling tourism to the Shire with continued growth expected year-on-year in addition to significant investment from Tourism North East and the associated “Ride High Country” campaign.

Greater use of cycling as a mode of transport has also increased demand on the region’s cycling infrastructure, contributing to greater friction between vehicles and cyclists on the road.

Safety concerns as they relate to Back Porepukah Road identified during assessments completed for the strategy included:

- Lack of formal on-road cyclist infrastructure, not catering for the more experienced cycling tourism that the region attracts
- Road shoulders varying in width, quality/seal treatment, deterioration and presence
- Rail Trail crossings at higher order roads difficult to be noticed and lack quality crossing facilities
- High speed limit roads throughout the Shire, particularly on mountainous sections where cyclists would be travelling at a slower pace
- Obstructive two (2) or greater abreast riding

A number of recommended action items were identified based on the identified concerns and community consultation, which were prioritised and separated into themes based on the Safe System principles.

The recommended actions and priority table detailed in the strategy that are specifically applicable to Back Porepukah Road are detailed, in part, in Table 3.1.

Table 3.1: Extract: ‘Alpine Shire Council Cycling Safety Strategy Report – Table 2: Recommended Actions & Priority’

NO.	ACTION	PRIORITY
Safe Roads & Roadsides – Separating Cyclists & 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.	High <FY22
A2	Encourage cyclists to utilise secondary roads with lower traffic volumes and speeds, including Back Porepukah Road.	High <FY22
A4	Investigate increasing the width of the Murray to Mountains Rail Trail between Bright and Porepukah to a minimum of 3m to cater for greater cycling volumes and provide an attractive alternative for training cyclists.	Low FY26-33
Safe Roads & 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 10mm, 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

NO.	ACTION	PRIORITY
B4	Construct road shoulders to an equal or greater surface condition than the main carriageway.	Medium FY22-25
Safe Roads & 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 & 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
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
Safe Speeds		
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.	High <FY22

It is recommended that the Cycling Safety Strategy is read in conjunction with this Strategy to provide greater understanding and detail of cyclist types, behaviours, road rules, legislation and literature. The Cycling Safety Strategy has been utilised to inform recommendations made within this Strategy.

A number of recommendations not specific to Back Porepunkah Road have been detailed in the Cycling Safety Strategy that would have an indirect positive impact on the overall safety of Back Porepunkah Road.

3.2 Alpine Shire Land Development Strategy

3.2.1 Overview

The LDS was adopted by Council in July 2024 to guide development throughout the Shire, identifying where people will live and access services to assist in the local economy prospering. The LDS will guide Council in their decision-making processes to inform policy development and infrastructure investment.

Transport accessibility is identified as a factor for urban suitability, dictating where future housing should be located. With reliance on access to larger regional centres such as Wangaratta and Albury-Wodonga for primary services, private vehicle use is highly utilised for most activities. Further, there is limited public transport along key routes though the Shire, including Great Alpine Road and Kiewa Valley Highway.

Strategic direction 7 of the LDS is “to deliver appropriate utility, transport and community infrastructure when and where it is needed to support growth”. Within Action 9.4 identifies to “prepare a Traffic Infrastructure Assessment or Traffic Impact Assessment for each of the service towns and highlight key infrastructure upgrades for future need for safe use at future capacities.”

3.2.2 Forecasted Residential Growth

With the Shire forecast to grow to a population of 15,890 by 2041, an increase of 2,734 (20.8%) from 2021, there is an expectation that an additional 2,167 homes will be required to be built. Much of this demand is expected to be accommodated within the large towns, including Bright and Porepunkah. Approximately 75% of demand is expected to be located in urban areas (1,625 dwellings) and 25% in rural areas (542 dwellings). Bright is expected to attract 553 dwellings, and Porepunkah is expected to attract 260 dwellings.

3.2.3 Framework Plans

Each service town has had a Framework Plan developed to identify growth areas for housing, commercial uses and land use intensification, which is shown in Figure 3.1 for Bright and Porepunkah. A high level summary of the Framework Plan is provided as follows:

- Bright is constrained by surrounding topography and flood zones from Ovens River, which runs parallel in close proximity to Great Alpine Road
- Bright will focus primarily on rezoning existing land use zones and intensifying or diversifying housing development in these areas, particularly near the retail core
- New development of land is primarily located along Great Alpine Road to the west of Ashwood Avenue, with a significant portion of farmland available as a General Residential Zone
- Porepunkah is similarly constrained as Bright to its south, however there is flat land to the north where potential residential development to the north, north-east has been identified
- Porepunkah is primarily zoned as a Township Zone
- The majority of existing development though Bright is located adjacent to or in close proximity to the arterial road network, being Great Alpine Road
- Porepunkah is strategically located so that arterial road network traffic has limited interaction with the remainder of the township, with Great Alpine Road running along the western settlement boundary and immediately crossing Ovens River away from the established residential and commercial areas

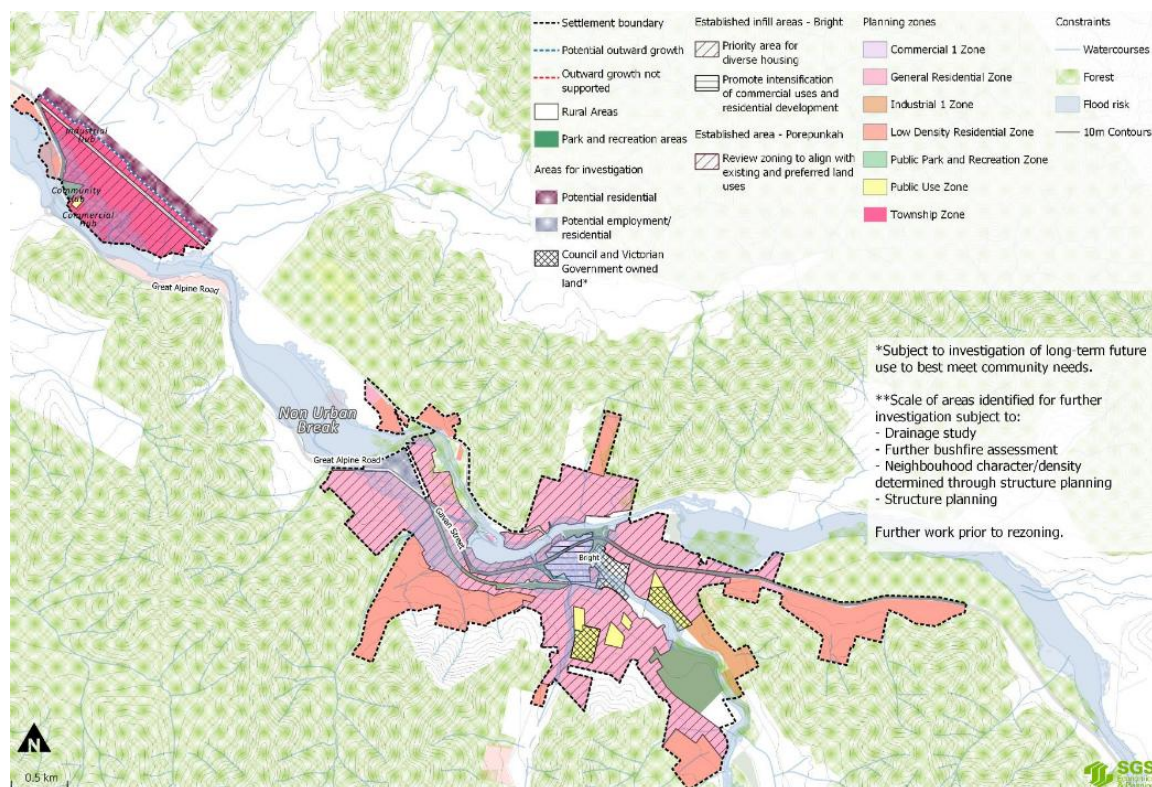


Figure 3.1: Bright & Porepunkah Framework Plan

In this regard, it is clear that increased development in Bright and Porepunkah will result in intensified use along Back Porepunkah Road, acting as a primary alternative route between the townships.

4 SAFE SYSTEM PRINCIPLES

Whilst this report has been prepared separately to conducting the SSA, context regarding the SSA and its framework has been provided for important context for the overall assessment and the Strategy.

4.1 Framework

The Safety System Philosophy underpins a paradigm shift in Victoria's strategic approach to road safety and the application of 'Austroads Guide to Road Safety':

"Virtually all of us have grown up with death and injury as a seemingly inevitable consequence of the operation of road networks...Whilst there has been a strong focus on vehicle design and the performance of the road users themselves, improvements in traffic planning, management and infrastructure design have also contributed significantly towards overall improvements in safety..."

...the shift represents a significant change in the way in which the road safety problem is perceived and therefore managed and a significant cultural shift is required before this approach becomes normalised practice. A Safe System forces everyone to look at road safety from a public health perspective in which injury is avoidable and responsibility lies with system planners, designers and operators in addition to the road users. The philosophy of the approach is grounded in the ethical imperative that no one should be killed or injured when using the road system...we must acknowledge that the way in which the road system has been designed and is operated may also contribute to crashes. A Safe System therefore is one in which roads are planned, designed and operated to be forgiving of human error so that severe casualty outcomes are unlikely to occur."

The Safe System is commonly divided into four core interrelated pillars – safer roads, safer speeds, safer vehicles and safer road users and is illustrated in Figure 4.1. Each pillar forms part of the 'Austroads Guide to Road Safety' in its own right and informs the way in which RSA's are completed.

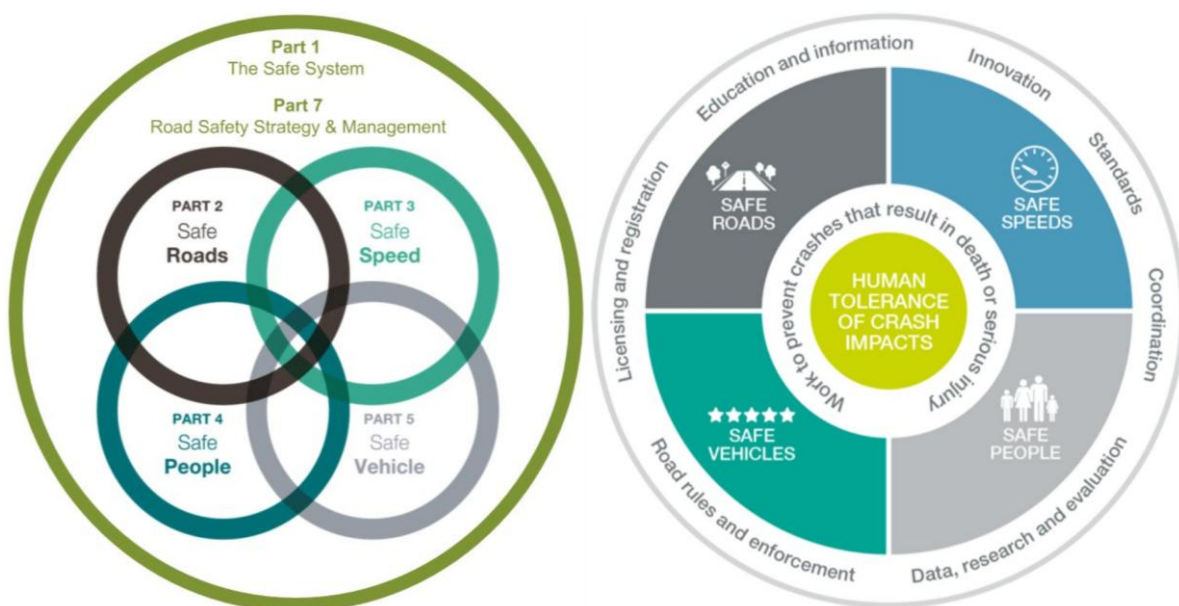


Figure 4.1: Extract: Portrayal of the Safe System (Austroads)

4.2 Safe System Assessment

SSA is a tool that has been developed to assess the extent to which recommendations align with Safe System principles and the objective to eliminate fatal and serious injuries. The process allows project options to be compared with a base case (i.e. existing conditions) and with each other. An SSA will identify areas where the risk of fatal and serious injury (FSI) crashes is high and identifies design changes which, if adopted, would improve alignment with the Safe System approach.

The methodology for conducting SSAs was developed by Austroads, with an SSA providing the following benefits:

- A way of determining how well a project proposal aligns with Safe System principles
- A method to compare project design options from a Safe System perspective
- Information on design and scope changes that will move a project proposal closer to the Safe System objective of eliminating the risk of fatalities and serious injuries
- A method to assist planners, designers and project managers to progress the Safe System approach from theory to practice
- A sound basis for the planning and design of road infrastructure

The Safe System is a road safety philosophy that requires roads to be designed and managed so that death and serious injury are avoidable. The basic principles are:

1. Humans are fallible and will inevitably make mistakes when driving, riding or walking.
2. Despite this, road trauma should not be accepted as inevitable. No one should be killed or seriously injured on our roads.
3. To prevent serious trauma, the road system must be forgiving, so that the forces of collisions do not exceed the limits that the human body can tolerate.

4.3 Safe System Pillars

Safer Roads	Relates to both the road itself and the roadside. This considers ways to design, operate and maintain the road network to reduce the chance of a crash occurring as well as the consequences when one does occur.
Safer Speeds	Relates to the speed at which vehicles are likely to travel on the road. Factors that influence operating speeds include posted speed limits, the level of compliance with the speed limit and physical constraints. Unsafe speeds can increase both likelihood and consequences of a crash.
Safer Vehicles¹	Relates to the safety features, including intelligent technologies that are incorporated into vehicles of different types, which contribute to crash avoidance and/or reducing the severity of crashes.
Safer Road Users	Relates to road user behaviour, driver/rider training and licensing, levels of compliance and personal safety equipment, particularly in the case of vulnerable road users such as cyclists and motorcyclists.

Additionally, 'Austroads Research Report AP-R509-16 Safe System Framework (AP-R509-16)' details the following framework for undertaking Safe System Assessments, which will be utilised to inform the Strategy:

1. Assess Objectives
2. Project Context
3. Safe System Matrix
4. Treatment Hierarchy

¹ Development of the Safety Strategy will not be able to influence the safety and design of vehicles on the road network.

4.4 Project Context

Back Porepukah Road is currently a two-lane local road with one lane in each direction. To define and understand the context of the project, 'Austroads' *Safe System Framework* provides a template with prompts which has been reproduced in Table 4.1.

Table 4.1: Project Context

PROMPTS	COMMENTS
What is the reason for the project? Is there specific crash type risk? Is it addressing specific issues such as poor speed limit compliance, road access, congestion, future traffic growth, freight movement, amenity concerns from the community, maintenance/asset renewal, etc.	Back Porepukah Road is utilised frequently by cyclists opting to utilise the road carriageway, primarily for training purposes. Back Porepukah Road is also known to have unsafe riding and driving surfaces and alignment.
What is the function of the road? Consider location, roadside land use, area type, speed limit, intersection type, presence of parking, public transport services and vehicle flows. What traffic features exist nearby (e.g. upstream and downstream)? What alternative routes exist?	Back Porepukah Road is a local collector road managed by Alpine Shire Council. It acts as an alternative route between Bright and Porepukah from Great Alpine Road. Alpine Shire's Land Development Strategy will guide additional development in the vicinity of Back Porepukah Road, increasing vehicle and cycling volumes. Additionally, cyclo-tourism is an area of investment and continued growth for the region. No formal parking areas are provided along its length. There are a number of informal, gravel intersecting roads and property access points.
What is the speed environment? What is the current speed limit? Has it changed recently? Is it similar other roads of this type? How does it compare to Safe System speeds? What is the acceptability of lowering the speed limit at this location?	Back Porepukah Road operates primarily as an 80 km/h road, however, has posted speed limits of 60 km/h adjacent Porepukah and 50 km/h adjacent Bright. 80 km/h is above the 10% survivable threshold for all crash types. Based on the road alignment, it would be acceptable to suggest lowering speed limits along the road length.
What road users are present? Consider the presence of elderly, school children and cyclists. Also note what facilities are available to vulnerable road users (e.g. signalised crossings, bicycle lanes, school zone speed limits, etc.)	During peak periods there are a number of cyclists riding along the road carriageway in both directions. The Murray to Mountains Trail runs parallel to the road carriageway for the majority of its length, with non-priority crossing points provided at three (3) locations south of the road.
What is the vehicle composition? Consider the presence of heavy vehicles (and what type), motorcyclists and other vehicles using the roadway.	Back Porepukah Road is not a nominated freight route; however it is understood that farming and logging vehicles up to a semi-trailer may utilise the road for industrial activities, noting that it does not form part of Victoria's Gazetted B-Double Network.

4.5 Safe System Matrix

In order to ensure that Safe System elements are considered, or to measure how well the study area aligns with Safe System principles, a Safe System matrix is produced. The purpose of the matrix is to assess different major crash types (those identified as the predominant contributors to fatal and serious crash outcomes) against the following factors:

- Exposure to the crash risk
- The likelihood of the crash occurring
- The severity of the crash should it occur

Exposure, likelihood and severity are defined as follows:

Road User Exposure	Refers to which road users, in what numbers and for how long are using the road and are thus exposed to a potential crash. The measures of exposure include: AADT, side-road traffic volumes, number of motorcycles, cyclists and pedestrians crossing or walking along the road, length of road, area and length of time.
Crash Likelihood	Groups of factors affecting the probability of a crash occurring. They can be elements which moderate opportunity for conflict (e.g. number of conflict points, offset to roadside hazards, separation between opposing traffic). They can also include elements of road user behaviour and/or road environment. Typically, these are the elements which moderate road user error rates. This includes issues such as level of intersection control (e.g. priority/signals/movement ban), speed, sight distance, geometric alignment, driver guidance and warning and maintenance.
Crash Severity	Groups of factors affecting the probability of severe injury outcomes should a crash occur. Typically, these factors are associated with the amount of kinetic energy and its transfer in the crash, e.g. impact speeds and angles, severity of roadside hazards, etc.

Additional Safe System components include:

PILLAR	PROMPTS
Road User	Are road users likely to be alert and compliant? Are there factors that might influence this? What are the expected compliance and enforcement levels (alcohol/drugs, speed, road rules, and driving hours)? What is the likelihood of driver fatigue? Can enforcement of these issues be conducted safely? Are there special road uses (e.g. entertainment precincts, elderly, children, on-road activities, motorcyclist route), distraction by environmental factors (e.g. commerce, tourism), or risk-taking behaviours?
Vehicle	What level of alignment is there with the ideal of safer vehicles? Are there factors which might attract large numbers of unsafe vehicles? Is the percentage of heavy vehicles too high for the proposed/existing road design? Is this route used by recreational motorcyclists? Are there enforcement resources in the area to detect non-roadworthy, overloaded or unregistered vehicles and thus remove them from the network? Can enforcement of these issues be conducted safely? Has vehicle breakdown been catered for?
Post-Crash Care	Are there issues that might influence safe and efficient post-crash care in the event of a severe injury (e.g. congestion, access stopping space)? Do emergency and medical services operate as efficiently and rapidly as possible? Are other road users and emergency response teams protected during a crash event? Are drivers provided the correct information to address travelling speeds on the approach and adjacent to the incident? Is there reliable information available via radio, VMS etc. Is there provision for e-safety (i.e. safety systems based on modern information and communication technologies, Cooperative Intelligent Transport Systems (C-ITS))?

5 SITE INSPECTION FINDINGS & DESIGN ASSESSMENT

As detailed in Section 1.3, WGA completed a site inspection of Back Porepunkah Road during both daylight and nighttime conditions on Monday 20 January 2025.

A number of key issues and findings were identified during the site inspection and have been detailed in line with the three (3) Safe System Pillars of safer roads, safer speeds and safer road users.

5.1 Safer Roads

- The quality of pavement and pavement marking was observed to be in reasonably good condition. Some intersections do not provide the requisite pavement marking treatments and most side-road markings are faded or illegible.
- No road shoulders are present along the entire length of road, with typically coarse gravel or grass located immediately adjacent the road carriageway (refer to Figure 5.3):
 - Where some road shoulder is present, pavement is of poor condition with vertical edges to verge.
 - At a number of locations adjacent the road pavement there are patches of gravel or dirt with tyre patterns across them, suggesting that portions off the road reserve are being utilised for consistent turning movements that the road pavement cannot accommodate. Once such example is at the intersection of Roberts Creek Road, where it is clear that larger vehicles straddle the verge to conduct turning movements (refer to Figure 5.4)
 - A review of aerial imagery shows that the pavement marked traffic lanes are typically 3m or less in width on straights.
- Back Porepunkah Road is lined with trees which are generally offset at an appropriate distance from the road pavement edge, however there are a number of significant trees and shrubbery that encroach on what should be clear zones in case of vehicular run-off (refer to Figure 5.5):
 - Similarly, the Murray to Mountains Trail also has areas which are subject to foliage overhang and vegetation creep onto and across the paved path.
- Murray to Mountains Trail is difficult to identify without the presence of any users travelling on the path:
 - Trail crossing points at Bright Golf Club, Karnu Court and Lowen Drive do not provide priority for trail users, resulting in 'End Shared Path' signs and devices being required (refer to Figure 5.6).
 - Specifically, the crossing at Karnu Court does not have the Trail path directly aligned and has sightlines to the south obstructed by planting, trees and leaves.
- The presence of guard rail is limited to the following locations:
 - Roberts Creek road crossing (both sides of road).
 - Adjacent Ovens River approx. 300m east of Gledhills Lane (south side of road).
 - Adjacent Ovens River approx. 100m north-west of Showers Avenue (south side of road).

Based on the topography, landscaping and road alignment of certain locations, additional safety barriers should be considered for the length of road (refer to Figure 5.5 and Figure 5.7).
- A basic turning lane treatment is only provided at Lowen Drive for left-turn vehicles. As such, at other intersections and access points to places of interest, vehicles are having to turn off the road from the through lane.
- The section of Back Porepunkah Road running immediately adjacent Ovens River runs next to a cliffside with unstable rock formations, however 'Fallen Rocks' warning signage is only provided for northbound traffic. Additionally, there is no netting provided to catch falling rocks, and thus the road is considered unprotected from such an occurrence.

- At night, the majority of drivers use high beams to increase sight distance and to increase safety (all drivers observed to use the road at night used high beams):
 - There are five (5) light poles located within the study area:
 - 1x south of the Station Street & Service Street roundabout
 - 1x at the Lowen Drive intersection
 - 3x west of the Star Road intersection
 - No lights are provided for the Murray to Mountains Trail, including at crossing points.
 - Hazards located close to the roadside are unable to be seen until a vehicle is positioned in close proximity of hazards, unless high beams are utilised (refer to Figure 5.8).
- Flexible guideposts are installed sporadically along the road edges. In particular on road curves, it is difficult to predict the alignment of the road at night with the limited amount of guideposts present. Further, there are no retroreflective raised pavement markers (RRPMs) installed within the road pavement.
- While advisory speeds are provided at some curves in the road, they are not supplemented with curve alignment markers (which may not be provided as they may not meet the technical requirements), which when not present may lead to some drivers (particularly those familiar with rural roads) displaying a false sense of security. Regardless, no curve alignment markers (CAMs) are provided along the full length of road which has numerous curves.

5.2 Safer Speeds

- The southern portion of Back Porepunkah Road past Lowen Drive could be considered uncomfortable to drive along at the advisory speed limit of 70km/h:
 - Repeater 80km/h signs displayed directly after the advisory speed sign when travelling northbound, which may encourage a higher speed than the advisory speed.
 - No advisory speed sign is provided for northbound travelling vehicles until after the first two major curves in the road after the posted speed limit increases to 80km/h (adjacent Ovens River). These curves were considered uncomfortable to drive along at the advisory speed limit of 70 km/h, let alone the posted speed limit of 80km/h (noting provision of an advisory speed sign associated with a curve may not meet technical requirements).
- The posted speed limit of 60km/h leading into Porepunkah was potentially considered to not provide an appropriate enough distance to the roundabout. It is however expected that vehicles would require to slow down to 60km/h due to approaching the intersection regardless of the speed limit sign (refer to Figure 5.9).
- Prior to the 'S' curve adjacent the Aroma Lake Track the advisory speed limit is 75km/h, which is provided in both directions. With curve radii approximately measured at 200m and 160m, the advisory speed limit being 5km/h slower than the actual posted speed limit (80km/h) at these horizontal curves.

5.3 Safer Road Users

- Cyclists are forced to ride within the traffic lanes at all times due to pavement widths (refer to Figure 5.10).
 - This would require a vehicle to overtake a cyclist at speed on a road carriageway that is typically 6m in width, leaving negligible room for error when overtaking
- No warning signage relating to the use of the road by cyclists is present along the length of road. Drivers would therefore only be alerted to the presence of a cyclists upon approach from either direction.
- Besides the Murray to Mountains Trail, the only portion of footpath provided exists from Showers Avenue to Star Road on the southern roadside. For the remaining length of Back Porepunkah Road, the Murray to Mountains Trail is the only infrastructure provided for pedestrians and cyclists.

- The road exhibits a variety of single and double unbroken and broken dividing pavement marking lines along the corridor, providing clear and appropriate instructions to drivers when and when not to overtake:
 - It is noted that vehicles are legally allowed to overtake cyclists across double unbroken dividing lines when there is a clear view ahead and it is safe to do so
 - No additional spacing is provided between pavement marking lines, including traffic edge lines adjacent the edge of pavement (no shoulder provided)

5.4 Desirable Road Design

'*Austroads Guide to Road Design (AGRD) Part 3: Intersections, Interchanges & Crossings*' details the desirable design of single carriageway rural road widths such as Back Porepukah Road. Broadly, the desirable land width is 3.5m, allowing for passing and overtaking without either vehicle having to move towards the outer edge of the traffic lane.

"The lane width and the road surface condition have a substantial influence on the safety and comfort of users of the roadway. In rural applications the additional costs that will be incurred in providing wider lanes will be partially offset by the reduction in long-term shoulder maintenance costs" – Austroads Guide to Road Design Part 3: Geometric Design."

Table 5.1 provides an extract from 'AGRD Part 3' that details the desirable cross-section dimensions of single carriageway rural roads based on the annual average daily traffic (AADT) volume. AGRD notes that where "significant" numbers of cyclists use the roadway, consideration should be given to fully sealing the shoulders, where it is suggested using a maximum size 10mm seal within a 20km radius of towns (i.e. representing the full length of Back Porepukah Road).

Table 5.1: Extract: Single Carriageway Rural Road Widths (m) ('AGRD Part 3')

ELEMENT	DESIGN AADT				
	1 – 150	150 – 500	500 – 1,000	1,000 – 3,000	> 3,000
Traffic Lanes	3.7 (1 x 3.7)	6.2 (2 x 3.1)	6.2 – 7.0 (2 x 3.1/3.5)	7.0 (2 x 3.5)	7.0 (2 x 3.5)
Total Shoulder	2.5	1.5	1.5	2.0	2.5
Minimum Sealed Shoulder	0	0.5	0.5	1.0	1.5
Total Carriageway	8.7	9.2	9.2 – 10.0	11.0	12.0

In this regard, Back Porepukah Road should be upgraded in line with the 1,000 – 3,000 AADT range, highlighting that its current design is undesirable for its intended purpose and future use.

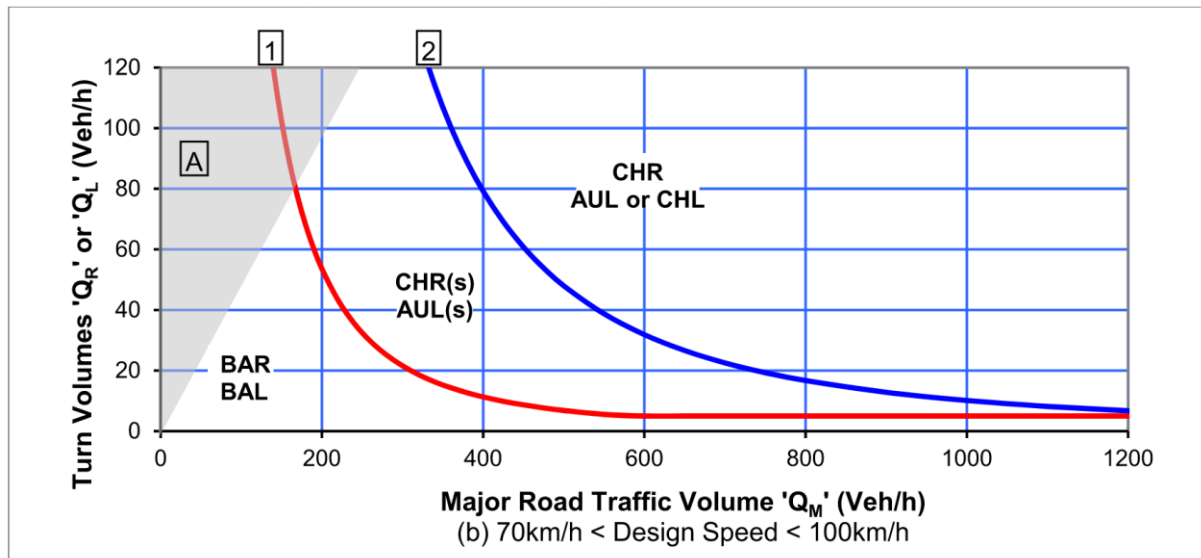
5.5 Turning Lane Warrants

'*Austroads Guide to Traffic Management (AGTM) Part 6: Intersections, Interchanges & Crossings Management*' details warrants that apply to major roads that may require turning lane treatments for side roads or access points, which include either basic, auxiliary or channelised turning lanes.

There are three (3) factors that apply to turning lane warrants:

- Design speed of the major road
- Peak hour traffic volume of the major road
- Turning volume into the minor road (left and or right turn volumes)

As the design speed for Back Porepukah Road is 80 km/h, the turning warrant diagram provided in Figure 5.1 as an extract from Figure 3.25 of 'AGTM Part 6' is applicable.



NOTE: Q_M equates to the total number of conflicting traffic movements.

Figure 5.1: Extract: Warrants for Turn Treatments on Major Roads at Unsignalised Intersections (Design Speed 70 km/h – 100 km/h)

Notwithstanding the volumes along Back Porepunkah Road, the provision of Basic Right Turn (BAR) and Basic Left Turn (BAL) treatments are the absolute minimum provision. The design of these rural intersection types are shown in Figure 5.2 as per *AGTM Part 6*.

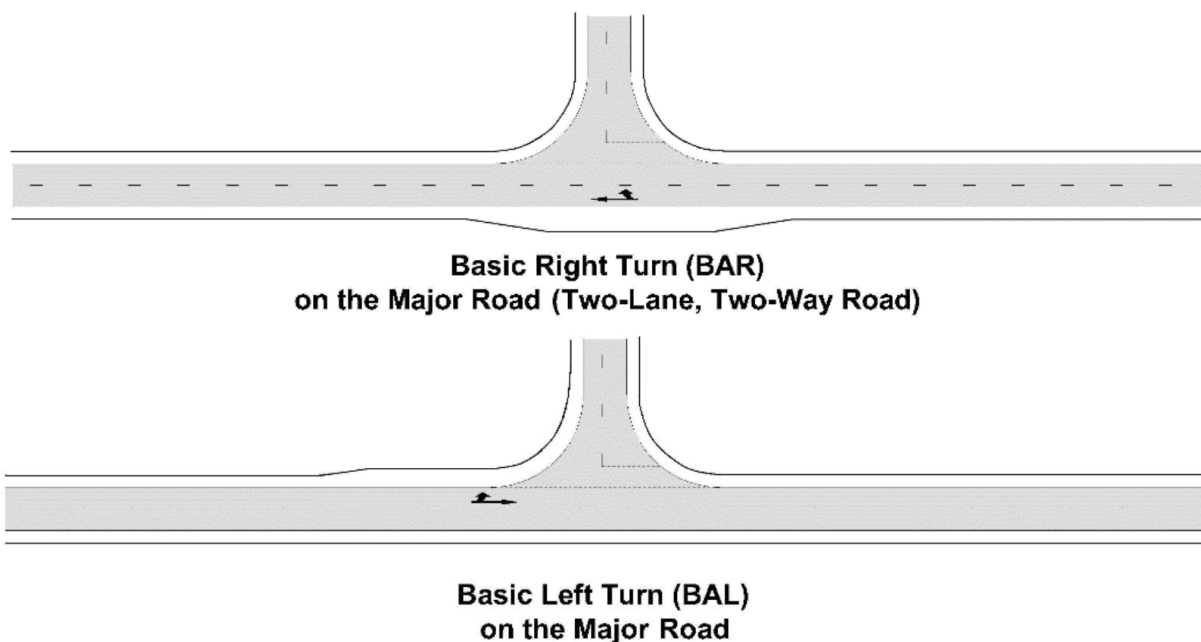


Figure 5.2: Extract: Rural Basic (BA) Turn Treatments (Austroads)

Average peak hour volumes are surveyed at approximately 250 two-way vehicle movements as detailed in Section 2.3.3. With consideration to the volumes expected from side roads and driveway accesses, it is not expected that any current intersections warrant upgrading to short Channelised Right Turns (CHR(s)) or short Auxiliary Left Turns (AUL(s)).

However, with the intensification of development along Back Porepunkah Road, frequent assessment of turning volumes and through volumes along Back Porepunkah Road should be conducted to determine if turning lane warrant thresholds are exceeded.



Figure 5.3: Back Porepukah Road – Typical Road Pavement Edge



Figure 5.4: Back Porepukah Road – Roberts Creek Road Intersection



Figure 5.5: Back Porepukah Road – Significant Tree adjacent Road Carriageway



Figure 5.6: Back Porepukah Road – Typical Crossing Design



Figure 5.7: Back Porepukah Road – Level Difference on Curve in Road



Figure 5.8: Back Porepukah Road – Typical Nighttime Light Levels



Figure 5.9: Back Porepukah Road – At 60 km/h Speed Limit Zone facing Porepukah



Figure 5.10: Back Porepukah Road – Typical Position of Cyclist on Road

6 ACTIONS

The recommendations made within this section of the Strategy are specific to the safety of Back Porepukah Road and its road users. Broader strategies around safety, marketing, communication and education should follow the recommendations made within the Cycling Safety Strategy.

The objective of each recommendation is to align the road corridor with the Safe System principles and reduce the risk of driver, cyclist and other vulnerable road user conflicts by minimising road user exposure, crash likelihood and crash severity.

Safer Roads recommendations relate to physical infrastructure and objects which will either force road users to use the road in a certain way or act as protecting or separating from physical constraints or hazards.

Safer Speeds recommendations relate to controls impacting the legal and advisory speeds at which drivers should be driving along the road corridor.

Safer Road Users recommendations relate to items that drivers aren't physically forced to abide by or don't necessarily protect from hazards, however, enhance driver awareness and prompt safe use of the road.

Where applicable, photo references have been provided in Section 6.3 in line with recommendations.

Concept plans have been prepared for items 7b, 7d and 7e to assist in illustrating a number of recommendations made, provided in Appendix A, subject to further design development.

6.1 Recommendations

6.1.1 Safer Roads

1. Investigate and provide minimum 1.5 m sealed shoulders along the full length of road on both sides of the road carriageway and a desirable minimum of 0.5 m in constrained locations in accordance with *Table 4.7 of 'AGRD Part 3: Geometric Design'*. In constrained areas, consideration of a reduced (or no provision) may be necessary and appropriate based on engineering judgement.

Where appropriate, investigate and consider providing BAR and BAL treatments at all local roads and driveway accesses (provisions subject to further assessments).

Reference should be made to the specific sealing design and methodology detailed in the Cycling Safety Strategy.

2. Investigate and consider installing safety barriers in accordance with '*RDN 06-04 – Accepted Safety Barrier Products*' and '*RDN 06-15 – Continuous Safety Barrier for High Speed Roads*' along Back Porepukah Road, noting the following have been initially identified as potential locations:
 - a. At the significant tree located proximate to the road carriageway approximately 50m south-east of the Roberts Creek Road intersection (refer to Figure 5.5)
 - b. Along the tree cutting adjacent 441 Back Porepukah Road
 - c. On the southern verge of the road curve located approximately 100m north-west of Aroma Lake Track where there is a steep drop-off located between the road carriageway edge and the Murray to Mountains trail (refer to Figure 5.7)
 - d. On the southern verge of the road immediately north-west of Lowen Drive where the Murray to Mountains Trail comes within approximately 2m of the road carriageway edge
 - e. Extend the existing guard rail on the southern verge immediately adjacent Ovens River east of Lowen Drive and provide on the northern verge where there are dense forested areas and drop-offs from the road carriageway
 - f. On both verges of the road located approximately 60m northwest of Showers Avenue where an open drainage channel (refer to Figure 6.4)

3. Provide sealed pavement at all local road thresholds to Back Porepukah Road at a minimum setback of 10 m from the edge of paved shoulder.
4. Investigate and provide appropriate lighting at all crossings and intersections with the Murray to Mountains Trail in accordance with '*Australian Standard (AS) 1158: Lighting for Roads & Public Spaces*', with the following locations initially identified as potential locations:
 - a. Roberts Creek Road Intersection
 - b. Golf Course Entrance
 - c. Karnu Court
5. Investigate and install tangible guideposts on both sides of the roadway in line with Section 4.2.4 of '*AS1742.2: Manual of Uniform Traffic Control Devices – Traffic Control Devices for General Use*', where appropriate.
6. Investigate and install RRPMS in line with Section 5.9 of '*AS 1742.2*'.
7. Investigate, removal, relocation or protection of trees that are located within close proximity of the traffic lane based on AustRoads Guidelines and relevant supplements. Trees located within 2 m of the traffic lane are recommended to be reviewed in the first instance.
8. Investigate and provide Raised Safety Platforms in line with '*Road Design Note (RDN) 03-07 – Raised Safety Platforms (RSP)*' at the Murray to Mountains Trail crossing points to give priority to Murray to Mountains Trail users and provide a continuous path where cyclists do not require dismounting. These would be provided at the following locations:
 - a. Bright Golf Club, including raising the trail approaches so that a raised platform can be provided
 - b. Karnu Court, including realigning the trail to maximise sight lines and provide a straight continuous path across the road
 - c. At Lowen Drive, including raising the trail approaches so that a raised platform can be provided
9. Where the road verge exhibits frequent use by vehicles, provide a paved area in line with the intended operational requirements, including the following locations:
 - a. Vehicle turn-out and turn-around located adjacent the south-east of the Roberts Creek Bridge (refer to Figure 6.5)
 - b. Vehicle turn-out and turn-around located north-east of Showers Avenue (refer to Figure 6.6)
10. Investigate and upgrade if required, a number of intersections that would benefit from having separate turning lane treatments, extended pavement areas for vehicle manoeuvring or additional controls, including:
 - a. Intersection at Roberts Creek Road, with allowances for heavy vehicle turning movements and turning lanes
 - b. Intersection at Bright Golf Club access, allowing left-turn treatments
 - c. Intersection at Aroma Lake Track, allowing left-turn treatments
 - d. Intersection at Karnu Court, allowing left-turn treatments
 - e. Intersection at Lowen Drive & Tom Briggs Road, facilitating a number of turning movements across a staggered intersection
11. Investigate and provide where appropriate netting to prevent any rocks, particularly larger rocks, from falling onto the road carriageway and creating debris, or falling directly onto passing vehicles and cyclists.
12. Investigate the preferred location for a new or upgraded pedestrian crossing near the Back Porepukah Road / Station Street / Service Street roundabout to link the Murray to Mountains Rail Trail to Station Street.
13. Investigate the use of Virtual Wildlife Fencing, particularly at the Canyon Corner outside of Bright.
14. Investigate and identify the preferred alignment for a footpath or shared use path along Back Porepukah Road between Showers Avenue and Lowen Drive.

6.1.2 Safer Speeds

The following recommendations have been illustrated on maps provided in Appendix B:

15. Review advisory speeds on all speed advisory signs and consider a reduction to 60km/h or other as appropriate.
16. Review the advisory speed sign for northbound vehicles between Showers Avenue and Lowen Drive.
17. Lower the speed limit from Lowen Drive to the 50km/h posted speed limit section in the east to 60km/h (i.e. to include Canyon Corner), negating the requirement to change or provide advisory speed limit signage and generally lowering speeds to a more suitable level.
18. Consider extending the existing 60km/h speed limit from Porepukah to north of Roberts Creek Road (where existing 80km/h signs are located).
19. Consider removal or relocation of the 80km/h signs facing southbound traffic that are placed after the advisory speed limit sign approximately 600m east of Lowen Drive.
20. Consider providing gateway treatments at either end of Back Porepukah Road similar to what is currently utilised throughout the Shire as shown in Figure 6.1.



Figure 6.1: Example of Bright Gateway Treatment

6.1.3 Safer Road Users

21. Ensure road pavement and pavement markings are maintained in accordance with the '*Alpine Shire Road Management Plan*'. Immediate signage and pavement marking updates should be completed for all sign-controlled side roads and intersections (refer to Figure 6.7).
22. Existing signage and pavement markings on the road are generally considered adequate, however, signage and pavement marking upgrades and realignment could be completed in line with the upgrade of the corridor. Until such time that a road shoulder is constructed:
 - Ensure that pavement marking is regularly updated and that all intersections provide the require control treatment signage and pavement marking to ensure road users are aware of priorities and legal requirements
 - Extend double unbroken pavement marking along the entire extent of existing guardrail between Lowen Drive and Showers Avenue (where not already present), providing gaps for access in accordance with *Section 5.3* of '*AS 1742.2*'
23. Provide cyclist training route signs at either end of Back Porepukah Road in accordance with DTP requirements. Examples of current cyclist advisory and warning signage in use around Victoria recommended for implementation are provided in Figure 6.2.



Figure 6.2: Examples of Cyclist Advisory & Warning Signage

24. Introduce updated cyclist advisory signs on Back Porepukah Road, including signs that remind motorists of their obligation to leave a safe distance when overtaking cyclists.
25. Introduce cyclist educational signage at the entrance to the rail trail at Porepukah to remind users of good trail etiquette (perhaps at the new flower bridge).
26. Where road shoulders of less than 2m in width are provided, install audio-tactile line marking (ATLM) along the traffic lane edge line in line with *Section 5.3.10* of 'AS 1742.2'.
27. Investigate and install curve alignment markers (CAMs) if required in line with *Section 4.3.6* of 'AS 1742.2' on curves in the road that are associated with advisory speed signs.
28. Consider 'Fallen Rocks' signage for southbound vehicles prior to the cliffside between Lowen Drive and Showers Avenue.
29. Where driveways are provided across the Trail, consider a coloured pavement treatment, linemarking or vibralline, to alert both drivers and trail users to the presence of changed conditions (refer to Figure 6.8).

6.2 Implementation Plan

An Implementation Plan has been developed in Table 6.1 to identify all items that contribute to each Safe System principle along with a priority and recommended timeframe for implementation depending on the importance of the recommendation.

Each recommendation has been developed in accordance with Safe Systems principles with the overall objective of increasing safety for all uses using the corridor. It is noted that these recommendations may require further assessment and design development.

Further investigation and design development may indicate that amended or altered mitigation treatments are more appropriate or achievable given engineering or site constraints. In any such case, an alternate mitigation treatment should be considered using the Safe System principles as well as engineering judgement.

Table 6.1: Implementation Plan

ITEM	RECOMMENDATION	PRIORITY
Safer Roads		
1	Investigate and provide minimum 1.5m sealed shoulders along the full length of road on both sides of the road carriageway and a desirable minimum of 0.5m in constrained locations in accordance with <i>Table 4.7 of 'AGRD Part 3: Geometric Design'</i>. In constrained areas, consideration of a reduced (or no provision) may be necessary and appropriate based on engineering judgement. Where appropriate, investigate and consider providing BAR and BAL treatments at all local roads and driveway accesses (provisions subject to further assessments). Reference should be made to the specific sealing design and methodology detailed in the Cycling Safety Strategy.	High 2025-26
2	Investigate and consider installing safety barriers in accordance with '<i>RDN 06-04 – Accepted Safety Barrier Products</i>' and '<i>RDN 06-15 – Continuous Safety Barrier for High Speed Roads</i>' along Back Porepukah Road, noting the following have been initially identified as potential locations: a. At the significant tree located proximate to the road carriageway approximately 50m south-east of the Roberts Creek Road intersection. b. Along the tree cutting adjacent 441 Back Porepukah Road c. On the southern verge of the road curve located approximately 100m north-west of Aroma Lake Track where there is a steep drop-off located between the road carriageway edge and the Murray to Mountains trail. d. On the southern verge of the road immediately north-west of Lowen Drive where the Murray to Mountains Trail comes within approximately 2m of the road carriageway edge e. Extend the existing guard rail on the southern verge immediately adjacent Ovens River east of Lowen Drive and provide on the northern verge where there are dense forested areas and drop-offs from the road carriageway f. On both verges of the road located approximately 60m northwest of Showers Avenue where an open drainage channel NOTE: Barrier locations should be considered in conjunction with any shoulder widening/future provisions.	
3	Provide sealed pavement at all local road thresholds to Back Porepukah Road at a minimum setback of 10m from the edge of paved shoulder.	
4	Investigate and provide appropriate lighting at all crossings and intersections with the Murray to Mountains Trail in accordance with '<i>Australian Standard (AS) 1158: Lighting for Roads & Public Spaces</i>', with the following locations initially identified as potential locations: a. Roberts Creek Road Intersection b. Golf Course Entrance	

ITEM	RECOMMENDATION	PRIORITY
	c. Karnu Court	
5	Investigate and install tangible guideposts on both sides of the roadway in line with <i>Section 4.2.4</i> of ‘AS1742.2: Manual of Uniform Traffic Control Devices – Traffic Control Devices for General Use’, where appropriate.	
6	Investigate and install RRPMS in line with <i>Section 5.9</i> of ‘AS 1742.2’	
7	Investigate, removal, relocation or protection of trees that are located within close proximity of the traffic lane based on AustRoads Guidelines and relevant supplements. Trees located within 2m of the traffic lane are recommended to be reviewed in the first instance.	Medium 2027-28
8	Investigate and provide Raised Safety Platforms in line with ‘ <i>Road Design Note (RDN) 03-07 – Raised Safety Platforms (RSP)</i> ’ at the Murray to Mountains Trail crossing points to give priority to Murray to Mountains Trail users and provide a continuous path where cyclists do not require dismounting. These would be provided at the following locations: a. Bright Golf Club, including raising the trail approaches so that a raised platform can be provided b. Karnu Court, including realigning the trail to maximise sight lines and provide a straight continuous path across the road c. At Lowen Drive, including raising the trail approaches so that a raised platform can be provided	
9	Where the road verge exhibits frequent use by vehicles, provide a paved area in line with the intended operational requirements, including the following locations: a. Vehicle turn-out and turn-around located adjacent the south-east of the Roberts Creek Bridge b. Vehicle turn-out and turn-around located north-east of Showers Avenue	
10	Investigate and upgrade if required, a number of intersections that would benefit from having separate turning lane treatments, extended pavement areas for vehicle manoeuvring or additional controls, including: a. Intersection at Roberts Creek Road, with allowances for heavy vehicle turning movements and turning lanes b. Intersection at Bright Golf Club access, allowing left-turn treatments c. Intersection at Aroma Lake Track, allowing left-turn treatments d. Intersection at Karnu Court, allowing left-turn treatments e. Intersection at Lowen Drive & Tom Briggs Road, facilitating a number of turning movements across a staggered intersection	
11	Investigate and provide where appropriate netting to prevent any rocks, particularly larger rocks, from falling onto the road carriageway and creating debris, or falling directly onto passing vehicles and cyclists.	Low 2029 and beyond
12	Investigate the preferred location for a new or upgraded pedestrian crossing near the Back Porepukah Road / Station Street / Service Street roundabout to link the Murry to Mountains Rail Trail to Station Street.	
13	Investigate the use of Virtual Wildlife Fencing, particularly at the Canyon Corner outside of Bright.	
14	Investigate and identify the preferred alignment for a footpath or shared use path along Back Porepukah Road between Showers Avenue and Lowen Drive.	
Safer Speeds		
15	Review advisory speeds on all speed advisory signs and consider a reduction to 60 km/h or other as appropriate.	High

ITEM	RECOMMENDATION	PRIORITY
16	Review the advisory speed sign for northbound vehicles between Showers Avenue and Lowen Drive.	2025-26
17	Lower the speed limit from Lowen Drive to the 50 km/h posted limit section in the east to 60 km/h (i.e. to include Canyon Corner), negating the requirement to change or provide advisory speed limit signage and generally lowering speeds to a more suitable level.	
18	Consider extending the existing 60 km/h speed limit from Porepukah to north of Robers Creek Road (where existing 50 km/h signs are located).	
19	Consider removal of the 80 km/h signs facing southbound traffic that are placed after the advisory speed limit sign approximately 600m east of Lowen Drive.	High 2025-26
20	Consider providing gateway treatments at either end of Back Porepukah Road similar to what is currently utilised throughout the Shire.	Medium 2027-28
Safer Road Users		
21	Ensure road pavement and pavement markings are maintained in accordance with the <i>'Alpine Shire Road Management Plan'</i> . Immediate signage and pavement marking updates should be completed for all sign-controlled side roads and intersections.	High 2025-26
22	Existing signage and pavement markings on the road are generally considered adequate, however, signage and pavement marking upgrades and realignment could be completed in line with the upgrade of the corridor. Until such time that a road shoulder is constructed: • Ensure that pavement marking is regularly updated and that all intersections provide the require control treatment signage and pavement marking to ensure road users are aware of priorities and legal requirements • Extend double unbroken pavement marking along the entire extent of existing guardrail between Lowen Drive and Showers Avenue (where not already present), providing gaps for access in accordance with <i>Section 5.3 of 'AS 1742.2'</i>	
23	Provide cyclist training route signs at either end of Back Porepukah Road in accordance with DTP requirements.	
24	Introduce updated cyclist advisory signs on Back Porepukah Road, including signs that remind motorists of their obligation to leave a safe distance when overtaking cyclists.	Medium 2027-28
25	Introduce cyclists' educational signage at the entrance to the rail trail at Porepukah to remind uses of good trail etiquette (perhaps at the new flower bridge).	
26	Where road shoulders of less than 2m in width are provided, install audio-tactile line marking (ATLM) along the traffic lane edge line in line with <i>Section 5.3.10 of 'AS 1742.2'</i> .	
27	Investigate and install curve alignment markers (CAMs) if required, in line with <i>Section 4.3.6 of 'AS 1742.2'</i> on curves in the road that are associated with advisory speed signs.	
28	Consider 'Fallen Rocks' signage for southbound vehicles prior to the cliffside between Lowen Drive and Showers Avenue.	Low 2029 and beyond
29	Where driveways are provided across the Trail, consider a coloured pavement treatment, linemarking or vibraline, to alert both drivers and trail users to the presence of changed conditions.	

It is noted that each recommendation may be subject to or require further design development and external funding.

Where applicable, multiple recommendations can be completed in conjunction with each other and are subject to the order of implementation.

6.3 Recommendation Photo References



Figure 6.3: Recommendation 3b – Realignment of Karnu Court Trail Crossing



Figure 6.4: Recommendation 4e – Open Drainage Channel



Figure 6.5: Recommendation 5a – Informal Turn-Out & Turn-Around Area (Roberts Creek Bridge)



Figure 6.6: Recommendation 5b – Informal Turn-Out & Turn-Around Area (Ovens River Drainage Channel)



Figure 6.7: Recommendation 18 – Typical Pavement Marking Deterioration at Local Road Intersection

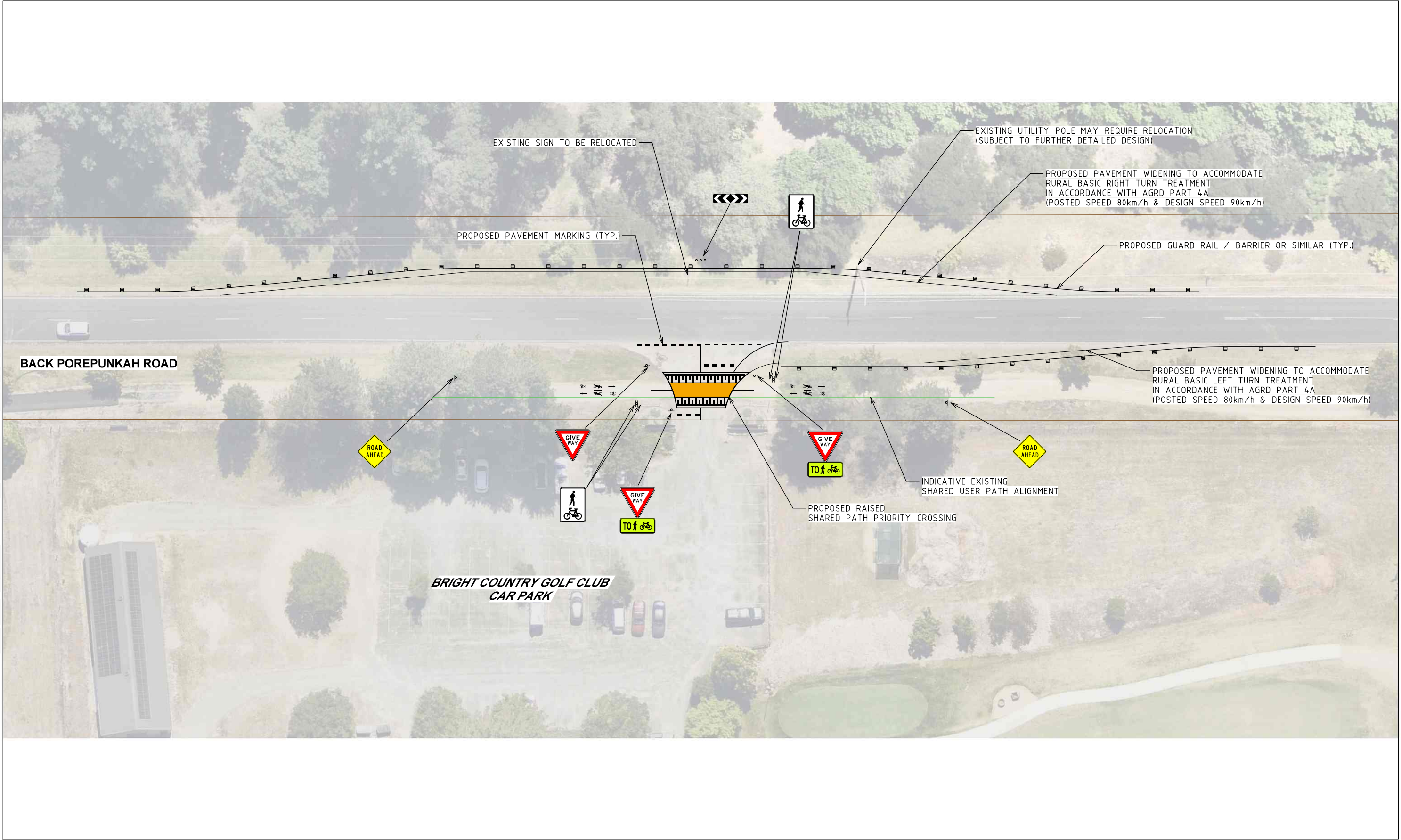


Figure 6.8: Recommendation 22 – Typical Property Access & Murray to Mountains Trail Intersection

APPENDIX A

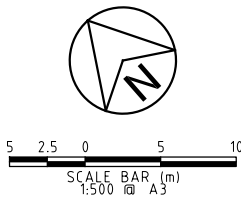
CONCEPT PLANS





**CONCEPT PLAN
FOR DISCUSSION PURPOSES ONLY**

DISCLAIMER:
PLEASE NOTE THIS WGA DRAWING HAS BEEN PREPARED USING NEARMAP AERIAL PHOTOGRAPHY. WGA CAN NOT ENSURE THAT THE INFORMATION SHOWN IS ACCURATE AND ENTITIES USING THESE DRAWINGS ACCEPT ALL LIABILITY IN THE USE OF THIS INFORMATION. WGA WILL NOT ACCEPT ANY LIABILITY FOR INACCURACIES IN THE INFORMATION PROVIDED. THIS DRAWING MUST NOT BE USED FOR SET OUT PURPOSES UNDER ANY CIRCUMSTANCES.



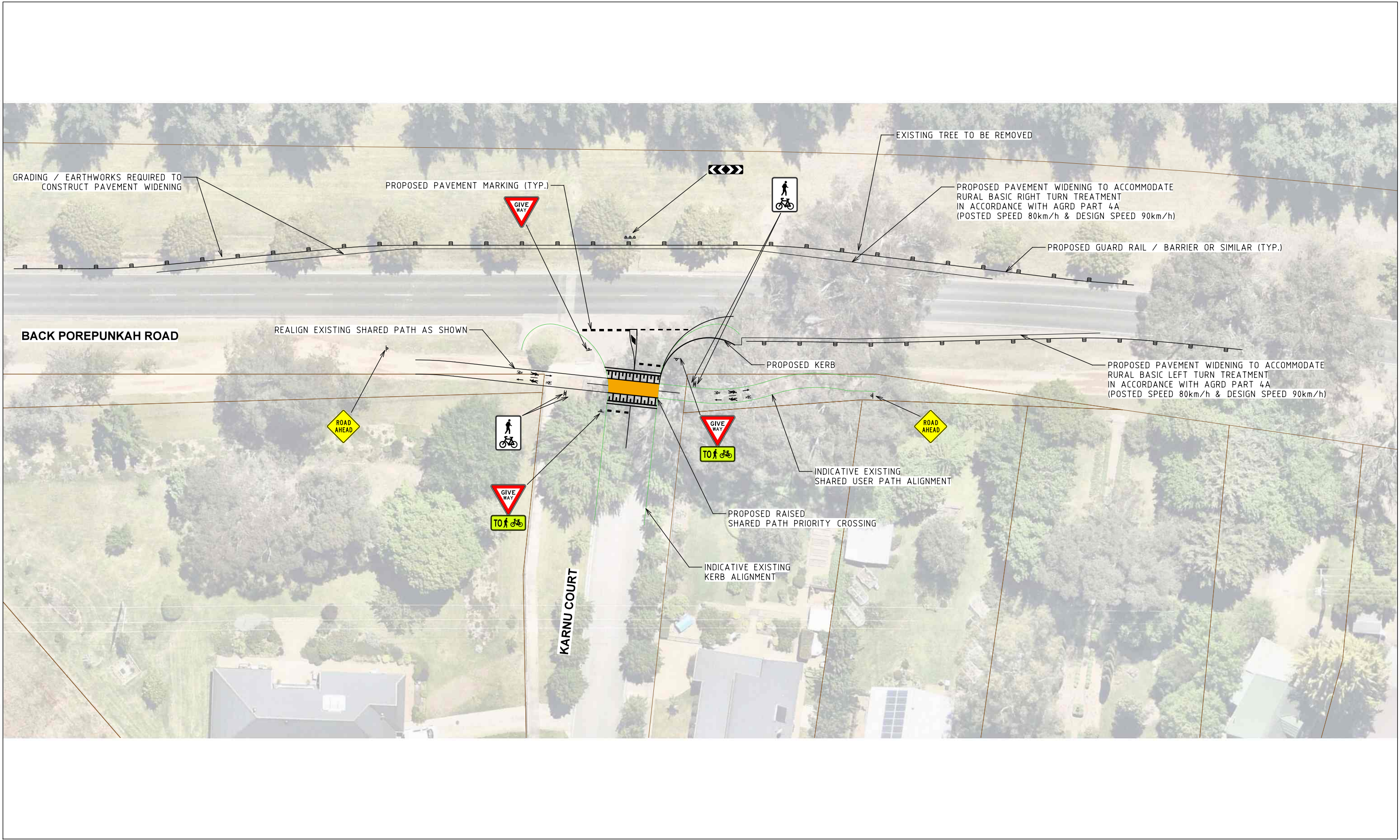
INFORMATION ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT	ENG.	CHKD
A	18.02.2025	ISSUED FOR INFORMATION	W.O	W.O	J.A



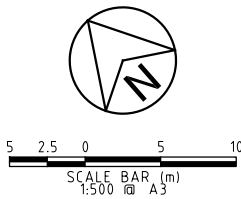
BACK POREPUNKAH ROAD SAFETY STRATEGY
ALPINE SHIRE COUNCIL
BRIGHT GOLF CLUB ACCESS
CONCEPT LAYOUT PLAN

DOCUMENT NUMBER			Rev.
Design	Drawn	Job Number	Sheet No.
W.O	W.O	WGA242886-DR-TT-1001	A



**CONCEPT PLAN
FOR DISCUSSION PURPOSES ONLY**

DISCLAIMER:
PLEASE NOTE THIS WGA DRAWING HAS BEEN PREPARED USING NEARMAP AERIAL PHOTOGRAPHY. WGA CAN NOT ENSURE THAT THE INFORMATION SHOWN IS ACCURATE AND ENTITIES USING THESE DRAWINGS ACCEPT ALL LIABILITY IN THE USE OF THIS INFORMATION. WGA WILL NOT ACCEPT ANY LIABILITY FOR INACCURACIES IN THE INFORMATION PROVIDED. THIS DRAWING MUST NOT BE USED FOR SET OUT PURPOSES UNDER ANY CIRCUMSTANCES.



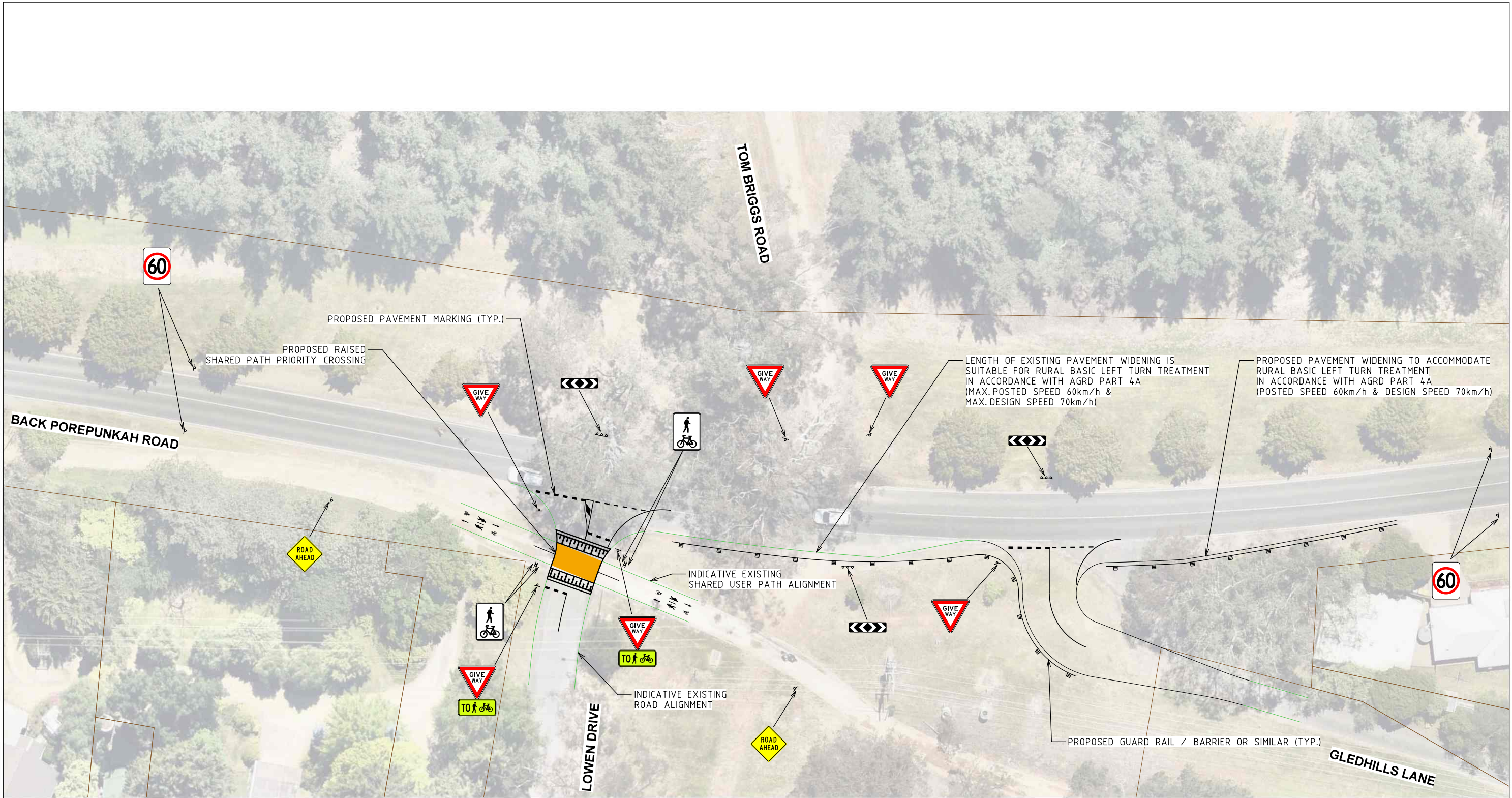
INFORMATION ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT	ENG.	CHKD
A	18.02.2025	ISSUED FOR INFORMATION	W.O	W.O	J.A



BACK POREPUNKAH ROAD SAFETY STRATEGY
ALPINE SHIRE COUNCIL
KARNU COURT INTERSECTION
CONCEPT LAYOUT PLAN

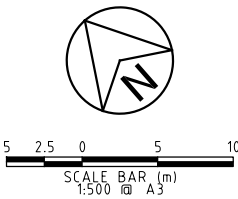
DOCUMENT NUMBER			Rev.
Design	Drawn	Job Number	Sheet No.
W.O	W.O	WGA242886-DR-TT-1002	A



GENERAL NOTE:
DESIGN HAS BEEN COMPLETED UTILISING THE SPEEDS LISTED BELOW:
POSTED SPEED: 60km/h
DESIGN SPEED: 70km/h
FURTHER REQUIRED SIGNAGE FOR THE SPEED REDUCTION FROM 80km/h SHALL BE IN ACCORDANCE WITH DTP SPEED ZONING TECHNICAL GUIDELINES

**CONCEPT PLAN
FOR DISCUSSION PURPOSES ONLY**

DISCLAIMER:
PLEASE NOTE THIS WGA DRAWING HAS BEEN PREPARED USING NEARMAP AERIAL PHOTOGRAPHY. WGA CAN NOT ENSURE THAT THE INFORMATION SHOWN IS ACCURATE AND ENTITIES USING THESE DRAWINGS ACCEPT ALL LIABILITY IN THE USE OF THIS INFORMATION. WGA WILL NOT ACCEPT ANY LIABILITY FOR INACCURACIES IN THE INFORMATION PROVIDED. THIS DRAWING MUST NOT BE USED FOR SET OUT PURPOSES UNDER ANY CIRCUMSTANCES.



INFORMATION ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT	ENG.	CHKD
A	18.02.2025	ISSUED FOR INFORMATION	W.O	W.O	J.A

WGA

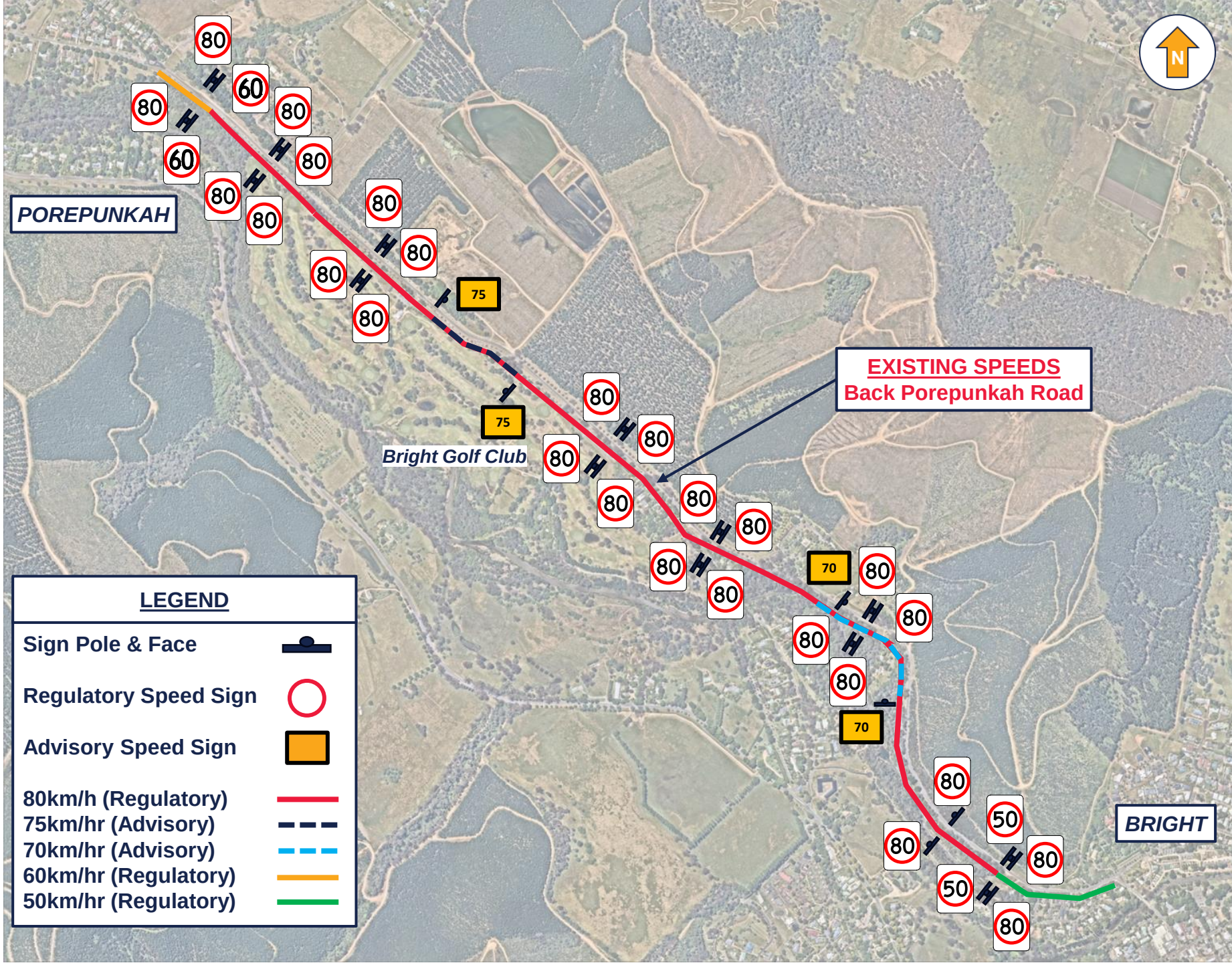
BACK POREPUNKAH ROAD SAFETY STRATEGY
ALPINE SHIRE COUNCIL
LOWEN DRIVE & GLEDHILLS LANE INTERSECTIONS
CONCEPT LAYOUT PLAN

DOCUMENT NUMBER			Rev.
Design	Drawn	Job Number	Sheet No.
W.O	W.O	WGA242886-DR-TT-1003	A

APPENDIX B

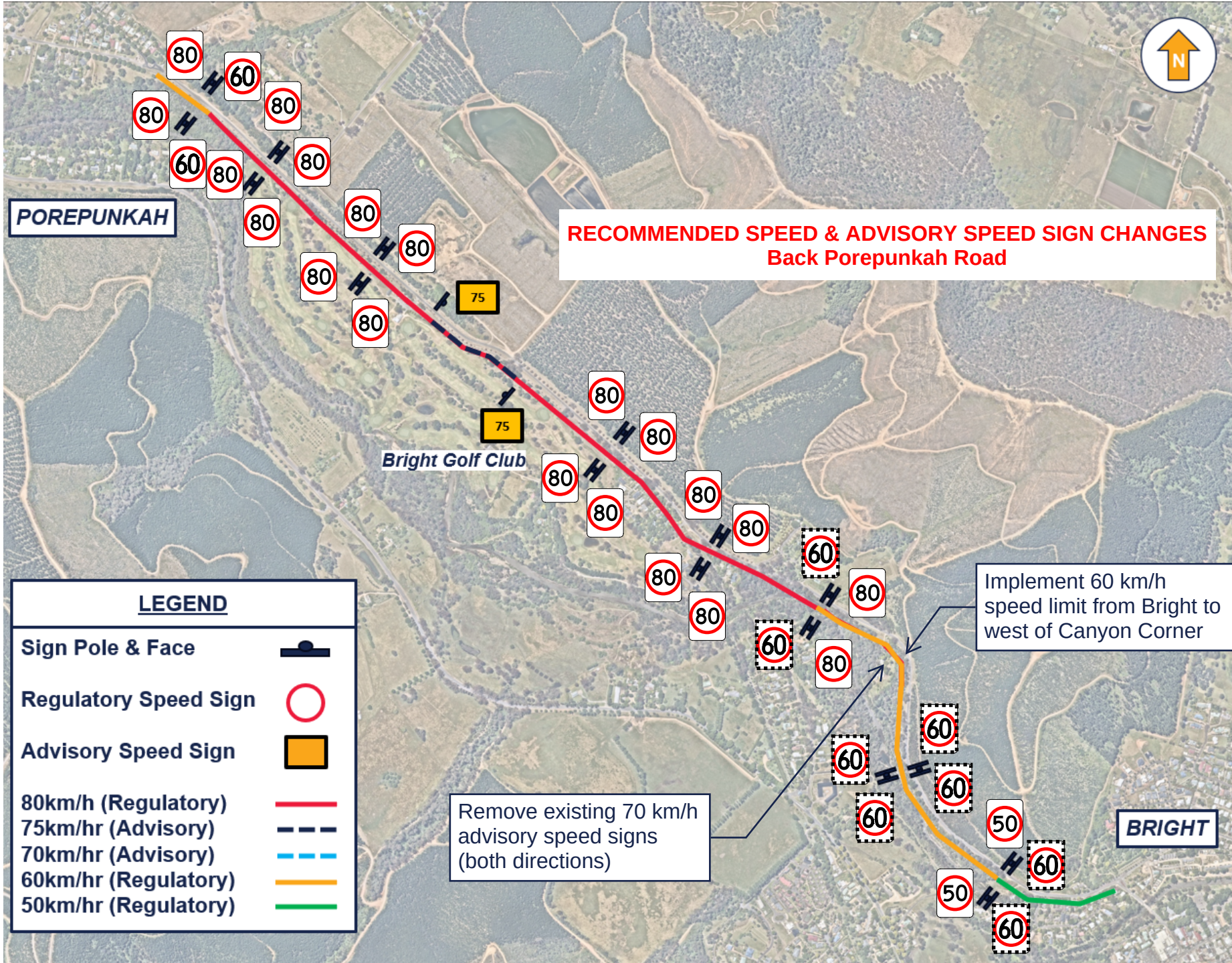
SPEED LIMIT & SIGN MAPS





WGA

Level 6, 312 St Kilda Road
Southbank VIC 3006
+61 (0)3 9696 9522
melbourne@wga.com.au



WGA

Level 6, 312 St Kilda Road
Southbank VIC 3006
+61 (0)3 9696 9522
melbourne@wga.com.au



FOR FURTHER INFORMATION CONTACT:

Ben Simpson
Principal Traffic Engineer | Transport Planner

T +61 3 9696 9522

E bsimpson@wga.com.au

WGA.COM.AU
WGANZ.CO.NZ

