The background image is a photograph of a two-lane asphalt road stretching into the distance. The road is flanked by tall, mature trees with dense green foliage, creating a canopy effect. The ground on the left side of the road is covered with dry, brown leaves and twigs. In the distance, a white car is visible on the road. The sky is blue with some white clouds.

Regional Road Assessment: Fleurieu Peninsula and McLaren Vale

Report: August 2021

[Motor](#) | [Home](#) | [Travel](#)

RAA at a glance



South Australia's
largest
membership organisation



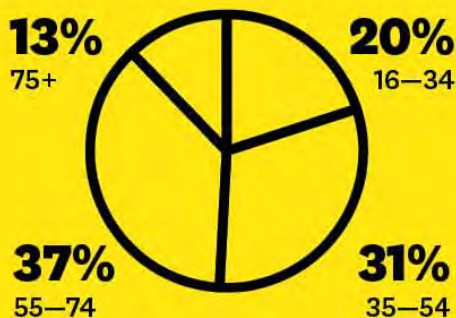
Advocating for South
Australians for over
115 years



770k+
current members
(55% of SA adults)



150k+
RAA members are
also cyclists



Our members span
all adult age groups



1000+
staff employed
across SA



Largest
personal lines
insurer in SA



340k+
roadside callouts
per year



530+
tourism providers
promoted on Experience SA



450+
businesses accredited
through RAA's Approved
Repairer network




29k+
people educated on
road, bike and child
safety each year




23k+
free lessons delivered
to keep SA learner
drivers safe


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Disclaimer

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Contents

Prepared by	ii
Disclaimer	ii
Contents	iii
Executive Summary	v
RAA's key recommendations for the Fleurieu Peninsula and McLaren Vale	vi
Index of recommendations	viii
Mobility and Tourism.....	viii
Roads and Safety	viii
Notes	ix
Notes on crash data.....	ix
Notes on star ratings.....	ix
Background	1
Recommendations	3
Recommendation colour scales	3
Full list of recommendations	4
Survey results and analysis	15
Travel behaviours	15
Overall rating of the region.....	16
Road design and maintenance	18
Driving speeds and speed limits.....	21
Driver behaviour	26
Freight	28
Motorcycling	32
Cycling.....	34
Pedestrians.....	36
Public and community transport.....	38
Taxis and rideshare	45

Facilities for tourists and other visitors	48
Demographics.....	51
2016-2020 casualty crash statistics	52
General crash statistics.....	52
Motorcycle crashes	54
Cyclist crashes.....	55
Road investigation details and recommendations	56
General and common issues across the region	56
Victor Harbor Road	60
Main South Road (Aldinga – Cape Jervis)	63
Inman Valley Road	83
Long Valley Road	91
Alexandrina Road	93
Port Elliot Road.....	106
Goolwa Road.....	113
Aldinga Road	120
Armstrong Road/Welch Road (Victor Harbor ring route)	127
Main Road (McLaren Vale to Willunga).....	135
Kangarilla Road	143
Nangkita Road.....	148
Encounter Bikeway	155
Other roads assessed.....	158
Tourism Assessments	178
Main Street tourism assessments	178
Specific issues raised in the Fleurieu Peninsula community survey	199

Executive Summary

RAA has been a trusted advocate in transport and mobility developed over the last 118 years and represents more than 770,000 members. We have also provided South Australians with travel services, ranging from holiday planning and bookings to travel insurance and international driving permits, for over 60 years. This means we have an expert understanding to provide unique insights into services and public policy settings to encourage improved transport, mobility planning and services and tourism infrastructure to help support and benefit our members and the broader South Australian community.

RAA aligns its advocacy with the following three principles:

- **Safe** – A safe system that not only achieves, but outperforms, national and international safety benchmarks. It encompasses safe people, using safe vehicles, on safe roads, at safe speeds.
- **Accessible** – To have a cost-efficient, convenient, and reliable network that is accessible and inclusive, as an essential part of personal mobility.
- **Sustainable** - Encompasses the needs of current and future generations, and considers financial, societal and environmental factors.

RAA's Safety and Infrastructure team periodically evaluates the South Australian regional road network based on the concerns of regional RAA members and other regional residents.

The methodology used to produce this regional road assessment report involved surveying residents of the Fleurieu Peninsula and McLaren Vale region and analysing their feedback prior to undertaking several weeks of field work to assess and review the issues raised. RAA also consulted with local councils to discuss issues raised throughout the community survey. The findings and subsequent recommendations from this field work are presented throughout this report along with a review of open-source crash and traffic volume data.

Victor Harbor Road was identified as the most concerning piece of transport infrastructure in the Fleurieu Peninsula Region. This corridor is critical to movement through the Fleurieu Peninsula and is extremely important to both freight and tourism in addition to its thousands of daily users. As such, Victor Harbor Road was reviewed in RAA's *2021 Victor Harbor Road Highway Assessment*¹, published in May 2021. In relation to cycle infrastructure, the Encounter Bikeway received the highest level of community feedback, and this was also reviewed as a part of a separate *2021 Encounter Bikeway Assessment* report², published in June 2021.

In this report, RAA has outlined a series of recommendations aimed at improving safety in the Fleurieu Peninsula and McLaren Vale region now, and into the future.

¹ RAA, 2021, *Highway Assessment: Victor Harbor Road – May 2021*, <www.raa.com.au/roadassessments>.

² RAA, 2021, *Bikeway Assessment: Encounter Bikeway – June 2021*, <www.raa.com.au/roadassessments>.

RAA's key recommendations for the Fleurieu Peninsula and McLaren Vale



Main South Rd, Cape Jervis

Mobility and tourism

Encounter Bikeway

Adopt recommendations in RAA's *June 2021 Encounter Bikeway Assessment*, including a long-term objective of providing a continuous off-road shared path between Goolwa and Victor Harbor.



Encounter Bikeway, Victor Harbor

Flat to Vale Trail

Fund and construct the Flat to Vale Trail, a 3.6km shared path connecting McLaren Vale and McLaren Flat.

On-demand bus service

Trial an on-demand bus service between Goolwa and Victor Harbor, including destinations en route, such as Middleton, Port Elliot and McCracken.

Town centres

Improve the visitor experience by reviewing parking restrictions, introducing more large recreational vehicle parking, improving pedestrian infrastructure and promoting sustainable tourism through smart solutions including recycling bins, solar lighting and electric vehicle charging infrastructure.

Roads and safety

South Coast Freight Corridor

Undertake a feasibility study and develop a business case for the South Coast Freight Corridor between Cape Jervis and the South Eastern Freeway at Callington.



Freight on Main South Rd, Cape Jervis

Continued >>

RAA's key recommendations for the Fleurieu Peninsula and McLaren Vale (continued)

Roadside hazards

Adopt a proactive, corridor-wide risk-based approach to installing crash barriers incorporating motorcycle underrun on Fleurieu Peninsula Roads.

Victor Harbor Road

Adopt all 14 recommendations of RAA's 2021 *Victor Harbor Road Highway Assessment*, including installing overtaking lanes and a wide centreline with wire rope barrier south of Mount Compass, and pavement rehabilitation between McLaren Vale and Willunga.

Main South Road (Aldinga – Cape Jervis)

Upgrades to Main South Road, including installing additional overtaking lanes and safety barriers, pavement reconstruction between Aldinga and Sellicks Beach, and several intersection upgrades.

Overtaking lanes

Install additional overtaking lanes on busy Fleurieu Peninsula corridors, including Victor Harbor Road (2), Main South Road (4), Long Valley Road (1), Alexandrina Road (4) and Goolwa Road (2).

Shoulder sealing

Seal road shoulders or widen existing shoulder seal on roads such as Inman Valley Road, Main Road, Kangarilla Road and Strathalbyn Road to improve safety and provide safer cycling.

Road surface improvements

Undertake critical road maintenance work on corridors, including Goolwa Road, Kangarilla Road, Inman Valley Road, Alexandrina Road and Langhorne Creek Road.

Intersection upgrades

Upgrade intersections in the region to improve safety and efficiency. Example intersections include Victor Harbor Road/Goolwa Road (Mt Compass), Main South Road/Sellicks Beach Road (Sellicks Beach), Port Elliot Road/Flagstaff Hill Road (Middleton), Armstrong Road/Greenhills Road (Victor Harbor) and Main Road/Malpas Road (McLaren Vale).



Intersection of Port Elliot Rd/Flagstaff Hill Rd, Middleton

McLaren Vale four-way intersections

Improve safety at four-way crossroad intersections in the McLaren Vale region by enhancing signage, delineation and providing horizontal deflection to reduce right angle crashes.

This should include a holistic review of the local road network to identify opportunities for partial or full road closures and right turn bans at appropriate intersections.



Intersection of Main Rd/Johnston Rd/McMurtrie Rd, McLaren Vale

Index of recommendations

Mobility and Tourism

Topic	Recommendation Number
Encounter Bikeway	18
Flat to Vale Trail	16D
On-demand bus service	2
Town centres	29A – 29D

Roads and Safety

Topic	Recommendation Number
South Coast Freight Corridor	1
Roadside hazards	4, 6, 7A, 7K, 8C, 8D, 9A, 10I, 11D, 12B, 17E, 20D, 21C, 22C, 23, 24B, 25B, 26, 28D
Victor Harbor Road	6
Main South Road (Aldinga – Cape Jervis)	7A – 7O
Overtaking lanes	6, 7G, 7H, 9A, 10H, 12C
Shoulder sealing	6, 8A, 11A, 15A, 16C, 17B, 19A, 21B, 24A, 28B
Road surface improvements	6, &I, 8E, 10F, 12D, 13A, 15B, 17D, 20B, 21A, 22B, 27
Intersection upgrades	5, 6, 7J, 7M, 7N, 7O, 8F, 9C, 11E, 11F, 12A, 14B, 14C, 15C, 15D, 15E, 15F, 15G, 15H, 15I, 22A, 22D
McLaren Vale four-way intersections	5, 15C – 15G

Notes

Notes on crash data

Unless otherwise specified, crash data quoted within this report is sourced from the Road Crash Data dataset uploaded by the Department of Infrastructure and Transport on the Data SA website. Crash data is for the five-year period between 2016 and 2020 (unless otherwise specified) because it is the most recent data available at the time of publishing this report.

Casualty crashes are defined as a crash where at least one person is injured or killed as a result of the crash. Property damage only crashes are not considered in crash data analysis within this report unless explicitly specified.

Units within the road crash database include animals and objects, but for the purpose of analysing the units involved in crashes, only human controlled units are considered unless otherwise specified.

Casualty crashes per 100 million vehicle kilometres travelled (vkt) have been calculated for various roads and road sections throughout this report for comparative purposes. The calculation for vehicle kilometres travelled is $vkt = \text{average annual daily traffic (AADT)} \times \text{length of road}$ and can be considered the approximate number of kilometres travelled by vehicles on that particular section of road. Crashes per 100m vkt allows for a comparison of historic crash risk across different road sections.

Notes on star ratings

Throughout this regional road assessment, AusRAP star ratings are provided for roads throughout the Fleurieu Peninsula Region. The AusRAP star rating system, a subsidiary of the International Road Assessment Program (iRAP), assesses several key criteria to establish the safety rating of a road from one to five stars with the latter representing the safest. Star ratings have been provided for discrete sites throughout the Fleurieu Peninsula region that are typical of the overall road network or to highlight certain deficiencies. These ratings have been calculated using the iRAP 'ViDA' demonstrator tool. AusRAP star ratings are based on the international iRAP model which estimates an average 40% reduction in fatal and serious crashes for each incremental increase in star rating³.

Table 1: Estimated reduction in fatalities and serious injuries with increases in AusRAP star rating (iRAP, 2020).

Star rating	Relative proportion of fatalities and serious injuries
1	1
2	0.6
3	0.36
4	0.216
5	0.1296

RAA advocates for all regional highways to be maintained/upgraded to achieve a minimum rating of three stars to reduce the number of lives lost and serious injuries on South Australian roads. Our recent submission to the South Australian Road Safety Strategy to 2031 recommends firstly that these ratings are released publicly, and secondly, they are used as a tool to identify and justify safety upgrades across South Australia's regional road network to achieve a three-star rating or better on all state highways.

³ iRAP, 2020, *The Business Case for Safer Roads*, <<https://www.vaccinesforroads.org/business-case-for-safer-roads/>>.

Background

RAA's Safety and Infrastructure team periodically evaluates the South Australian regional road network based on the concerns of regional RAA members and other regional residents. During this assessment of the Fleurieu Peninsula and McLaren Vale region, the team undertook several weeks of site assessments between February and June 2021 within the region, encompassing dozens of roads and intersections. In addition, RAA's Government and Public Policy team conducted two days of tourism assessments. These primarily consisted of a 60-minute visit to major township main streets across the region, with a checklist used to identify from a visitor perspective anything that appeared to be an issue and anything that was exemplary.

This is RAA's first regional road assessment in the Fleurieu Peninsula and McLaren Vale region and follows on from an extensive review of Victor Harbor Road, with this report released in May 2021 and downloadable at www.raa.com.au/roadassessments.

RAA consulted with Alexandrina Council, City of Onkaparinga Council, City of Victor Harbor Council, Yankalilla District Council and regional stakeholders including Regional Development Australia (RDA) and the Local Government Association (LGA).

A detailed survey was also distributed via email to 12,235 RAA members residing in the Fleurieu Peninsula and McLaren Vale region and promoted through local and social media. The online survey took an average of 30 minutes to complete and received 1,080 responses between 23 November and 16 December 2020 (694 of which came from members who were emailed a link to the survey). Information was sought regarding how respondents travel through the region and how they rate the transport network, before exploring particular locations and issues of concern to them in relation to:

- Road design and maintenance
- Driving speeds/Speed limits
- Driving behaviour
- Freight
- Motorcycling
- Cycling
- Pedestrians
- Public and community transport
- Taxis and Rideshare
- Facilities for tourists and other visitors

The area assessed is shown in Figure 1, and is defined by the combined boundaries of the Alexandrina Council, City of Victor Harbor Council, Yankalilla District Council and a portion of the City of Onkaparinga Council which makes up the McLaren Vale wine region. Cross-regional corridors including Strathalbyn Road and Long Valley Road were assessed during RAA's *2020 Adelaide Hills Regional Road Assessment* but are also discussed within this report. Unless otherwise specified, references to the Fleurieu Peninsula region throughout this report are in relation to the boundary shown in Figure 1.

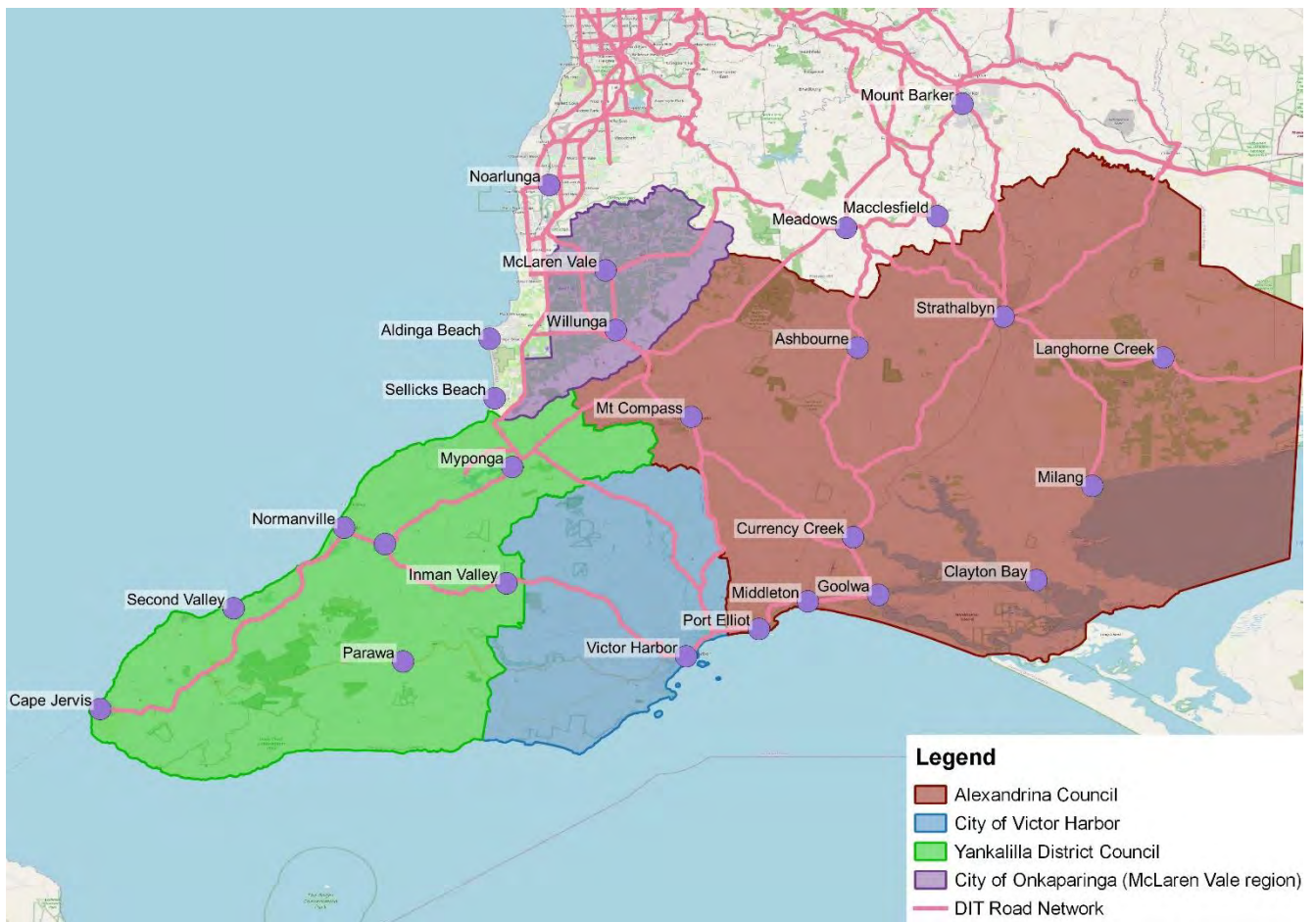


Figure 1: Map of the Fleurieu Peninsula and McLaren Vale region assessed by RAA

Recommendations

Recommendations throughout this report are ranked using a priority colour scale as depicted below. The primary factors considered when prioritising recommendations are the importance to survey respondents, road safety, traffic volumes and importance to tourism and industry in the region. However, not all these factors may contribute to a given priority.

Timeframes mentioned below are a general guide only and may not be applicable to every recommendation within this report.

Recommendation colour scales

High priority recommendation

This issue is of very high importance to the local community, has significant implications to road safety, is located on a busy road corridor and is important to tourism and industry in the region. These recommendations should be committed to within 12 months.

Mid-high priority recommendation

This issue is of high importance to the local community, has implications to road safety, is generally located on a busy road corridor and can be important to tourism and industry in the region. These recommendations should be committed to within 3 years or as part of routine maintenance.

Mid priority recommendation

This issue is moderately important to the local community, has some road safety implications and may be important to tourism and industry in the region. These recommendations should be committed to within 5 years or as part of routine maintenance.

Mid-low priority recommendation

This issue has been raised by the local community, may have some road safety implications or be important to tourism and industry in the region. These recommendations should be implemented as part of routine maintenance, or as part of a longer-term vision.

Low priority recommendation

This issue may have road safety implications or has some level of importance to tourism and industry in the region. These recommendations should be implemented as part of routine maintenance, rolled out gradually or as part of a longer-term vision.

Full list of recommendations

The below list of recommendations is displayed in the order they appear throughout this report.

To improve freight productivity on the south coast of the Fleurieu Peninsula

Recommendation 1

Undertake a feasibility study and develop a business case for the South Coast Freight Corridor.

Note that recommendation 7L discusses exploring the feasibility of a heavy vehicle bypass of Yankalilla and Normanville.

To improve mobility and accessibility in the region

Recommendation 2

Trial an on-demand bus service between Goolwa and Victor Harbor, including destinations en route such as Middleton, Port Elliot and McCracken.

Recommendation 3

Expand rideshare services into the Fleurieu Peninsula region, in particular between Victor Harbor and Goolwa.

To improve safety broadly across the region

Recommendation 4

Adopt a proactive, corridor-wide risk-based approach to installing crash barriers incorporating motorcycle underrun on Fleurieu Peninsula roads.

Recommendation 5

Improve safety at four-way crossroad intersections in the McLaren Vale region through various safety upgrades including enhanced signage, delineation and horizontal deflection. This should also include a holistic review of the local road network to identify opportunities for partial or full road closures and right turn bans at intersections where appropriate.

To improve safety at other locations reviewed by RAA

Victor Harbor Road

Recommendation 6

Adopt all 14 recommendations of RAA's 2021 *Victor Harbor Road Highway Assessment*, some of which include pavement rehabilitation between McLaren Vale and Willunga, installation of wide centreline with wire rope barrier south of Mount Compass and a roundabout at the intersection with Goolwa Road.

Main South Road

Recommendation 7A

Install motorcycle underrun protection on roadside barriers south of Normanville.

Recommendation 7B

Install audio tactile centreline markings between Sellicks Beach and Yankalilla.

Recommendation 7C

Review and prioritise the identified narrow bridges for widening between Myponga and Second Valley.

Recommendation 7D

Implement streetscape improvements between Yankalilla and Normanville to improve amenity and reinforce the existing 50km/h speed limit.

Recommendation 7E

Improve signposting of speed limits to create consistency with speed limits along the corridor.

Recommendation 7F

Explore the possibility of extending existing overtaking lanes to provide longer overtaking opportunities in existing locations.

Recommendation 7G

Install additional overtaking lanes between Myponga and Sellicks Beach (northbound), and between Wirrina Cove and Normanville (northbound).

Recommendation 7H

Install two overtaking lanes between Cape Jervis and Wirrina Cove and convert the wide shoulder on the steep incline near Cape Jervis into a climbing lane for slow or heavy vehicles.

Recommendation 7I

Prioritise 2km of pavement reconstruction works between Aldinga Beach Road and Hahn Road.

Recommendation 7J

Update W2-1 crossroad and W2-4 side road intersection warning signs along the corridor to reflect current Australian Standards.

Recommendation 7K

Improve the safety of roadsides by continuing to remove hazards or install barriers with motorcycle underrun protection.

Recommendation 7L

Explore the economic feasibility of constructing a heavy vehicle bypass of Yankalilla and Normanville.

Recommendation 7M

Upgrade the intersection with Main South Road and Sellicks Beach Road to improve safety by increasing sight distance and installing channelised turn lanes.

Recommendation 7N

Install a channelised right turn lane at the intersection with Main South Road and Country Road in Sellicks Beach.

Recommendation 7O

Install a roundabout at the intersection with Main South Road and Pages Flat Road in Myponga.

Inman Valley Road

Recommendation 8A

Seal shoulders to 1m wide along the 16km section of Inman Valley Road between Sawpit Rd (Lower Inman Valley) and Torrens Vale Rd (Bald Hills).

Recommendation 8B

Consider a reduced speed limit for Inman Valley Road.

Recommendation 8C

Further installation of barriers (incorporating motorcycle under run) to protect against fixed roadside hazards on Inman Valley Road.

Recommendation 8D

Retrofit motorcycle underrun to existing barriers on Inman Valley Road.

Recommendation 8E

Localised pavement rehabilitation/reconstruction to address undulating and sections and rutting between Victor Harbor and Yankalilla.

Recommendation 8F

Install a rural junction active warning system (RJAWS) at the intersection with Inman Valley Road and Hancock Road in Inman Valley.

Long Valley Road

Recommendation 9A

Install the additional overtaking lane, first announced in 2019, by the end of 2021.

Recommendation 9B

Consider dividing treatments such as a wire rope centre barrier to separate opposing traffic flows on Long Valley Road and reduce the likelihood of head on crashes occurring.

Recommendation 9C

Clear vegetation at side road intersections to improve sight distance.

Recommendation 9D

Provide at least 10m of apron sealing at unsealed side road intersections.

Alexandrina Road

Recommendation 10A

Install audio tactile edge lines on Alexandrina Road.

Recommendation 10B

Undertake localised road and sealed shoulder widening on curves in the short term to compensate for poor curve geometry.

Recommendation 10C

Realign Alexandrina Road over Jackson Creek, 3.5km south of Strathalbyn, which will require construction of new culverts and allow a curve with better horizontal and vertical geometry to be constructed.

Recommendation 10D

Trial of township entry treatment on the Alexandrina Road approach to Goolwa.

Recommendation 10E

Undertake curve realignment and widening on Alexandrina Road to increase the radius of poorly designed curves.

Recommendation 10F

Undertake localised pavement rehabilitation and microsurfacing to address failing sections of pavement and rutting, including a reseal between Airport Road and Goolwa.

Recommendation 10G

Widen six narrow bridges between Sandergrove and Currency Creek to achieve a minimum combined road and shoulder width of 8.6m.

Recommendation 10H

Install four overtaking lanes on Alexandrina Road between Strathalbyn and Goolwa.

Recommendation 10I

Install additional roadside barrier hazard protection, incorporating motorcycle underrun protection.

Port Elliot Road

Recommendation 11A

Widen sealed shoulders to provide a consistent width where this is not already achieved to provide additional space and improve safety for cyclists.

Recommendation 11B

Install cycle lanes between Port Elliot and McCracken, and through the Middleton town centre.

Recommendation 11C

Review and consolidate speed limits between Goolwa and Port Elliot. This should consider an 80km/h speed limit for all non-built-up sections and 50km/h for built up sections in townships.

Recommendation 11D

Install additional safety barriers to reduce the severity of crashes involving fixed objects along the corridor.

Recommendation 11E

Improve safety at the entrance to the Fleurieu Regional Waste Authority Depot in Goolwa by installing channelised right and left turn lanes on Port Elliot Road.

Recommendation 11F

Install a roundabout at the intersection with Port Elliot Road and Flagstaff Hill Road in Middleton.

Recommendation 11G

Provide a pedestrian crossing facility in Middleton to allow for safer pedestrian movements across Port Elliot Road.

Goolwa Road**Recommendation 12A**

Install a roundabout at the intersection with Goolwa Road and Victor Harbor Road, as raised in RAA's *2021 Highway Assessment: Victor Harbor Road*.

Recommendation 12B

Install roadside safety barriers along the corridor to reduce the likelihood of high severity crashes with unprotected fixed objects (mostly trees).

Recommendation 12C

Install two overtaking lanes (one in each direction) on Goolwa Road.

Recommendation 12D

Undertake localised pavement rehabilitation between Victor Harbor Road and Kokoda Road to address the uneven and undulating surface.

Recommendation 12E

Reconstruct pavement over the level crossing at Currency Creek to remove the significant dip in the road.

Aldinga Road**Recommendation 13A**

Undertake additional pavement rehabilitation works, particularly between Almond Grove Road and Willunga.

Recommendation 13B

Upgrade the intersection with Aldinga Road and Almond Grove Road/California Road to complement the recent improved warning signs. This should consider treatments such as staggering side-road approaches, enhancing the pavement bar treatment, and installing rumble strips.

Welch Road/Armstrong Road (Victor Harbor ring route)

Recommendation 14A

Consider extending the southern 80km/h zone by 450m to the north, which will reduce travel speeds and improve safety through the intersection with Crozier Road.

Recommendation 14B

Provide right turn lanes at intersections along Armstrong Road and Welch Road by converting right-through lanes into right turn only lanes. Channelised left turn should also be considered where possible.

Recommendation 14C

Upgrade the intersection with Armstrong Road and Greenhills Road to provide improved sight distance and channelised turn lanes into Greenhills Road.

Main Road (McLaren Vale to Willunga)

Recommendation 15A

Install 2.5m wide sealed shoulders along Main Road between McLaren Vale and Willunga which will allow vehicles to leave the through lanes when accessing properties, provide additional space to drivers if they inadvertently leave the road and provide additional space for road cyclists.

Recommendation 15B

Undertake road resealing works on Main Road between Branson Road and Willunga.

Recommendation 15C

Install a roundabout at the intersection with Malpas Road/Binney Road.

Recommendation 15D

Install a roundabout at the intersection with McMurtrie Road/Johnston Road.

Recommendation 15E

Upgrade the intersection with Branson Road/Rifle Range Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

Recommendation 15F

Upgrade the intersection with Little Road/Gaffney Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

Recommendation 15G

Install W2-1 'crossroad' intersection warning signs on Main Road in advance of all crossroad intersections.

Recommendation 15H

Investigate a possible upgrade which may include a roundabout or traffic signals to improve safety and efficiency at the intersection with Main Road, Kangarilla Road and Tatachilla Road in McLaren Vale.

Recommendation 15I

Install green cycle lanes through the intersection with Aldinga Road and Main Road in Willunga to increase awareness of cyclists travelling through the intersection.

Kangarilla Road

Recommendation 16A

Install 1.5m wide sealed shoulders between McLaren Vale and McLaren Flat.

Recommendation 16B

Install '50 ahead' advance warning signs prior to speed limit reductions in McLaren Vale and McLaren Flat.

Recommendation 16C

Reseal Kangarilla Road between McLaren Vale and McLaren Flat, including localised reconstruction near McLaren Vale and 1.5m wide shoulder sealing. Roadside drainage upgrades should also be considered.

Recommendation 16D

Fund and construct the Flat to Vale Trail, a 3.6km shared path connecting McLaren Vale and McLaren Flat.

Nangkita Road

Recommendation 17A

Transfer ownership of Nangkita Road to the state government to allow for additional funding for the upkeep of the road.

Recommendation 17B

Widen sealed shoulders to 1m as part of road resealing works.

Recommendation 17C

Reduce the speed limit to 80km/h between Mount Compass and Nangkita.

Recommendation 17D

Undertake pavement rehabilitation (and possibly full-depth reconstruction) between Nangkita and Mount Compass.

Recommendation 17E

Install additional safety barriers uniformly in high-risk locations along the corridor.

Encounter Bikeway

Recommendation 18

Adopt recommendations in RAA's *June 2021 Encounter Bikeway Assessment*, which include a long-term objective of providing a continuous off-road shared path between Goolwa and Victor Harbor, and several shorter-term safety and wayfinding improvements.

Hindmarsh Island

Recommendation 19A

Seal shoulders on Randell Road from Tolarno Drive through to Barker Road, and through to Semaschko Road, and on Semaschko Road, Bongalong Road and Murray Mouth Road in the longer term.

Recommendation 19B

Improve walkability on Hindmarsh Island by upgrading the Tolarno Drive footpath and constructing footpaths along Excelsior Parade, Providence Place and Princess Royal Parade which should provide a continuous link to the Tolarno Drive footpath and subsequently, Goolwa. Footpaths or shared paths should also be considered for Captain Sturt Parade and Batson Parade.

Callington Road

Recommendation 20A

Consider bridge and culvert widening works on Callington Road between Woodchester and Callington.

Recommendation 20B

Undertake localised rehabilitation works on Callington Road between Strathalbyn and Heinjus Road, with consideration of a full reseal for this section.

Recommendation 20C

Monitor traffic volumes on Callington Road and consider installing two overtaking lanes.

Recommendation 20D

Install additional crash barriers on Callington Road.

Range Road

Recommendation 21A

Undertake localised pavement rehabilitation or resealing works just west of Parawa.

Recommendation 21B

Seal shoulders and undertake pavement rehabilitation works on the eastern end of Range Road.

Recommendation 21C

Install additional roadside barriers along Range Road to mitigate the high percentage of crashes involving roadside hazards.

Hindmarsh Tiers Road

Recommendation 22A

Install a roundabout at the intersection with Hindmarsh Tiers Road and Victor Harbor Road.

Recommendation 22B

Undertake localised resurfacing works along the length of Hindmarsh Tiers Road to reduce surface roughness.

Recommendation 22C

Install additional roadside crash barriers along the length of Hindmarsh Tiers Road, particularly in Hindmarsh Valley.

Recommendation 22D

At the intersection with Pages Flat Road and Hindmarsh Tiers Road, install street lighting and a right turn lane from Pages Flat Road onto Hindmarsh Tiers Road. In the short term, an 80km/h speed limit on Pages Flat Road between Hindmarsh Tiers Road and Main South Road could be implemented as a low-cost safety improvement.

Brookman Road

Recommendation 23

Install additional safety barriers on Brookman Road.

Paris Creek Road

Recommendation 24A

Install 1m wide sealed shoulders on Paris Creek Road between Bull Creek Road and Vivian Road.

Recommendation 24B

Install additional motorcycle friendly safety barriers on Paris Creek Road.

Bull Creek Road

Recommendation 25A

Install centreline ATLM on Bull Creek Road to improve rider and driver cornering lines and reduce the occurrences of vehicles crossing the centreline.

Recommendation 25B

Install additional roadside barriers with motorcycle underrun protection to prevent crashes with trees and stobie poles on Bull Creek Road.

Pages Flat Road

Recommendation 26

Install additional safety barriers on Pages Flat Road to protect against fixed roadside hazards and achieve a three-star AusRAP safety rating.

Langhorne Creek Road

Recommendation 27

Undertake localised pavement reconstruction to repair undulations on Langhorne Creek Road between Strathalbyn and Langhorne Creek.

Strathalbyn Road

Recommendation 28A

Install centre line ATLM along Strathalbyn Road between Flaxley and Strathalbyn to deter motorcycle riders from crossing the centre line in this high-risk location.

Recommendation 28B

Seal shoulders to 1m wide on Strathalbyn Road (0.5m minimum where environment is constrained)

Recommendation 28C

Install '50 AHEAD' signage on each approach to Macclesfield, and other townships if speed limit consolidation takes place along Strathalbyn Road.

Recommendation 28D

Install additional motorcycle friendly barriers on Strathalbyn Road.

To improve tourist experience in town centres and across the region

Recommendation 29A

Review parking restrictions in Fleurieu townships to give greater priority to short-term access to support shops and services that rely on high customer turnover.

Recommendation 29B

Provide well signed and readily accessible parking to accommodate short-term parking for large recreational vehicles

Recommendation 29C

Encourage visitors to explore Fleurieu townships on foot through further enhancing pedestrian infrastructure including wayfinding, safe crossings, landscaping and improved pedestrian connectivity with nearby attractions

Recommendation 29D

Promote more sustainable tourism in Fleurieu townships through smart solutions including public recycling bins, solar powered lighting and well-signposted electric vehicle charging infrastructure

Recommendation 29E

Improve mobile phone coverage in Deep Creek Conservation Park and Newland Head Conservation Park to boost tourism and enhance visitor safety

Survey results and analysis

Travel behaviours

Almost all survey respondents (98%) had driven a car or van within the Fleurieu Peninsula in the past six months, while a majority (56%) had been a passenger in a car or van. Nearly half (46%) had walked as a mode of transport, 16% had cycled, 8% had ridden a motorcycle and 7% had driven a truck. Less common modes of transport included bus (4%), taxi (4%), rideshare (2% - almost exclusively among those living in the Onkaparinga council area), community transport (2%) and wheelchair/mobility scooter (1%). Other transport modes spontaneously mentioned by respondents included tractor, train and tricycle.

Which of the following modes of transport have you used within the Fleurieu Peninsula in the past 6 months?

Base: All respondents (n=1080)

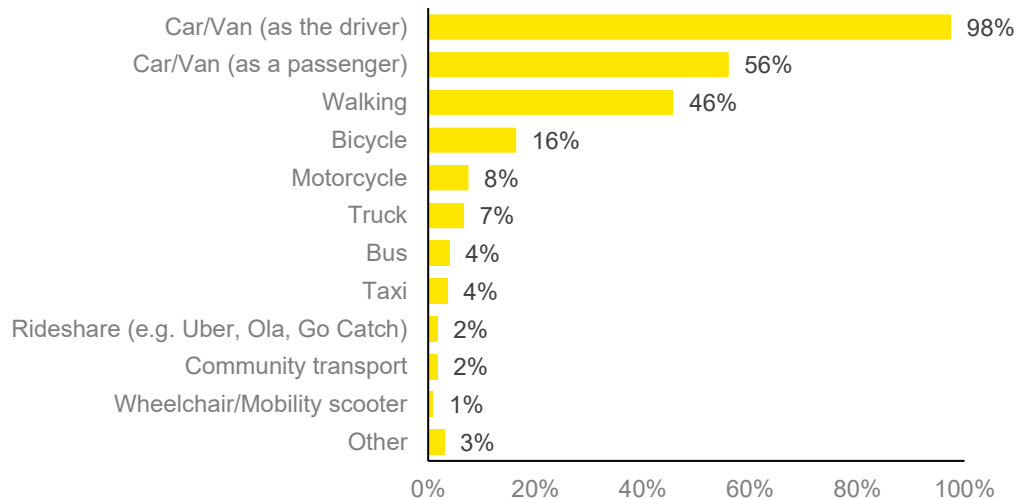


Figure 2: Transport modes used in the region in the past six months

Males in the region were more likely than females to have ridden a motorcycle (12% compared with 3%) or driven a truck (11% compared with 2%) whereas females were more likely to have been a car/van passenger (66% compared with 46%) or to have walked (52% compared with 39%). Those aged 16-44 were most likely to have driven a truck (12%) and to have used rideshare (6%), whereas those aged 65 and over were most likely to have used community transport (3%) and least likely to have been a car/van passenger (47%) or truck driver (3%).

Those who had used a transport mode in the past six months were asked how often they use it, enabling the frequency that different modes of transport are used to be calculated. Seven in 10 respondents (70%) drive a car/van most days, two in 10 (22%) walk most days and one in 10 (11%) travel as a car/van passenger most days. On a weekly basis, 94% drive a car/van, 37% walk, 36% travel as a car/van passenger and 8% cycle. On a monthly basis, 97% drive a car/van, 50% travel as a car/van passenger, 44% walk, 14% cycle, 6% ride a motorcycle and 5% drive a truck.

How often do you use each mode of transport within the Fleurieu Peninsula? - Modes used by 5% or more

Base: All respondents (1080)

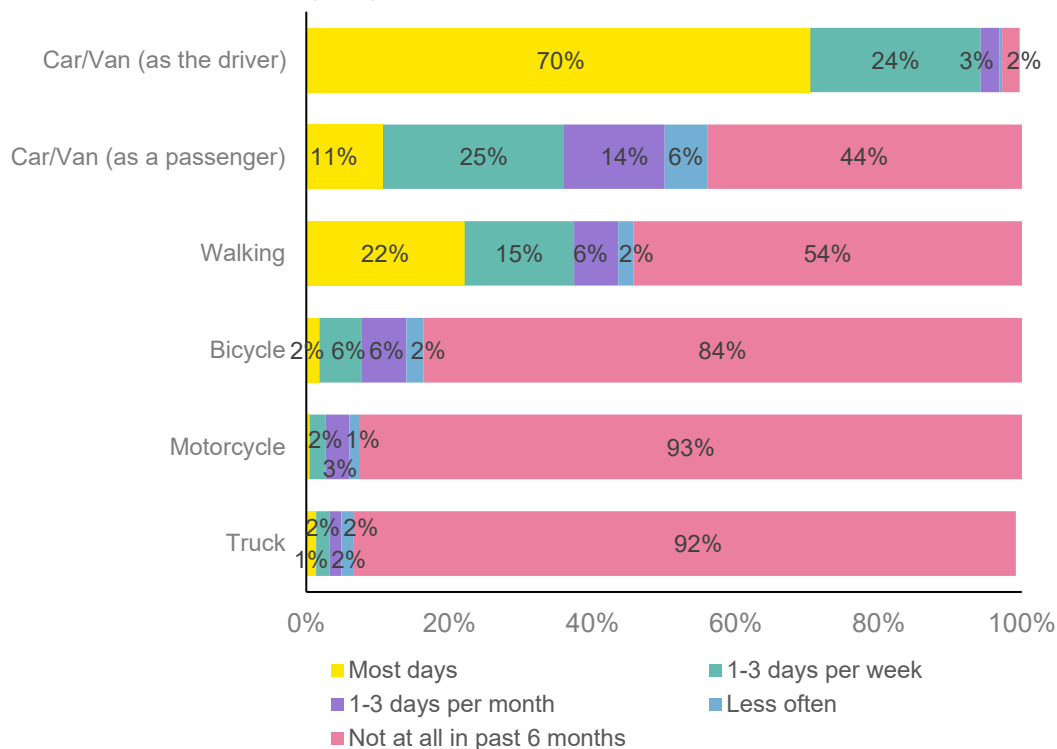


Figure 3: How often use each transport mode within the region

Those aged 16-44 are most likely to drive on most days (86%), whereas only six in 10 (62%) of those aged 65 or older drive on most days, with a third (32%) of this age group driving 1-3 days per week. Those aged 65 or older are most likely to walk on most days (26%), whereas those aged 16-44 are least likely to do so (15%).

Nine in 10 survey respondents (91%) live in a postcode that RAA defined as part of the Fleurieu Peninsula for the purpose of this survey. These respondents were asked whether they regularly travelled outside of the Fleurieu Peninsula for any reasons. Seven in 10 (68%) regularly travel outside of the region to visit friends and family, six in 10 (58%) for shopping, half (50%) for medical appointments, four in 10 (41%) for trips away, just over a third for eating out or entertainment (36%) and a quarter (27%) for work. Only one in 10 (12%) do not regularly travel outside of the region. Those aged 65 or older are most likely than average to travel for medical appointments (58%) whereas those aged 16-44 were more likely than average to travel for work (51%). Truck drivers (54%) are particularly likely to travel outside of the region for work.

Overall rating of the region

A quarter of respondents (25%) rated the overall standard of the roads in the Fleurieu Peninsula as either very good or fairly good, a third (32%) rated it as acceptable and nearly half (44%) rated it as either fairly poor or very poor. Those living in the Yankalilla council area were most likely to rate the overall standard of the roads as fairly poor or very poor (58%), while those living in the Victor Harbor council area were least likely to do so (33%).

How would you rate the overall standard of the roads in the Fleurieu Peninsula?

Base: All respondents

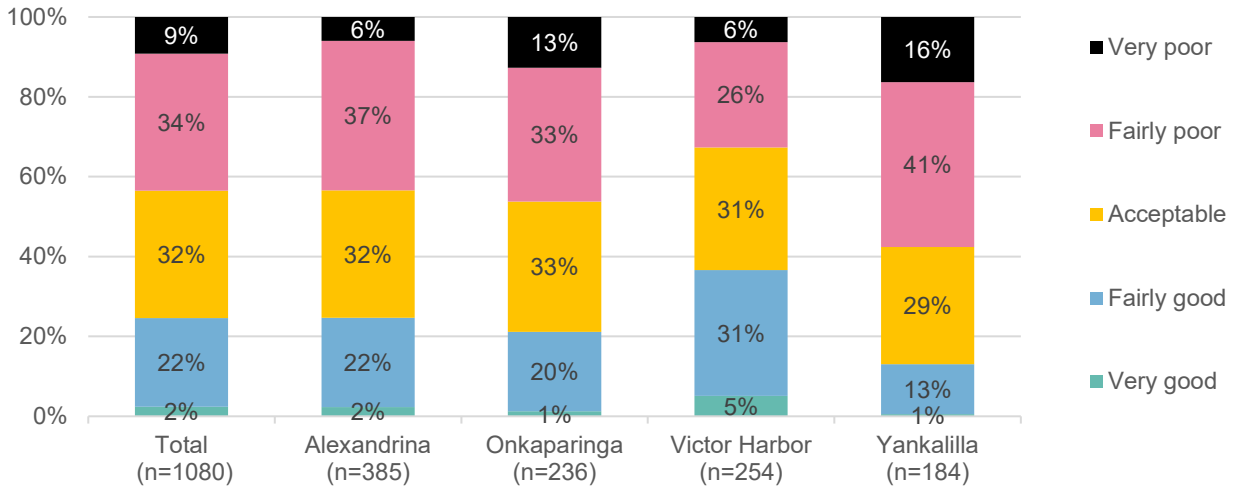


Figure 4: Overall standard of roads in the region

In relation to the overall accessibility of the Fleurieu Peninsula for someone without a motor vehicle, fewer than one in 10 (7%) rated this as very good or fairly good, two in 10 (18%) rated it as acceptable and the remaining three quarters (75%) rated it as fairly poor or very poor. Those living in the Yankalilla council area were most likely to rate the overall accessibility for someone without a motor vehicle as fairly poor or very poor (83%), while those living in the Onkaparinga council area (where there is access to Adelaide Metro public transport services) were least likely to do so (67%).

How would you rate the overall accessibility of the Fleurieu Peninsula for someone without a motor vehicle?

Base: All respondents

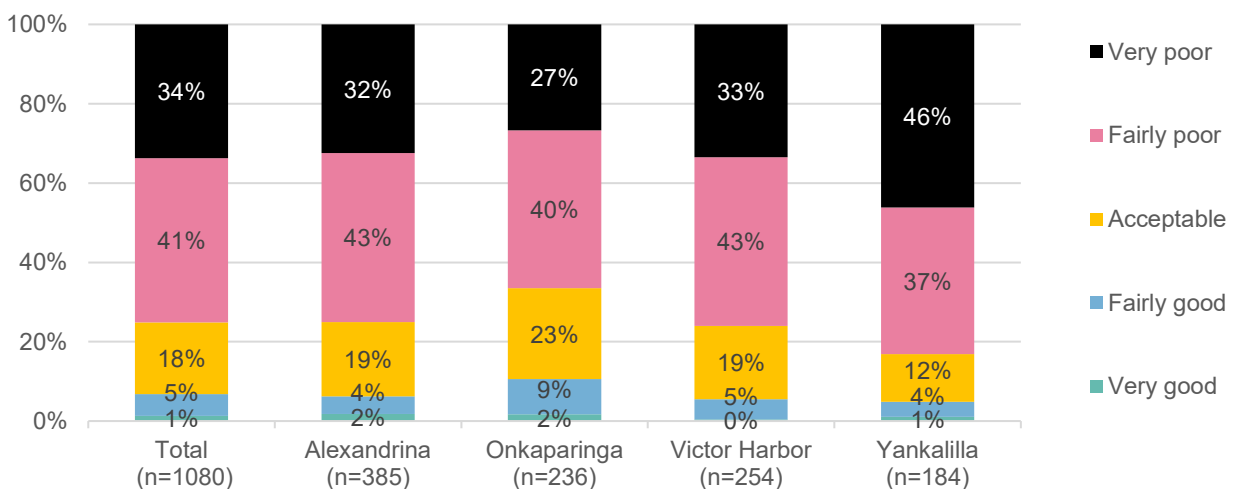


Figure 5: Overall accessibility of the region for someone without a motor vehicle

When asked to select the top road or transport issue that needs addressing within the Fleurieu Peninsula, one in three respondents (34%) identified road maintenance, which was twice the number who identified unsafe road design (17%), the second most common response. The next most common responses were driver behaviour (15%) and road capacity/congestion (13%), followed by public and community transport (8%).

What is the top road or transport issue that you think needs addressing within the Fleurieu Peninsula?

Base: All respondents (n=1080)

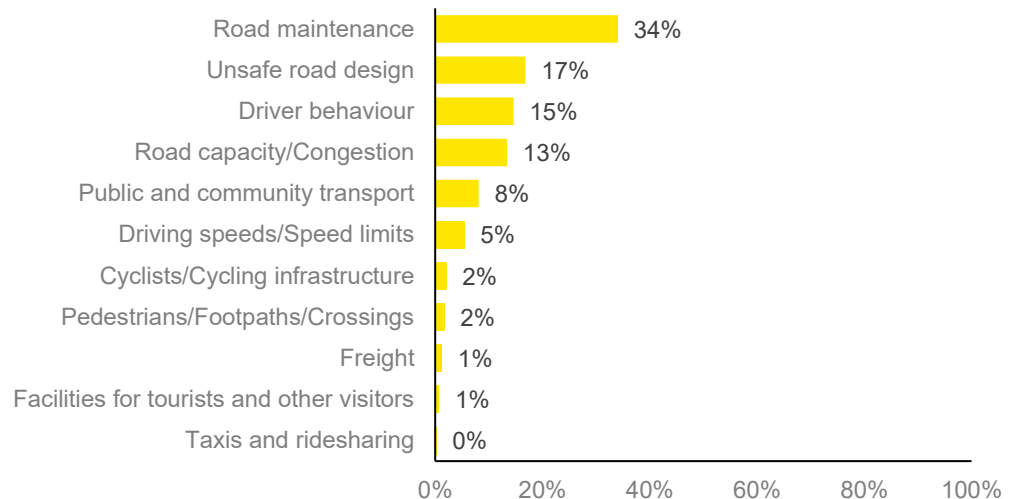


Figure 6: Top road or transport issue that needs addressing in the region

There were again differences by council area, with half (50%) of residents of the Yankalilla council area selecting road maintenance as the top issue compared with only two in 10 Victor Harbor council area residents (20%). The number one issue among those living in the Victor Harbor council area was driver behaviour (21%), with driving speeds and speed limits also raised disproportionately often by these respondents (9%). Unsafe road design and road capacity/congestion were significantly more likely to be raised by those living in the Onkaparinga council area (24% and 20% respectively) than those living elsewhere.

As one would expect, truck drivers were more likely than average to identify freight as their top issue (8%) and cyclists were more likely than average to identify cyclists and cycling infrastructure as their top issue (6%).

Road design and maintenance

Respondents were presented with a list of potential issues with the design and maintenance of roads in the region and asked to select which were concerns for them and then which was their biggest concern.

Which, if any, of the following is a concern for you/your biggest concern with the design and maintenance of roads in the Fleurieu Peninsula?

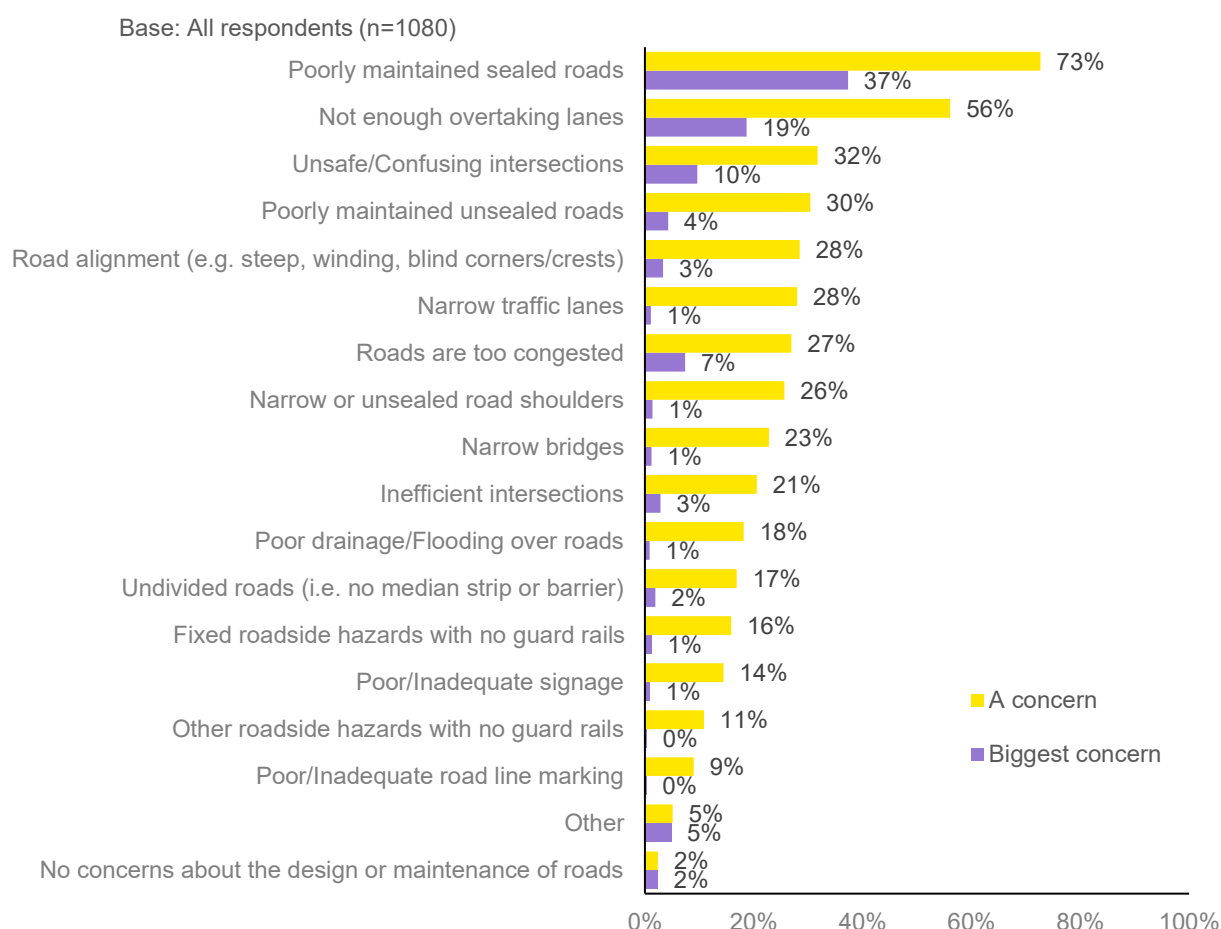


Figure 7: Concerns with the design and maintenance of roads in the region

Three quarters (73%) of respondents were concerned about poorly maintained sealed roads and four in 10 (37%) selected it as their biggest concern, making it the top issue relating to road design and maintenance. A majority of respondents (56%) were concerned about there not being enough overtaking lanes, with two in 10 (19%) selecting it as their biggest concern, making this the second most prominent road design and maintenance issue among survey respondents.

Other prominent respondent concerns included: unsafe or confusing intersections (a concern for 32%, biggest concern for 10%); roads are too congested (a concern for 27%, biggest concern for 7%); poorly maintained unsealed roads (a concern for 30%, biggest concern for 4%); and road alignment (a concern for 28%, biggest concern for 3%). The most common 'other' concern not provided as a response option was issues relating to driving speeds and speed limits. Only 2% of respondents had no concerns about the design or maintenance of roads in the region.

The prominence of different concerns varied considerably by council area:

- Alexandrina council area residents were more likely than average to be concerned about not enough overtaking lanes (62% - with 24% selecting it as their biggest concern), narrow bridges (29%) and poor drainage/flooding over roads (23%);

- Onkaparinga council area residents were more likely than average to be concerned about unsafe/confusing intersections (48% - with 19% selecting it as their biggest concern), roads being too congested (41% - with 17% selecting it as their biggest concern) and inefficient intersections (39%), while they were less likely than average to be concerned about lack of overtaking lanes (42% - with 6% selecting it as their biggest concern) or narrow bridges (15%);
- Victor Harbor council area residents were more likely than average to be concerned about not enough overtaking lanes (61% - with 30% selecting it as their biggest concern), road alignment (36%) and roads being undivided (24% - with 6% selecting it as their biggest concern), while they were less likely than average to be concerned about poorly maintained sealed roads (55% - with 25% selecting it as their biggest concern), unsafe/confusing intersections (19%) or poorly maintained unsealed roads (13%); and
- Yankalilla council area residents were more likely than average to be concerned about poorly maintained sealed roads (88% - with 53% selecting it as their biggest concern), poorly maintained unsealed roads (46%), narrow traffic lanes (38%) and poor drainage/flooding over roads (27%).

Poorly maintained unsealed roads were a more common concern for females (34%) than males (26%). Truck drivers were particularly concerned about poorly maintained unsealed roads (50%), while both truck drivers (40%) and cyclists (37%) were particularly concerned about narrow or unsealed road shoulders.

Respondents who identified road maintenance, road design or congestion as concerns were given the opportunity to provide details of a particular road or intersection they were most concerned about. The tables below show the most frequently raised locations along with the approximate number of times the location was raised.

With respect to roads, concerns were most frequently raised about Main South Rd and Victor Harbor Rd, with Main South Rd ranking top for poor maintenance and second for unsafe road design and congestion, while Victor Harbor Rd ranked top for unsafe road design and congestion and second for poor maintenance. Long Valley Rd and Alexandrina Rd also ranked in the top five on all three measures, while Inman Valley Rd received a large number of nominations in relation to poor maintenance. There were more than twice as many road nominations made in relation to poor maintenance than in relation to unsafe road design or congestion.

Table 2: Roads most concerned about in relation to road design and maintenance

Rank	Poor maintenance	Unsafe road design	Congestion
1	Main South Rd (136)	Victor Harbor Rd (64)	Victor Harbor Rd (65)
2	Victor Harbor Rd (124)	Main South Rd (37)	Main South Rd (50)
3	Inman Valley Rd (61)	Alexandrina Rd (31)	Long Valley Rd (18)
4	Long Valley Rd (34)	Long Valley Rd (18)	Port Elliot Rd (14)
5	Alexandrina Rd (33)	Goolwa Rd (13)	Alexandrina Rd (11)
6	Aldinga Rd (30)	Inman Valley Rd (12)	Hindmarsh Rd (9)
7	Goolwa Rd (26)	Armstrong Rd (8)	Goolwa Rd (7)

All of the top seven most nominated intersections for unsafe road design and congestion were on either Main South Rd or Victor Harbor Rd. Main South Rd/Main Rd (Normanville), located in the Yankalilla council area, was the most frequently nominated intersection for unsafe road design, whereas Main South Rd/Port Rd, located in the Onkaparinga council area, was the most frequently nominated intersection for congestion. The Main South Rd/Tatachilla Rd, Victor Harbor Rd/Seaview Rd and Main South Rd/Aldinga Beach Rd intersections, all located in the Onkaparinga council area, ranked in the top five on both measures.

Table 3: Intersections most concerned about in relation to road design and maintenance

Rank	Unsafe road design	Congestion
1	Main South Rd/Main Rd (Normanville) (37)	Main South Rd/Port Rd (24)
2	Main South Rd/Tatachilla Rd (32)	Main South Rd/Aldinga Beach Rd (17)
3	Victor Harbor Rd/Seaview Rd (27)	Victor Harbor Rd/Seaview Rd (10)
4	Main South Rd/Aldinga Beach Rd (15)	Main South Rd/Tatachilla Rd (10)
5	Victor Harbor Rd/Goolwa Rd (12)	Main South Rd/Victor Harbor Rd (9)
6	Main South Rd/Aldinga Rd (11)	Main South Rd/Main Rd (Normanville) (8)
7	Victor Harbor Rd/Robinson Rd (10)	Main South Rd/Aldinga Rd (7)

Driving speeds and speed limits

Respondents were presented with a list of potential issues with driving speeds and speed limits in the region and asked to select which were concerns for them and then which was their biggest concern.

Four in 10 respondents (40%) were concerned about people driving too slowly (well below the speed limit) and two in 10 (22%) selected this as their biggest concern, making it the top issue relating to driving speeds and speed limits. Three in 10 respondents (28%) were concerned about speed limits being applied inconsistently, with one in 10 (10%) selecting it as their biggest concern, making this the second most prominent speed issue among survey respondents.

Similar proportions of respondents were concerned about speed limits being too low (23%) and speed limits being too high (22%), but speed limits being too high was more likely to be respondents' biggest concern (10% compared with 6%). Speeding was most commonly a concern on roads in non-built-up areas (19% - with 8% identifying it as their biggest concern). The most common 'other' concern not provided as a response option related to slower drivers not allowing faster traffic to pass (e.g., don't pull over, accelerate once reach overtaking lane). There were 14% of respondents who had no concerns about driving speeds and speed limits in the region.

Which, if any, of the following is a concern for you/your biggest concern with driving speeds and speed limits in the Fleurieu Peninsula?

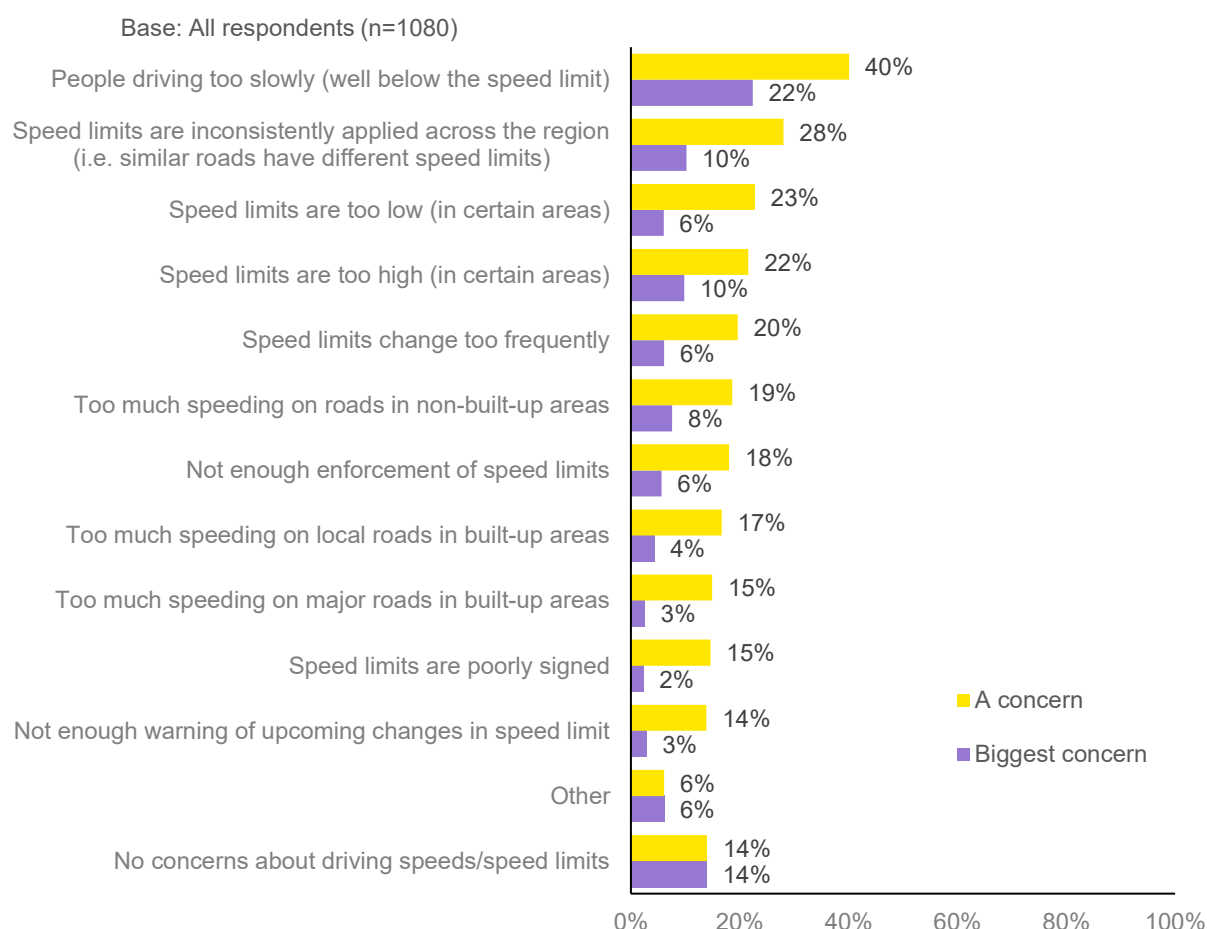


Figure 8: Concerns with driving speeds and speed limits in the region

Those living in the Yankalilla council area were more likely than average to be concerned about speed limits being too low (34% - with 13% selecting it as their biggest concern), whereas those living in the Victor Harbor council area were more likely than average to be concerned about speed limits being too high (31% - with 15% selecting it as their biggest concern). Similarly, 16-44 year olds were more likely than average to be concerned about speed limits being too low (31% - with 12% selecting it as their biggest concern), whereas those aged 65 and over were more likely than average to be concerned about speed limits being too high (28% - with 13% selecting it as their biggest concern), about lack of speed limit enforcement (24% - with 8% selecting it as their biggest concern) and about speeding on all road types. Males were more likely than females to be concerned about people driving too slowly (45% compared with 35%) and speed limits being too low (26% compared with 19%). Truck drivers (44% - with 15% selecting it as their biggest concern) and motorcyclists (40%) were also particularly likely to be concerned about speed limits being too low.

Respondents who identified speed limits or speeding as concerns were given the opportunity to provide details of a particular road they were most concerned about. The table below shows the most frequently raised locations along with the approximate number of times the location was raised.

Concerns were most frequently raised about Main South Rd and Victor Harbor Rd, with Main South Rd ranking top for speed limit concerns (mostly in relation to the speed limit being too low – between Normanville and Yankalilla and between Seaford and Sellicks Beach) and second for speeding concerns, while Victor Harbor Rd ranked top for speeding concerns and second for speed limit concerns (most commonly in relation to the speed limit being too high – particularly around Mount Compass). Long Valley Rd featured prominently on both measures, while Port Elliot Rd received a large number of nominations in relation to speed limits, with the primary concern being frequent speed limit changes. There were around twice as many nominations made in relation to speed limits than in relation to speeding or speed limit enforcement.

Table 4: Roads most concerned about in relation to driving speeds and speed limits

Rank	Speed limits	Speeding or speed limit enforcement
1	Main South Rd (104) – mostly 'speed limit too low'	Victor Harbor Rd (57)
2	Victor Harbor Rd (72) – most commonly 'speed limit too high'	Main South Rd (32)
3	Port Elliot Rd (54) – most commonly 'frequent changes'	Long Valley Rd (17)
4	Armstrong Rd (22) – almost all 'speed limit too high'	Alexandrina Rd (12)
5	Inman Valley Rd (22) – mostly 'speed limit too high'	Port Elliot Rd (10)
6	Long Valley Rd (21) – mixture of concern types	Inman Valley Rd (6)
7	Alexandrina Rd (12) – mostly 'speed limit too high'	Kangarilla Rd (6)

In relation to speed limits, respondents were provided with a description of the Rural Junction Active Warning System (RJAWS), which uses sensors that detect vehicles approaching an intersection from a side road and automatically lowers the speed limit on the through road to provide a safer gap for vehicles entering from the side road. They were asked how they felt about RJAWS being used at more intersections on the Fleurieu Peninsula.

Six in 10 respondents (59%) supported RJAWS being used at more intersections on the Fleurieu Peninsula, while one in 10 (10%) opposed this, with the remaining three in 10 (31%) neutral or unsure, typically because they did not know much about it and were not familiar with it. Support for RJAWS was lowest in the Yankalilla council area (49%), where a larger proportion of respondents were neutral or unsure. Opposition to RJAWS was highest among truck drivers (26%) and motorcyclists (20%).

How do you feel about RJAWS being used at more intersections on the Fleurieu Peninsula?

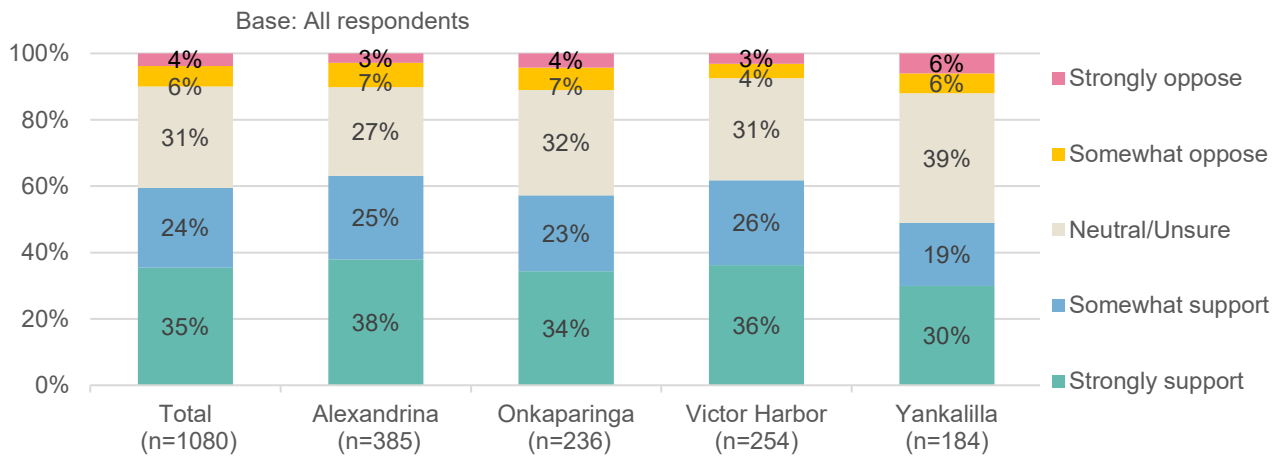


Figure 9: Views on RJAWS being used at more intersections in the region

Among those in support of RJAWS (n=642), the top reasons given were:

- It improves safety/Makes people feel safer (24%)
- It could prevent crashes/save lives (9%)
- It works/It is useful (8%)
- It provides warning to drivers/increases driver awareness (8%)
- Familiar with intersections where it is used (7%)

“Anything to improve the safety for road users. Far too many lives are lost due to persons being inattentive, not driving to road conditions or speeding.”

“I traverse the Bull Ck/Paris Ck Rd junction every day, and though I was sceptical at first, I think it is a very good system.”

“I regularly travel along McLaren Flat Road/Bakers Gully Road and the RJAWS definitely help make drivers more aware of upcoming intersections.”

Among those opposed to RJAWS (n=108), the top reasons given were:

- Don't think it will work e.g., drivers will miss or ignore the speed limit change, technology unreliable (21%)
- Fix the intersections instead of a band-aid solution (20%)
- Opposed to speed limit reductions e.g., impedes traffic flow, makes it harder for traffic to enter (14%)
- Could cause more collisions e.g., drivers assume they have time to pull out, sudden speed limit change, distraction (12%)
- Drivers are the problem/Drivers should take responsibility/Focus on driver education (10%)

“I regularly use the intersection at McLaren Flat/Bakers Gully Road. Sign is not prominent enough and many vehicles fail to see it or ignore it.”

“Fix the problem - poor intersection design, don't treat the symptom and create a new problem i.e., driver frustration.”

“Why would you suddenly change a main road speed limit for side road entry? This will only lead to worse driver behaviour... driving fearfully, expecting a change in speed limits and many will lower their speed, just in case and that is dangerous for all other road users.”

“Could drivers just be aware of what's coming? Instead of nannying everybody.”

Survey respondents were also asked what they believe the default speed limit should be on unsealed roads outside built-up areas. The current default on such roads is 100 km/h. The most popular default speed limit by some distance, nominated by four in 10 respondents (42%), was 80 km/h. Around one in 10 respondents nominated a preferred default speed limit of 60 km/h (13%), 70 km/h (11%) or 100 km/h (12%), with a 100 km/h speed limit more popular among males (15%) than females (8%). A small minority of respondents (8%) did not nominate a default speed limit because they believed the appropriate speed limit was too dependent on factors such as the road quality and conditions, the driver and the vehicle and therefore a uniform default would be inappropriate.

What do you believe the default speed limit should be on unsealed roads outside built-up areas?

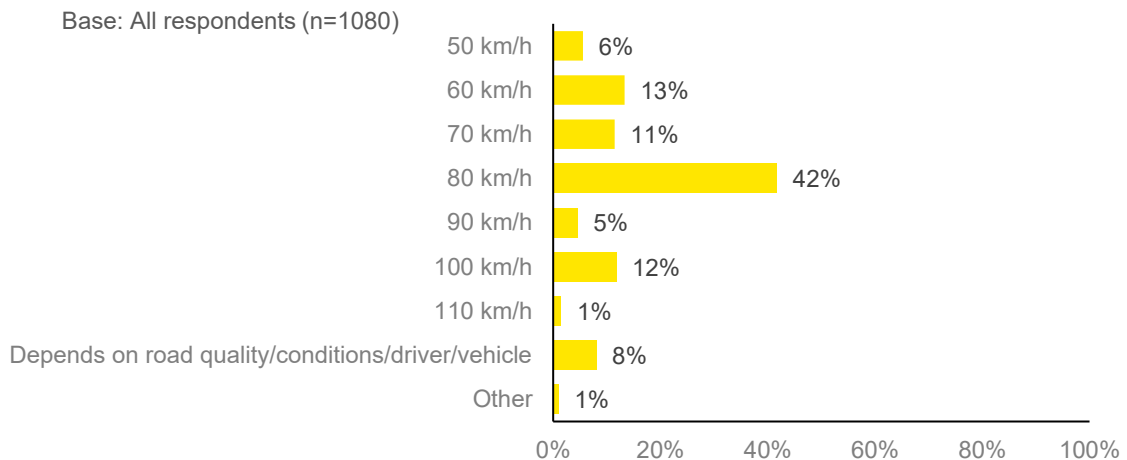


Figure 10: Preferred default speed limit on unsealed rural roads

Driver behaviour

Respondents were presented with a list of potential issues with driver behaviour in the region and asked to select which were concerns for them and then which was their biggest concern.

There were five driver behaviour issues that were a concern for at least four in 10 respondents: visitors who are not experienced driving on local roads (51%); people driving too slowly (well below the speed limit) (45%); speeding (43%); drivers with poor knowledge of the road rules (42%); and driver distraction/inattention (40%). Of these five, two in 10 (19%) nominated people driving too slowly (well below the speed limit) as their biggest concern, with around one in 10 nominating each of the other four as their biggest concern. A third of respondents (34%) were concerned about road rage/aggressive behaviour, with one in 10 (9%) identifying this as their biggest concern.

The most common 'other' concerns not provided as a response option related to tailgating and crossing double white lines when overtaking or cornering. Only 4% of respondents had no concerns about driver behaviour in the region.

Those living in the Yankalilla council area were more likely than average to be concerned about visitors who are not experienced driving on local roads (68% - with 22% selecting it as their biggest concern), whereas those living in the Victor Harbor council area were more likely than average to be concerned about drivers who are not medically fit (43% - with 12% selecting it as their biggest concern). Onkaparinga residents were more likely than those living elsewhere to nominate drivers with poor knowledge of the road rules as their biggest concern (15%). Speeding was of greatest concern to older people, with half (51%) of those aged 65 and over identifying it as a concern and two in 10 (19%) nominating it as their biggest concern.

Which, if any, of the following is a concern for you/your biggest concern with driver behaviour in the Fleurieu Peninsula?

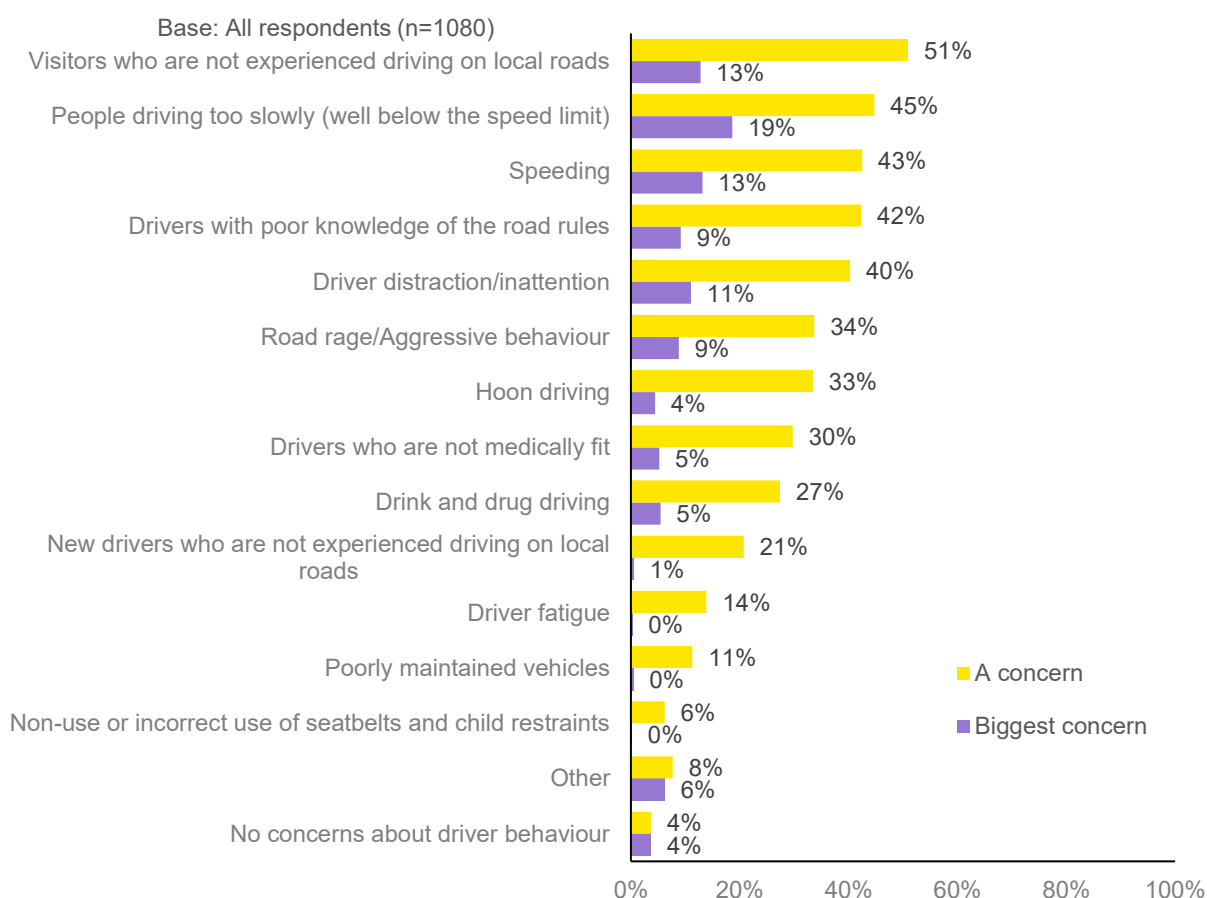


Figure 11: Concerns with driver behaviour in the region

Respondents who identified driver behaviour as a concern were given the opportunity to provide details of a particular road they were most concerned about. The table below shows the most frequently raised locations along with the approximate number of times the location was raised. Victor Harbor Rd ranked top for driver behaviour concerns, followed by Main South Rd, Long Valley Rd, Port Elliot Rd and Alexandrina Rd. The top five roads were the same as for speeding and speed limit enforcement.

Table 5: Roads most concerned about in relation to driver behaviour

Rank	Driver behaviour
1	Victor Harbor Rd (174)
2	Main South Rd (127)
3	Long Valley Rd (52)
4	Port Elliot Rd (44)
5	Alexandrina Rd (21)
6	Inman Valley Rd (19)
7	Goolwa Rd (13)

Freight

Respondents were presented with a list of potential issues with freight in the region and asked to select which were concerns for them and then which was their biggest concern.

There were three freight issues that were a concern for at least four in 10 respondents: not enough safe overtaking opportunities (57%); road design not suitable for large trucks (e.g., too narrow, too windy, too steep) (48%); and damage caused to road surfaces (44%). These three issues accounted for nearly two thirds of respondents' biggest freight concerns, with a quarter selecting not enough safe overtaking opportunities (25%) and road design not suitable for large trucks (23%), while 16% selected damage caused to road surfaces. The next most prominent concern after these three issues was intersections not suitable for large trucks, which was a concern for three in 10 respondents (29%) and the biggest concern for one in 10 (8%). There were 15% of respondents who had no concerns about freight in the region.

Those living in the Alexandrina and Victor Harbor council areas were most likely to be concerned about there not being enough safe opportunities to overtake freight: among Alexandrina residents, 64% identified this as a concern, with 28% selecting it as their biggest concern; among Victor Harbor residents, 58% identified this as a concern, with 35% selecting it as their biggest concern. In contrast, the top concern among Yankalilla council area residents was the road design not being suitable for large trucks, with 64% identifying this as a concern and 39% nominating it as their biggest freight concern. In addition, those living in the Yankalilla council area were more likely than average to be concerned about damaged caused by freight to road surfaces (55%). Onkaparinga residents were more likely than average to be concerned about the suitability of intersections for large trucks, with 39% concerned about this and 18% nominating it as their biggest concern.

Which, if any, of the following is a concern for you/your biggest concern with freight in the Fleurieu Peninsula?

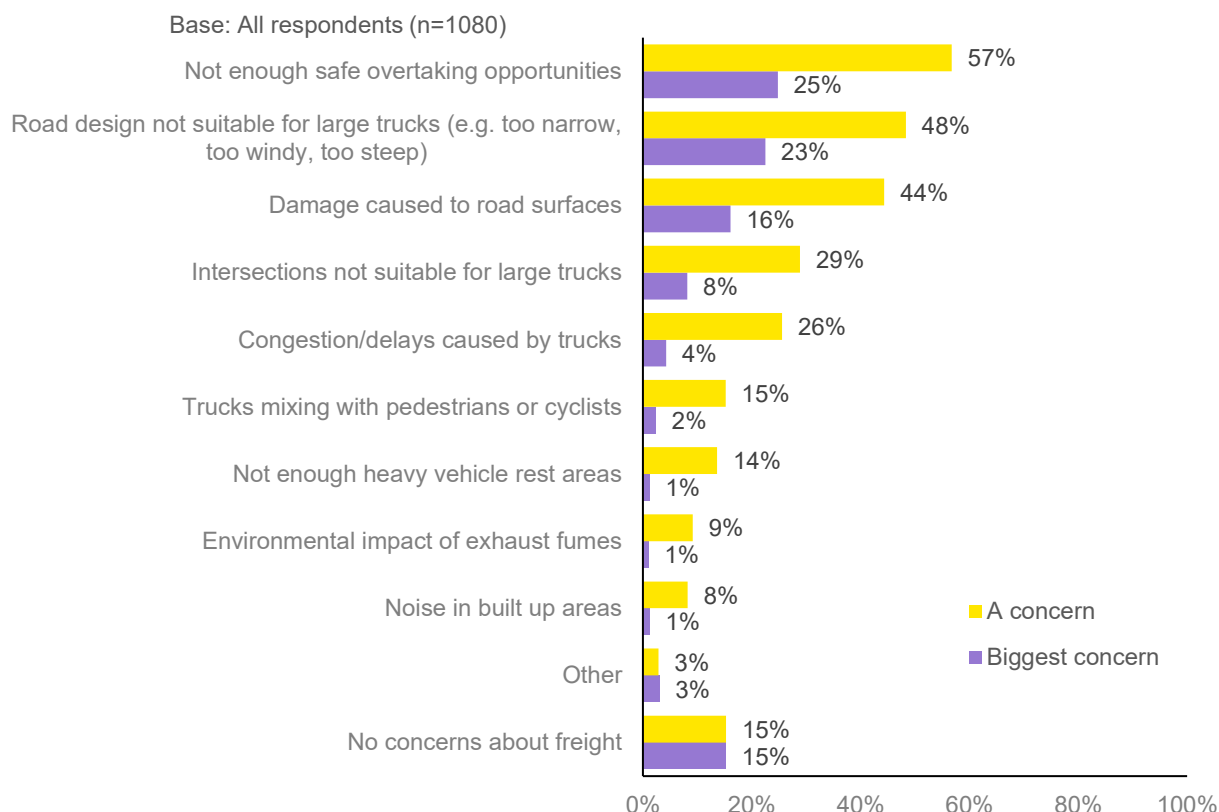


Figure 12: Concerns with freight in the region

Respondents who identified freight as a concern were given the opportunity to provide details of a particular road or intersection they were most concerned about. The tables below show the most frequently raised locations along with the approximate number of times the location was raised.

With respect to roads, Main South Rd ranked top for freight concerns, followed by Victor Harbor Rd, Long Valley Rd, Alexandrina Rd and Goolwa Rd. With respect to intersections, Victor Harbor Rd/Seaview Rd, located in the Onkaparinga council area, was by far the most commonly mentioned location, accounting for around half of all freight intersection nominations.

Table 6: Roads and intersections most concerned about in relation to freight

Rank	Road	Intersection
1	Main South Rd (143)	Victor Harbor Rd/Seaview Rd (38)
2	Victor Harbor Rd (107)	Main South Rd/Tatachilla Rd (6)
3	Long Valley Rd (27)	Main South Rd/Main Rd (Normanville) (6)
4	Alexandrina Rd (27)	
5	Goolwa Rd (27)	
6	Inman Valley Rd (14)	
7	Port Elliot Rd (10)	

In relation to freight, respondents were provided with a description of the proposed South Coast Freight Corridor from Cape Jervis to Callington, which would involve upgrading roads to allow b-

double trucks to travel from Cape Jervis, via Victor Harbor (ring route) and Strathalbyn, to the South Eastern Freeway Interchange at Callington. Respondents were asked how they felt about this proposal.

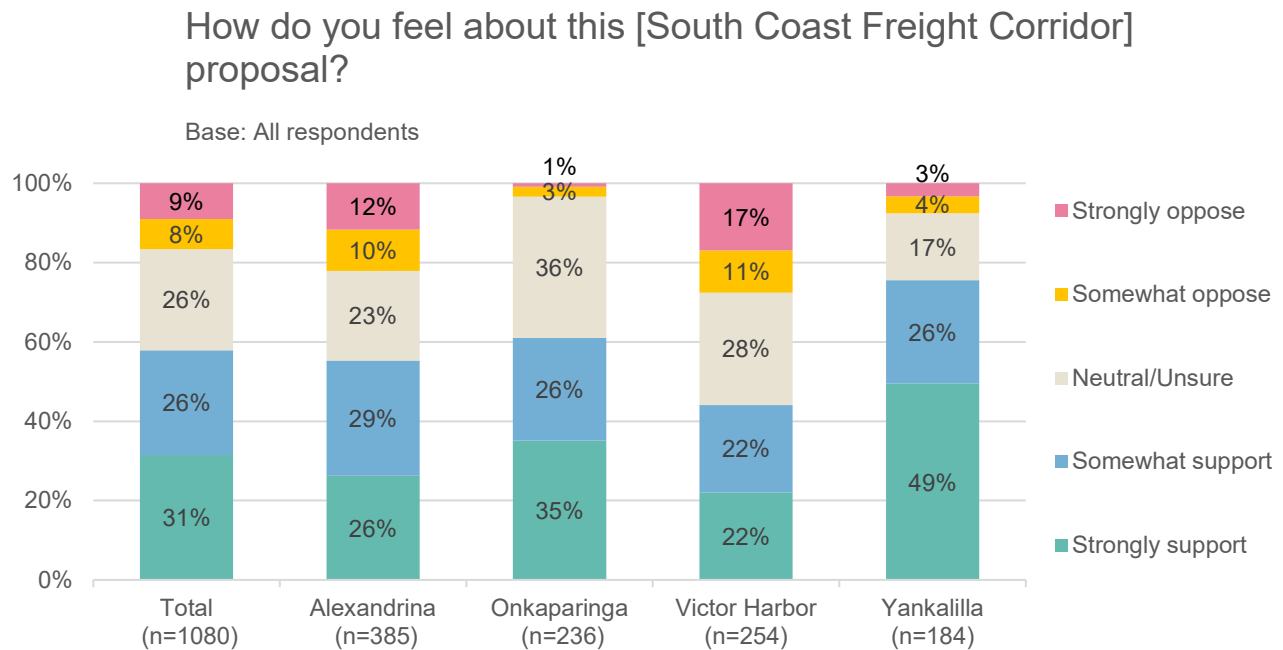


Figure 13: Views on the South Coast Freight Corridor proposal

Six in 10 respondents (58%) supported the South Coast Freight Corridor proposal, while two in 10 (17%) opposed it, with the remaining quarter (26%) neutral or unsure, typically because they wanted more information e.g., exact route details or details on how many trucks would use the route. There was considerable variation in opinion by council area, with three quarters (76%) of Yankalilla residents supporting the proposal (49% strongly so) compared with less than half (44%) of Victor Harbor residents (and just 22% strongly so). This is likely to reflect that the proposal would probably see fewer trucks travelling through the Yankalilla council area and a greater number travelling through the Victor Harbor council area. Support for the South Coast Freight Corridor was high among truck drivers, seven in 10 (71%) of whom supported it and half (47%) of whom strongly supported it. Females (30%) were more likely than males (21%) to be neutral or unsure about the proposal.

Among those in support of the South Coast Freight Corridor proposal (n=625), the top reasons given were:

- Removes trucks from other routes e.g., windy roads, roads used by cars, Main South Rd (16%) – this response was most common among those living in the Yankalilla council area
- It would improve safety (11%)
- Beneficial for truck drivers/freight industry e.g., time and cost savings (8%)
- It would mean road improvements/upgrades (that benefit everyone) (7%)
- Removes trucks from towns and residential areas e.g., Yankalilla (4%) – this response was most common among those living in the Yankalilla council area

“Giving the trucks a safer and easier path to travel will make them less likely to be on the tighter, winding roads.”

“Current road (Main South Road) too narrow and windy. Trucks turning at intersection in Normanville and into Yankalilla residential area.”

“It should remove some of the heavy trucks from the other roads & provide a quicker way for trucks to get to Victor Harbor & Cape Jervis/KI.”

“Everyone will benefit from this type of upgrade as cars will also be able to use that road.”

Among those opposed to the South Coast Freight Corridor proposal (n=179), the top reasons given were:

- Proposed route is unsuitable for trucks (14%)
- Route needs to bypass towns e.g., Middleton, Strathalbyn (12%) – this response was most common among those living in the Alexandrina council area
- Concerns about congestion (11%) – this response was most common among those living in the Victor Harbor council area
- Route would need major road upgrades first (currently too dangerous) (9%)
- Concerns about safety (8%)
- Not convinced it is necessary/Cost not justifiable (7%)

“Alexandrina Rd and Callington Rd would need a cost prohibitive amount of money to make them safe as would the B37.”

“Strathalbyn streets are not suitable for heavy traffic! If this proposal goes ahead there needs to be a ring route around Strathalbyn.”

“Very concerned if freight goes though the main street of Middleton. It is too congested as is.”

“Ring route already takes a huge amount of traffic. The road would become very dangerous if more trucks used it.”

“What purpose would it serve? Freight transport from Cape Jervis to Callington would not be a huge volume.”

At the time of writing this report, RAA understands that the proposal is somewhat underdeveloped and detailed traffic analysis needs to be undertaken which would inform a business case for the creation of a South Coast Freight Corridor. As a minimum, should b-double usage be high along the corridor, several road upgrades would be required, including:

- Range Road including at the intersection with Main South Road, noting that the Delamere intersection offers poor sight distance and is likely to be inappropriate,
- Victor Harbor ring route, particularly at intersections,
- Middleton bypass
- Airport Road upgrade

- Alexandrina Road upgrade including overtaking lanes.

Implementing the South Coast Freight Corridor would result in more efficient freight movements and improve productivity in the southern Fleurieu region by providing b-double access to Victor Harbor and the south coast. There may be some reduction in freight use along Main South Road to and from Kangaroo Island, and an origin-destination analysis is required to determine how this may impact heavy vehicle routes as Main South Road would still provide the most direct route to Adelaide.

RAA recommends that a feasibility study and business case be developed for the South Coast Freight corridor.

Recommendation 1

Undertake a feasibility study and develop a business case for the South Coast Freight Corridor.

Motorcycling

There were 81 survey respondents who had ridden a motorcycle in the Fleurieu Peninsula in the past six months. These respondents were presented with a list of potential issues with motorcycling in the region and asked to select which were concerns for them and then which was their biggest concern.

Seven in 10 motorcyclists (72%) were concerned about poorly maintained sealed roads and half (51%) selected it as their biggest concern, making it the top issue relating to motorcycling. Nearly half of respondents (44%) were concerned about poor or dangerous driver behaviour, with two in 10 (21%) selecting it as their biggest concern, making this the second most prominent motorcycling issue among survey respondents. The third most common concern, selected by three in 10 motorcyclists (30%) was roadside barriers not having motorcycle underrun protection, although only 2% nominated this as their biggest concern. Two in 10 (19%) identified poorly maintained unsealed roads as a concern, with 6% nominating this as their biggest concern. One in 10 motorcyclists (10%) had no concerns about motorcycling in the region.

Which, if any, of the following is a concern for you/your biggest concern with motorcycling in the Fleurieu Peninsula?

Base: All who have ridden a motorcycle in the Fleurieu Peninsula in the past six months (n=81)

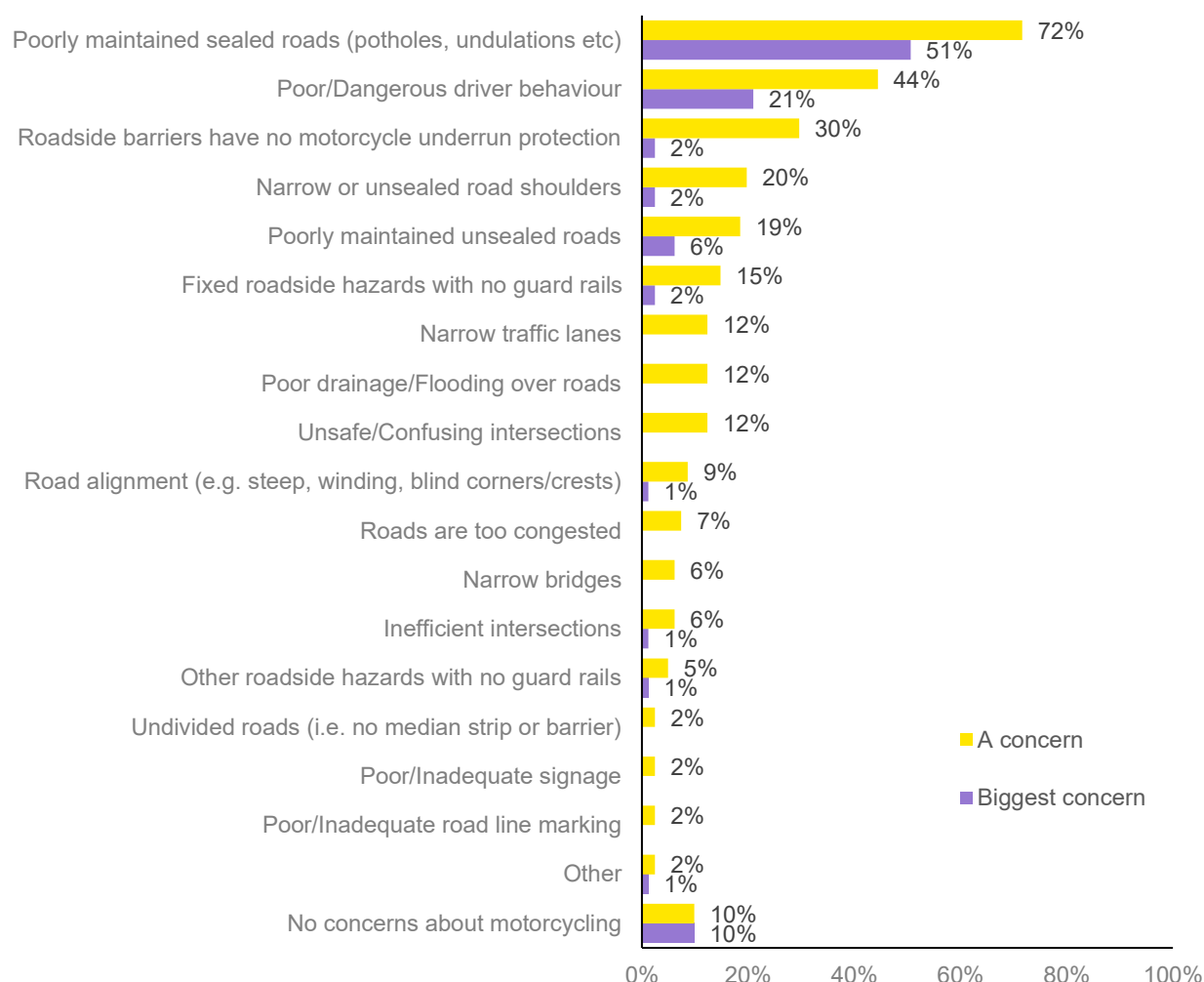


Figure 14: Concerns with motorcycling in the region

Both motorcyclists and non-motorcyclists were given the opportunity to provide details of a particular road or intersection they were most concerned about in relation to motorcycling. The table below shows the most frequently raised roads along with the approximate number of times the road was raised. There were very few nominations for intersections.

Among motorcyclists, Inman Valley Rd received the most nominations, followed by Alexandrina Rd and Victor Harbor Rd. Among non-motorcyclists, Bull Creek Rd featured alongside Main South Rd and Victor Harbor Rd in the top three ranked roads for concerns about motorcycling.

Table 7: Roads most concerned about in relation to motorcycling

Rank	Motorcyclists	Non-motorcyclists	Total
1	Inman Valley Rd (6)	Main South Rd (22)	Main South Rd (24)
2	Alexandrina Rd (4)	Bull Creek Rd (15)	Victor Harbor Rd (17)
3	Victor Harbor Rd (3)	Victor Harbor Rd (14)	Bull Creek Rd (16)

Cycling

There were 177 survey respondents who had cycled in the Fleurieu Peninsula in the past six months. These respondents were presented with a list of potential issues with cycling in the region and asked to select which were concerns for them and then which was their biggest concern.

Which, if any, of the following is a concern for you/your biggest concern with cycling in the Fleurieu Peninsula?

Base: All who have ridden a bicycle in the Fleurieu Peninsula in the past six months (n=177)

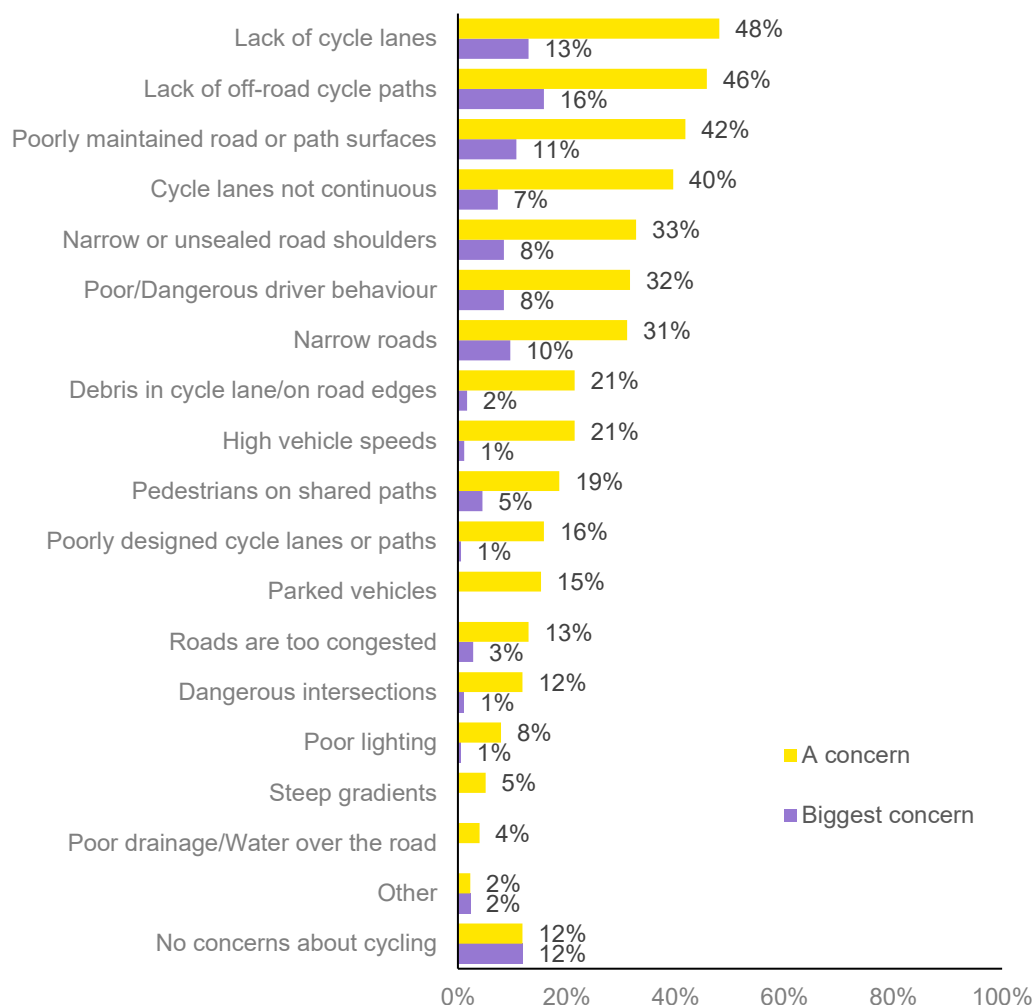


Figure 15: Concerns with cycling in the region

There were four issues that were a concern for at least four in 10 cyclists: lack of cycle lanes (48%); lack of off-road cycle paths (46%); poorly maintained road or path surfaces (42%); and cycle lanes not being continuous (40%). Of these four, lack of off-road cycle paths was most frequently selected as the biggest concern (16%), followed by lack of cycle lanes (13%), poorly maintained road or path surfaces (11%) and cycle lanes not continuous (7%). A further three issues were a concern for around a third of cyclists and the biggest concern for around one in ten: narrow or unsealed road shoulders; poor/dangerous driver behaviour; and narrow roads. One in 10 cyclists (12%) had no concerns about cycling in the region.

Both cyclists and non-cyclists were given the opportunity to provide details of a particular road, cycle path or intersection they were most concerned about in relation to cycling. The table below shows the most frequently raised roads/cycle paths along with the approximate number of times the road/cycle path was raised. There were very few nominations for intersections.

Among cyclists, Encounter Bikeway received the most nominations; this is an on-road and shared path trail that links Victor Harbor to Goolwa. Inman Valley Rd and Main South Rd received the next highest numbers of cyclist nominations. Among non-cyclists, Inman Valley Rd featured alongside Main South Rd and Victor Harbor Rd in the top three ranked roads/cycle paths for concerns about cycling.

Table 8: Roads/Cycle paths most concerned about in relation to cycling

Rank	Cyclists	Non-cyclists	Total
1	Encounter Bikeway (13)	Main South Rd (40)	Main South Rd (48)
2	Inman Valley Rd (9)	Inman Valley Rd (34)	Inman Valley Rd (43)
3	Main South Rd (8)	Victor Harbor Rd (19)	Victor Harbor Rd (23)

All survey respondents were asked whether they felt the Fleurieu Peninsula has too much cycling infrastructure (e.g., cycle paths, cycle lanes, cycle network signs and bike boxes at intersections), about the right amount of cycling infrastructure or not enough cycling infrastructure.

Do you feel the Fleurieu Peninsula has...?

Base: All respondents

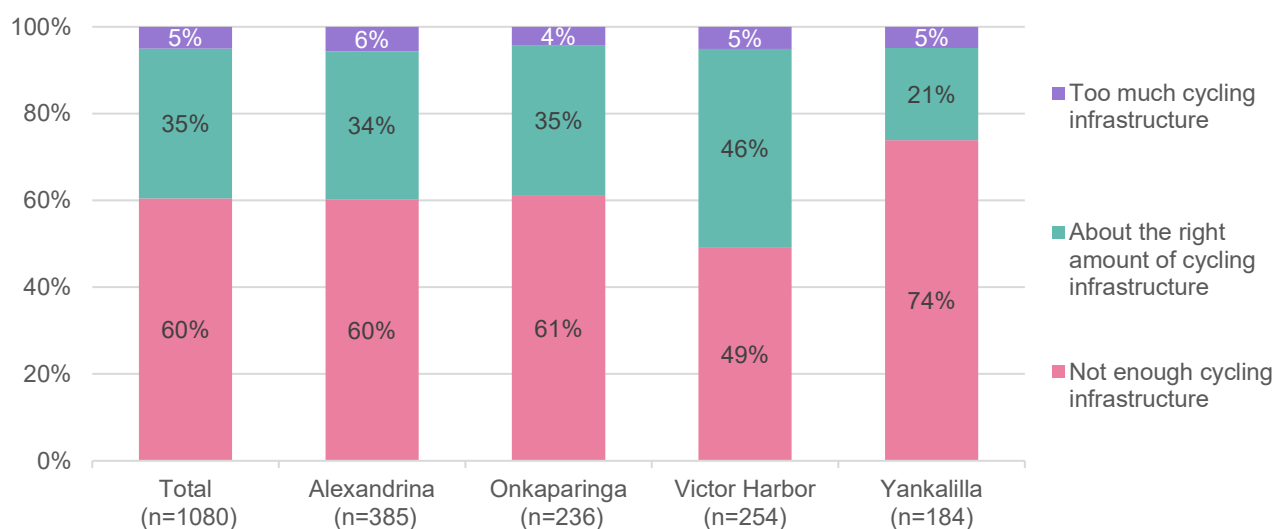


Figure 16: Feelings on the amount of cycling infrastructure in the region

Six in 10 respondents (60%) felt the region does not have enough cycling infrastructure, a third (35%) felt it has about the right amount and one in twenty (5%) felt it had too much. Those living in the Yankalilla council area were more likely than average to think the region has not enough cycling infrastructure (74%), while those in the Victor Harbor council area were almost evenly split between those thinking there is not enough cycling infrastructure (49%) and those thinking there is about the right amount (46%). Cyclists (72%) and females (65%) were particularly likely to feel that the Fleurieu

Peninsula has not enough cycling infrastructure, whereas truck drivers and motorcyclists (both 11%) were more likely than average to feel that the region has too much cycling infrastructure.

Respondents were also provided with a description of current rules around safe passing of cyclists, which require drivers to give a minimum of one metre clearance when passing a cyclist where the speed limit is 60 km/h or less, or 1.5 metres where the speed limit is over 60 km/h. They were asked how they felt about these laws.

Six in 10 respondents (60%) supported the minimum passing distance laws, while a quarter (23%) opposed them, with the remaining two in 10 (17%) neutral or unsure. There were no significant differences in opinion by council area. Support for the laws was high among cyclists, three quarters (76%) of whom supported them and half (49%) of whom strongly supported them. Around two in 10 truck drivers and motorcyclists (22% in each case) strongly opposed the laws.

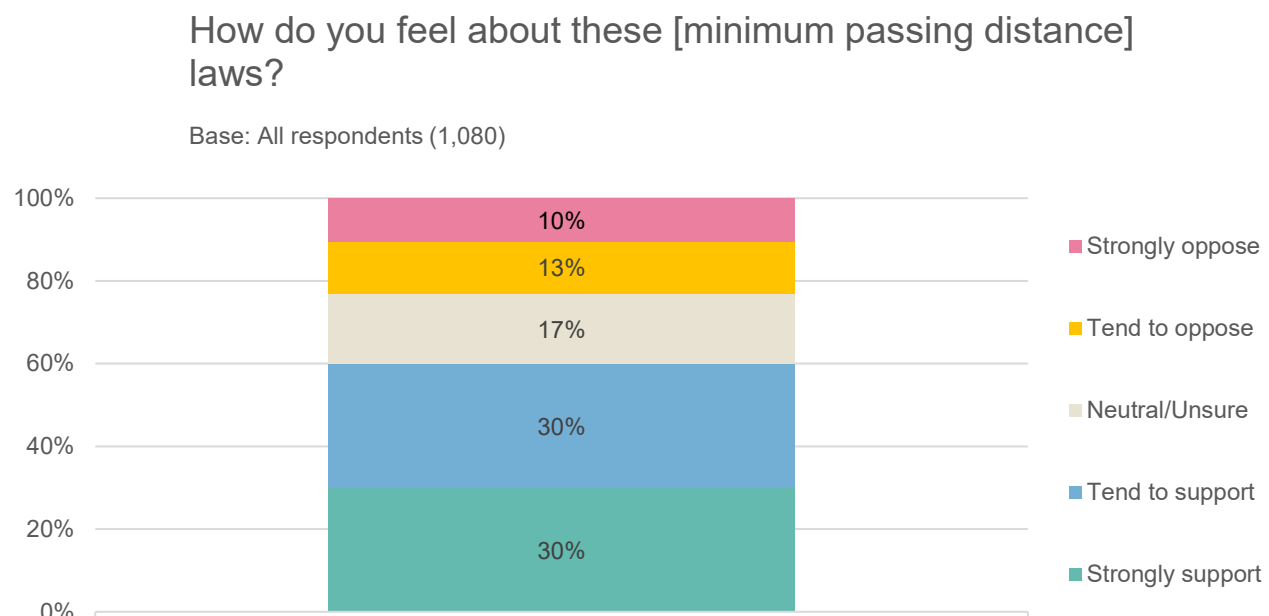


Figure 17: Views on minimum passing distance laws

Pedestrians

Respondents were presented with a list of potential issues with travelling as a pedestrian in the region and asked to select which were concerns for them and then which was their biggest concern.

The top two pedestrian concerns among respondents were lack of footpaths (a concern for 44% and the biggest concern for 23%) and poorly maintained footpaths (a concern for 38% and the biggest concern for 19%). These were followed by non-continuous footpaths (a concern for 34% and the biggest concern for 10%), lack of pedestrian crossings/refuges (a concern for 22% and the biggest concern for 7%) and busy roads (a concern for 19% and the biggest concern for 6%). A quarter of respondents (27%) had no concerns about travelling as a pedestrian in the region, increasing to 31% of males.

Residents of the Yankalilla council area were more likely than average to identify lack of pedestrian crossings/refuges as a concern (36% - with 16% selecting it as their biggest concern), while 16-44 year olds were most likely to identify poor lighting as a concern (20%). Among those who had used

walking as a mode of transport in the past six months, lack of footpaths (51%) and non-continuous footpaths (42%) were particularly likely to be raised as concerns.

Which, if any, of the following is a concern for you/your biggest concern when travelling as a pedestrian in the Fleurieu Peninsula?

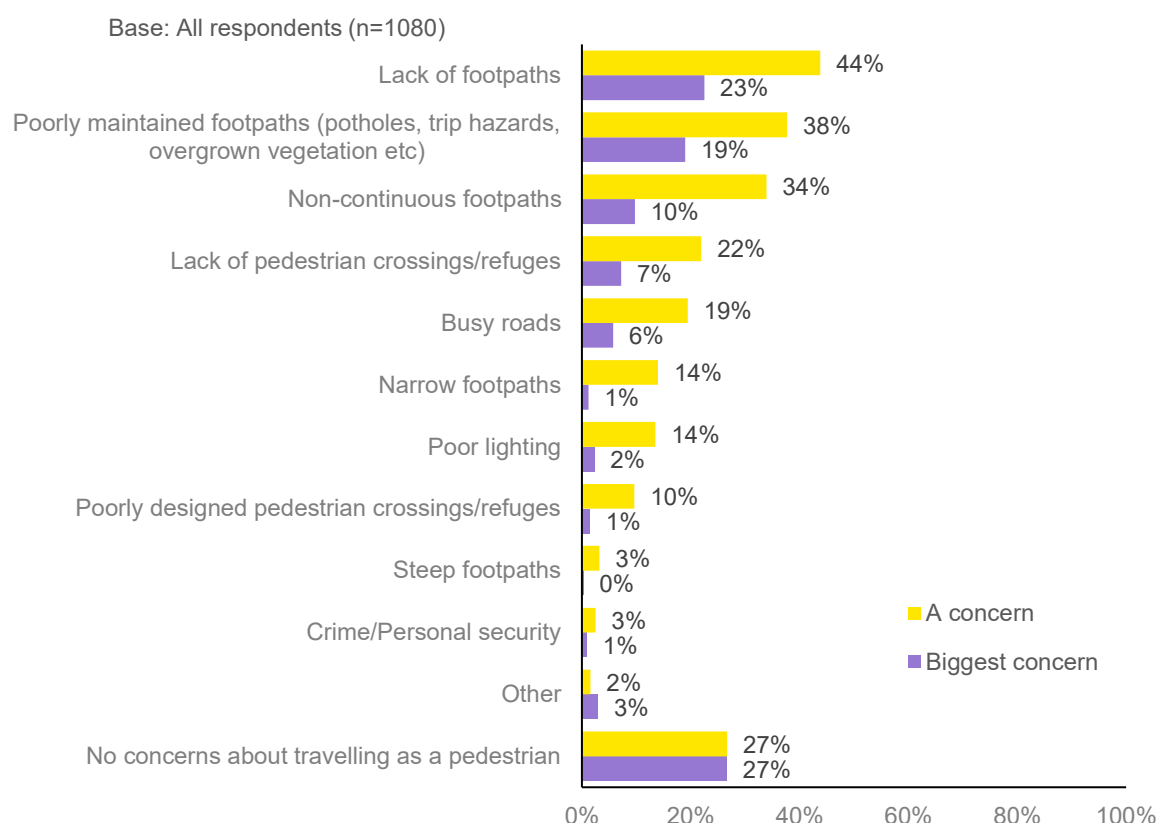


Figure 18: Concerns with travelling as a pedestrian in the region

Respondents who identified concerns with travelling as a pedestrian in the region were given the opportunity to provide details of a particular road or path they were most concerned about. The table below shows the most frequently raised locations along with the approximate number of times the location was raised. Some respondents chose to identify a whole town rather than a specific road or path, and these are shown separately in the table.

Main South Rd (Yankalilla) ranked top for concerns in relation to pedestrian travel, receiving more than three times the nominations of any other road/path or town, with almost all nominations relating to difficulties crossing Main South Rd in the centre of Yankalilla. The nearby section of Main South Rd just south of Normanville (Williss Dr) ranked second among roads for pedestrian concerns, in this case almost all in relation to footpaths, while Kangarilla Rd (McLaren Flat) ranked third, again almost all in relation to footpaths. In relation to towns, Victor Harbor had the most concerns raised, followed by Goolwa, Sellicks Beach and Strathalbyn.

Table 9: Locations most concerned about in relation to pedestrian travel

Rank	Road/Path	Town
1	Main South Rd (Yankalilla) (35) – almost all crossings	Victor Harbor (11) – almost all footpaths
2	Main South Rd/Williss Dr (Normanville) (10) – almost all footpaths	Goolwa (10) – almost all footpaths
3	Kangarilla Rd (McLaren Flat) (8) – almost all footpaths	Sellicks Beach (7) – all footpaths
4	Noble Ave (Goolwa) (7) – almost all footpaths	Strathalbyn (7) – mostly footpaths
5	Hindmarsh Rd (Victor Harbor) (6) – mixture	Encounter Bay (6) - all footpaths

In relation to pedestrian travel, survey respondents were also asked whether they felt the Fleurieu Peninsula has too much pedestrian infrastructure (e.g., footpaths and pedestrian crossings), about the right amount of pedestrian infrastructure or not enough pedestrian infrastructure.

Just over half of respondents (54%) felt the region does not have enough pedestrian infrastructure, just under half (46%) felt it has about the right amount and the remaining 1% felt it had too much. Those living in the Yankalilla council area were a little more likely than average to think the region has not enough pedestrian infrastructure (63%), while more people in the Victor Harbor council area thought there is the right amount of cycling infrastructure (53%) than thought there is not enough cycling infrastructure (46%). Those who had used walking as a mode of transport in the past six months (60%), along with females (59%), were particularly likely to think there is not enough pedestrian infrastructure.

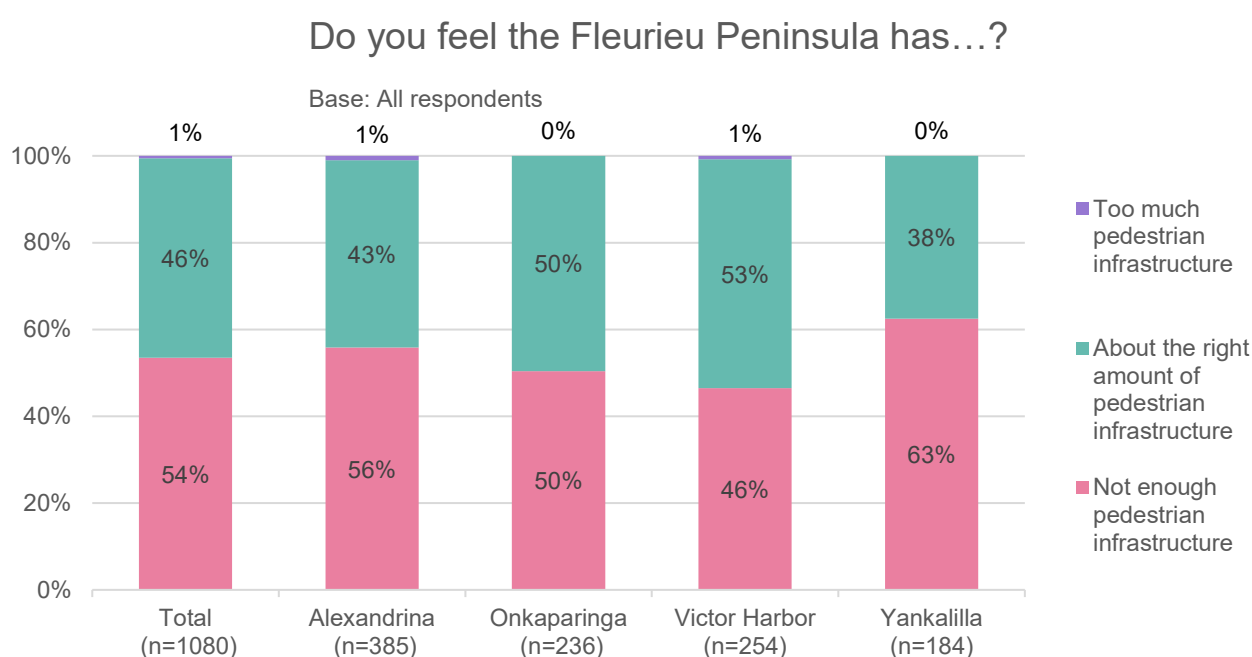


Figure 19: Feelings on the amount of pedestrian infrastructure in the region

Public and community transport

Respondents were presented with a list of potential issues with public transport in the region and asked to select which were concerns for them and then which was their biggest concern. It should be noted that only 4% of respondents had used a bus within the Fleurieu Peninsula in the past six months but all respondents were asked these questions.

Nearly half of respondents (45%) were concerned about there being no services or services being too far away and a third (36%) selected this as their biggest concern, making it the top issue relating to public transport. Three in 10 respondents (28%) were concerned about services not taking them where they need to go, with one in 10 (10%) selecting this as their biggest concern, making this the second most prominent public transport issue among survey respondents. The third most prominent issue was travel time being too long, which was a concern for two in 10 respondents (20%) and the biggest concern for 6% of respondents. The most common 'other' concern not provided as a survey response option was services being too infrequent or having limited operating hours. A quarter of respondents (26%) had no concerns about public transport in the region.

Which, if any, of the following is a concern for you/your biggest concern with the public transport in the Fleurieu Peninsula?

Base: All respondents (n=1080)

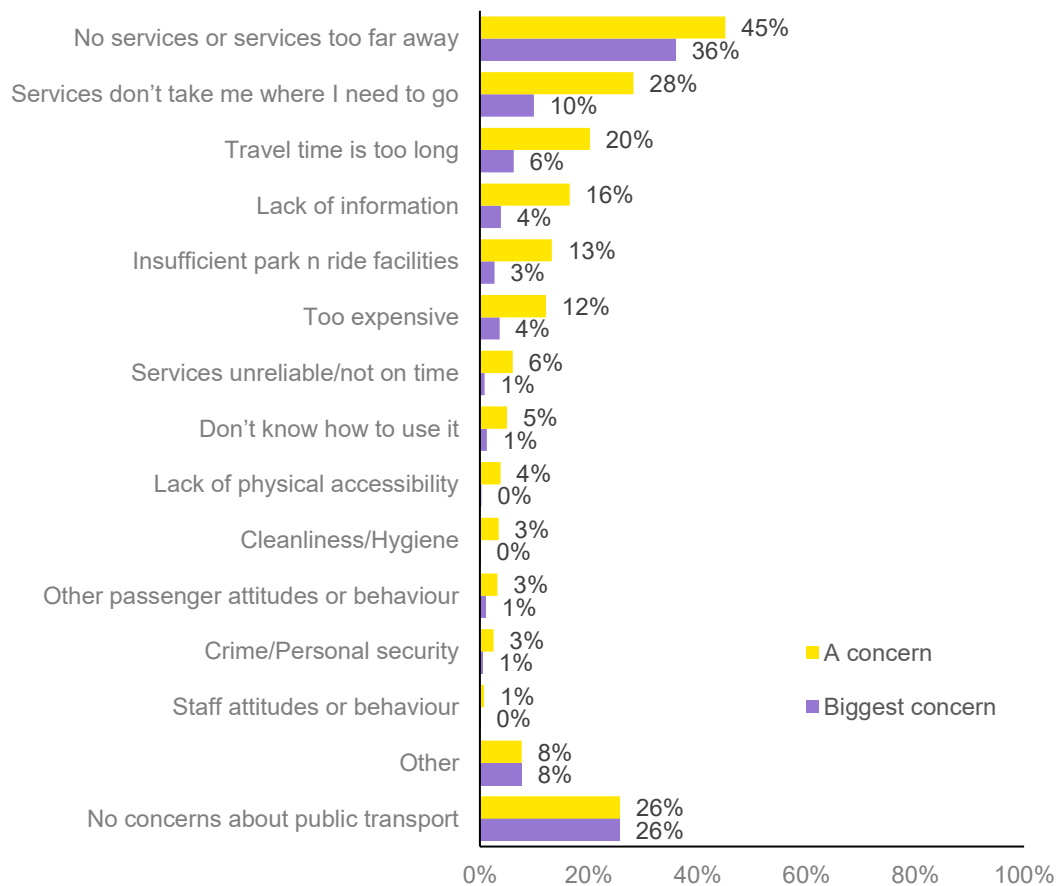


Figure 20: Concerns with public transport in the region

The prominence of different concerns varied considerably by council area:

- Alexandrina council area residents were more likely than average to be concerned about insufficient park n ride facilities (18%);
- Onkaparinga council area residents were more likely than average to nominate travel time being too long as their biggest concern (11%), but were also more likely than average to have no concerns about public transport (35% - with 22% selecting it as their biggest concern) and less likely than average to be concerned about no services or services too far away (32%), lack of information (8%) or public transport being too expensive (3%);
- Victor Harbor council area residents were more likely than average to be concerned about public transport being too expensive (20% - with 8% selecting it as their biggest concern), while they were less likely than average to be concerned about no services or services too far away (37%); and
- Yankalilla council area residents were more likely than average to be concerned about no services or services too far away (70% - with 65% selecting it as their biggest concern), while only 16% had no concerns about public transport.

Those who had travelled on a bus in the region in the past six months were particularly likely to be concerned that services do not take them where they need to go (56% - with 23% selecting it as their biggest concern). In addition, females were more likely than males to be concerned that travel time is too long (25% compared with 16%), whereas males were more likely to have no concerns about public transport (31% compared with 21%).

Respondents who identified public transport as a concern were given the opportunity to provide details of a particular location where they thought improvements to public transport were most needed. The table below shows the most frequently raised locations along with the approximate number of times the location was raised. Some respondents chose to identify a town while others identified a route between two towns, and these are shown separately in the table.

The most common routes identified by respondents as in need of public transport improvements were Victor Harbor-Adelaide and the connection between Normanville/Yankalilla and Adelaide/Seaford/Noarlunga. The towns most frequently identified as in need of public transport improvements were Strathalbyn, Normanville/Yankalilla and Victor Harbor.

Table 10: Locations improvements to public transport are most needed

Rank	Route between two towns	Town
1	Victor Harbor-Adelaide (33)	Strathalbyn (31)
2	Normanville/Yankalilla-Adelaide/Seaford/Noarlunga (28)	Normanville/Yankalilla (29)
3	Goolwa-Adelaide (16)	Victor Harbor (23)
4	Seaford-Aldinga (9)	Goolwa (17)
5	Strathalbyn-Mount Barker (9)	Willunga (10)

In relation to public transport, respondents were asked how frequently they would be likely to use an extension of the Seaford rail line from Seaford to Aldinga if it were constructed. Overall, one in twenty (5%) indicated they would use the rail extension most days, one in 10 (10%) would use it at least weekly, a quarter (24%) would use it at least monthly and just over half (54%) would ever use it.

How frequently would you be likely to use this rail extension?

Base: All respondents

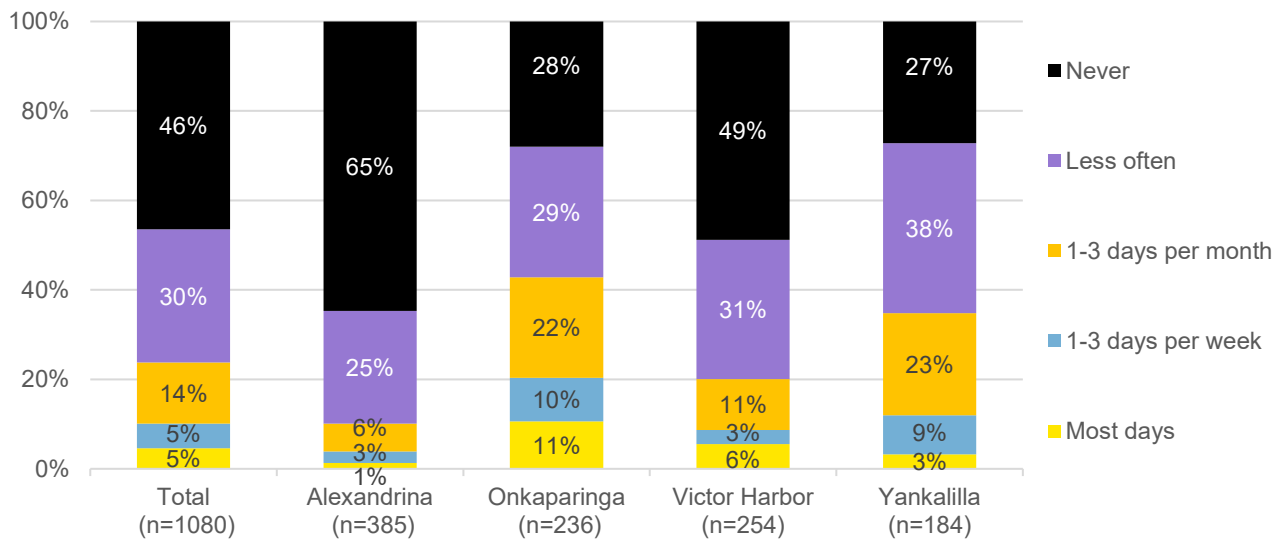


Figure 21: Likely frequency of use of an extension of the Seaford rail line to Aldinga

There was considerable variation in likely usage of the rail extension by council area, reflecting the geographical proximity of the council area to Aldinga and the extent to which Aldinga is en route from the council area to Adelaide:

- Likely usage was highest in Onkaparinga (which Aldinga sits within), where one in 10 (11%) would use it most days, two in 10 (20%) weekly, four in 10 (43%) monthly and three quarters (72%) ever (it should be noted that only those living in the McLaren Vale and Willunga areas of Onkaparinga were actively encouraged to complete the survey, and so these figures do not reflect likely usage among those living in Aldinga itself);
- Likely usage was also relatively high in Yankalilla, where although only 3% would use it most days and one in 10 (12%) weekly, a third (35%) would use it monthly and three quarters (73%) ever;
- Likely usage was close to average in Victor Harbor, where one in twenty (6%) would use it most days, one in 10 (9%) weekly, two in 10 (20%) monthly and half (51%) ever
- Likely usage was lowest in Alexandrina, where only one in 10 (10%) would use it monthly and two thirds (65%) indicated they would never use it – 31% of Alexandrina residents provided the explanation that they do not live near Aldinga or cannot easily get there.

Likely frequency of use was higher among working age people than older people, with 15% of 16-44 year olds and 14% of 45-64 year olds likely to use it weekly compared with 5% of those aged 65 and over. At about a quarter (23%), likely weekly usage was also higher than average among those who had used a bus in the region in the past six months.

Among those who would be likely to use the rail extension at least weekly (n=109, nearly half of whom live in Onkaparinga), the top three reasons given were:

- Useful for travel for work/study (30%)
- Useful for kids/other family members e.g., travelling to school, uni or work (11%)
- Aldinga is closer to where I live/more convenient than Seaford (7%)

Among those who would be likely to use the rail extension at least monthly (n=257), the top three reasons change somewhat:

- Useful for travel for work/study (14%)
- Better than driving to Adelaide e.g., safer, avoids congestion and parking, reduces fatigue (10%)
- Useful for city travel (9%)

“I live in Victor Harbor and work in Adelaide, so already drive to Seaford most days to catch the train. Aldinga will save me some time.”

“This would be a good extension because I do my studying in the city.”

“Children attend school in city so they would be on the train 5 days a week and sometimes for sporting activities on weekends.”

“Convenient access to city and avoiding city parking and traffic.”

“Would only use this service if needing to go to the CBD. But absolutely support this idea!”

Those who would use the rail extension less often than monthly (n=321) most commonly gave the reason that they do not travel to Adelaide (or Aldinga) very often (19%), while those who would never use the rail extension (n=502, half of whom live in Alexandrina) most commonly gave the reasons that they do not live near Aldinga or cannot easily get there (31%), they prefer to drive (8%) or they do not generally use public transport (7%).

A small minority of respondents (3%) spontaneously called for a train service to be provided from Adelaide to Victor Harbor (or Goolwa).

The topic of public transport was explored further in the survey through providing respondents with a description of on-demand bus trials, as launched in Mount Barker and the Barossa Valley, which enable passengers to order a bus, when and where they need it, to take them anywhere within the service area. Respondents were asked how useful an on-demand bus service in Victor Harbor-Goolwa would be to them.

A quarter of respondents (23%) indicated that a Victor Harbor-Goolwa on-demand bus service would be extremely or very useful to them and two in 10 (20%) indicated it would be fairly useful. However, a majority (56%) indicated it would be not very useful or not at all useful.

How useful would this [Victor Harbor-Goolwa] on-demand bus service be to you?

Base: All respondents

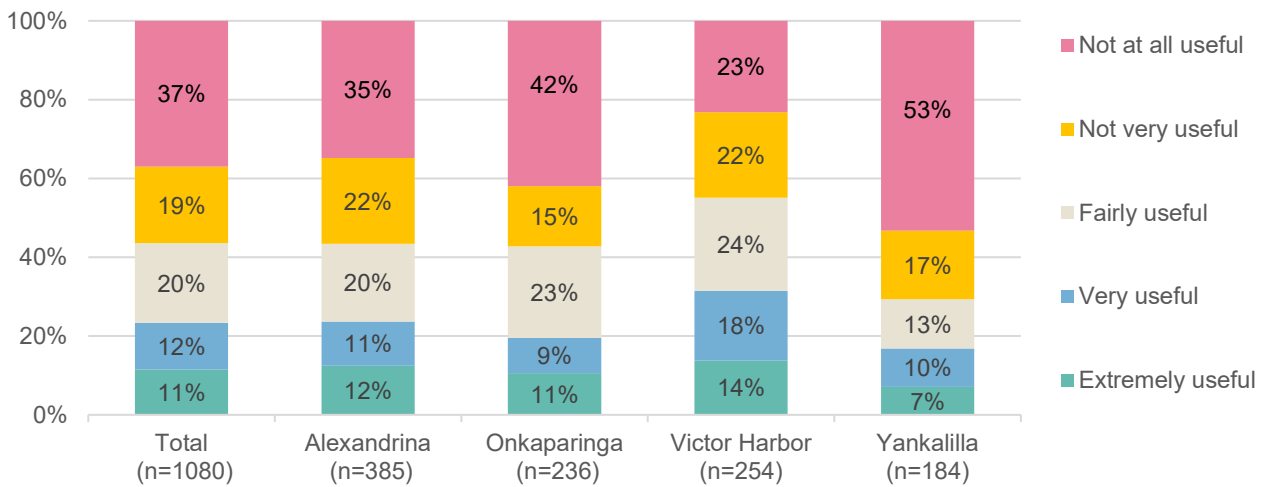


Figure 22: Perceived usefulness of a Victor Harbor-Goolwa on-demand bus service

There was variation in perceived usefulness of the on-demand bus service by council area, reflecting whether people live in the Victor Harbor-Goolwa area or live close enough to visit it regularly:

- Most residents of the Victor Harbor council area (55%) would find the service at least fairly useful, which reflects that most either live within the proposed service area or would visit on a regular basis;
- Around four in 10 residents of the Alexandrina council area (43%) would find the service at least fairly useful, with responses likely to depend on whether residents live in or close to the Goolwa end of the proposed service area or if they live closer to Strathalbyn (and therefore may not visit Victor Harbor-Goolwa very often);
- Perceived usefulness was relatively high among Onkaparinga residents given the distance from the proposed service area (43% at least fairly useful), suggesting many regularly utilise Victor Harbor Road to visit Victor Harbor-Goolwa; and
- Only three in 10 residents of the Yankalilla council area (29%) would find the service at least fairly useful, reflecting that they do not live in the proposed service area and possibly do not regularly visit Victor Harbor-Goolwa.

Those aged 16-44 (19%) and females (15%) were more likely than average to view a Victor Harbor-Goolwa on-demand bus service as extremely useful.

Among those who rated a Victor Harbor-Goolwa on-demand bus service as extremely or very useful to them (n=252), the top reasons given were:

- Useful for older people (13%)
- Useful for people who are unable to drive (10%)
- Current public transport options are poor/non-existent (10%)
- Provides flexibility/an alternative to driving (7%)
- May need it in the future/later in life (3%) – this response was most common among those living in the Victor Harbor council area and those aged 65 and over

This suggests that the primary appeal of an on-demand bus service would be to improve mobility for those who are unable or reluctant to drive, such as older people.

“I am old and having trouble driving. A bus service would be great.”

“Aging population cannot always walk to a place to catch a bus of which are few and far between in Victor Harbor.”

“There will come a time I don't drive, and I think this is a great idea.”

“The option of taking a bus to other parts of the region would be welcome in case driving wasn't an option.”

Among those who rated a Victor Harbor-Goolwa on-demand bus service as not very or not at all useful to them (n=609), the top reasons given were:

- Do not live in/near Victor Harbor-Goolwa (29%) – this response was most common among those living in the Yankalilla council area
- Have a car/Prefer to drive (14%)
- Don't generally use buses/public transport (8%)
- No need for it (5%)
- Don't tend to go to Victor-Harbor-Goolwa (3%)

“I live in Normanville, which is a long way from Victor and Goolwa.”

“I have a car but great for people with less access to transport.”

“I have my own transport and with COVID I personally would now never catch any other public transport.”

“I have to drive to the area anyway and would not be needing the bus.”

“If I go to Goolwa/Victor Harbor then I drive there, so no point using public transport of any kind.”

RAA recommends that an on-demand bus service between Goolwa and Victor Harbor be trialled, which will improve connectivity and mobility between the two large population centres and destinations en route including Middleton, Port Elliot, and McCracken.

Recommendation 2

Trial an on-demand bus service between Goolwa and Victor Harbor, including destinations en route such as Middleton, Port Elliot and McCracken.

Only 19 survey respondents (2%) had used community transport within the Fleurieu Peninsula in the past six months. These respondents were asked if they had any suggestions for improving community transport in the region. Seven comments were made, with most calling for enhanced services to get to Adelaide e.g., to attend medical appointments.

Taxis and rideshare

All respondents were asked if they had any suggestions for improving taxi services in the Fleurieu Peninsula, noting that only 4% of respondents had used a taxi within the Fleurieu Peninsula in the past six months. Just under two in 10 respondents (17%) made a comment, with the seven most common responses (each made by at least 1% of respondents) listed below:

- There are no local taxis/Need to establish a service first (3%) - this response did not apply to those living in the Victor Harbor council area
- Don't use taxis locally (3%)
- Too expensive/Reduce taxi fares (3%)
- Need more taxis/taxi services (2%)
- Need to improve taxi availability/reliability (e.g., at peak times) (2%) - this response was most common among taxi users
- Current services are satisfactory (1%) - this response was most common among those living in the Victor Harbor council area
- Bring in rideshare services (e.g., to increase competition, availability) (1%)

"Strathalbyn needs a taxi service! We have a lot of elderly people in our town and they often have to wait hours for one to come from mount barker or walk."

"There is no taxi service in Normanville."

"I have not used a taxi in the region but frequently hear that the availability is poor and unreliable."

"I had to catch one taxi from Bunnings to Encounter Bay, \$30, it is just too dear for me."

"Allow Uber to provide more competition."

While only 2% of survey respondents had used a rideshare service within the Fleurieu Peninsula in the past six months, two in 10 (20%) had used a rideshare service when outside of the region. In

around two thirds of these cases the respondent booked the rideshare service themselves, with the remaining third relying on a travelling companion to book the service.

There is a correlation between age and rideshare use outside the region, with nearly half of 16-44 year olds (46%) having used a rideshare service outside of the Fleurieu Peninsula in the past six months compared with two in 10 45-64 year olds (20%) and one in 10 of those aged 65+ (8%). Those who have used a taxi service within the region are particularly likely to have used a rideshare service outside of the region (44%).

In the past 6 months, have you used ridesharing services (e.g. Uber, Ola, Go Catch) when outside of the Fleurieu Peninsula?

Base: All respondent (n=1080)

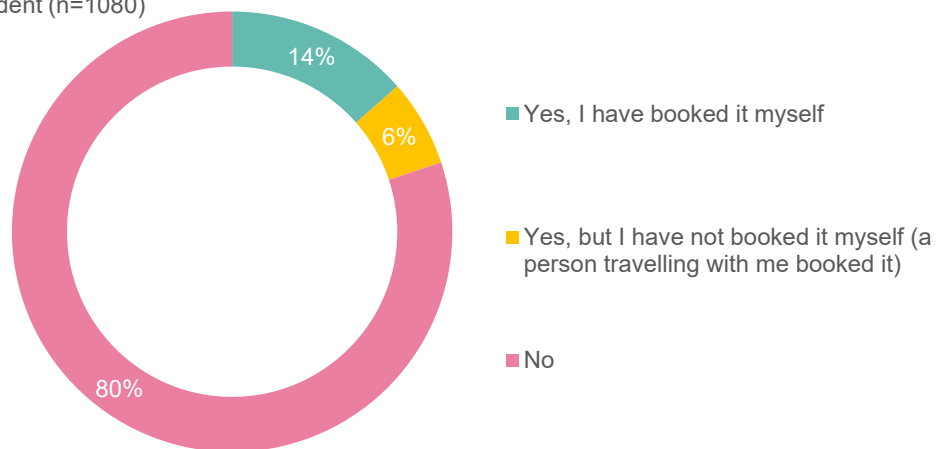


Figure 23: Whether used a rideshare service outside of the Fleurieu Peninsula in the past six months

Two in 10 respondents (22%) would use a rideshare service if it were offered where they live, nearly half (46%) would not, with the remaining third (32%) unsure. Once again, likelihood to use was correlated with age, with half of 16-44 year olds (49%) likely to use a local rideshare service compared with a quarter of 45-64 year olds (25%) and one in 10 of those aged 65+ (9%). In addition, females (26%), bus users (37%) and taxi users (49%) were particularly likely to indicate their intention to use a rideshare service if offered locally.

Would you use a ridesharing service if it were offered where you live?

Base: All respondent (n=1080)

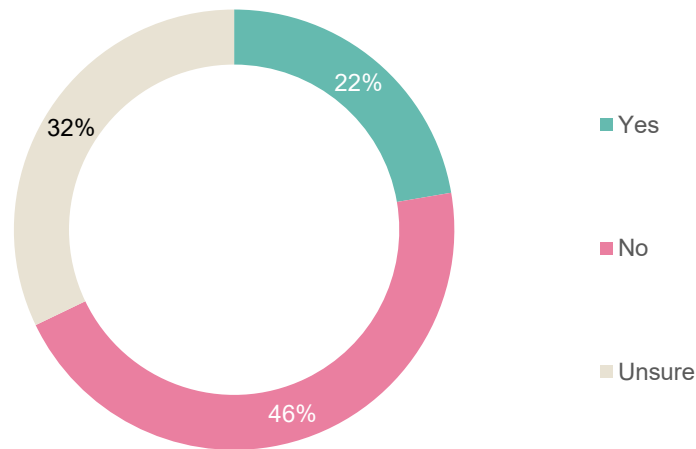


Figure 24: Whether would use a rideshare service if offered locally

RAA welcomes the recent announcement to reform point-to-point passenger services, taking effect in December 2021. This will result in the Adelaide Hills Council and Mount Barker District Council areas being included in the metropolitan Adelaide region, and allow metropolitan-based taxi and rideshare drivers to accept callouts within these areas without the requirement of a separate regional licence. McLaren Vale is part of the existing metropolitan Adelaide region for point-to-point passenger services, but the remainder of the Fleurieu Peninsula is not.

South Australia is the only state in Australia where rideshare services operate solely in the metropolitan area of the state's capital city, reflecting the preference of rideshare services to operate only in major urban centres and a lack of large regional centres in South Australia (compared with other states).

RAA recommends that the state government works with rideshare operators to facilitate the expansion of rideshare services into the Fleurieu Peninsula region, in particular, between Victor Harbor and Goolwa, an area with a combined population of more than 25,000 people as of the 2016 Census⁴.

Recommendation 3

Expand rideshare services into the Fleurieu Peninsula region, in particular between Victor Harbor and Goolwa.

⁴ ABS, 2016, Combined Victor Harbor Statistical Area Level 2 (14,378) and Goolwa-Port Elliot Statistical Area Level 2 (11,126), accessed at <<https://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats>>.

Facilities for tourists and other visitors

Respondents were presented with a list of tourism infrastructure areas and asked to select which areas they thought should be improved to enhance the experience for tourists and other visitors, and then which they thought was the biggest priority.

Which, if any, of the following areas do you think should be improved/is the biggest priority in the Fleurieu Peninsula to enhance the experience for tourists and other visitors?

Base: All respondents (n=1080)

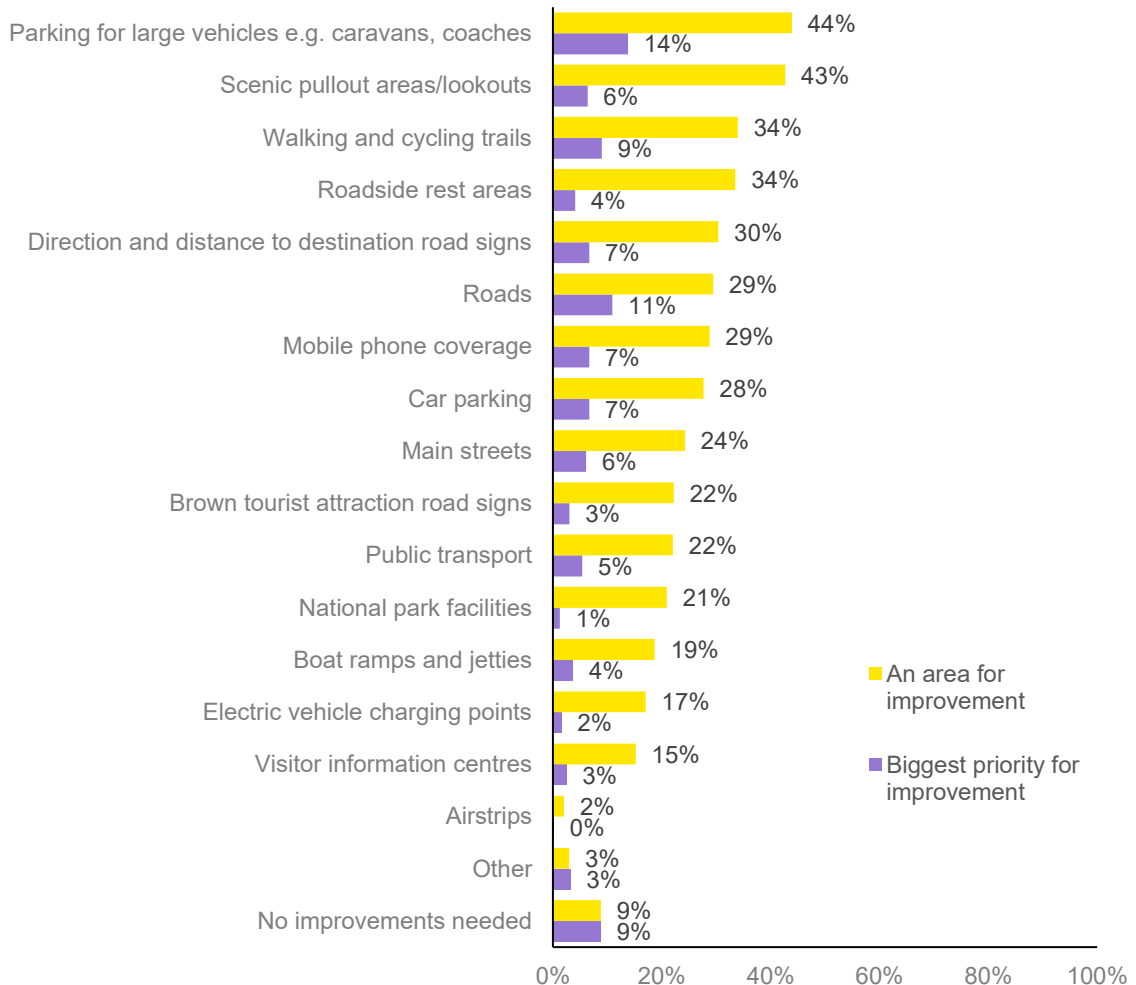


Figure 25: Improvements to the region to enhance the experience of tourists and other visitors

Over four in 10 respondents (44%) of respondents thought parking for large vehicles such as caravans and coaches should be improved and 14% selected it as the biggest priority for improvement, making it the top issue relating to facilities for tourists and other visitors. This issue was more likely to be raised among older respondents, with half (50%) of those aged 65 and over raising it compared with only three in 10 (30%) of those aged 16-44.

Other prominent issues included:

- Scenic pull-off areas/lookouts – identified by 43% as an area for improvement but by only 6% as the biggest priority;
- Walking and cycling trails – identified by 34% as an area for improvement (increasing to 43% of Yankalilla residents, 44% of walkers and 53% of cyclists) and by 9% as the biggest priority (increasing to 12% of walkers and 20% of cyclists);
- Roadside rest areas – identified by 34% as an area for improvement (increasing to 40% of Alexandrina residents but dropping to 24% of Onkaparinga residents) but identified by only 4% as the biggest priority;
- Direction and distance to destination road signs – identified by 30% as an area for improvement and by 7% as the biggest priority;
- Roads – identified by 29% as an area for improvement and by 11% as the biggest priority;
- Mobile phone coverage – identified by 29% as an area for improvement and by 7% as the biggest priority;
- Car parking – identified by 28% as an area for improvement and by 7% as the biggest priority (increasing to 13% of Victor Harbor residents); and
- Main streets (e.g., footpaths, lighting, seating, landscaping, street art) – identified by 24% as an area for improvement (increasing to 29% of females, 35% of 16-44 year olds and 29% of walkers) and by 6% as the biggest priority (increasing to 13% of 16-44 year olds).

Boat ramps and jetties was relatively unlikely to be raised as an area for improvement (19%), except in the Yankalilla council area (36% identified it as an area for improvement and 9% as the biggest priority). One in 10 respondents (9%) did not think improvements were needed to tourist facilities.

Respondents who thought improvements were needed to enhance the experience of tourists and other visitors to the region were given the opportunity to provide details of a particular location where they thought improvements were most needed. The table below shows the most frequently raised locations along with the approximate number of times the location was raised.

Table 11: Locations improvements to tourism most needed

Rank	Location	Most common topics (min. 3 mentions)
1	Victor Harbor (49)	Large vehicle parking, car parking, public transport
2	Normanville (32)	Jetties, car parking, large vehicle parking
3	Strathalbyn (25)	Car parking, large vehicle parking, tourism signage
4	McLaren Vale (24)	Streetscape, car parking, walking/cycling paths
5	Goolwa (20)	Public transport, car parking
6	Main South Rd (20)	Road upgrades, rest stops
7	Yankalilla (17)	Streetscape, car parking, large vehicle parking
8	Victor Harbor Rd (16)	Road upgrades, rest stops
9	Bluff (Encounter Bay) (10)	Boat ramp, car parking
10	Long Valley Rd (7)	Phone coverage

The top locations raised for tourism improvements were Victor Harbor, Normanville, Strathalbyn and McLaren Vale. Car parking and large vehicle parking were commonly raised as areas for improvement for visitors in the region's towns, while road upgrades and rest stops were raised as areas for improvement on the region's two main roads. There were also some more location-specific suggestions: public transport was raised for Victor Harbor and Goolwa; the jetty was raised for Normanville; the streetscape was raised for McLaren Vale and Yankalilla; the boat ramp and parking were raised for Bluff (Encounter Bay); and phone coverage was raised for Long Valley Rd.

Demographics

1080 people completed RAA's Fleurieu Peninsula regional assessment survey, with 980 (91%) living in a postcode defined by RAA as part of the region for the purpose of this assessment and most of the remainder living elsewhere within the City of Onkaparinga. All four Fleurieu council areas were well represented among respondents, ranging from 184 responses from Yankalilla residents to 385 responses from Alexandrina residents, enabling the results to be analysed by council area. With regard to the age of respondents, 55-74 year olds comprised about half (52%) of respondents but all age groups were represented, meaning that survey results have been analysed by three broad age groups: 16-44 year olds; 45-64 year olds; and those aged 65 or over. Survey responses were evenly split between males and females (50% in each case).

Table 12: Survey respondent demographics

Subgroup	No. of responses	% of total
Council Area		
Alexandrina Council	385	36%
City of Victor Harbor	254	24%
City of Onkaparinga	236	22%
District Council of Yankalilla	184	17%
District Council of Mt Barker	9	1%
Other	12	1%
Gender		
Female	535	50%
Male	540	50%
Other	5	0%
Age		
16-24	21	2%
25-34	63	6%
35-44	126	12%
45-54	140	13%
55-64	241	22%
65-74	316	29%
75+	173	16%
Total	1080	100%

When analysing results by council area, it should be noted that Onkaparinga residents were more likely than average to be aged 16-44, female and sourced from media and social media promotional activity whereas Alexandrina and Victor Harbor residents were more likely than average to be aged 65 or older and to have been sourced from an email to RAA members located in the region. When analysing results by age, it should be noted that those aged under 65 were more likely than average to be female and sourced from promotional activity whereas those aged over 65 were more likely than average to be male and sourced from an email to RAA members located in the region.

2016-2020 casualty crash statistics

General crash statistics

For the 10-year period between 2011 and 2020, there has been no noticeable reduction in the annual number of fatal and serious injury (FSI) crashes occurring in the Fleurieu Peninsula and McLaren Vale region as highlighted in Figure 26.

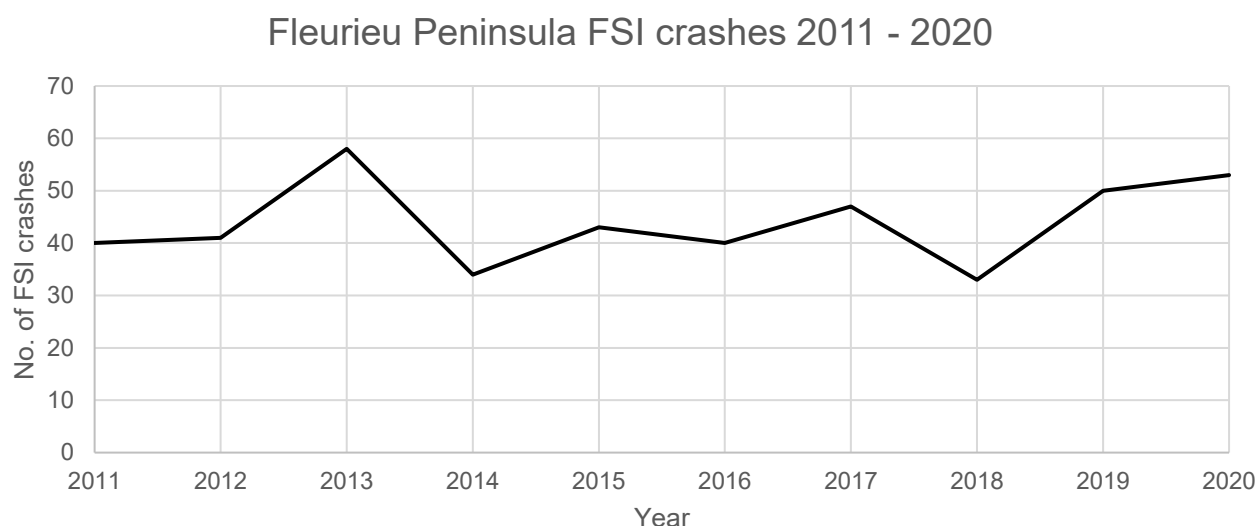


Figure 26: Trend in FSI crashes in the Fleurieu Peninsula since 2011

Over the five-year 2016 – 2020 analysis period, 25 fatal crashes occurred in the region. There were 198 crashes resulting in serious injuries with a further 626 resulting in people sustaining minor injuries.

Single vehicle run off road crash types (hit fixed object, roll over, left road – out of control) are the most frequently occurring crashes on the Fleurieu Peninsula Region, making up 49% of all casualty crashes. This largely consists of collisions with fixed objects, which make up 34% of all casualty crashes and 50% of fatal crashes. These most often involve a single vehicle and an object on the roadside with common examples including trees, embankments, posts and safety barriers. This crash type is more likely on narrow, curved roads such as those frequently encountered in Fleurieu Peninsula region.

Table 13: Fleurieu Peninsula casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	290 (34%)	205	73	12
Right Angle	142 (17%)	115	27	0
Roll Over	107 (13%)	74	32	1
Rear End	94 (11%)	80	13	1
Head On	71 (8%)	35	28	8
Side Swipe	36 (4%)	30	6	0
Right Turn	25 (3%)	21	3	1
Hit Pedestrian	24 (3%)	17	5	2

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Parked Vehicle	18 (2%)	14	4	0
Hit Animal	17 (2%)	15	2	0
Left Road - Out of Control	16 (2%)	14	2	0
Other	6 (<1%)	6	0	0
Hit Object on Road	3 (<1%)	0	3	0
Total	849	626	198	25

When comparing the Fleurieu Peninsula to the rest of South Australia, the profile of crash types is more typical of a regional area as expected, with a few exceptions. Rear end crashes are more prominent than typical for a regional area, due to high volume corridors in Victor Harbor Road and Main South Road. Head on crashes also make up a larger portion of casualty crashes in the Fleurieu Peninsula region compared to regional SA whilst rollover crashes occur less frequently than typical for regional South Australia which may be due to a less forgiving roadside along most key corridors and vehicles colliding with objects before having the chance to rollover.

Table 14: Fleurieu Peninsula region casualty crash types compared against SA casualty crash types (2016 – 2020)

Crash type	Percent of casualty crashes			
	Fleurieu Peninsula	Regional SA	Metro SA	Total SA
Hit Fixed Object	34%	30%	12%	15%
Right Angle	17%	15%	21%	20%
Roll Over	13%	22%	5%	8%
Rear End	11%	7%	31%	27%
Head On	8%	5%	2%	3%
Side Swipe	4%	4%	7%	7%
Hit Pedestrian	3%	4%	6%	6%
Right Turn	3%	3%	10%	9%
Hit Parked Vehicle	2%	3%	4%	4%
Hit Animal	2%	3%	<1%	<1%
Left Road - Out of Control	2%	3%	<1%	<1%
Other	<1%	<1%	<1%	<1%
Hit Object on Road	<1%	<1%	<1%	<1%

Table 15 shows the percentage of different units involved in crashes in the Fleurieu Peninsula region, compared with regional and metropolitan South Australia. Only human-controlled units have been considered in this analysis. As a percentage of units involved in crashes, motorcycles and bicycles are substantially over-represented when compared to regional South Australia as a whole. This can be explained by the high popularity of the Fleurieu Peninsula road network amongst cyclists and motorcyclists for recreational purposes, when compared with other regional areas.

Table 15: Units involved in crashes in the Fleurieu Peninsula region (2016 – 2020)

Unit type	Approximate percentage of units involved in crashes			
	Fleurieu Peninsula	Regional SA	Metro SA	SA Total
Car	81%	78%	80%	79%
Motorcycle	8%	9%	4%	5%
Bicycle	4%	2%	6%	5%
Pedestrian	2%	3%	3%	3%
Truck	2%	6%	2%	3%
Unknown/other vehicle	2%	2%	3%	3%
Bus	<1%	<1%	<1%	<1%
Scooter	<1%	<1%	<1%	<1%

Motorcycle crashes

Motorcyclists make up 8% of units involved in casualty crashes in the Fleurieu Peninsula region, which is similar to the rate of motorcycle crashes across regional South Australia. This crash rate highlights the additional vulnerability of motorcycle riders on the road network, given that motorcycles make up only 3.6% of registered vehicles⁵ (excluding trailers/caravans).

Since 2016, there have been no significant upward or downward trends regarding motorcyclist involvement in casualty crashes in the Fleurieu Peninsula region. Of concern is the 2019 and 2020 data which shows a higher number of fatal or serious injury (FSI) crashes in this year compared to the previous three years.

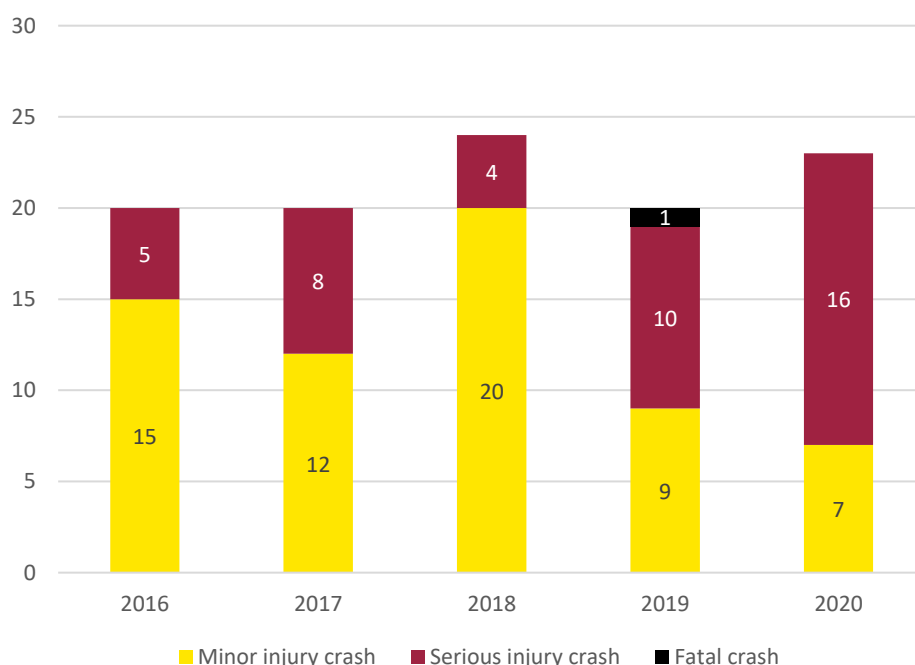


Figure 27: Motorcyclist casualty crashes in the Fleurieu Peninsula

⁵ As of 31 December 2020, Department for Infrastructure and Transport, *Registration and licensing statistics, Vehicle registrations*, accessed at < https://dpti.sa.gov.au/registration_and_licensing>.

Single vehicle run off road crashes (roll over, hit fixed object, left road – out of control) are the most frequently occurring motorcycle crash types in the Fleurieu Peninsula making up a combined 74% of all motorcycle casualty crashes in the region. Head on crashes are the next most common crash type involving motorcycles, making up 7% of motorcycle casualty crashes.

Overall, casualty crashes involving motorcycles in the Fleurieu Peninsula are attributed to the motorcycle rider 87% of the time, which reduces to 70% of the time when involving another road user.

Cyclist crashes

Cyclists are higher represented in casualty crashes in the Fleurieu Peninsula region when compared to regional SA, making up 4% of units involved in casualty crashes within the region, as opposed to 2% of units involved in regional casualty crashes. Crashes involving cyclists are often under reported, especially those that don't involve another cyclist or motor vehicle. The crash data analysed in this report includes only those crashes where a police report was made. For example, if a cyclist falls from their bicycle on the road and is injured, this is only included in the database if reported to police.

Single unit crash types⁶ make up 38% of cyclist crashes in the Fleurieu Peninsula region. In contrast, these crash types make up 26% of regional SA cyclist crashes, 27% of city cyclist crashes and 23% of metro cyclist crashes. Conversely, right angle, right turn and side swipe crashes make up 70% of cyclist crashes in metro Adelaide, 64% of cyclist crashes in the City and 62% of crashes in regional SA whilst making up only 51% of cyclist crashes in the Fleurieu Peninsula.

Since 2016, when 17 cyclists were involved in casualty crashes in the Fleurieu Peninsula, there has been a general downward trend in cyclist involvement in crashes across the region.

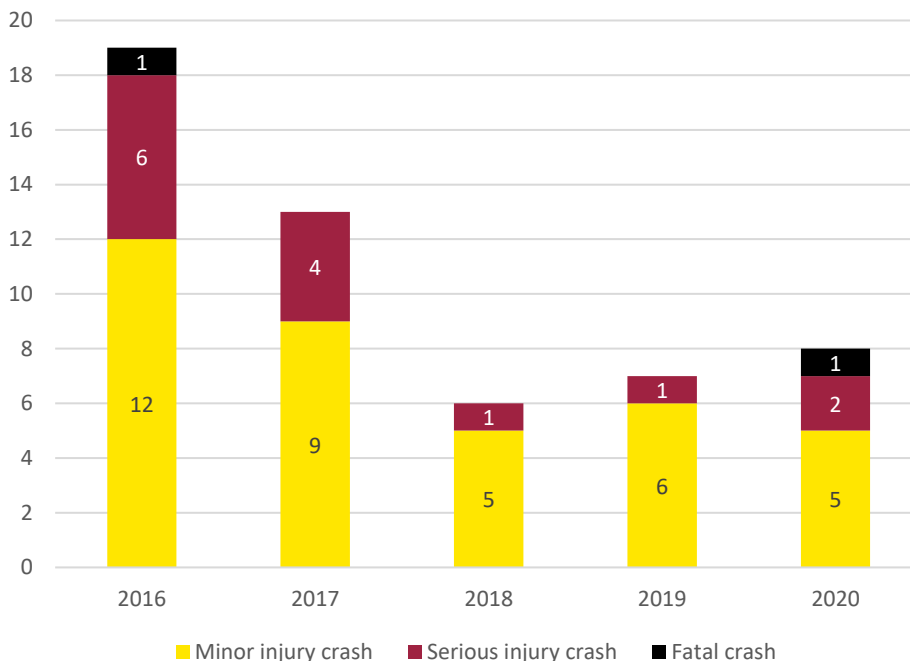


Figure 28: Cyclist casualty crashes in the Fleurieu Peninsula

Overall, casualty crashes involving cyclists in the Fleurieu Peninsula are attributed to the cyclist 49% of the time, which reduces to 28% of the time when involving another road user.

⁶ Single unit crash types include 'roll over', 'hit fixed object', 'hit animal', 'hit object on road', 'hit parked vehicle', 'left road – out of control'

Road investigation details and recommendations

General and common issues across the region

Fixed roadside hazards

Casualty crashes involving a collision with a fixed roadside object made up 34% of casualty crashes in the Fleurieu Peninsula region between 2016 and 2020 which made it the most commonly occurring crash type. Trees are the most common object collided with, as highlighted in Table 16.

Table 16: Types of objects collided with in 'hit fixed object' crashes between 2016 and 2020

Object type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Tree	173	111	51	11
Other Fixed Obstruction	88	65	20	3
Guard Rail	37	30	6	1
Stobie Pole	12	6	6	0
Sign Post	7	6	1	0
Pole - not Stobie	2	2	0	0
Bridge	1	1	0	0
Wire Rope Barrier	1	1	0	0
Other Inanimate Object	1	0	0	1

The rollout of safety barriers to reduce the severity of crashes with fixed objects has been gradual across the region and is often undertaken reactively at locations where casualty crashes have occurred. Often the treatment of these locations has been funded through 'Black Spot' programs which focus more on reactive treatment rather than a proactive treatment of a location or road. Throughout this report, RAA has made recommendations to install safety barriers on a corridor-wide approach. Entire road corridors should be treated based on the risk of a crash occurring which may consider factors such as the curvilinear alignment, shoulder width and proximity of hazards to the road edges. This addresses one of the drawbacks with the reactive approach where sections of road with equal risk remain untreated because a crash hasn't occurred out of chance.

Recommendation 4

Adopt a proactive, corridor-wide risk-based approach to installing crash barriers incorporating motorcycle underrun on Fleurieu Peninsula roads.

McLaren Vale four-way crossroad intersections

As with many agricultural areas in South Australia, the McLaren Vale region is divided into a grid by a network of intersecting north-south and east-west roads. This is particularly evident when looking at a map of the region, such as the map in Figure 29 which highlights the locations of almost 50 four-way intersections in the region and the associated crash data for the 10 years between 2011 and 2020.

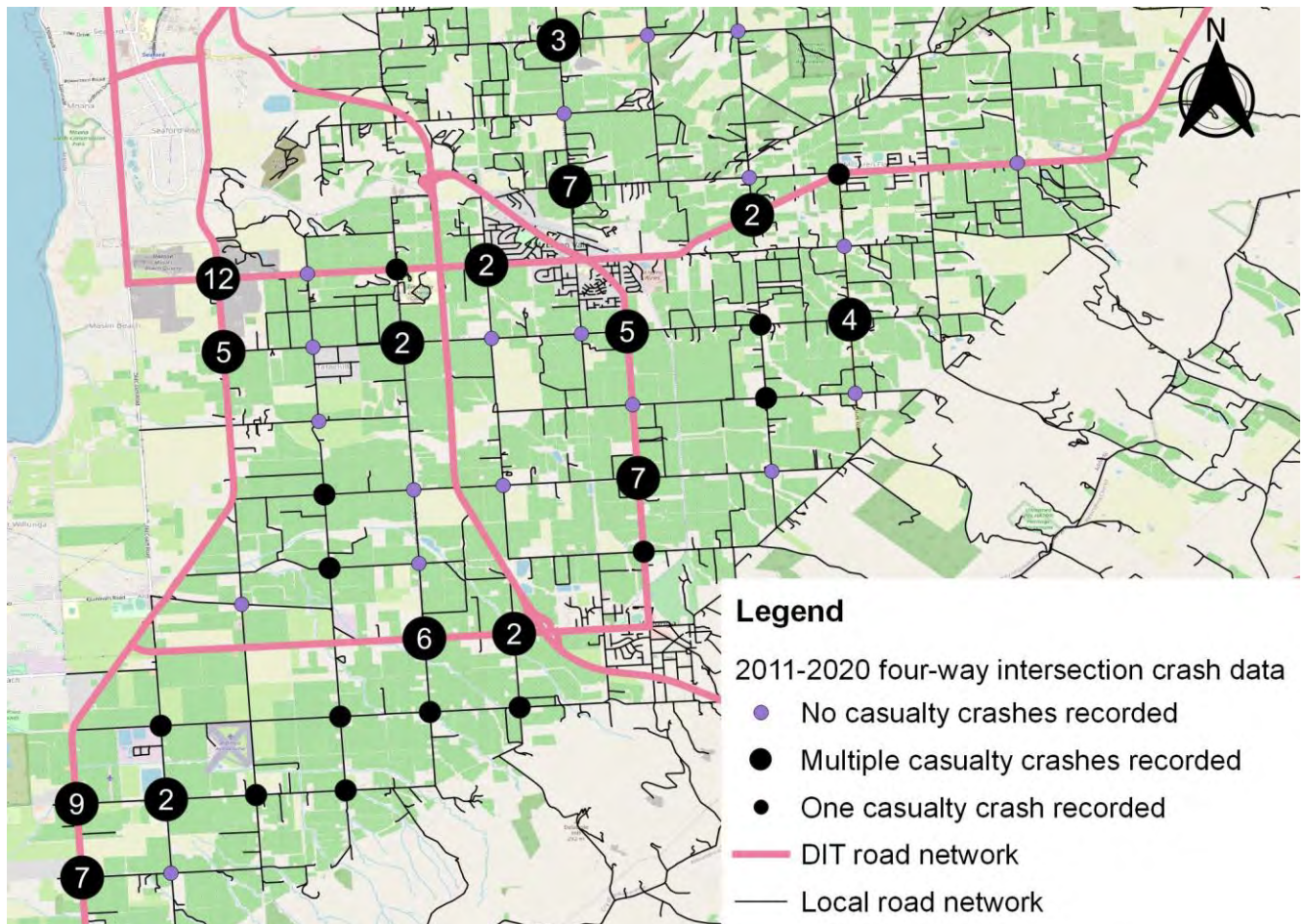


Figure 29: Map of four-way crossroad intersections in the McLaren Vale region

Four-way crossroad intersections generate a relatively low likelihood of casualty crashes in quiet agricultural areas as traffic volumes are very low which means the chance that another vehicle is present at the time one driver makes a mistake is also low. In tourist regions, many drivers can be unfamiliar with the roads and may be distracted by scenery, navigational aids or whilst looking for a particular destination. The increase in traffic volumes from tourism and residential development in the McLaren Vale region means that there is a far greater likelihood of another vehicle being present in the event that a mistake is made.

Sadly, two lives have been lost in fatal crashes so far in 2021, which have drawn significant public attention to the issue. The first occurred at the intersection with Main Road, Malpas Road and Binney Road on February 24. The second occurred at the intersection with Main Road, McMurtrie Road and Johnston Road on March 28. At least one other serious crash has been reported through the media, which also occurred at the intersection with Main Road, McMurtrie Road and Johnston Road.

RAA welcomes City of Onkaparinga's approach to undertake an independent road safety audit along Main Road including its intersections, and also focus efforts in improving safety at council-controlled

intersections. Noticeable improvements on some council-controlled intersections have already been seen as a result of this, such as along California Road where enhanced intersection warning signage has been installed along the corridor.

After reviewing several crossroad intersections throughout the McLaren Vale region, RAA identified several recurring issues:

- The 'see-through effect' is prominent at many crossroad intersections in the region. This is where a driver on the minor approach has poor visibility of the presence of an intersection ahead, and the road they are travelling on can appear to be a continuing road. Often this effect is exacerbated by a continuing row of trees, stobie poles, grape vines or even delineator guideposts. An example of this is shown in Figure 30 at the intersection with California Road and Malpas Road.
- Warning signage, where installed, usually meets minimum standards, but it could be increased in size or placed in more prominent positions to improve conspicuity to approaching drivers.
- Crash impact angles at intersections are generally at right angles, and most intersections do not offer any horizontal deflection to improve impact angles if a crash occurs.
- Roadside vegetation sometimes obscures warning signs on the approaches to intersections, or sight distance at intersections



Figure 30: Although approaching a give way sign, there are few visual cues of the upcoming intersection other than signage (Intersection shown: California Road/Malpas Road, looking north on California Road)

There are many treatments available to road authorities to improve safety at four-way crossroad intersections, however, the most effective of these can be prohibitively expensive to introduce on a large-scale. The most effective treatments, such as roundabouts, reduce the number of conflict points, reduce speeds through the intersection, and improve potential impact angles. Treatments that address all three of these factors are also costly to install, and usually require land acquisition,

relocation of services, drainage, and can be constraining to freight and oversized agricultural equipment that requires access to the road network.

Lower cost treatments to reduce crash severity or likelihood can include partial or full road closures, right turn restrictions or bans (e.g., left in/left out), staggered teardrop intersection treatments, rumble strips on minor road approaches, improved intersection delineation, rural junction active warning systems (RJAWS), permanent speed limit reductions, increased and enhanced signage.

RAA has reviewed the number of casualty crashes occurring at the four-way crossroad intersections highlighted in Figure 29 over the 10 years since 2011. Since 2015, there has been an increasing number of crashes at four-way intersections, which may be attributable to the growing popularity of McLaren Vale as a tourist destination and increasing traffic volumes on the road network.

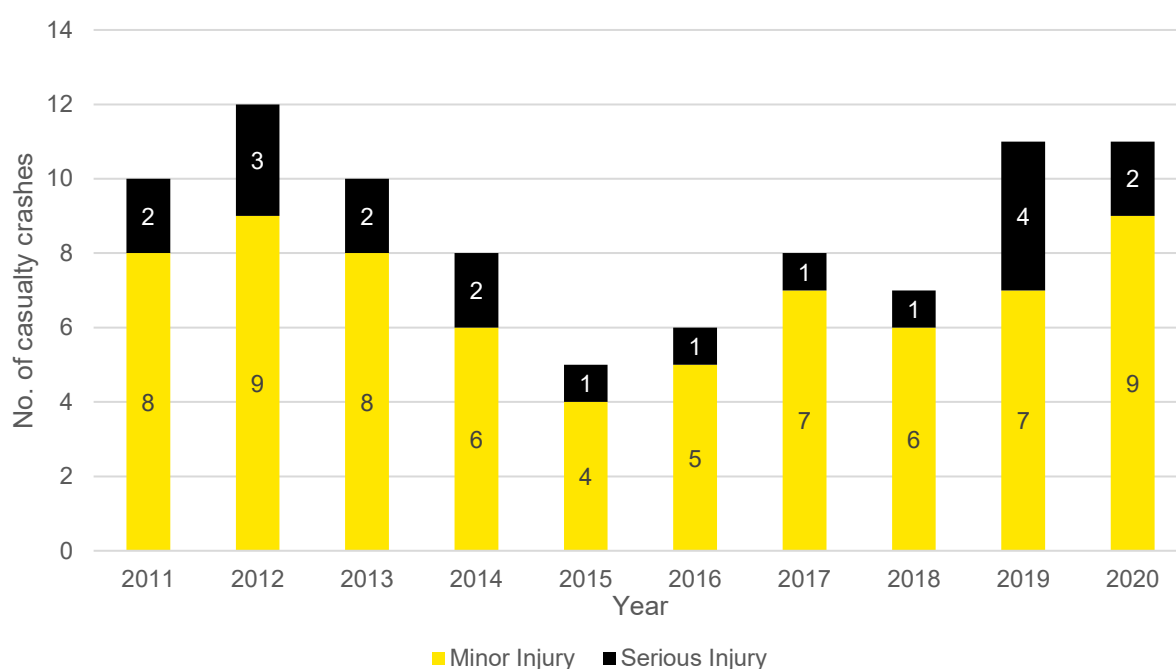


Figure 31: Casualty crashes at four-way intersections in the McLaren Vale region (2011-2020)

Whilst several of these higher profile intersections are discussed throughout this report, it is evident that both the City of Onkaparinga Council and the Department for Infrastructure and Transport need to establish a program of intersection improvements to improve safety at four-way crossroad intersections in the McLaren Vale region. Intersection upgrades should include as a minimum, upgraded delineation and larger warning signs through to the introduction of horizontal deflection by installing staggered teardrop intersections and where appropriate, roundabouts.

A holistic review of the local road network should also be undertaken to identify opportunities for partial or full road closures, which may look to remove intersections entirely, convert four-way crossroad intersections into three-way T intersections, or prohibit right turns at some locations.

Recommendation 5

Improve safety at four-way crossroad intersections in the McLaren Vale region through various safety upgrades including enhanced signage, delineation and horizontal deflection. This should also include a holistic review of the local road network to identify opportunities for partial or full road closures and right turn bans at intersections where appropriate.

Victor Harbor Road

Victor Harbor Road is a major rural arterial corridor under the care and control of the Department for Infrastructure and Transport. Victor Harbor Road extends for 47km between Main South Road in Old Noarlunga and Port Elliot Road in Hayborough (including Adelaide Road) and is the primary route between Adelaide and Victor Harbor. While the road bypasses McLaren Vale and Willunga, both with grade separated interchanges, it continues through the regional township of Mount Compass.

Average traffic volumes between Main South Road and McLaren Vale exceed 25,000 vehicles per day. Between McLaren Vale and Goolwa Road (Mount Compass), volumes average more than 12,000 vehicles per day, and south of Goolwa Road they sit at around 6,500 vehicles per day.

RAA welcomes the upgrades to Victor Harbor Road in recent years, and supports other major projects that are on the horizon, including:

- (2013) \$18m McLaren Vale overpass
- (2016) \$4.3m roundabout at the intersection with Welch Road/Waterport Road
- (2016) \$2.0m for wide centreline between Old Willunga Hill Road and Yundi Road, and safety improvements at the intersection with Pages Flat Road
- (2019) \$0.6m upgrade at the intersection with Arthur Road in Mt Compass
- (2020) \$0.6m upgrade at the intersection with Goolwa Road, south of Mt Compass
- (2021) \$3m for 3.5km resurfacing works between Willunga and Mount Compass
- (2021/22) overtaking lane between Crows Nest Road and Victor Harbor
- (2021/22) \$92m duplication between Old Noarlunga and McLaren Vale
- (2021/22) \$12m safety upgrades between Mount Compass and Victor Harbor including overtaking lanes (2020 Federal budget)

Respondents to the Fleurieu Peninsula regional community survey raised Victor Harbor Road more times than any other road in the Fleurieu Peninsula region. It was the most frequently raised road under several categories including 'top issue in region', 'maintenance', 'road design', 'congestion', 'speed enforcement' and 'driver behaviour', and was raised highly for other categories.

Table 17: Total number of survey responses raising Victor Harbor Road

Category	No. of responses	Overall rank
Top issue in region	113	1
Maintenance	136	2
Road design	64	1
Congestion	65	1
Speed limit	104	2
Speed enforcement	57	1
Driver behaviour	174	1
Freight	107	2
Motorcycling	17	2
Cycling	23	3
Combined	816	1

Due to its prominence in the community survey and high importance to the Fleurieu Peninsula, RAA completed a separate assessment of Victor Harbor Road, which can be found on the RAA website⁷.

Summary of recommendations for Victor Harbor Road

The recommendations in Table 18 were made in RAA's 2021 *Victor Harbor Road Highway Assessment*, available at www.raa.com.au/roadassessments. For more details, please view the full report.

Table 18: Recommendations from RAA's 2021 Victor Harbor Road Highway Assessment report

Victor Harbor Road report recommendation no.	Details of recommendation
Recommendation 1	Widen shoulder seal to at least 2.0m wide north of Mount Compass, where this width has not already been attained.
Recommendation 2	Ensure that current funding provided for overtaking lanes on Victor Harbor Road contributes to providing at least two more overtaking lanes of substantial length between Mount Compass and Victor Harbor, with wire rope median barriers dividing opposing traffic.
Recommendation 3	<ul style="list-style-type: none"> a) As part of the Victor Harbor Road duplication project, construct a grade separated interchange at the intersection with Victor Harbor Road, Seaview Road and Budgens Road. This should be undertaken in conjunction with other improvements suggested in this report including a new link road between Bakewell Drive and Wheaton Road and right turn restrictions at the Robinson Road and Quarry Road intersection. b) Ensure wire rope central median barrier is installed for the length of the Victor Harbor Road duplication project.
Recommendation 4	Undertake additional pavement rehabilitation between McLaren Vale and Willunga to address the poor pavement not being addressed under the current \$3m resurfacing works on Victor Harbor Road.
Recommendation 5	Plan and prepare for future duplication of Victor Harbor Road to Mount Compass.
Recommendation 6	Widen Victor Harbor Road south of Mount Compass to achieve a minimum 13.0m seal width incorporating 2.0m wide shoulders, 3.5m lanes and 2.0m wide centre line with wire rope central barrier. If this cannot be justified economically, as an absolute minimum, a sealed width of 10.0m incorporating 3.5m wide lanes, 1.0m wide sealed shoulders and a 1.0m wide centre line (with wire rope barrier) must be achieved to ensure safer travel on this section of Victor Harbor Road.
Recommendation 7	Review and update as necessary all W series intersection warning signs between Mount Compass and Victor Harbor to align with current Australian Standard AS1742.2.
Recommendation 8	<ul style="list-style-type: none"> a) Ensure motorcycle underrun protection is incorporated into all new barrier installations and retrofitted to existing barriers, prioritising curved sections. b) Continued rollout of safety barriers incorporating motorcycle underrun protection to ensure that drivers and riders are protected from all fixed roadside hazards where removal of the hazard is not possible or desirable.
Recommendation 9	<ul style="list-style-type: none"> a) Refresh line marking at the intersection with Nangkita Road in Mount Compass. b) Replace w-beam crash barrier on the southeastern corner of the intersection with Nangkita Road in Mount Compass. c) Monitor freight movements at the intersection with Nangkita Road and consider an upgrade or realignment of the intersection to facilitate safer freight movement through Mount Compass.
Recommendation 10	Install a roundabout at the intersection with Goolwa Road.
Recommendation 11	<ul style="list-style-type: none"> a) Install a channelised right turn lane for traffic turning right from Victor Harbor Road onto Crows Nest Road. b) Clear vegetation on Victor Harbor Road to improve sight distance when turning from Crows Nest Road.

⁷ RAA, 2021, *Highway Assessment: Victor Harbor Road – May 2020*, accessed at <www.raa.com.au/roadassessments>.

Victor Harbor Road report recommendation no.	Details of recommendation
Recommendation 12	<ul style="list-style-type: none"> a) Install a roundabout at the intersection with Hindmarsh Tiers Road. b) Update W2-1 crossroad intersection warning signs approaching Hindmarsh Tiers Road to align with current Australian Standard AS1742.2.
Recommendation 13	Ensure safety upgrades to Victor Harbor Road achieve a minimum three-star AusRAP star rating for the entire corridor.
Recommendation 14	<ul style="list-style-type: none"> a) Extend the north-western 80km/h speed zone in Mount Compass by 400m to the west, to reduce the speed of vehicles to improve safety at the Peters Terrace reserve exit point and Sand Mine Road intersections. Consideration should also be given to extending this an additional 600m north beyond Lanacoona Road to improve safety at this intersection. b) Extend the Mount Compass 60km/h speed zone by 100m to the northwest to improve safety at the Tay Road intersection by reducing the approach speed of vehicles.

RAA considers that adoption of these recommendations is critical for improving safety on Victor Harbor Road and that all recommendations be strongly considered for implementation.

Recommendation 6

Adopt all 14 recommendations of RAA's 2021 *Victor Harbor Road Highway Assessment*, which include pavement rehabilitation between McLaren Vale and Willunga, installation of wide centreline with wire rope barrier south of Mount Compass and a roundabout at the intersection with Goolwa Road.

Main South Road (Aldinga – Cape Jervis)

Main South Road is a major arterial corridor extending for about 97km between Darlington in Adelaide's southern suburbs and Cape Jervis on the southwestern coast of the Fleurieu Peninsula. For the purposes of this assessment, RAA has reviewed the 64km section between Aldinga and Cape Jervis as there is already a state government commitment for a significant upgrade between Seaford and Aldinga which includes duplication and intersection upgrades. RAA raised feedback pertaining to this section of Main South Road during the community consultation phase of the duplication project which ran from 30 April to 28 May 2021.

Average daily traffic volumes on Main South Road are highest at the northern end, with 8,000-10,200 vehicles using the section between Aldinga and Sellicks Beach each day. This drops to 5,600 between Sellicks and Myponga, 3,800 between Myponga and Yankalilla/Normanville, 2,100 between Normanville and Wirrina Cove, and less than 1,500 south of Wirrina Cove. Heavy vehicles make up about 8% of traffic and the corridor (south of Sellicks Beach) is gazetted for 23m b-doubles as opposed to the majority of South Australia's b-double network which can accommodate 26m b-doubles.

Main South Road was the second most raised road in the Fleurieu Peninsula region, behind Victor Harbor Road, receiving a significantly higher amount of community feedback than other roads in the region. A large amount of this feedback was in relation to the Seaford to Sellicks section and the Main South Road duplication project, however, there were still a high number of responses relating to other sections of Main South Road.

Table 19: Total number of survey responses raising Main South Road

Category	No. of responses	Overall rank
Top issue in region	90	2
Maintenance	136	1
Road design	37	2
Congestion	50	2
Speed limit	104	1
Speed enforcement	32	2
Driver behaviour	127	2
Freight	143	1
Motorcycling	24	1
Cycling	48	1
Combined	791	2

The focus of this report is on the section south of Aldinga, and as such, the below survey responses are representative of commentary received for the southern section of Main South Road.

"Between Yankalilla to Cape Jervis is the only transport route to KI. There is often congestion, due to Semi Trailers with oversized loads, and tourist transport to and from the Island. This congestion often reduces speed from 100 to 40 km especially in the many bends. There are no overtaking lanes, and this results in people taking unnecessary risks to overtake, putting lives at risk, particularly us locals, who may have to travel to Adelaide for work. I have given up a career due to this stretch of road taking its toll on my nerves daily. I do still need however to travel it to access doctors, supermarkets, physio and family."

“Between Aldinga Beach Road and Sellicks Beach Road the road has shocking undulations.”

“Too many drivers wander over double white lines on corners. Rumble strips down centre of road may help.”

“Between Yankalilla and Normanville, Main South Rd is signed 50km/h. It’s too slow for too long. I would rather it be 60km/h from just past the Yankalilla Children’s Centre, all the way to the Normanville turn off.”

“Some corners creep up on you and are much tighter than expected.”

“Drivers very often sit on a speed under the limit, right up until they get to a passing lane, then sped up, so can’t be passed.”

“There are too few overtaking lanes and people who do not know the road travel very slowly. this is also as a result of the poor road surface.”

“Blatant disregard of the conditions and blind bends, overtaking on double lines and cutting corners when driving too fast down hills and around blind bends.”

“The road is poorly cambered and not designed for today’s freight requirements.”

“Not enough pull overs for log trucks causes long lines of traffic to be held up.”

“Both Yankalilla and Normanville need a bypass to keep heavy vehicles away from main streets.”

“Myponga to Yankalilla can be quite distracting for motor bikes as it’s so windy and they tend to go over lines on some sharp corners”.

“No room to pass cyclists safely. 100km/h with blind corners everywhere. A disastrous scenario”.

“Outside of Yankalilla Foodland/Bakery - road is far too busy for pedestrians to safely cross.”

There has been some investment on Main South Road to improve safety in response to community concern about its condition and consequent calls for major upgrades of this increasingly busy corridor. with duplication between Seaford and Aldinga set to commence in early 2022. Recent and planned upgrades along the corridor include:

- (2016/17) \$0.4m installation of safety barrier, wider sealed shoulders and ATLM south of Sellicks Beach
- (2017) \$11.2m upgrade between Malpas Road and Old Coach Road including a roundabout at the intersection with Port Road and 1.5km of wire rope centre barrier
- (2021) Safety improvements at intersection with Main Road and Willis Drive in Normanville which involve installation of LED lighting and a left turn lane from Main South Road onto Willis Drive.
- (2022) \$305m duplication stage 1 between Griffiths Drive and Aldinga Beach Road
- (TBC) \$136m duplication stage 2 between Aldinga Beach Road and Sellicks Beach Road

Main South Road duplication project

RAA supports the Main South Road duplication project, with stage one of this project set to duplicate the corridor for the 10km section between Griffiths Drive (Seaview) and Aldinga Beach Road (Aldinga). Stage two of the project proposes to duplicate the road between Aldinga Beach Road and Sellicks Beach Road (Sellicks Beach), however the community consultation in May 2021 was gathering feedback from the community as to whether grade separation at Tatachilla Road should be undertaken instead, with safety upgrades to occur in lieu of full duplication between Aldinga and Sellicks.

Whilst duplication between Aldinga and Sellicks would be desirable for the 8,000 - 10,200 vehicles per day that use this section of road, these traffic volumes indicate that full duplication may not be required for many years to come. Moreover, current funding allocated to this project may be better utilised for safety upgrades on this section and to improve the design of the Stage 1 Main South Road duplication and Victor Harbor Road duplication projects. Whilst 2011 volumes (5,800 – 8,200 VPD) indicate a significant increase in traffic over the past decade, these traffic volumes are unlikely to warrant full duplication for 20 years or more at the current rate of growth.

Therefore, RAA's preference is to allocate additional funding towards a grade separated intersection at Tatachilla Road, whilst implementing a 2+1 road layout (alternating overtaking lanes) between Aldinga and Sellicks Beach. Grade separating Main South Road and Tatachilla Road will significantly reduce congestion, whilst also improving safety at the intersection. A 2+1 road layout south of Aldinga would be suitable for the next 20+ years and should be undertaken in combination with wire rope centre barrier and intersection upgrades which may include the removal of some right turns.

RAA supports the construction of two roundabouts at Aldinga Road and Port Road in Aldinga and note that roundabouts have shown to operate safely and effectively at other intersections across Adelaide with similar traffic volumes. Given the future level of development planned on adjacent land, roundabouts are effective solutions that would operate more safely than signalised intersections. Whilst a grade separated interchange would promote the free flow of traffic on Main South Road, this would result in substantially higher construction costs and significant land acquisition which would reduce the feasibility of proposed future land developments and contribute negatively to amenity.

RAA suggests that construction of southbound bypass lanes is considered at the Port Road Roundabout, however, notes that there are some space constraints due to St Ann's Anglican Church, located close to Main South Road, immediately south of the intersection.

RAA welcomes the introduction of a right turn ban from Aldinga Beach Road onto Main South Road, due to the very poor crash history involving right turns at this intersection. It is important that emergency service vehicles will still have access to make a right turn via a small 'emergency vehicles only' break in the median, as the Aldinga Beach CFS is situated near this intersection.

RAA welcomes the planned inclusion of separated cycle infrastructure between Seaford and Sellicks Beach, which will reduce conflict between cyclists and motor vehicles on this busy corridor.

Crash History

Between 2016 and 2020, there were a total of 83 casualty crashes occurring on the section of Main South Road south of Aldinga Beach Road. Crashes into fixed objects made up 31% of these, with head on crashes the next most common, making up 17% of all casualty crashes. The number of head on crashes occurring is of particular concern, with head on crashes occurring at more than double the rate of the rest of the Fleurieu Peninsula and triple the rate of regional SA.

Table 20: Main South Road (South of Aldinga Beach Road) casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	26	20	4	2
Head On	14	7	7	0
Rear End	12	10	2	0
Roll Over	12	8	4	0
Right Angle	5	3	2	0
Right Turn	5	4	1	0
Side Swipe	5	5	0	0
Hit Animal	1	1	0	0
Hit Object on Road	1	0	1	0
Left Road - Out of Control	1	1	0	0
Other	1	1	0	0
Total	83	60	21	2

Cars were the most common unit involved in crashes between 2016 and 2020, followed by motorcycles and bicycles. Motorcycles were overrepresented and made up 13% of units involved in crashes over this time. Truck involvement in crashes has been relatively low, considering the high heavy vehicle volumes and challenging road alignment.

Table 21: Vehicles involved in crashes on Main South Road, south of Aldinga Beach Road (2016 – 2020)

Unit type	Approximate number of units
Car	108 (80%)
Motorcycle	17 (13%)
Bicycle	4 (3%)
Truck	4 (3%)
Other/Unknown	2 (<2%)

When looking at where the crashes occurred, 57% of crashes involving cars occurred on curved sections of road, and 82% of crashes involving motorcycles occurred on curved sections of road. 17 motorcycles were involved in 16 crashes as one of these involved two motorcycles. In each of the 16 crashes, a motorcycle rider was considered responsible for the crash.

Motorcycle crashes occurred more frequently on Main South Road compared to the Fleurieu Peninsula overall, with 71% of these being single vehicle crashes involving a loss of control, collision with a fixed object or roll over. Four of five 'hit fixed object' casualty crashes involving motorcycles involved a collision with a safety barrier. Motorcycle underrun protection is highly utilised between Sellicks Beach and Yankalilla, however, is not used on safety barriers south of Normanville. Whilst touring motorcycle use is highest between Sellicks Beach and Yankalilla, there is still a history of motorcycle crashes south of Normanville.

Recommendation 7A

Install motorcycle underrun protection on roadside barriers south of Normanville.

The section of Main South Road between Sellicks Beach and Yankalilla has a higher rate of motorcycle and head on crashes. Of 17 motorcycle crashes, 13 occurred on the winding sections between Sellicks Beach and Yankalilla. Of 14 head on crashes, 10 occurred on this section. RAA considers that audio tactile centreline marking would be a worthwhile consideration to increase safety by improving cornering lines and further discouraging all road users to cross the centreline.

Recommendation 7B

Install audio tactile centreline markings between Sellicks Beach and Yankalilla.

Road Widths

Main South Road is generally constructed to a width greater than 8m, with sealed shoulders provided for the entire length. There are some sections which are narrower due to bridges or roadside vegetation and barriers narrow the carriageway width.

Table 22: Sealed width of Main South Road

Location	Lane width	Sealed shoulder width	Total seal width
S of Aldinga Beach Road (Aldinga)	3.5m	1.3m / 1.6m	9.9m
S of The Links Lady Bay (Normanville)	3.0m / 3.2m	0.9m / 1.0m	8.1m
S of Bennett Rd (Delamere)	3.4m	1.0m	8.8m

Several narrow bridge crossings exist along the corridor and should be considered for widening. These bridges are relatively narrow, and often located on or near high-speed curves. In order from north to south, these include:

- 300m southwest of Green Way, Myponga
- Bowyer Bridge, north of Wild Dog Creek Road, Wattle Flat
- Bungala River Bridge, south of Main Road, Normanville
- Yankalilla River Bridge, near Garnet Kelly Reserve, Normanville
- 120m north of #7241 Main South Road driveway, Normanville
- Congeratinga River Bridge, 500m east of Poolamacca Road, Second Valley

Recommendation 7C

Review and prioritise the identified narrow bridges for widening between Myponga and Second Valley.



Figure 32: The Bowyer Bridge in Wattle Flat is one example of a narrow bridge along Main South Road

Speed Limits

South of Sellicks Beach, the default 100km/h speed limit applies to open sections of road, with speed reductions through the various townships.

Table 23: Speed limit on Main South Road

Segment	Speed limit (km/h)
Aldinga to Sellicks Beach	90
Sellicks Beach to Myponga	100
Myponga	80 – 50 – 80
Myponga – Yankalilla	100
Yankalilla	50
Yankalilla – Normanville	50
Normanville	50 – 80
Normanville – Second Valley	100
Second Valley	60 – 80
Second Valley – Delamere	100
Delamere	80
Delamere – Cape Jervis	100
Cape Jervis	80 – 60

Community survey respondents were vocal in criticism of the 50km/h speed limit between Yankalilla and Normanville, which was reduced from 60km/h late in 2018. The majority of the roadside is considered a built-up area, although RAA acknowledge that a 300m section is scarcely built up, with a service station being the only development near the road for this section. On the northern side of the road is Yankalilla Area School, a playground and skate park, medical centre and nursing home, whilst residential dwellings make up most properties on the south side of the road.

Between 12:00 and 12:30 on 11 March 2021, RAA conducted a short speed survey of vehicles between Yankalilla and Normanville. This highlighted good compliance with the 50km/h speed limit, with an average free flow speed of 47.9km/h measured over 184 speed readings in both directions. Vehicles travelling in a stream of traffic were excluded from this analysis to ensure free flow speed was measured.

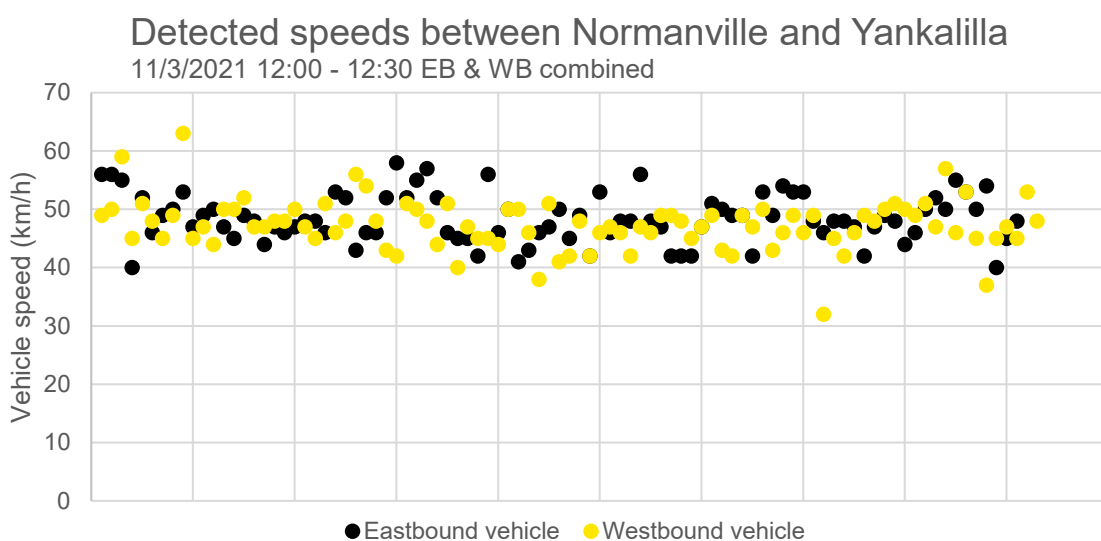


Figure 33: Results of short speed survey between Yankalilla and Normanville

RAA supports the application of the 50km/h limit and notes that overall compliance is good. To further reinforce the limit, RAA recommends that streetscape improvements be undertaken to create a visibly lower speed limit environment. This may include construction of kerb and gutter, marking of formal cycle lanes and parallel parking bays, construction of footpaths, and planting of street trees.

Recommendation 7D

Implement streetscape improvements between Yankalilla and Normanville to improve amenity and reinforce the existing 50km/h speed limit.

There are several inconsistencies with speed limits through townships along Main South Road, and RAA recommends that speed limits be reviewed to create consistency along the route. Any changes must comply with Australian Standard 1742.4 – 2020 and the Department for Infrastructure and Transport's *Speed Limit Guideline for South Australia*. RAA's preferred method for signposting speed limits through townships is replacing intermediate speed buffer zones with G9-79 'speed limit ahead' signs and removing the need for multiple changes in speed limit over a short distance. RAA considers that reducing the speed limit from 100km/h to 80km/h at some locations would effectively improve safety with minimal detriment to overall travel times.

Given that Main South Road has consistently varying vertical and horizontal geometry, it is not always appropriate to signpost the default 100km/h speed limit, particularly when departing townships, as this is often immediately before a hazardous road section. Instead, RAA suggests that R4-12 'end speed limit' signs are placed when departing townships, which have the same effect, but are less encouraging of higher speed limits in locations where they are not necessarily appropriate.

The speed limit reduction when approaching Yankalilla from the north does not align with the requirements set out in Australian Standard 1742.4 – 2020 or the Department for Infrastructure and Transport's *Speed Limit Guideline for South Australia* as there is no speed limit buffer treatment between the 100km/h zone and 50km/h zone. RAA recommends that G9-79 'speed limit ahead (50)' signs be installed on the northern approach to Yankalilla.

The same issue exists with the speed limit reduction when approaching Second Valley from the north, where the speed limit reduces from 100km/h to 60km/h with no advance notice. The southern side of Second Valley has an intermediate 80km/h buffer zone, which should be replaced with G9-79 'speed limit ahead' signs for consistency.

In Delamere, where the 80km/h speed zone ends at each side, consideration should be given to replacing the 100km/h speed limit signs with R4-12 'end speed limit (80)' signs to create consistency with the signposting of speed limits in Second Valley.

Approaching Cape Jervis from the north, an 80km/h buffer zone is used to reduce the speed limit from 100km/h to 60km/h, and RAA recommends G9-79 'speed limit ahead (60)' signs be used to provide advance warning of the speed zone and create consistency along the corridor.

When departing Cape Jervis, the existing 80 km/h sign should be replaced with R4-12 'end speed limit (60)' sign in conjunction with the above.

Consideration should be given to replacing the southern 80km/h zone in Myponga with R4-12 'end speed limit (50)' signs. RAA considers the northern Myponga 80km/h zone to be necessary, given changes to this could result in increased speeds and reduced safety at the Pages Flat Road intersection.

In summary, the following changes to speed limit signage should be implemented:

- Install G9-79 'speed limit ahead (50)' signs on the northern approach to Yankalilla.
- Install G9-79 'speed limit ahead (60)' signs on the northern approach to Second Valley.
- In Delamere, replace 100km/h speed limit signs with R4-12 'end speed limit (80)' signs.
- Install G9-79 'speed limit ahead (60)' signs on the northern approach to Cape Jervis.
- Install G9-79 'speed limit ahead (50)' signs on the southern approach to Myponga
- Replace 100km/h speed limit signs with R4-12 'end speed limit (50)' signs on the southern departure of Myponga
- Replace 100km/h speed limit signs with R4-12 'end speed limit (80)' signs on the northern departure of Myponga.

The aforementioned recommendations will result in a more consistent application of speed limits on Main South Road.

Recommendation 7E

Improve signposting of speed limits to create consistency with speed limits along the corridor.

AusRAP Star Ratings

The AusRAP star rating of Main South Road typically varies between one and two stars, with some three-star sections present along the corridor. For a section to be rated three stars, it typically must be free of fixed hazards other than safety barriers, and on a moderately curving, or straight road section.

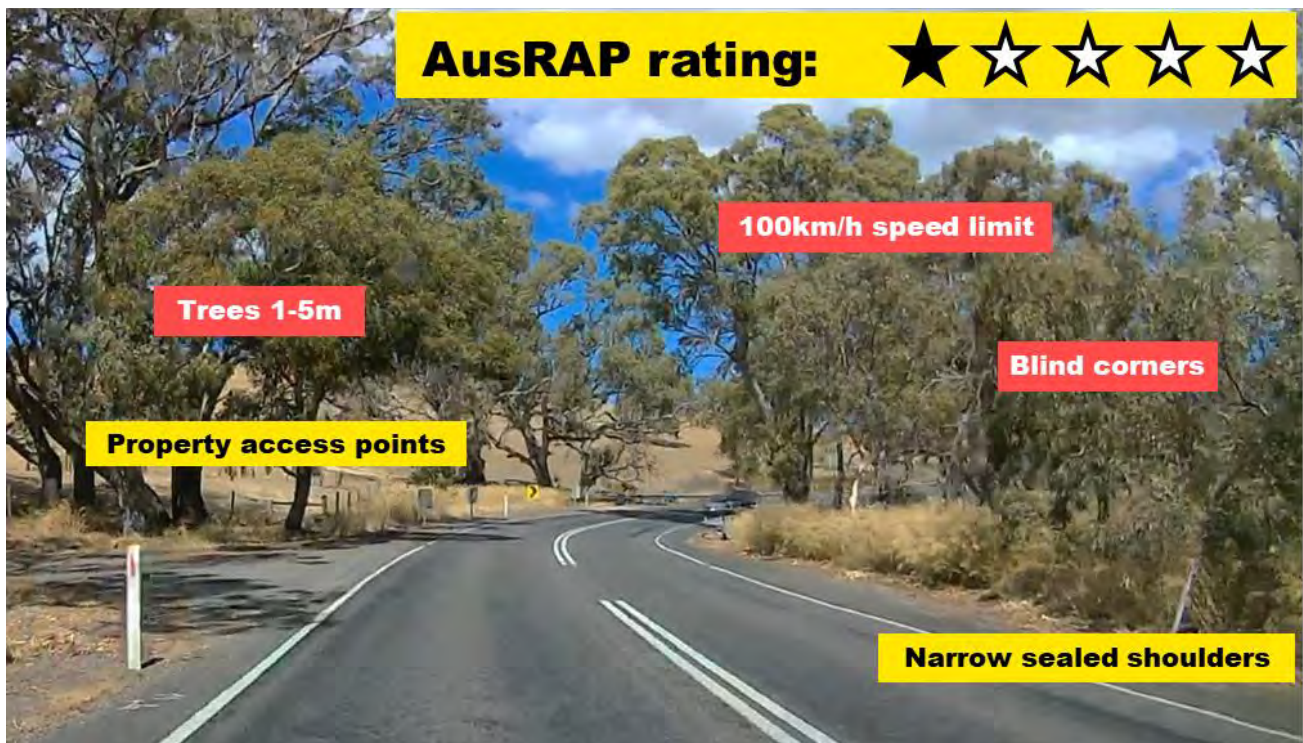


Figure 34: Example of a one-star AusRAP star rated section on Main South Road

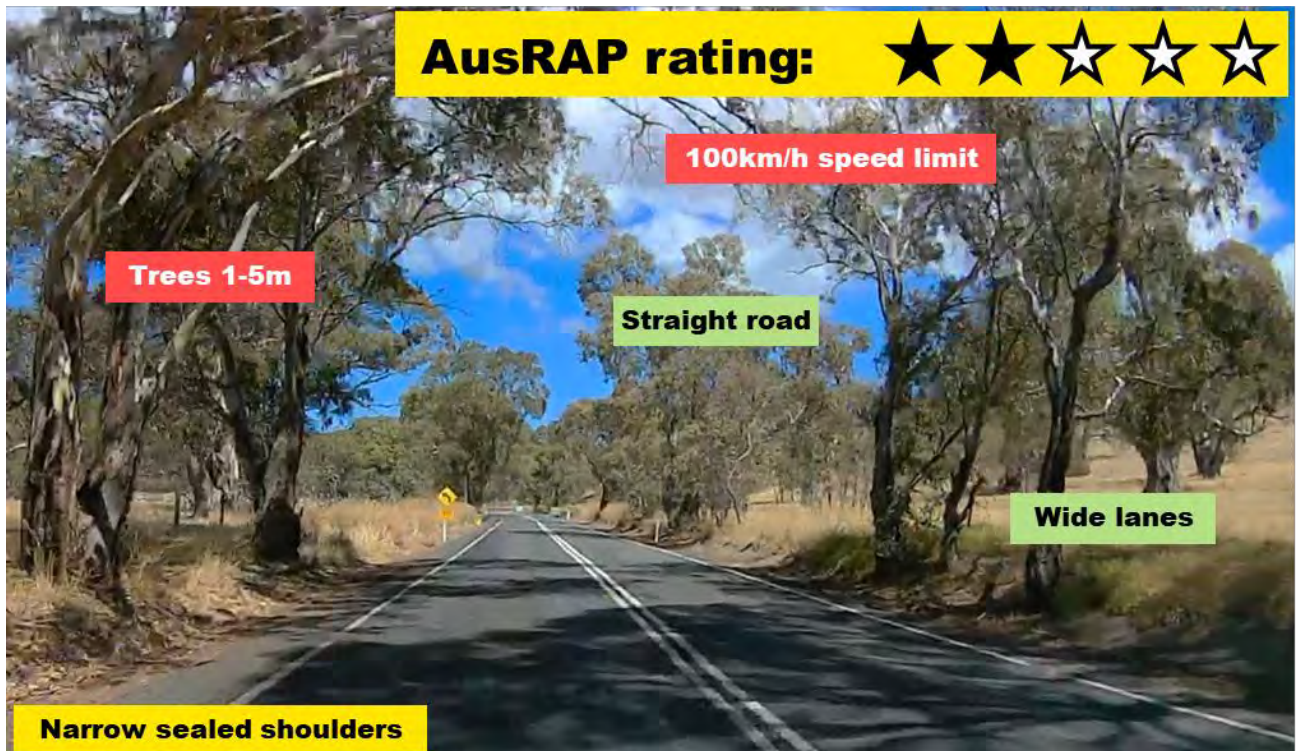


Figure 35: Example of a two-star AusRAP star rated section on Main South Road

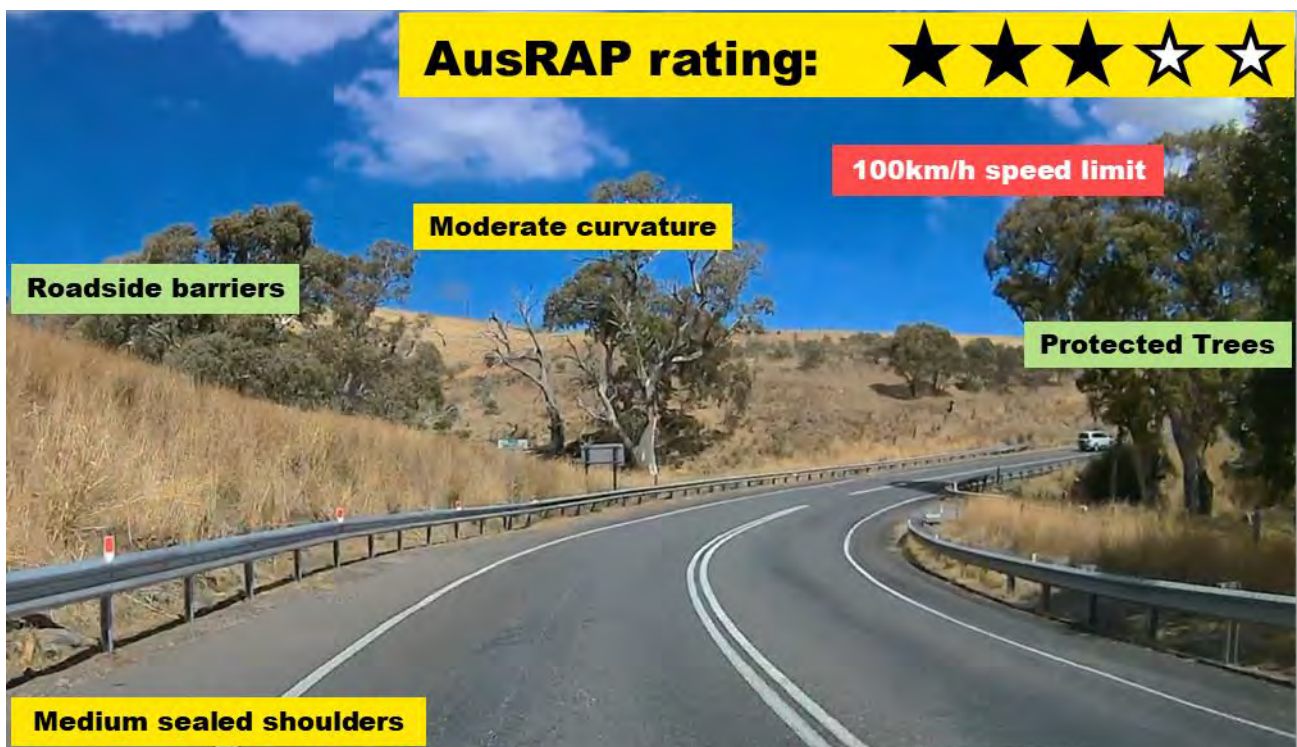


Figure 36: Example of a three-star AusRAP star rated section on Main South Road

Comparing Figure 34 and Figure 36, which are both similar cross-sections, highlight the important difference that safer roadsides have on road star rating.

Other Observations

One of the most common complaints received about Main South Road was the lack of overtaking lanes and opportunities along the corridor. This can cause driver frustration and dangerous overtaking manoeuvres, which increases the risk of crashes occurring. There are 10 overtaking lanes on Main South Road. Two of these are between Seaford and Aldinga, where the road will be duplicated, seven of these are along the 38km section between Aldinga and Yankalilla, and one is in the southbound direction just south of Normanville. Slow vehicle turnouts are not used on Main South Road.

The average length of existing overtaking lanes on Main South Road is about 850m, which is considered short by Austroads guidelines, which state for non-road train routes, a minimum length of 550m (excluding tapers) in a 100km/h zone, and a desirable length of at least 950m. When including most of the taper length, three of the 10 overtaking lanes slightly exceed one kilometre in length, and three are only 600m long. Ideally, all of these overtaking lanes would be extended, particularly given that b-doubles are permitted on the corridor. However, RAA understands the roadside environment, including the presence of side roads and property access points, constrains some of the existing lanes.

Recommendation 7F

Explore the possibility of extending existing overtaking lanes to provide longer overtaking opportunities in existing locations.

The locations of nine of 10 existing overtaking lanes between Aldinga and Cape Jervis are shown in Figure 37.

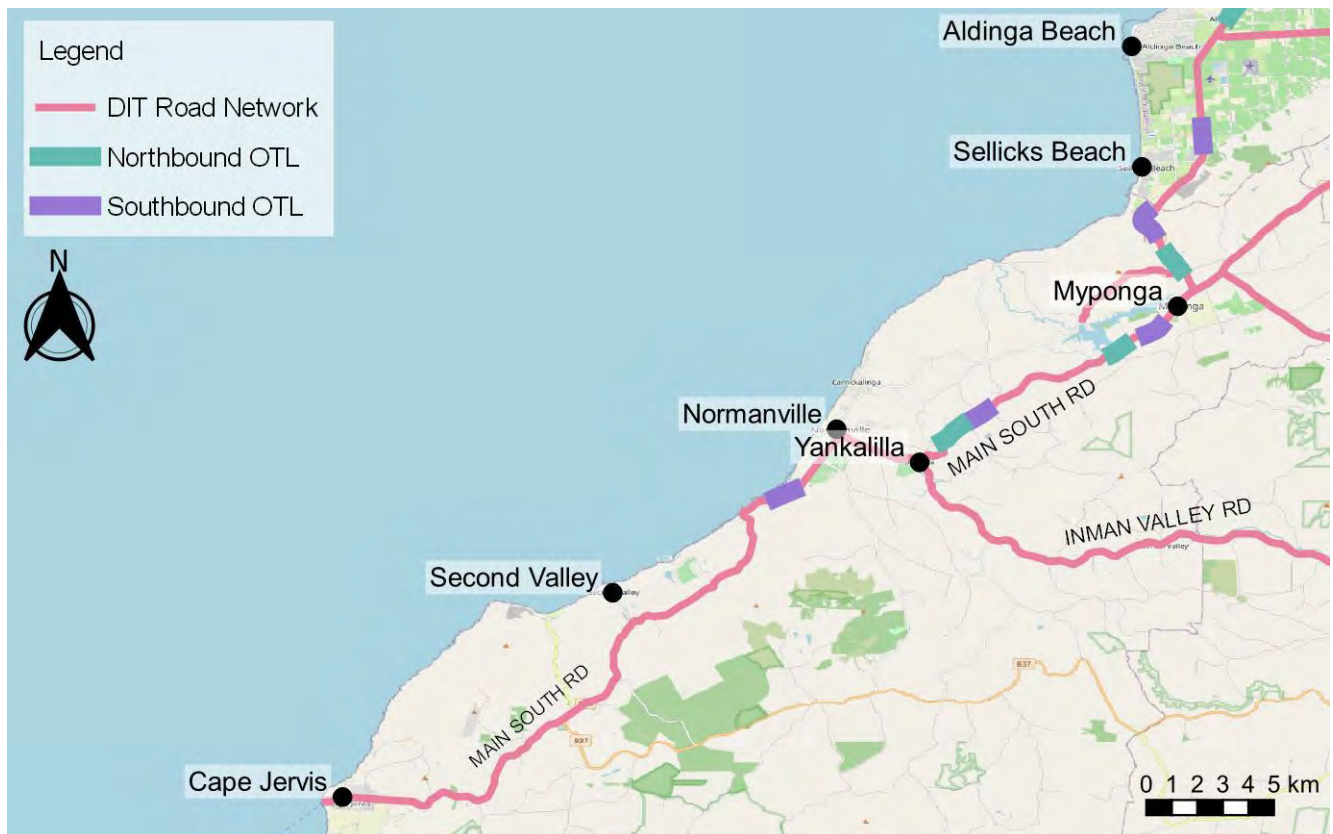


Figure 37: Locations of nine of 10 overtaking lanes on Main South Road

RAA has reviewed Main South Road and mapped out the sections of the road where overtaking is permitted in each direction. This involved a review of footage taken whilst driving the corridor and available satellite imagery. This analysis only considered sections with a speed limit of 80km/h or higher, with sections within townships excluded. On average for the corridor, only 29% of the length in the southbound direction and 25% of the length in the northbound direction is available for legal overtaking. These sections are often less than 500m long, meaning that legal overtaking is often unrealistic. When only considering sections greater than 500m in length, overtaking is considered possible 15% of the time in the northbound direction, and 19% of the time in the southbound direction, with existing overtaking lanes making up many of these opportunities.



Figure 38: Locations where overtaking is provided on Main South Road (heading north)

The table below compares the availability of overtaking and overtaking lanes for four sections of Main South Road with the respective lengths and traffic volumes.

Segment	Length	AADT	No. of overtaking lanes	Per cent of length allowing overtaking*
Aldinga – Myponga	14km	5600	3 (2x SB, 1x NB)	33%
Myponga – Yankalilla	13km	3800	4 (2x SB, 2x NB)	16%
Normanville – Wirrina Cove	8.5km	2300	1 (1x SB)	29%
Wirrina Cove – Cape Jervis	20km	900 – 1500	0	31%

*Both directions combined

Given these results, RAA recommends that an additional northbound overtaking lane is provided between Myponga and Sellicks Beach, given that there is presently only one in this direction, overtaking is scarcely provided otherwise, and traffic volumes are high (5,600 vehicles per day). RAA

also recommends that a northbound overtaking lane be constructed between Wirrina Cove and Normanville.

Recommendation 7G

Install additional overtaking lanes between Myponga and Sellicks Beach (northbound), and between Wirrina Cove and Normanville (northbound).

South of Wirrina Cove, average daily traffic volumes drop off substantially, and it is unlikely that the road meets the Austroads warrants for the construction of overtaking lanes. Nevertheless, this is a 20km long section of road in steep, hilly terrain with freight making up 10% of traffic. The corridor is the principal route to Kangaroo Island, and can experience heavy waves of traffic, particularly as vehicles depart the Kangaroo Island Ferry and travel towards Adelaide. For these reasons, RAA suggests that two overtaking lanes be constructed between Wirrina Cove and Cape Jervis, and the wide shoulder on the steep incline in the eastbound direction near Cape Jervis be converted to a climbing lane for slow or heavy vehicles.

Recommendation 7H

Install two overtaking lanes between Cape Jervis and Wirrina Cove and convert the wide shoulder on the steep incline near Cape Jervis into a climbing lane for slow or heavy vehicles.

The condition of the pavement between Aldinga Beach Road and Sellicks Beach Road is very poor, with substantial undulations present, along with rutting and fatigue cracking. Whilst RAA understands that these would be priority works as part of the stage 2 Main South Road upgrade, these works are not expected to start until after 2023. RAA recommends that about 2km of road reconstruction works between Aldinga Beach Road and Hahn Road be prioritised and completed as early as practical. Additional maintenance is required for other sections of the road, to ensure the safety of road users until the road is upgraded.

Recommendation 7I

Prioritise 2km of pavement reconstruction works between Aldinga Beach Road and Hahn Road.

W2-1 crossroad and W2-4 side road intersection warning signage is consistently outdated along Main South Road. RAA recommends these intersection warning signs be updated along the corridor to reflect current Australian Standards (AS1742.2 – 2009), which incorporate an arrowhead into the crossroad warning sign highlighting the priority movement through the intersection.

Recommendation 7J

Update W2-1 crossroad and W2-4 side road intersection warning signs along the corridor to reflect current Australian Standards.

Roadside barrier protection is installed on many of the curves and straight sections with a high frequency of roadside hazards. Nevertheless, collisions with fixed roadside objects continue to occur regularly on Main South Road and other roads across the region. Safety of roadsides should continue to be improved by either removing hazards or installing barriers with motorcycle underrun to reduce the level of risk for all road users.

Recommendation 7K

Improve the safety of roadsides by continuing to remove hazards or install barriers with motorcycle underrun protection.

Heavy freight travelling through Yankalilla was raised regularly by survey respondents, with several suggesting the idea of providing a bypass for larger vehicles. A Yankalilla bypass route utilising an upgraded and realigned Jervois Road looks to be potentially the most feasible, however the current alignment of Jervois Road poses significant horizontal and vertical challenges that would need to be addressed. A Normanville bypass would require the construction of new road alignment and more property acquisition. Bypassing both towns is technically possible, but RAA considers that these may be longer term options and therefore some short and medium term measures should be considered in the interim as it may not be feasible economically to build these bypasses.

Recommendation 7L

Explore the economic feasibility of constructing a heavy vehicle bypass of Yankalilla utilising Jervois Road.

Intersection with Sellicks Beach Road (Sellicks Beach)

The intersection with Sellicks Beach Road in Sellicks Beach was raised by several survey respondents in the Fleurieu Peninsula community survey, with examples of the feedback received included below.

“Double white lines both ways, blind hill both ways, directly opposite the Victory Hotel driveway. Cars turning left from Sellicks Beach Road often pull out in the path of 90km/h incoming traffic. Turning lane urgently needed before a fatality occurs. Possibly the most dangerous blind intersection in the south.”

“At the intersection with Sellicks Beach Road, there isn’t adequate time to get into the road and build up speed on this blind corner, you cannot see approaching cars until they are almost on the intersection.”

Between 2016 and 2020, four casualty crashes occurred at the intersection that all resulted in minor injuries:

- In March 2017, a right-angle crash between a vehicle turning right from Old Sellicks Hill Road (Victory Hotel) and a vehicle travelling southwest on Main South Road
- In March 2018, a rear end crash between a motorcycle travelling southwest and southwest bound vehicle stopped on the carriageway (likely turning right onto Sellicks Beach Road)
- In December 2017, a right turn crash between a southwest bound vehicle turning right into Sellicks Beach Road and a semi-trailer heading northeast on Main South Road.
- In January 2020, a rear end crash between an eastbound vehicle turning left and another eastbound vehicle stopped on the carriageway of Sellicks Beach Road.

On-site, the key observations made by the RAA team were the poor sight distance due to the crest in the road and poor road alignment, and the high speed of vehicles travelling through the intersection.

Several east-west pedestrian movements to access the Victory Hotel were witnessed whilst on site, and it is noted pedestrian infrastructure is not present to facilitate safer crossing of Main South Road. As the Victory Hotel is within close walking distance to residents or holidaymakers staying in the eastern part of Sellicks Beach, these movements are not unexpected.

RAA has raised an intersection upgrade at this location to be of high importance in the second stage of the Main South Road upgrade between Aldinga and Sellicks Beach. As a minimum, the 90km/h speed limit needs to be reviewed, channelised turn lanes constructed, and pedestrian infrastructure considered, noting that constructing footpaths may encourage more pedestrians to cross in this dangerous location. In conjunction with these upgrades, it is highly desirable to realign the intersection to improve sight lines and improve street lighting.

Recommendation 7M

Upgrade the intersection with Main South Road and Sellicks Beach Road to improve safety by increasing sight distance and installing channelised turn lanes.



Figure 39: Poor sight distance from Sellicks Beach Road to the southwest



Figure 40: Poor sight distance from Sellicks Beach Road to the northeast

Intersection with Country Road (Sellicks Beach)

RAA reviewed the intersection with Country Road following several comments in the Fleurieu Peninsula community survey. An example of this feedback is included below.

“Turning from South Road on to Country Road at Sellicks Beach, I won’t turn there if there is someone behind me. People have been rear-ended there. I have a really small car and braking to 50km/h on approach, with indicator on, still leads to person behind panicking about the space they have left to work with. A truly horrible feeling when a quarry truck rounds the blind corner behind you.”

Between 2016 and 2020, four casualty crashes occurred at the intersection, with these all occurring since the start of 2019:

- In March 2019, a rear end crash between two southwest bound cars, one of which was stopped on the carriageway (likely turning right onto Country Road). A northeast bound vehicle was also involved after the initial collision. Crash resulted in minor injuries.
- In June 2019, a rear end crash between two southwest bound cars, one of which was stopped on the carriageway (likely turning right onto Country Road). Crash resulted in minor injuries.
- In June 2020, a southwest bound car on Main South Road hit a guard rail, causing minor injuries
- In July 2020, a southwest bound motorcycle on Main South Road hit a guard rail, causing serious injuries

RAA's observations on-site identified that when travelling southwest on Main South Road, the stopping sight distance to the intersection is quite short, and particularly short to a vehicle stopped on the carriageway waiting to turn right. Whilst there is some space on the shoulder to pass a stationary vehicle, this can be quite narrow, especially for large vehicles or if the right turning vehicle isn't positioned in the far right of the lane.

For these reasons and given the history of rear end crashes involving southwest bound vehicles, RAA considers it appropriate to install a channelised right turn lane from Main South Road onto Country Road as a minimum at this location.

Recommendation 7N

Install a channelised right turn lane at the intersection with Main South Road and Country Road in Sellicks Beach.

Intersection with Pages Flat Road (Myponga)

Between 2016 and 2020, four casualty crashes occurred at the intersection with Main South Road and Pages Flat Road, just north of the Myponga township. The current intersection alignment creates an unnecessarily high number of conflict points, and the layout can be confusing for those unfamiliar with it. RAA recommends that a roundabout be installed at this location, given that there is a significant amount of land available at the intersection to construct a large rural roundabout without requiring significant property acquisition. The crashes at this location included:

- In October 2016, a right-angle crash occurred involving a car on Pages Flat Road making a right turn and two other southwest bound vehicles on Main South Road, resulting in minor injuries.
- In December 2016, a southwest bound car on Pages Flat Road collided with a guard rail and an 'other inanimate object', resulting in serious injuries.
- In November 2018, a right turn crash involving a car on Pages Flat Road turning right and a northeast bound vehicle on Main South Road, resulting in minor injuries.
- In October 2019, a right-angle crash occurred involving a car on Pages Flat Road making a right turn and a southwest bound vehicle on Main South Road, resulting in serious injuries.

Recommendation 7O

Install a roundabout at the intersection with Main South Road and Pages Flat Road in Myponga.

Intersection with Main Road (Normanville)

The intersection with Main Road and Willis Drive (Main South Road) in Normanville attracted a very high number of responses in the Fleurieu Peninsula community survey, which made it the third most nominated intersection in the region, and the most highly raised for unsafe road design. Several of these responses have been included below.

"This is the only intersection on South Road that has to give way to traffic coming from a secondary road. This is very confusing for all drivers."

“Very busy at times and needs better control/traffic management. Left/right turn is frequently compromised as many drivers confused as to whom should give way. (Give-way sign installed a year or so ago has seemed to make it worse).”

“Absolutely no sense that a main road gives way. Needs a roundabout. Traffic builds up for 300 metres during peak times.”

RAA welcomes the \$300,000 upgrade at this intersection which commenced in March 2021. This involved converting the left turn slip lane into a channelised left turn lane without a dividing island, which changes the priorities between traffic continuing along South Road and traffic turning Right from Main Road. RAA expects this to improve traffic flow for southbound traffic on Main South Road, but it may cause additional delays for traffic on Main Road as there is limited space for Main Road traffic to pass a vehicle turning right, especially if this is a larger vehicle.



Figure 41: Changed intersection priorities will occur as a result of the Main Road (Normanville) intersection upgrade (Source: DIT⁸)

The intersection is constrained by buildings and significant vegetation with the historic Bungala Cottage located immediately south of the intersection, retail and residential properties immediately north of the intersection, and a significant tree on the northwestern corner. RAA believes a roundabout would further improve safety and traffic flow at the intersection, however, this would come at the cost of local businesses or heritage and as such the community should be extensively consulted.

⁸ DIT, 2021, *Normanville intersection Safety Improvements*, access on DC Yankalilla website at <https://www.yankalilla.sa.gov.au/news-and-events/news-and-events/latest-news/normanville-intersection-safety-improvements>.

Summary of recommendations for Main South Road

Recommendation 7A

Install motorcycle underrun protection on roadside barriers south of Normanville.

Recommendation 7B

Install audio tactile centreline markings between Sellicks Beach and Yankalilla.

Recommendation 7C

Review and prioritise the identified narrow bridges for widening between Myponga and Second Valley.

Recommendation 7D

Implement streetscape improvements between Yankalilla and Normanville to improve amenity and reinforce the existing 50km/h speed limit.

Recommendation 7E

Improve signposting of speed limits to create consistency with speed limits along the corridor.

Recommendation 7F

Explore the possibility of extending existing overtaking lanes to provide longer overtaking opportunities in existing locations.

Recommendation 7G

Install additional overtaking lanes between Myponga and Sellicks Beach (northbound), and between Wirrina Cove and Normanville (northbound).

Recommendation 7H

Install two overtaking lanes between Cape Jervis and Wirrina Cove and convert the wide shoulder on the steep incline near Cape Jervis into a climbing lane for slow or heavy vehicles.

Recommendation 7I

Prioritise 2km of pavement reconstruction works between Aldinga Beach Road and Hahn Road.

Recommendation 7J

Update W2-1 crossroad and W2-4 side road intersection warning signs along the corridor to reflect current Australian Standards.

Recommendation 7K

Improve the safety of roadsides by continuing to remove hazards or install barriers with motorcycle underrun protection.

Recommendation 7L

Explore the economic feasibility of constructing a heavy vehicle bypass of Yankalilla and Normanville.

Recommendation 7M

Upgrade the intersection with Main South Road and Sellicks Beach Road to improve safety by increasing sight distance and installing channelised turn lanes.

Recommendation 7N

Install a channelised right turn lane at the intersection with Main South Road and Country Road in Sellicks Beach.

Recommendation 7O

Install a roundabout at the intersection with Main South Road and Pages Flat Road in Myponga.

Inman Valley Road

Inman Valley Road is a state maintained arterial road extending for approximately 30km between Yankalilla and Victor Harbor via Inman Valley.

Average daily traffic volumes are moderate for the corridor, and highest at each end. On the Victor Harbor end, 1,700 vehicles (7% heavy vehicles) per day use the road and on the Yankalilla end, 1,400 vehicles (9.5% heavy vehicles) per day use the road. About 1,000 vehicles (6% heavy vehicles) use the central section every day.

Inman Valley Road was highly raised by respondents of the community survey and was the third-most raised road in the Fleurieu Peninsula region – only behind Victor Harbor Road and Main South Road. Whilst the majority of comments pertained to the poor condition of the road, there were also a substantial number of comments relating to roadside hazards, poor curvature, high speed limits and high use by cyclists. Driver behaviour issues were also raised highly with a variety of comments about speeding, tailgating and slow drivers.

Inman Valley Road was the highest raised road in the region from a cycling perspective, with the Encounter Bikeway being the only cycle corridor attracting more cycle nominations. Inman Valley Road also ranked highly for comments about motorcycle safety, being the most raised road across the region by survey respondents who were motorcycle riders, and fourth overall about motorcycle safety.

Table 24: Total number of survey responses raising Inman Valley Road

Category	No. of responses	Overall rank
Top issue in region	41	3
Maintenance	61	3
Road design	12	6
Congestion	2	13
Speed limit	22	5
Speed enforcement	6	6
Driver behaviour	19	6
Freight	14	6
Motorcycling	14	4
Cycling	43	2
Combined	234	3

Several examples of typical survey comments pertaining to Inman Valley Road are included below.

“Near the Bald Hills Road intersection there are some horrendously dangerous variations in levels through a number of bends. Cyclists, trucks, cars towing horse floats or boats and motorcyclists share the road here regularly with tourists unfamiliar with this particularly bad stretch.”

“Very windy, narrow, trees too close to road, lots of water over road in winter and no overtaking places.”

“Large trees on the roadside without guard rails, blind corners and crests.”

The speed limit between Yankalilla and Inman Valley and beyond should not exceed 80km/hour. There are too many trees, it is a winding road and there are quite a few roos.”

“One of many bumpy poorly maintained roads that take the fun out of riding sometimes.”

In recent years, several minor improvements to Inman Valley Road have been completed, including:

- (2016/17) \$1.62m black spot upgrade near Back Valley Road, Back Valley
- (2018/19) \$145k black spot upgrade near Woodvale Road, Yankalilla
- (2018/19) \$169k pavement rehabilitation near Torrens Vale Road, Bald Hills

Crash History

Between 2016 and 2020, 17 casualty crashes occurred on Inman Valley Road, with more than half of these involving a collision with a fixed object, and most involving only a single vehicle.

Table 25: Inman Valley Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	9	7	2	0
Left Road - Out of Control	3	1	2	0
Rear End	2	2	0	0
Hit Animal	1	1	0	0
Side Swipe	1	1	0	0
Roll Over	1	0	1	0
Total	17	12	5	0

Whilst cars are the unit most frequently involved in crashes on Inman Valley Road, motorcycles make up a higher percentage than average for the region with 23% of units involved in crashes being motorcycles as compared to 8% for the Fleurieu Peninsula. Cyclists appear to be overrepresented in crashes as well, making up 18% of units involved in casualty crashes, as compared to 4% on average for the Fleurieu Peninsula region. However, it should be noted that all four of these cyclists were involved in the single side swipe collision, which involved four cyclists and no other road users.

Table 26: Vehicles involved in crashes on Inman Valley Road (2016 – 2020)

Unit type	Approximate number of units
Car	13 (59%)
Motorcycle	5 (23%)
Bicycle	4 (18%)

This highlights the popularity of Inman Valley Road as a motorcycling route, and the subsequently higher volumes of motorcyclists present.

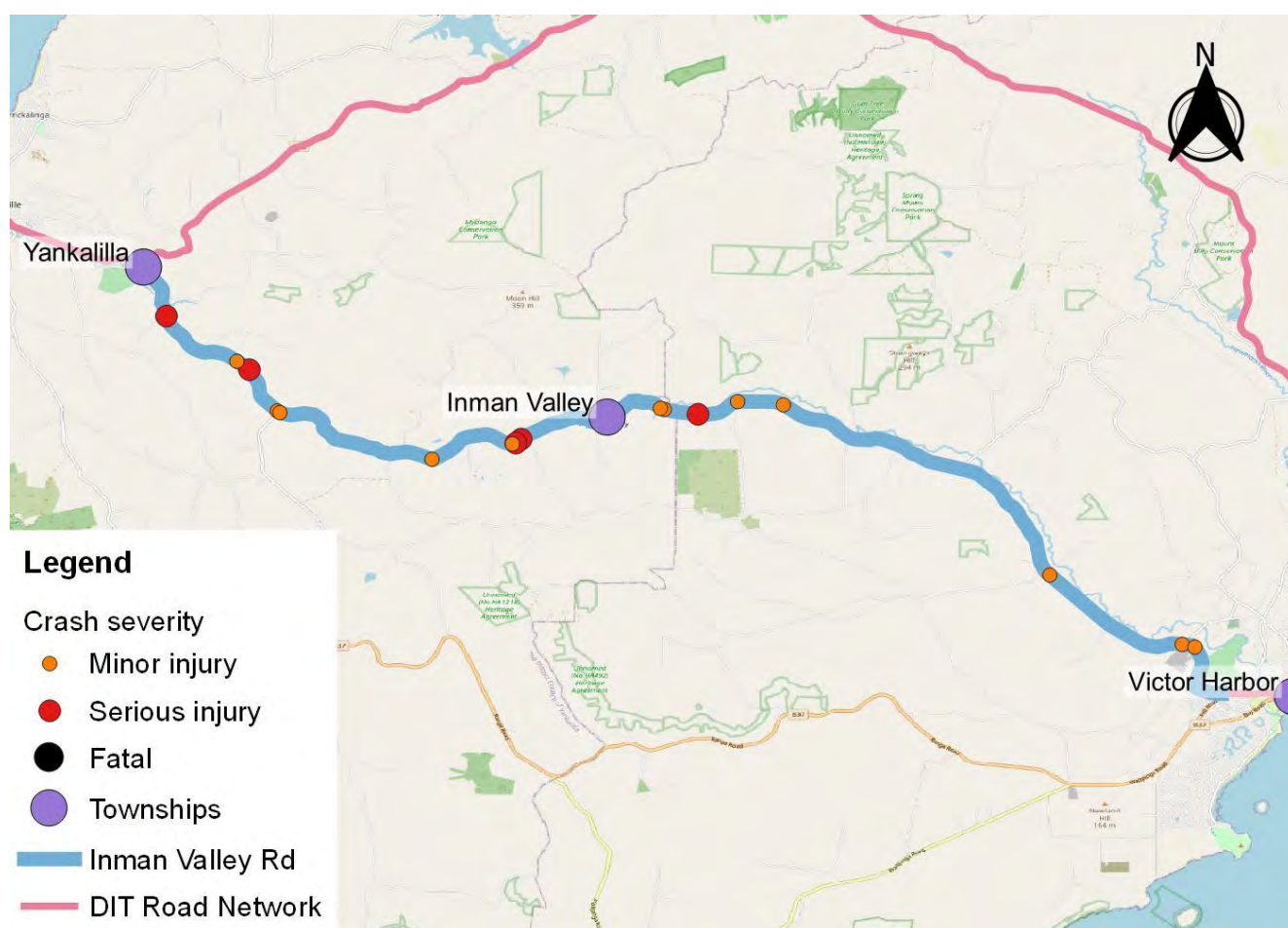


Figure 42: Locations of casualty crashes on Inman Valley Road between 2016 and 2020

The average casualty crash rate per 100m vkt is 25 along Inman Valley Road, however this is as high as 34 for the 16km section with consistently curving geometry between Sawpit Road and Torrens Vale Rd, and as low as 11 for the 7km long, relatively wide and straight section between Sawpit Rd and Victor Harbor.

Road Widths

Only one cross sectional width was measured on Inman Valley Road due to safety concerns stopping at other locations along the corridor. This measurement was taken on the flat, wide section close to Victor Harbor and is not representative of most parts of Inman Valley Road where lane widths vary from 3m to 3.3m, and shoulders are unsealed.

Table 27: Sealed width of Inman Valley Road

Location	Lane width	Sealed shoulder width	Total seal width
S of Back Valley Rd (Back Valley)	3.2m	1.6m	9.6m

Shoulders are sealed for the 9km section between Victor Harbor and Sawpit Rd, and for the 5km Section between Torrens Vale Rd and Yankalilla, which leaves approximately 16km of shoulder sealing required between Sawpit Rd (Lower Inman Valley) and Torrens Vale Rd (Bald Hills). This will also improve cyclist safety on this popular cycling corridor by providing additional sealed width for

cyclists to use, whilst making it safer and easier for drivers to overtake cyclists and give the required 1.5m clearance.

Recommendation 8A

Seal shoulders to 1m wide along the 16km section of Inman Valley Road between Sawpit Rd (Lower Inman Valley) and Torrens Vale Rd (Bald Hills).

Speed Limits

The speed limit on Inman Valley Road is 100km/h, other than a 1.1km section through Inman Valley which is reduced to 60km/h with 80km/h buffer zones on the approaches.

On approach to Victor Harbor and Yankalilla, an 80km/h buffer zone is used before the 60km/h zone. In Yankalilla, the 60km/h zone becomes 50km/h closer to Main South Road.

Table 28: Speed limit on Inman Valley Road

Segment	Speed limit (km/h)
Victor Harbor	60 – 80
Victor Harbor – Inman Valley	100
Inman Valley	80 – 60 – 80
Inman Valley – Yankalilla	100
Yankalilla	80 – 60 – 50

RAA considers 80km/h to be a more appropriate speed limit on most parts of Inman Valley Road, although understands that retaining the 100km/h limit along the short section between Victor Harbor and Back Valley Rd may be feasible. From a corridor point of view, speed limits should be set for safety and consistency along a corridor whilst minimising the number of speed limit changes, and RAA would support a speed limit reduction to 80km/h for the entire corridor.

Recommendation 8B

Consider a reduced speed limit for Inman Valley Road.

AusRAP Star Ratings

Inman Valley Road is typically rated one star under AusRAP star rating protocols. Straight sections where there are no roadside hazards or adequate barriers are installed may be rated up to two or three stars, however, these are not typical of the road environment on Inman Valley Road.

The section pictured below is located between Inman Valley and Yankalilla and is a low one star rated road. In this case, a speed reduction to 80km/h would still result in a one star rated road. Barriers on both sides of the road and 1m wide sealed shoulders would give this a two-star rating, and the rating would increase to three stars if improvements were made to the road surface. Our recommendations for Inman Valley Road in this report would result in a consistent, minimum three star rated road, and significantly reduce the amount of trauma occurring on Inman Valley Road.



Figure 43: Typical AusRAP star rating on Inman Valley Road

Other Observations

Whilst a beam barrier protection is used to a reasonable degree along the corridor, unprotected trees are still present in high numbers along the entire length of Inman Valley Road. RAA recommends that further barrier installation incorporating motorcycle underrun protection be undertaken, especially given the high prevalence of crashes involving fixed objects along the corridor.

Recommendation 8C

Further installation of barriers (incorporating motorcycle under run) to protect against fixed roadside hazards on Inman Valley Road.

It was also noted that motorcycle underrun protection was only used on two short lengths of barrier and should be retrofitted to existing barriers due to the popularity of Inman Valley Road amongst motorcyclists.

Recommendation 8D

Retrofit motorcycle underrun to existing barriers on Inman Valley Road.



Figure 44: Trees on the roadside present the most significant hazard to users of Inman Valley Road

Sections of the road were undulating, however undulations were not present on all sections of the road, but were experienced frequently along its length. Localised pavement rehabilitation or reconstruction is needed to address several undulating sections between Victor Harbor and Yankalilla. Ruts deeper than 30mm were also measured on sections of Inman Valley Road and RAA recommends rut-filling works to improve vehicle handling and reduce the risk of vehicles aquaplaning in wet weather.

Recommendation 8E

Localised pavement rehabilitation/reconstruction to address undulating and sections and rutting between Victor Harbor and Yankalilla.



Figure 45: Rutting on Inman Valley Road

Several survey respondents raised concerns about limited sight distance at the intersection with Hancock Road in Inman Valley. Hancock Road meets Inman Valley Road on the inside of a curve, and trees exacerbate sight distance issues when turning onto Inman Valley Road. No casualty crashes occurred at this intersection between 2016 and 2020. Whilst realignment of the intersection to improve sight distance would address the issue, the high cost of this treatment cannot currently be justified over other high priority intersections in the region. As such, RAA recommends installing a rural junction active warning system (RJAWS) at this location, which will deliver safety benefits in the form of localised speed reduction only when a vehicle is about to enter the road at a significantly lower cost than traditional infrastructure treatments.

Recommendation 8F

Install a rural junction active warning system (RJAWS) at the intersection with Inman Valley Road and Hancock Road in Inman Valley.

Summary of recommendations for Inman Valley Road

Recommendation 8A

Seal shoulders to 1m wide along the 16km section of Inman Valley Road between Sawpit Rd (Lower Inman Valley) and Torrens Vale Rd (Bald Hills).

Recommendation 8B

Consider a reduced speed limit for Inman Valley Road.

Recommendation 8C

Further installation of barriers (incorporating motorcycle under run) to protect against fixed roadside hazards on Inman Valley Road.

Recommendation 8D

Retrofit motorcycle underrun to existing barriers on Inman Valley Road.

Recommendation 8E

Localised pavement rehabilitation/reconstruction to address undulating and sections and rutting between Victor Harbor and Yankalilla.

Recommendation 8F

Install a rural junction active warning system (RJAWS) at the intersection with Inman Valley Road and Hancock Road in Inman Valley.

Long Valley Road

Long Valley Road is a regional arterial road extending for 15km between Wistow and Strathalbyn, forming part of a key link between the Fleurieu Peninsula region and the South Eastern Freeway at Mount Barker. Long Valley Road was raised highly by respondents to RAA's 2020 Adelaide Hills regional road assessment survey⁹, and the corridor was subsequently reviewed as part of this assessment. As expected, Long Valley Road was also raised by respondents to the Fleurieu Peninsula community survey, receiving the fourth highest number of nominations of all roads across the region.

Table 29: Total number of survey responses raising Long Valley Road

Category	No. of responses	Overall rank
Top issue in region	15	7
Maintenance	34	4
Road design	18	4
Congestion	18	3
Speed limit	21	6
Speed enforcement	17	3
Driver behaviour	52	3
Freight	27	3
Motorcycling	4	9
Cycling	9	8
Combined	215	4

Poor driver behaviour was one of the primary issues raised by survey respondents, with drivers travelling too slowly, and drivers overtaking dangerously consistently raised. This was strongly related to comments about congestion and a lack of overtaking lanes on the road. Some typical responses received in the community survey relating to Long Valley Road are included below.

"I travel Long Valley Rd every day and there is a desperate need for an overtaking lane coming into Strathalbyn from Wistow. There are two leaving Strathalbyn. Many take too many risks when they have a slow driver in front of them endangering everyone".

"Long lines of traffic in either direction most days. All travelling too fast at the limit of 100km/h. It's a killer road at these speeds".

"Double lines most of the way with only two passing lanes very close together and one other passing spot available".

"Frequently get people driving too slow, other road users try to overtake but due to lack of opportunity to do so, stupidly take risks and cause hazards".

RAA's recommendations from the 2020 Adelaide Hills Regional Road Assessment Report were to install a southbound overtaking lane and a wire rope centre barrier for the length of the road to reduce

⁹ RAA, 2020, Regional Road Assessment: Adelaide Hills, <www.raa.com.au/roadassessments>

the likelihood of head on crashes occurring. At the time of writing this report, commitment has been made to install a southbound overtaking lane with central wire rope barrier for the lane. RAA expected that this would have been installed by the end of the 2020/21 financial year, however, construction has still not commenced.

Recommendation 9A

Install the additional overtaking lane, first announced in 2019, by the end of 2021.

Recommendation 9B

Consider dividing treatments such as a wire rope centre barrier to separate opposing traffic flows on Long Valley Road and reduce the likelihood of head on crashes occurring.

RAA reviewed the corridor again in 2021 noting that shoulder widening, and some roadside vegetation clearance has occurred along the corridor since our 2020 assessment. Sight distance continues to be an issue at several side road intersections, most notably at Gemmell Road, and further vegetation clearance would generally improve lines of sight without incurring the cost of major earthworks.

Recommendation 9C

Clear vegetation at side road intersections to improve sight distance.

During our 2021 review, gravel was scattered across the sealed carriageway at several unsealed side road intersections and property access points. It was noted that several unsealed roads have a narrow apron seal, however, RAA recommends that this be extended to 10m on all unsealed road access points to Long Valley Road.

Recommendation 9D

Provide at least 10m of apron sealing at unsealed side road intersections.

Summary of recommendations for Long Valley Road

Recommendation 9A

Install the additional overtaking lane, first announced in 2019, by the end of 2021.

Recommendation 9B

Consider dividing treatments such as a wire rope centre barrier to separate opposing traffic flows on Long Valley Road and reduce the likelihood of head on crashes occurring.

Recommendation 9C

Clear vegetation at side road intersections to improve sight distance.

Recommendation 9D

Provide at least 10m of apron sealing at unsealed side road intersections.

Alexandrina Road

Alexandrina Road is a regional arterial road extending for about 32km between Strathalbyn and Goolwa. Alexandrina Road is gazetted for use by 26m b-doubles for the majority of its running distance between the Strathalbyn township and Goolwa Road and is part of the sole b-double route linking the Fleurieu Peninsula and the South Eastern Freeway.

Traffic volumes on Alexandrina Road are high, with an average of 3,200 vehicles per day using the road between Strathalbyn and Finniss, 3,800 between Finniss and Currency Creek (Goolwa Road), and 5,100 between Goolwa Road and Goolwa (other than the 500m section between Goolwa Road and Airport Road, traversed by 7,100 vehicles per day). Freight vehicles make up around 10% of all traffic, which currently includes an average of 25 b-double movements per day and more than 100 movements by other articulated heavy vehicles.

In the Fleurieu Peninsula community survey, Alexandrina Road was one of the highest raised roads, particularly by residents of Alexandrina Council. The top three issues were road maintenance, road design and freight, as shown in Table 30 below.

Table 30: Total number of survey responses raising Alexandrina Road

Category	No. of responses	Overall rank
Top issue in region	26	5
Maintenance	33	5
Road design	31	3
Congestion	11	5
Speed limit	12	7
Speed enforcement	12	4
Driver behaviour	21	5
Freight	27	4
Motorcycling	9	5
Cycling	7	10
Combined	189	5

Analysis of survey responses indicated several issues being raised repeatedly, namely: a lack of overtaking lanes and safe overtaking opportunities, narrow bridges, a poor road surface, and poorly designed curves. Some typical survey responses are shown below.

“Strathalbyn to Goolwa Road (Alexandrina Road) is in very poor condition for a major road used by trucks, local traffic and tourists with caravans...narrow bridges, broken shoulders, surface is rough, undulating, with no overtaking lanes”.

“Narrow bridges – If trucks or caravans are using the road it is extremely dangerous meeting these on the bridges”.

“Sharp curves, negative camber on some curves, narrow bridges”.

“Frequent sharp bends and blind crests do not justify the current speed limits”.

“Oncoming trucks cutting corners over double lines (at speed) and taking up the whole road on narrow bridges.”

“B-double trucks are too big, long and slow up hills and cause congestion and some drivers taking risks to pass”.

Other than minor pavement rehabilitation, the only upgrade that RAA are aware of on Alexandrina Road in recent years is a \$1.5m upgrade of the intersection with Winery Road in Currency Creek, occurring in late 2018.

Crash History

The types of crashes occurring on Alexandrina Road between 2016 and 2020 are consistent with other regional roads, with single vehicle crashes making up 65% of all casualty crashes. Collisions with fixed objects are most prominent, with one of these tragically resulting in a fatality. The number of head on crashes is also cause for concern, making up 15% of casualty crashes on Alexandrina Road, as compared to 8% of all casualty crashes in the Fleurieu Peninsula, and 5% of casualty crashes in regional South Australia.

Table 31: Alexandrina Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	15	11	3	1
Roll Over	10	7	3	0
Head On	6	1	4	1
Right Angle	4	2	2	0
Side Swipe	2	2	0	0
Hit Animal	1	1	0	0
Rear End	1	1	0	0
Other	1	1	0	0
Total	40	26	12	2

Four of the six head on crashes occurred on curves, with the remaining crashes occurring on the Currency Creek Bridge, and another on a straight section of road immediately south of the Giles Creek Road corner. It is possible that narrow sections and substandard curves were contributing factors in each of these crashes.

Between 2016 and 2020, the casualty crash rate per vehicle kilometre travelled is notably higher between Strathalbyn and Goolwa Road, where 21 casualty crashes occurred per 100m vkt. In contrast, the section between Goolwa Road and Goolwa had a casualty crash rate of seven casualty crashes per 100m vkt over the same timeframe. This reflects the reduced crash risk due to a relatively straight and flat alignment on Alexandrina Road for the southern 4.5km section.

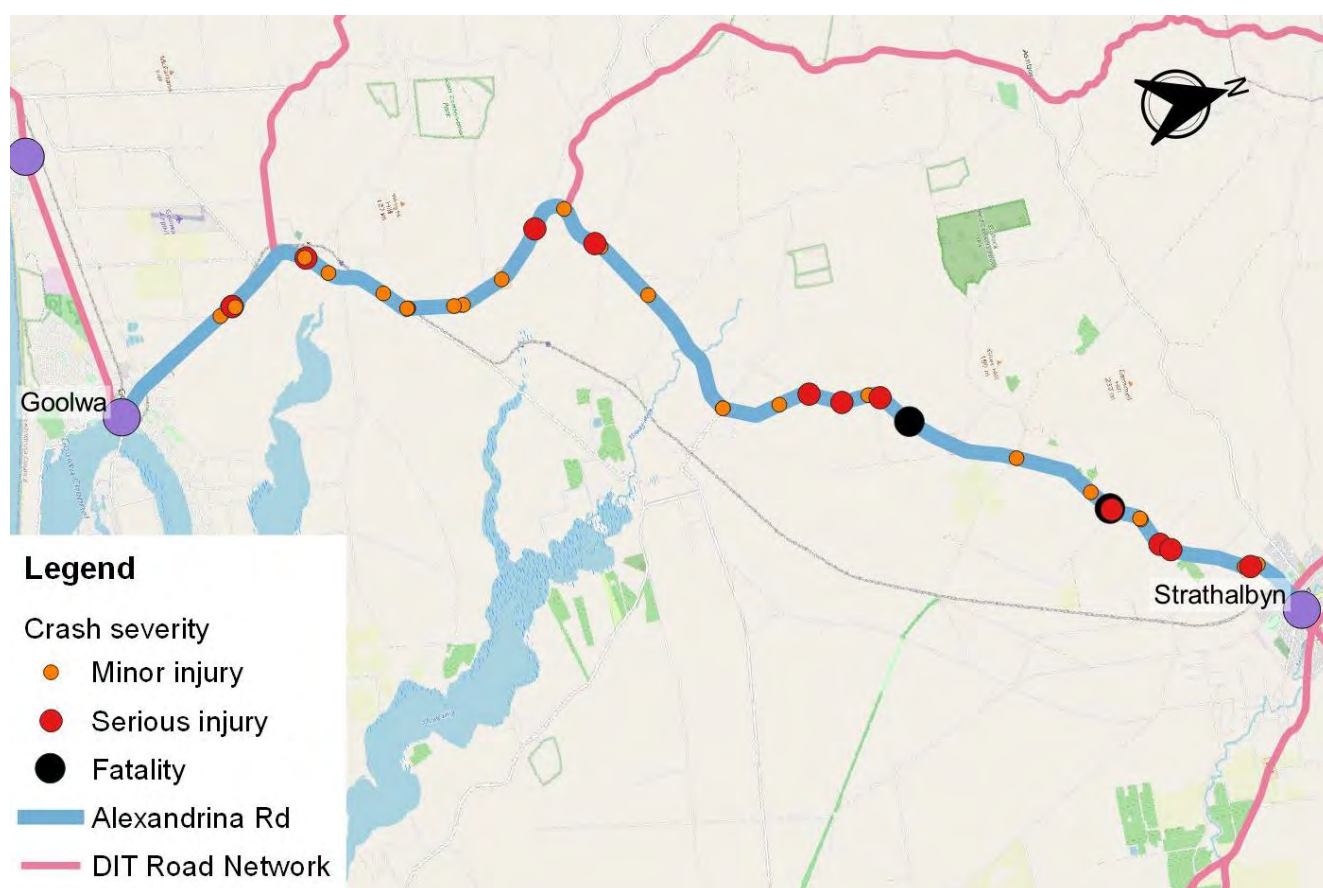


Figure 46: Locations of casualty crashes on Alexandrina Road between 2016 and 2020

Audio tactile edge line marking would contribute to reducing the number of single vehicle hit fixed object or rollover crashes, which are often the result of a vehicle inadvertently crossing the edge line.

Recommendation 10A

Install audio tactile edge lines on Alexandrina Road.

Cars are the predominant unit involved in crashes on Alexandrina Road and made up 83% of units involved in casualty crashes on the road. Motorcycles made up 13% of units involved in casualty crashes, with all motorcyclist crashes single vehicle run off road crash types.

Table 32: Vehicles involved in crashes on Alexandrina Road (2016 – 2020)

Unit type	Approximate number of units
Car	46 (84%)
Motorcycle	7 (13%)
Truck	1 (<2%)
Other/Unknown	1 (<2%)

Road Widths

Road width is fairly consistent along Alexandrina Road, with lanes approximately 3.3m wide and shoulders sealed to 1.0m wide. Generally, there is no, or little localised road and shoulder widening

around curves. Given that curve geometry is generally poor on Alexandrina Road with low radius curves with little superelevation commonly used to join longer straight sections, lanes and shoulders should be widened on curves to provide additional separation between opposing traffic and improve manoeuvrability for heavy vehicles.

Recommendation 10B

Undertake localised road and sealed shoulder widening on curves in the short term to compensate for poor curve geometry.

Table 33: Sealed width of Alexandrina Road

Location	Lane width	Sealed shoulder width	Total seal width
N of Michelmore Road (Strathalbyn)	3.3m	1.1m	8.8m
S of Sandergrove Rd (Finniss)	3.1m / 3.3m	1.3m / 1.2m	8.9m
N of Winery Rd (Currency Creek)	3.3m	1.0m / 1.1m	8.7m

Narrow bridges were also raised highly by survey respondents, with several narrow bridge and culvert structures present along the corridor. The most concerning of these is the Jackson Creek Bridge, located about 3.5km south of Strathalbyn. This bridge creates a blind crest in the road, is narrow and located on a substandard, blind curve with radius of approximately 180m.



Figure 47: Jackson Creek Bridge, 3.5km south of Strathalbyn

The advisory speed over the Jackson Creek Bridge is currently 65km/h, which feels fast through the curve given the poor horizontal and vertical alignment. The best improvement at this location would be to reconstruct the curve to a radius of at least 400m, which would facilitate safer travel at higher speed and allow a new section of road and culvert to be constructed mostly offline, and to modern standards. This would require some land acquisition on the inside of the curve.

Recommendation 10C

Realign Alexandrina Road over Jackson Creek, 3.5km south of Strathalbyn, which will require construction of new culverts and allow a curve with better horizontal and vertical geometry to be constructed.

A sketch of this proposal is included in Figure 48 below.



Figure 48: RAA proposed curve realignment to improve safety at the Jackson Creek Bridge

Similar curve realignments along the corridor should be considered to improve safety around curves along Alexandrina Road, which is discussed later in this report under Other Observations.

Speed Limits

Alexandrina Road is subject to a 100km/h speed limit outside of townships, with the exception of a 500m long 80km/h zone over the level crossing just north of Winery Road in Currency Creek.

Table 34: Speed limit on Alexandrina Road

Segment	Speed limit (km/h)
Strathalbyn	50 - 80
Strathalbyn – Winery Road level crossing (Currency Creek)	100
Winery Road level crossing (Currency Creek)	80
Winery Road level crossing – Currency Creek township	100
Currency Creek township	80
Currency Creek township – Goolwa	100
Goolwa	80 - 50

Several survey respondents raised issues with vehicle speeds entering Goolwa, travelling past the two schools in Goolwa Secondary College and Goolwa Primary School. More could be done as an entry statement to encourage and reinforce the lower speed limit on this section of road as the road environment north of Vercoe Terrace is generally not conducive of a 50km/h speed limit. RAA considers a trial of a township entry treatments¹⁰, similar to what is used frequently in regional Queensland would be appropriate in this location to ensure visibility of the awareness of the Goolwa 50km/h speed limit is enhanced. The technical requirements of township entry treatments are detailed in the Queensland Department of Transport and Main Roads (TMR) traffic engineering technical note TN170¹¹.

Recommendation 10D

Trial of township entry treatment on the Alexandrina Road approach to Goolwa.

AusRAP Star Ratings

The AusRAP star rating on Alexandrina Road varies between one and three stars along the length of the corridor. Good use of roadside barriers to protect against hazards ensures two stars is achieved for much of the road, with some sections rated three stars. One-star sections are present through several curves, and in sections where roadside hazards remain exposed. Several examples of the star ratings on Alexandrina Road are included below.

¹⁰ Queensland Government, 2021, Department of Transport and Main Roads, *Township Entry Treatments*, accessed at <<https://www.tmr.qld.gov.au/Safety/Road-safety/Targeted-Road-Safety-Program/Township-Entry-Treatments>>.

¹¹ Queensland Government, 2021, Department of Transport and Main Roads, *TN170 Township Entry Treatment (TETs)*, accessed at <<https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Technical-Notes/Traffic-engineering>>.

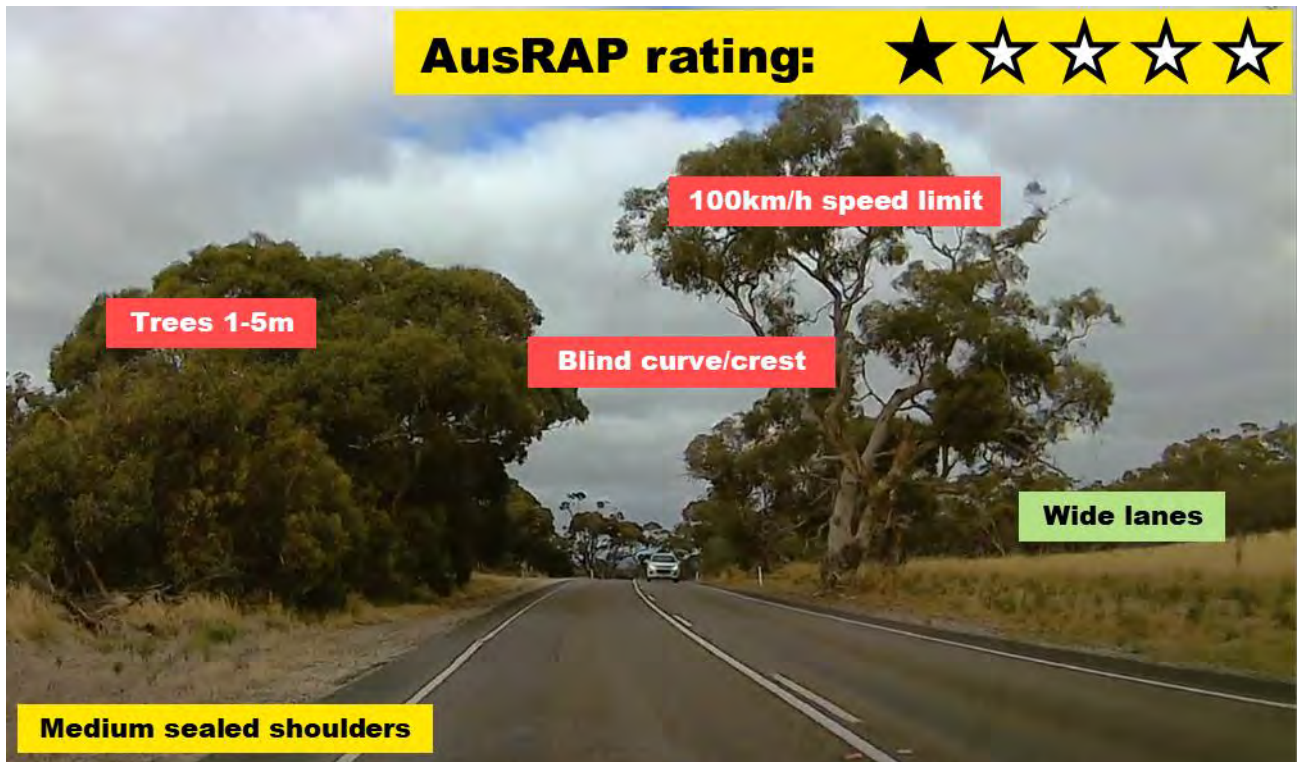


Figure 49: Section of one star rating on Alexandrina Road

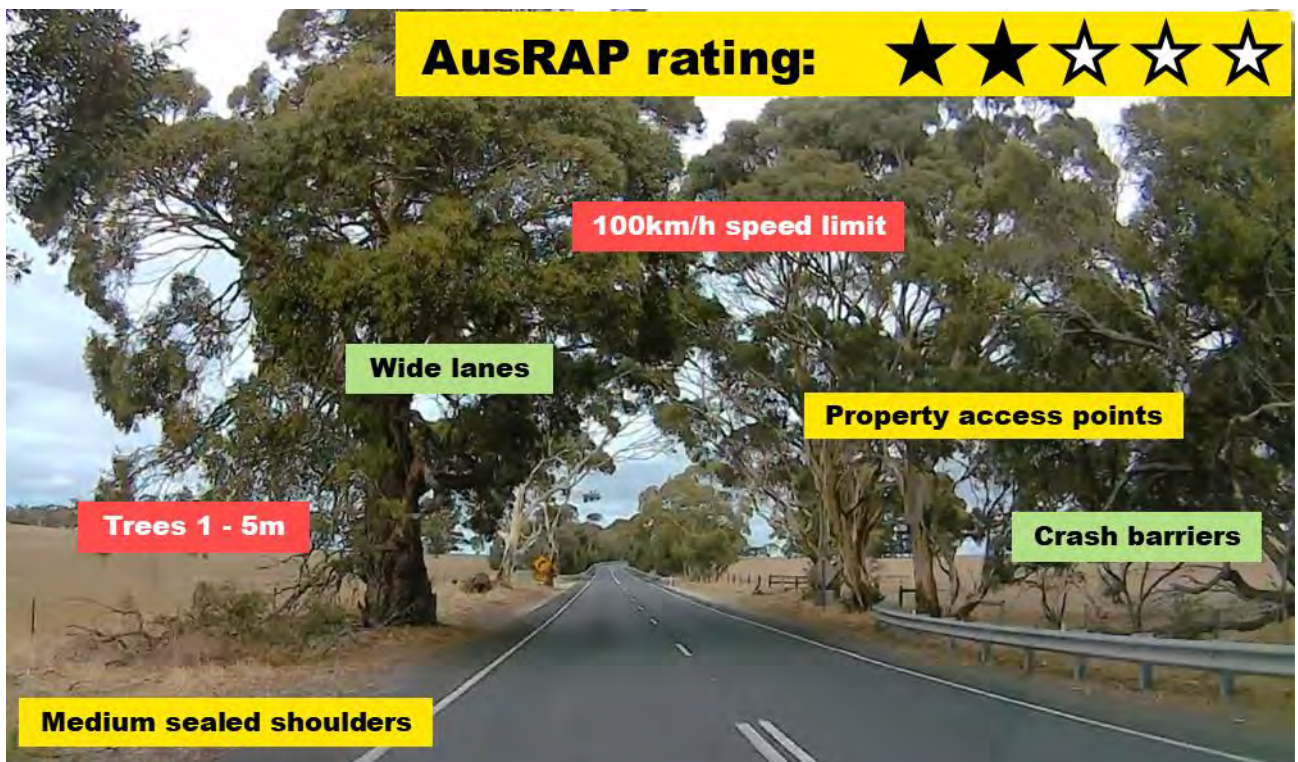


Figure 50: Section of two-star rating on Alexandrina Road

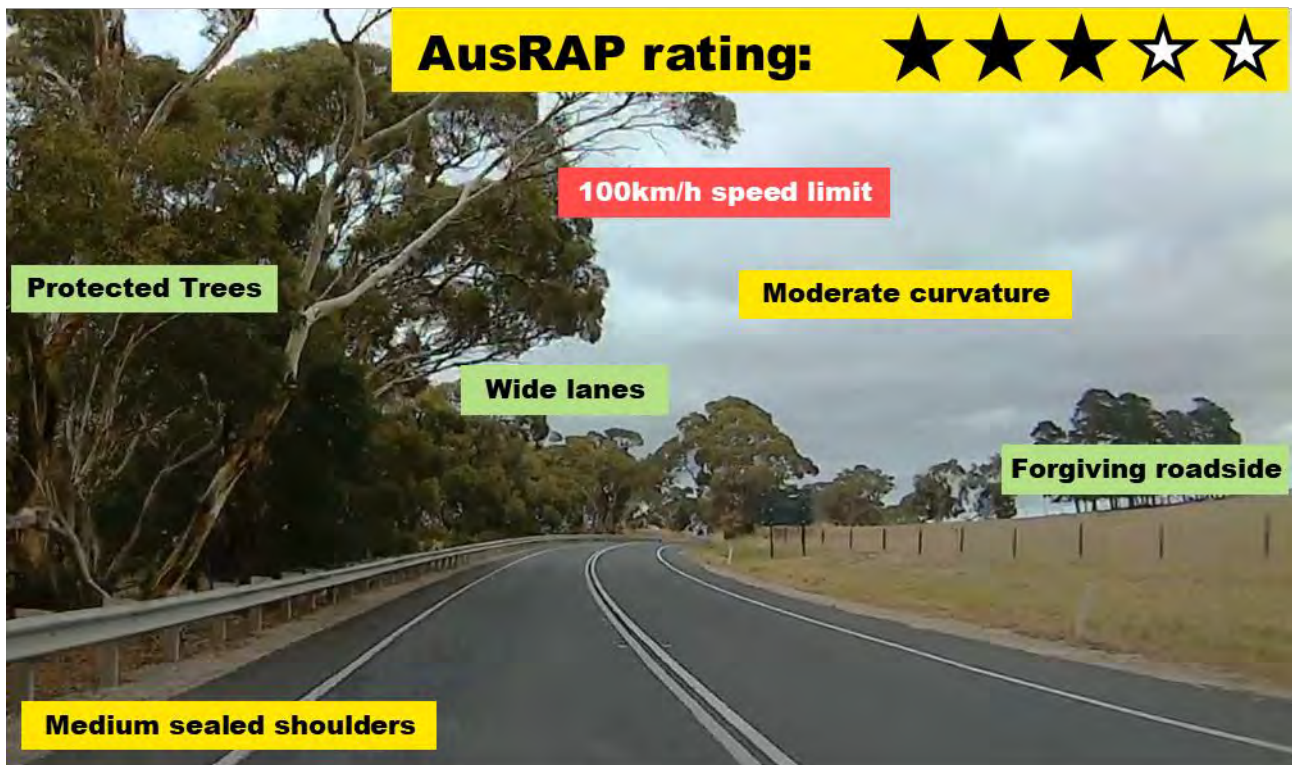


Figure 51: Section of three-star rating on Alexandrina Road

To create a consistent three star rated corridor, all roadside hazards should be removed or be behind barriers, and several curves should be realigned. A central dividing barrier would take this to four stars.

Other Observations

One of the key observations along Alexandrina Road is the poor road alignment and curve design. Horizontal and vertical curves often combine to create blind horizontal/vertical combination curves, which are not desirable. Many of the curves on Alexandrina Road are unnecessarily sharp, with low radius curves used to join longer sections of straight road with no, or little use of transition curves or appropriate superelevation. Use of higher radius curves with transition curves as necessary would allow for safer, more stable and higher speed cornering.

*Austrroads Guide to Road Design Part 3: Geometric Design*¹² explains that curves causing 30km/h speed reductions from 100km/h increase the risk of a run-off-road casualty crash by 5.1 times. This guide also explains run-off-road crash types greatly increase when low radius curves are combined with 6% grades or higher.

RAA considers there to be about 12 poorly designed curves along Alexandrina Road that exhibit this poor geometry. Curve realignments should be undertaken along the corridor to improve safety at these locations. In some cases, this would only require some relatively minor pavement widening on the inside of curves, however other locations such as near Jackson Creek will require significant works and construction of new road segments. A review of casualty crashes highlights 17 casualty crashes occurring at or in the immediate vicinity of these curves, where the curve design may have

¹² Austrroads, 2021, Guide to Road Design Part 3: Geometric Design, pp 161, accessed at <https://austrroads.com.au/publications/road-design/agrd03>.

been a contributing factor. The key crash types are roll over, hit fixed object and head on crashes, which make up 88% of them.

Recommendation 10E

Undertake curve realignment and widening on Alexandrina Road to increase the radius of poorly designed curves.

The condition of the road surface is also generally quite poor in several areas with rutting up to 30-40mm deep in wheel paths requiring microsurfacing, and fatigue cracking also present in localised areas. The most notable sections requiring rehabilitation are between Airport Road and Goolwa, and between Bull Creek Road and Winery Road.

Recommendation 10F

Undertake localised pavement rehabilitation and microsurfacing to address failing sections of pavement and rutting, including a reseal between Airport Road and Goolwa.



Figure 52: 30mm deep ruts and surface ravelling in Sandergrrove

Whilst the Jackson Creek Bridge as previously discussed is RAA's highest priority to be widened, there are six other narrow bridges along Alexandrina Road that should also be considered for future widening, listed below in order of priority:

- 590m northeast of Wattle Flat Road, Sandergrrove
- Tooperang Creek Bridge, 90m southwest of Bull Creek Road, Tooperang
- 200m north of Winery Road, Currency Creek

- 640m southwest of Brookdale Road, Sandergrove
- 90m northwest of Adelaide Place, Currency Creek
- Currency Creek Bridge, 220m southwest of Frome Road, Currency Creek

These six bridges are narrow to moderate in width, with some located on curves or near intersections which pose additional safety hazards. The two bridges in Sandergrove are located on straight sections of road, which poses a higher risk when overtaking manoeuvres are being undertaken. Whilst the route is already gazetted for b-double use, RAA considers this to be highly risky whilst these bridges remain along the route. As a minimum, 3.3m wide lanes and 1.0m wide sealed shoulders should be provided over bridges.



Figure 53: Narrow bridge 590m northeast of Wattle Flat Road in Sandergrove

Recommendation 10G

Widen six narrow bridges between Sandergrove and Currency Creek to achieve a minimum combined road and shoulder width of 8.6m.

There are no overtaking lanes for the entire length of Alexandrina Road between Strathalbyn and Goolwa, which can cause delays and frustration, with dangerous overtaking manoeuvres occurring regularly on the route. The road links tourist destinations in the townships of Strathalbyn and Goolwa, Lake Alexandrina and popular wine regions in Langhorne Creek and Currency Creek, all whilst serving a critical freight purpose. Given this function of Alexandrina Road, it is expected that there will always be many different road user types travelling at different speeds along the road.

Curves and crests in the road geometry make safe overtaking opportunities infrequent, and when overtaking is possible, high traffic volumes often mean that there is a vehicle travelling in the opposing direction. A review of the centreline for 31.5km of Alexandrina Road has been undertaken to determine the percentage of time that overtaking is permitted in each direction. This involves plotting

the location and lengths broken and unbroken centreline sections along the length of the road, noting that there will be variations in each direction.

This review indicates that the percentage of road providing overtaking is 47% in the northbound direction, and 49% the southbound direction. In reality, the percentage of time where overtaking is viable is much lower given that many of these overtaking opportunities are less than 500m in total length. RAA considers 500m to be the minimum distance for legal overtaking to occur, in the case where a vehicle travelling at 100km/h overtakes another vehicle travelling at 80km/h.

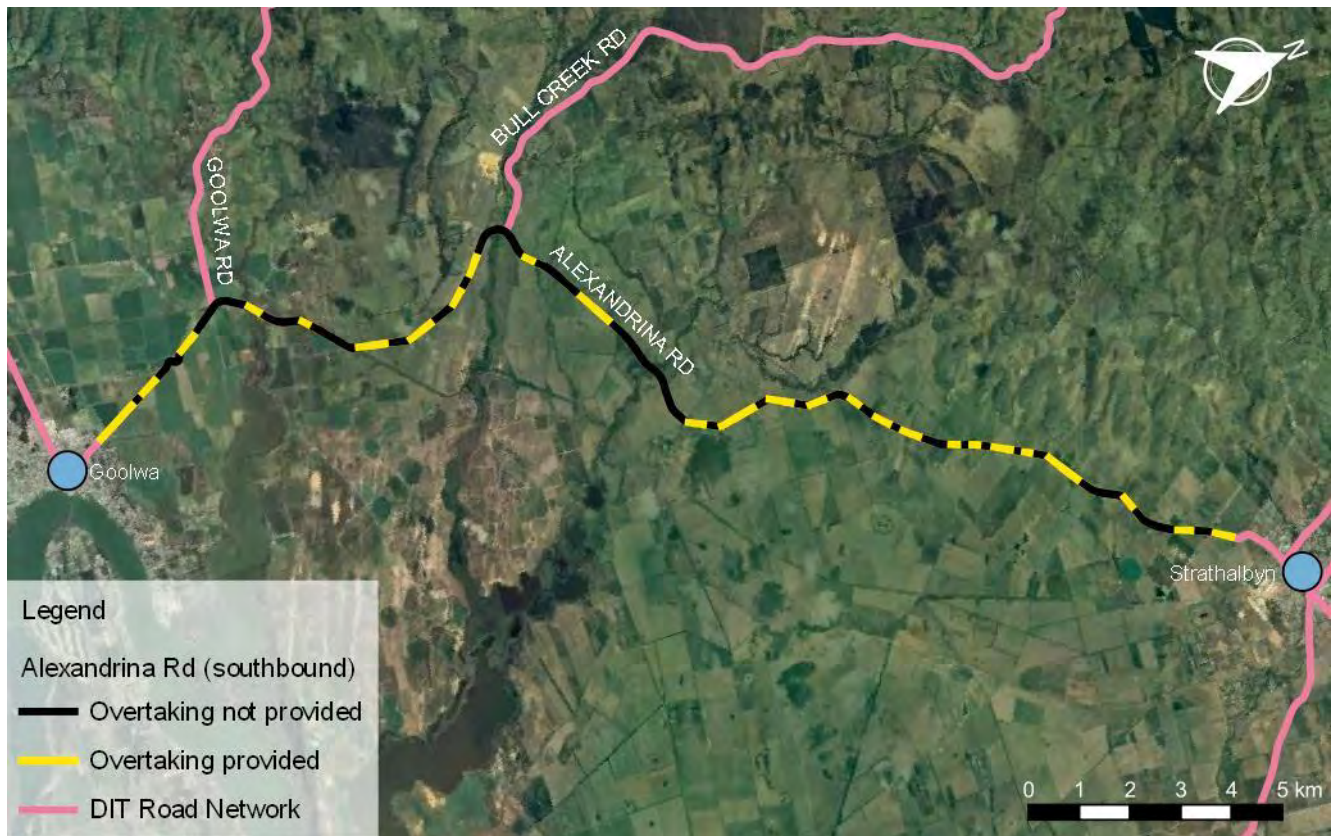


Figure 54: Locations where overtaking opportunities are provided along Alexandrina Road (heading south)

If considering sections less than 500m long to be unsuitable for the majority of legal overtaking manoeuvres, overtaking opportunities are only present 10% of the time in the northbound direction and 11% of the time in the southbound direction. In other words, RAA considers most overtaking opportunities along Goolwa Road to be highly dangerous, given the typical very short length of these opportunities.

When determining the need for overtaking lanes, it is important to consider the percentage of slow vehicles on the route. *Austrroads Guide to Road Design Part 3: Geometric Design*¹³ defines slow vehicles as heavy vehicles including light trucks, cars towing trailers, caravans and boats. The percentage of heavy vehicles varies between 7.5% and 10.5% of traffic on Alexandrina Road and RAA has used a reasonable approximation of 5% of other vehicles to be defined as slow vehicles.

Interpolating data from table 9.1 of *Austrroads Guide to Road Design Part 3: Geometric Design*, using a 'good' (30-70%) per cent length providing overtaking, and a conservative estimate of 12.5% slow

¹³ Austrroads, 2021, *Guide to Road Design Part 3: Geometric Design*, pg 238-239, accessed at <https://austrroads.com.au/publications/road-design/agrd03>.

vehicles, AADT warrants for installing overtaking lanes on Alexandrina Road are 3,585 vehicles per day. As these traffic volumes are currently exceeded for most of the corridor, RAA considers installation of four overtaking lanes (two in each direction) warranted to improve safety on Alexandrina Road.

Recommendation 10H

Install four overtaking lanes on Alexandrina Road between Strathalbyn and Goolwa.

Roadside barriers are generally well placed along the corridor, however, road users are still exposed to trees and fixed hazards in the roadside at unprotected locations. Additional barrier rollout would improve safety along Alexandrina Road, and would ensure more sections achieve a three-star AusRAP safety rating. Motorcycle underrun protection should also be applied to these barriers, given the popularity as a recreational motorcycling route, and that motorcycles are involved in a higher percentage of crashes on Alexandrina Road, when compared to other roads in the Fleurieu Peninsula region.

Recommendation 10I

Install additional roadside barrier hazard protection, incorporating motorcycle underrun protection.

Summary of recommendations for Alexandrina Road

Recommendation 10A

Install audio tactile edge lines on Alexandrina Road.

Recommendation 10B

Undertake localised road and sealed shoulder widening on curves in the short term to compensate for poor curve geometry.

Recommendation 10C

Realign Alexandrina Road over Jackson Creek, 3.5km south of Strathalbyn, which will require construction of new culverts and allow a curve with better horizontal and vertical geometry to be constructed.

Recommendation 10D

Trial of township entry treatment on the Alexandrina Road approach to Goolwa.

Recommendation 10E

Undertake curve realignment and widening on Alexandrina Road to increase the radius of poorly designed curves.

Recommendation 10F

Undertake localised pavement rehabilitation and microsurfacing to address failing sections of pavement and rutting, including a reseal between Airport Road and Goolwa.

Recommendation 10G

Widen six narrow bridges between Sandergrove and Currency Creek to achieve a minimum combined road and shoulder width of 8.6m.

Recommendation 10H

Install four overtaking lanes on Alexandrina Road between Strathalbyn and Goolwa.

Recommendation 10I

Install additional roadside barrier hazard protection, incorporating motorcycle underrun protection.

Port Elliot Road

Port Elliot Road is a major arterial road extending for 13.5km between Goolwa and McCracken via Middleton and Port Elliot. Port Elliot Road is the Fleurieu Peninsula's busiest transport corridor outside of Victor Harbor, with daily traffic volumes of 8,100 vehicles between Goolwa and Middleton, 11,000 vehicles between Middleton and Port Elliot, and 8,400 Vehicles between Port Elliot and McCracken. Heavy vehicles make up about 6% of this traffic and are most prominent between Waterport Road and Goolwa.

Port Elliot Road was one of the most frequently raised roads in the Fleurieu Peninsula community survey, receiving 177 mentions across the questionnaire. The most frequently raised concerns regarded inconsistent application of speed limits on the road, and that the community is concerned about safety in the 100km/h zone between Goolwa and Middleton, particularly near the Fleurieu Regional Waste Authority Depot. The intersection with Flagstaff Hill Road in Middleton was also raised several times, as were difficulties experienced by pedestrians trying to cross the road in Middleton.

Some respondents also raised frustrations with the high number of cyclists that ride along Port Elliot Road, despite there being an off-road bikeway to follow along the coast. RAA reviewed the Encounter Bikeway as part of this assessment and have recommended several improvements that may further encourage riders to use the bikeway. Nevertheless, there will still be cyclists that prefer the fastest and most direct on-road route, and provisions need to be made to ensure this can be done safely by providing road space for both cyclists and motorists.

Table 35: Total number of survey responses raising Port Elliot Road

Category	No. of responses	Overall rank
Top issue in region	16	6
Maintenance	8	12
Road design	5	8
Congestion	14	4
Speed limit	54	3
Speed enforcement	10	5
Driver behaviour	44	4
Freight	10	7
Motorcycling	0	-
Cycling	16	5
Combined	177	6

The below quotes are typical of the type of survey responses received about Port Elliot Road.

“The speed limit on the Goolwa to Middleton Road needs to be reduced from 100kmh to 80kmh as I've lost count of the dangerous overtaking and near misses, especially in the vicinity of the Goolwa Waste Facility and Boettcher Road intersection.”

“There needs to be a passing lane on both sides of the Goolwa to Middleton road as everyone drives at about 80kph on average and drivers cannot pass as there is a constant flow of traffic on the other side of the road.”

“Volume of traffic along Port Elliot Road causes traffic to bank up coming off Flagstaff Hill Rd sometimes impossible to turn right across the traffic and need to turn left then u-turn to come back. Seems to be plenty of room here to put in a roundabout.”

“60-80-100-80-60-50-80-50-60-50 are the changes between Goolwa and Victor. All one straight road and the people sit well below the speed limit (especially 100kph zone) due to confusion.”

“Current 100km/h should be 80km/h. 100km/h only encourages people to drive at 100km/h and not everybody wants too, so therefore it encourages risky overtaking by many drivers. It's not safe. The Fleurieu Recycling centre enters on a section of this road with limit of 100km/h. Very dangerous.”

“Why do cyclists continue to ride in groups on a narrow busy road when there is a dedicated parallel bike path from Goolwa to Victor Harbor?”

In 2019, a \$735k upgrade was completed at the intersection with Boettcher Road in Middleton which converted the intersection to a staggered T layout, installed street lighting and a channelised left turn lane onto Boettcher Road.

Crash History

Between 2016 and 2020, 27 casualty crashes occurred on Port Elliot Road. Rear end and right-angle crashes, which are often associated with high traffic volumes and traffic congestion were the most frequently occurring crash types along the corridor, making up more than half of all casualty crashes combined.

Table 36: Port Elliot Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Number of casualties		
		Minor	Serious	Fatal
Rear End	10	9	1	0
Right Angle	6	6	0	0
Hit Fixed Object	5	5	0	0
Side Swipe	4	4	0	0
Hit Pedestrian	2	1	1	0
Head On	1	1	0	0
Hit Parked Vehicle	1	1	0	0
Total	29	27	2	0

Cars are the primary vehicles involved in crashes on Port Elliot Road, with vulnerable road users in pedestrians and cyclists involved in 9% of crashes. One of two cyclist crashes involved a rear end collision between two riders between Goolwa and Middleton, and the other involved a cyclist entering Port Elliot Road from Mentone Road and a car heading west on Port Elliot Road. The two pedestrian crashes occurred in Port Elliot, with one involving a vehicle turning right from the Strand and a pedestrian crossing Port Elliot Road, and another near Brittain Street where a car collided with a pedestrian on the footpath.

Table 37: Units involved in crashes on Port Elliot Road (2016 – 2020)

Unit type	Approximate number of units
Car	49 (88%)
Bicycle	3 (5%)
Pedestrian	2 (4%)
Truck	1 (<2%)
Other/Unknown	1 (<2%)

Road Widths

Port Elliot Road is constructed to a reasonably standard geometry with minimum 3.3m wide lanes and 1m wide sealed shoulders. Shoulders are wider than 1m for most of the corridor, however some sections would benefit from widening to 2.0m to provide additional space for cyclists who frequently travel the corridor.

Recommendation 11A

Widen sealed shoulders to provide a consistent width where this is not already achieved to provide additional space and improve safety for cyclists.

Cycle lanes are provided in the Port Elliot town centre and provide a safer space for cyclists to ride. As a minimum, these cycle lanes should continue from Port Elliot through to McCracken, and also through the Middleton town centre.

Recommendation 11B

Install cycle lanes between Port Elliot and McCracken, and through the Middleton town centre.



Figure 55: Wide shoulders are present on sections of Port Elliot Road

Speed Limits

Speed limits on Port Elliot Road were the most frequently raised issue by Fleurieu Peninsula community survey respondents. The current speed limits are highlighted below in Table 38.

Table 38: Speed limit on Port Elliot Road

Segment	Speed limit (km/h)
Goolwa	50 – 60 – 80
Goolwa – Middleton	100
Middleton	80 – 60 – 50
Middleton – Port Elliot	80
Port Elliot	50
Port Elliot - McCracken	60

RAA proposes that these speed limits be reviewed and consolidated between Goolwa and Port Elliot. This should consider a reduction in speed limit from 100km/h to 80km/h between Middleton and Goolwa, and provision of a consistent 50km/h speed limit through built up areas with large '50 AHEAD' advance warning signs on the approaches to each of these 50km/h zones. The 60km/h speed limit on the partially built-up section between McCracken and Port Elliot could remain as-is., given the existing levels of roadside development.

Applying speed limits in this manner will improve safety and create a more consistent and understandable speed limit environment along the length of the corridor.

Recommendation 11C

Review and consolidate speed limits between Goolwa and Port Elliot. This should consider an 80km/h speed limit for all non-built-up sections and 50km/h for built up sections in townships.

AusRAP Star Ratings

Port Elliot Road is built to a good geometric standard which contributes positively to its star rating. Exposed roadside hazards in the form of trees and stobie poles exist between 1m and 5m from the road edges and negatively contribute to the star rating.

The existing 80km/h zone is rated three stars, with intersections rated one or two stars. Meanwhile, the 100km/h zone is generally rated two stars (with one-star intersections) due to the presence of roadside hazards within 5m of the road and the high speed limit. Further hazard removal or protection could result in a four-star rating in the 80km/h zone, and a three-star rating in the 100km/h zone, although this would not improve intersection safety.

Due to its 60km/h speed limit, the section between Port Elliot and McCracken is rated as four stars.



Figure 56: Three-star AusRAP rating on Port Elliot Road between Middleton and Port Elliot

Other Observations

The road pavement is in serviceable condition for the majority of Port Elliot Road, with some recent localised rehabilitation works completed at the time of assessment. Roadside hazards are present for most of the corridor in the form of trees and stobie poles, and roadside barriers are scarcely used to prevent collisions with these hazards. Given the relatively straight alignment of Port Elliot Road and a relatively low occurrence of hit fixed object crashes, installing additional barrier protection is seen as a lower priority than on many other Fleurieu Peninsula roads. Nevertheless, this would still positively improve safety by reducing the severity of crashes involving fixed objects along the corridor.

Recommendation 11D

Install additional safety barriers to reduce the severity of crashes involving fixed objects along the corridor.

One of the highly raised issues by community survey respondents was the safety of access and egress from the Fleurieu Regional Waste Authority Depot located between Middleton and Goolwa. This facility operates as a dump for disposal of domestic and commercial waste, green waste, and recycling facilities whilst also offering landscaping products such as mulch and sand for sale.

The facility is located within the 100km/h zone, and no channelised turn lanes are provided for access from Port Elliot Road. Heavy vehicles and light vehicles towing trailers regularly access the facility from Port Elliot Road, and these movements are typically slower than unladen passenger vehicles at an intersection.

Currently, the shoulders on Port Elliot Road are wide enough for trailing vehicles to pass turning vehicles. However, safer movements could be achieved if a channelised right turn lane from Port Elliot Road into the facility were constructed as a minimum, whilst a channelised left turn lane from Port Elliot Road would also be highly desirable.

Recommendation 11E

Improve safety at the entrance to the Fleurieu Regional Waste Authority Depot in Goolwa by installing channelised right and left turn lanes on Port Elliot Road.

In Middleton, the two intersections at Flagstaff Hill Road and Mindacowie Terrace were both raised by several survey respondents, mostly due to difficulties and delays entering Port Elliot Road from the side roads. Between 2016 and 2020, one casualty crash occurred at the Flagstaff Hill Road intersection, which was a rear end crash involving two southbound vehicles on Flagstaff Hill Road.

Flagstaff Hill Road provides a bypass of Goolwa for traffic travelling along Port Elliot Road between the Victor Harbor area and Strathalbyn or the South Eastern Freeway via Flagstaff Hill Road and Airport Road. The route is about 4km shorter and avoids travelling through the built-up area of Goolwa, where a reduced speed limit applies for several kilometres. As such, the most frequent turn movements are left turns into Flagstaff Hill Road and right turns out of Flagstaff Hill Road. Flagstaff Hill Road enters Port Elliot Road on the outside of a curve, and whilst sight lines are good, they are less intuitive than at a conventional T intersection due to the angles at which traffic approaches the side road. Furthermore, being on a curve, it can be difficult for Flagstaff Hill Road traffic to judge the intentions of northeast bound drivers, who regularly fail to indicate left when approaching the high-speed sweeping left turn slip lane.

The intersection covers a large footprint, and a roundabout could be installed without any major land acquisition. This would improve safety and generally improve traffic flow at the intersection, although this would result in a priority change such that westbound traffic on Port Elliot Road would be required to give way to traffic entering from Flagstaff Hill Road.

Recommendation 11F

Install a roundabout at the intersection with Port Elliot Road and Flagstaff Hill Road in Middleton.

Pedestrian movements across Port Elliot Road in Middleton were also raised several times throughout the community survey, particularly near the intersection with Mindacowie Terrace. There are currently no pedestrian crossing facilities in Middleton, and RAA suggests that provision of a pedestrian crossing facility be investigated further. As a minimum, a pedestrian refuge should be provided, however a pedestrian actuated crossing or wombat crossing should also be considered.

Recommendation 11G

Provide a pedestrian crossing facility in Middleton to allow for safer pedestrian movements across Port Elliot Road.

Summary of recommendations for Port Elliot Road

Recommendation 11A

Widen sealed shoulders to provide a consistent width where this is not already achieved to provide additional space and improve safety for cyclists.

Recommendation 11B

Install cycle lanes between Port Elliot and McCracken, and through the Middleton town centre.

Recommendation 11C

Review and consolidate speed limits between Goolwa and Port Elliot. This should consider an 80km/h speed limit for all non-built-up sections and 50km/h for built up sections in townships.

Recommendation 11D

Install additional safety barriers to reduce the severity of crashes involving fixed objects along the corridor.

Recommendation 11E

Improve safety at the entrance to the Fleurieu Regional Waste Authority Depot in Goolwa by installing channelised right and left turn lanes on Port Elliot Road.

Recommendation 11F

Install a roundabout at the intersection with Port Elliot Road and Flagstaff Hill Road in Middleton.

Recommendation 11G

Provide a pedestrian crossing facility in Middleton to allow for safer pedestrian movements across Port Elliot Road.

Goolwa Road

Goolwa Road is a state maintained arterial road corridor extending for 16km between Mount Compass and Currency Creek, just north of Goolwa. The Road carries an average of 3,100 vehicles per day, made up of 8% heavy vehicle traffic including semi-trailers and occasional b-doubles. Goolwa Road is gazetted for 26m b-double access.

Goolwa Road is critical to transport to and from the greater Goolwa area, as part of the most direct route between southern Adelaide and parts of the South Coast which also uses Victor Harbor Road. Goolwa Road also provides primary access to many rural residences along the road, or on side roads in Mosquito Hill, Currency Creek and Middleton.

Goolwa Road was the seventh highest raised road across the Fleurieu Peninsula region. Community survey respondents raised Goolwa Road highly for its lack of overtaking opportunities, and difficult interactions with heavy vehicles. Road maintenance was another point of concern, receiving 26 comments overall.

Table 39: Total number of survey responses raising Goolwa Road

Category	No. of responses	Overall rank
Top issue in region	27	4
Maintenance	26	7
Road design	13	5
Congestion	7	7
Speed limit	9	8
Speed enforcement	3	9
Driver behaviour	13	8
Freight	27	5
Motorcycling	3	10
Cycling	2	>20
Combined	130	7

A selection of typical survey responses is included below.

“Certain sections of the road are poorly levelled and cause issues when driving towards oncoming traffic. One section of the road causes the motor vehicle you are driving to hit a small unlevelled section of road and bounces the car close to the oncoming lane. This section I speak of is situated on a sharp corner”.

“Road is too narrow, badly maintained, rough, needs at least one overtaking lane”.

“Lack of safe overtaking areas. Lots of caravans and trucks doing 80 - 90km/h in the 100km/h zone”.

“There are hardly any places to pass on the Goolwa to Mt Compass Road and people make dangerous decisions to overtake on the road where they shouldn't. As a user of the road every day to go to work, I also see cows crossing the road regularly. Cars also often pull out of Flagstaff Hill Road in-front of me, even when I have my lights on during the day”.

There were also a very high number of survey responses highlighting issues with the recently upgraded intersection with Victor Harbor Road in Mount Compass. RAA assessed this intersection as part of our *2021 Highway Assessment: Victor Harbor Road*¹⁴, and recommends that a roundabout be installed at this location due to a high crash risk.

Recommendation 12A

Install a roundabout at the intersection with Goolwa Road and Victor Harbor Road, as raised in RAA's *2021 Highway Assessment: Victor Harbor Road*.



Figure 57: Victor Harbor Road/Goolwa Road intersection looking north, after the 2020 upgrade

¹⁴ RAA, 2021, Highway Assessment: Victor Harbor Road, accessed at <www.raa.com.au/roadassessments>.



Figure 58: RAA concept sketch of a roundabout at the Victor Harbor Road/Goolwa Road intersection (22m central island radius used)

Recent upgrades to Goolwa Road include:

- (2015/16) \$286k black spot upgrade including barrier installations, shoulder widening and delineation upgrades between Victor Harbor Road and Kidman Road
- (2018/19) \$276k black spot safety barrier upgrade near Flagstaff Hill Road, Currency Creek
- (2020) \$600k upgrade at the intersection with Victor Harbor Road, south of Mt Compass

Crash History

Between 2016 and 2020, 14 casualty crashes occurred along Goolwa Road and at intersections with Goolwa Road. Four of the five right angle crashes occurred at the intersection with Victor Harbor Road, with a fifth 'other' crash type also occurring at this intersection.

Table 40: Goolwa Road casualty crash types

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	5	5	0	0
Right Angle	5	5	0	0
Rear End	2	2	0	0
Roll Over	1	1	0	0
Other	1	1	0	0
Total	14	14	0	0

Cars were the predominant unit involved in crashes on Goolwa Road. In 2017, a crash involving a car driver and the Cockle Train occurred at the level crossing near Alexandrina Road. This was due to the car driver failing to give way at the level crossing and resulted in minor injuries to the car driver.

Table 41: Units involved in crashes on Goolwa Road

Unit type	Approximate number of units
Car	19 (90%)
Railway vehicle	1 (5%)
Motorcycle	1 (5%)

Installation of audio-tactile line marking (ATLM) would be desirable along the corridor; however, this would end up being quite fragmented along the route to provide 300m clearance between the lines and any dwellings, which are frequently located along the corridor and often set back from the road by less than 300m.

Road Widths

Goolwa Road is generally sealed to a width of 8m for its length, consisting of 3 - 3.2m wide lanes and 1m wide shoulders.

Table 42: Sealed width of Goolwa Road

Location	Lane width	Sealed shoulder width	Total seal width
NW of Mosquito Hill Rd (Mosquito Hill)	2.9m / 3.2m	0.9m / 1.0m	8.0m
SE of Flagstaff Hill Rd (Currency Creek)	3.1m / 3.3m	0.5m / 1.1m	8.0m

Road widening to achieve a minimum sealed width of nine metres should be considered in future or as part of future reseal works, which should aim to provide wide 3.5m lanes and consistent 1.0m sealed shoulders.

Speed Limits

The entire length of Goolwa Road is subject to the rural default 100km/h speed limit, with the speed limit signposted at each end of the road to reinforce this.

AusRAP Star Ratings

Goolwa Road is typically rated one star under AusRAP star rating protocols. This is largely due to the frequency and proximity of roadside vegetation, curves and crests in the road, and the 100km/h speed limit. Sections with clear roadsides or adequate barrier protection are typically rated between two and three stars, however these occur less frequently than the one-star sections of road.



Figure 59: Typical AusRAP star rating on Goolwa Road

Road widening and additional barrier protection as recommended in this report would help give Goolwa Road a two to three AusRAP star rating, which would vary depending on localised curve radii.

Alternatively, implementation of an 80km/h speed limit could see similar improvements to star rating. The section pictured above would be given a high two-star rating if the speed limit was 80km/h instead of 100km/h.

Other Observations

Roadside hazards are prominent on Goolwa Road, and this is evident when reviewing crash data, which shows 56% of casualty crashes on the road involve collisions with fixed objects (when excluding crashes occurring at the Victor Harbor Road intersection). Most of these hazards are in the form of large trees between 1m and 5m from the road edges. More than \$500,000 in funding under the *Black Spot Program* has been used to install barrier protection along the corridor, which RAA welcomes. However, the downfall of this program is that funding is provided in relatively localised areas and only in response to past crashes. Better value per dollar spent could be achieved by targeting entire corridors for roadside hazard protection. This will reduce the likelihood of high severity crashes occurring on a much larger scale, and in locations where a crash hasn't previously occurred only out of chance.

Recommendation 12B

Install roadside safety barriers along the corridor to reduce the likelihood of high severity crashes with unprotected fixed objects (mostly trees).

Overtaking opportunities are scarce, with overtaking provided for 24% of the corridor length in each direction after reviewing the percentage of broken dividing line. However, most of these overtaking opportunities are very short. If considering that the minimum length of broken dividing line to safely

overtake another vehicle is 500m, overtaking is realistically available for 8% of Goolwa Road in the southeast direction, and 12% in the northwest direction. There are only two lengths of road providing overtaking that are greater than 500m long in the southeast direction of travel, each measuring approximately 580m and 720m. There are three lengths of road providing overtaking greater than 500m long in the northwest direction of travel, each measuring approximately 585m, 600m and 665m.

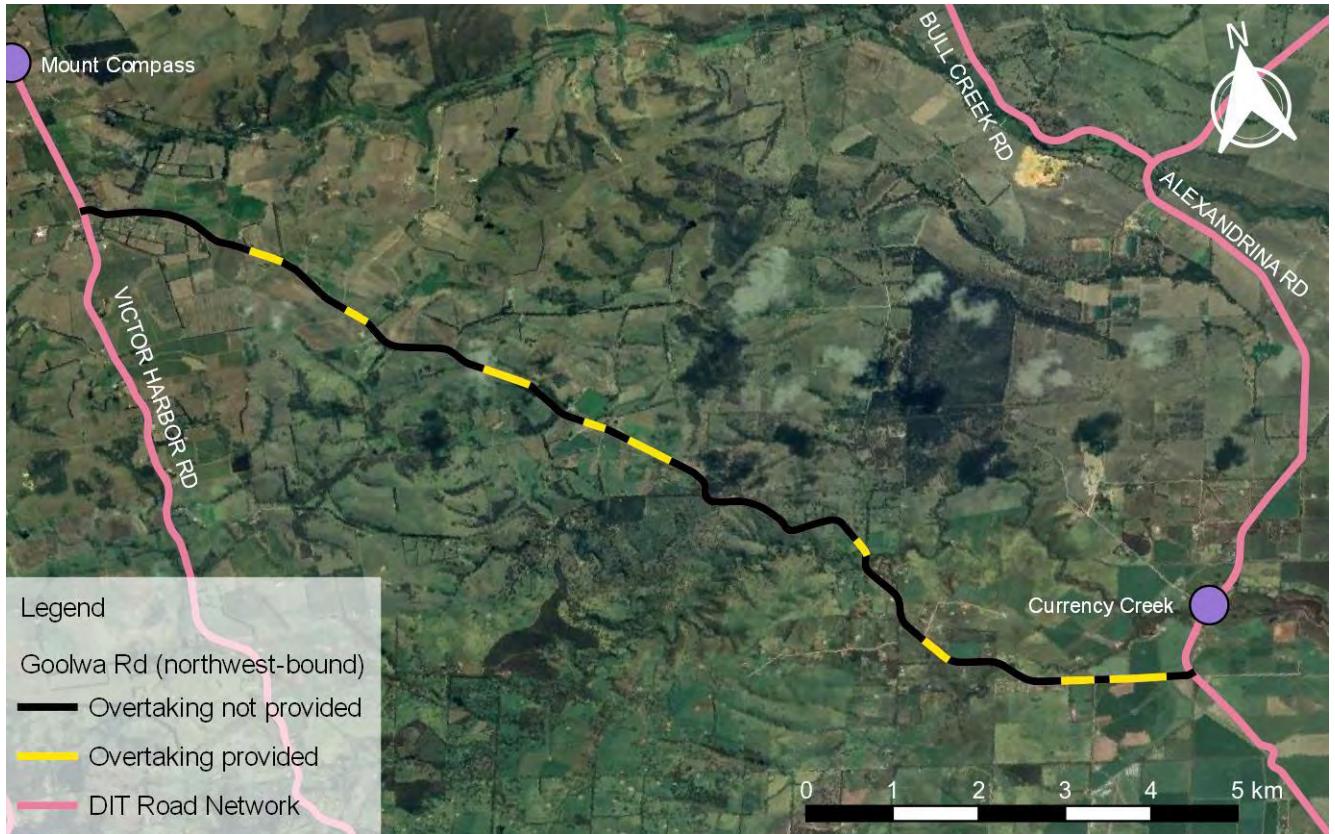


Figure 60: Locations where overtaking opportunities are provided along Goolwa Road (heading northwest)

When determining the need for overtaking lanes, it is important to consider the percentage of slow vehicles on the route. *Austrroads Guide to Road Design Part 3: Geometric Design*¹⁵ defines slow vehicles as heavy vehicles including light trucks, cars towing trailers, caravans and boats. The percentage of heavy vehicles on Goolwa Road is 7.5% of all traffic and RAA has used a reasonable approximation of 5% of other vehicles to be defined as slow vehicles.

Interpolating data from table 9.1 of *Austrroads Guide to Road Design Part 3: Geometric Design*, using a 'moderate' (10-30%) per cent length providing overtaking, and an estimated 12.5% slow vehicles, AADT warrants for installing overtaking lanes on Goolwa Road are 2,720 vehicles per day. These traffic volumes are currently exceeded for the length of the corridor, which is used by an average of 3,100 vehicles daily. RAA considers installation of at least two overtaking lanes (one in each direction) to be a high priority to improve safety on Goolwa Road.

There is a steep and relatively long descent between McHugh Road and Deep Creek Road which has an average grade of about 8.5% over 1,500m through curving geometry. Analysis and further

¹⁵ Austrroads, 2021, *Guide to Road Design Part 3: Geometric Design*, pg 238-239, accessed at <https://austrroads.com.au/publications/road-design/agrd03>.

assessment should be undertaken as to whether any of these overtaking lanes should be located on the descent or ascent as a descending or climbing lane for heavy vehicles.

Recommendation 12C

Install two overtaking lanes (one in each direction) on Goolwa Road.

The overall condition of the road pavement is generally fair, other than some minor undulations experienced over a length of about five kilometres between Victor Harbor Road and Kokoda Road which should be targeted for localised pavement rehabilitation works.

Recommendation 12D

Undertake localised pavement rehabilitation between Victor Harbor Road and Kokoda Road to address the uneven and undulating surface.

A significant dip is also present in the road as it crosses the rail line near Alexandrina Road in Currency Creek. The pavement should be reconstructed over the level crossing to provide a smoother transition.

Recommendation 12E

Reconstruct pavement over the level crossing at Currency Creek to remove the significant dip in the road.

Summary of recommendations for Goolwa Road

Recommendation 12A

Install a roundabout at the intersection with Goolwa Road and Victor Harbor Road, as raised in RAA's *2021 Highway Assessment: Victor Harbor Road*.

Recommendation 12B

Install roadside safety barriers along the corridor to reduce the likelihood of high severity crashes with unprotected fixed objects (mostly trees).

Recommendation 12C

Install two overtaking lanes (one in each direction) on Goolwa Road.

Recommendation 12D

Undertake localised pavement rehabilitation between Victor Harbor Road and Kokoda Road to address the uneven and undulating surface.

Recommendation 12E

Reconstruct pavement over the level crossing at Currency Creek to remove the significant dip in the road.

Aldinga Road

Aldinga Road is a state maintained arterial road extending for almost 7km between Main South Road in Aldinga and Main Road in Willunga with a grade separated interchange at Victor Harbor Road. Traffic volumes are high, with 5,500 vehicles using the section between Victor Harbor Road and Main South Road each day, and 7,100 vehicles using the section between Willunga and Victor Harbor Road each day. Heavy vehicles make up about 5% of the average daily traffic.

Aldinga Road was highly raised in the community survey due to its poor condition, with most responses citing this as the reason for complaining about the road. There were also several responses indicating safety concerns for cycling between Willunga and Aldinga.

Table 43: Total number of survey responses raising Aldinga Road

Category	No. of responses	Overall rank
Top issue in region	13	8
Maintenance	30	6
Road design	4	9
Congestion	1	17
Speed limit	3	19
Speed enforcement	0	-
Driver behaviour	3	14
Freight	3	18
Motorcycling	1	-
Cycling	7	9
Combined	65	8

The below comments are typical of what was received in the community survey.

“Undulations in road surface. Poorly maintained surface. Patchwork of potholes after any rain.”

“Massive undulations and potholes, the whole way along.”

“Undulating, especially section within 2km of south road.”

“Would like to be able to cycle safely from Willunga to Aldinga - a cycle path away from the road would be best.”

“No cycling lane, narrow rd with plenty of traffic.”

At the time of RAA’s initial site assessment in March 2021, sections of Aldinga Road were being improved, with roadworks underway. RAA made a subsequent visit in July 2021 and can confirm that localised pavement rehabilitation has been undertaken along Aldinga Road, and the road currently offers a relatively smooth journey, however it is evident that some sections, particularly on the eastern end will require resurfacing soon.

Crash History

Between 2016 and 2020, 14 casualty crashes occurred on Aldinga Road, with most of these occurring at intersections. Right angle crashes were the most common crash type, with two of these resulting in serious injuries.

Table 44: Aldinga Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Number of casualties		
		Minor	Serious	Fatal
Right Angle	6	4	2	0
Rear End	4	4	0	0
Side Swipe	1	1	0	0
Hit Animal	1	1	0	0
Head On	1	0	1	0
Hit Parked Vehicle	1	1	0	0
Total	14	11	3	0

Cars were the predominant unit involved in crashes on Aldinga Road between 2016 and 2020. Two crashes involving cyclists also occurred.

Table 45: Units involved in crashes on Aldinga Road (2016 – 2020)

Unit type	Approximate number of units
Car	23 (85%)
Bicycle	2 (7%)
Truck	1 (4%)
Motorcycle	1 (4%)

The two cyclist crashes occurred at the four-way intersection with Main Road, Aldinga Road, High Street and St Peters Terrace in Willunga, which is discussed in more detail in the Main Road section of this report.

Road Widths

Aldinga Road is generally constructed to an acceptable geometry with 3.3m wide lanes and 1.5m wide shoulders, however the shoulder seal narrows in localised areas on the western end of the road.

Table 46: Sealed width of Aldinga Road

Location	Lane width	Sealed shoulder width	Total seal width
W of Delabole Rd (Willunga)	3.3m	1.5m	9.9m

Speed Limits

Aldinga Road is subject to an 80km/h speed limit, which reduces to 50km/h through the built-up area of Willunga.

Table 47: Speed limit on Aldinga Road

Segment	Speed limit (km/h)
Between Main South Road and Victor Harbor Road	80
Between Victor Harbor Road and Willunga	50

AusRAP Star Ratings

Aldinga Road is typically rated three stars under AusRAP star rating protocols due to its generally good geometry and straight alignment, with most fixed hazards located beyond three metres from the road edges. Intersections are typically rated one star due to the lack of channelisation, and potentially high impact speeds and angles.

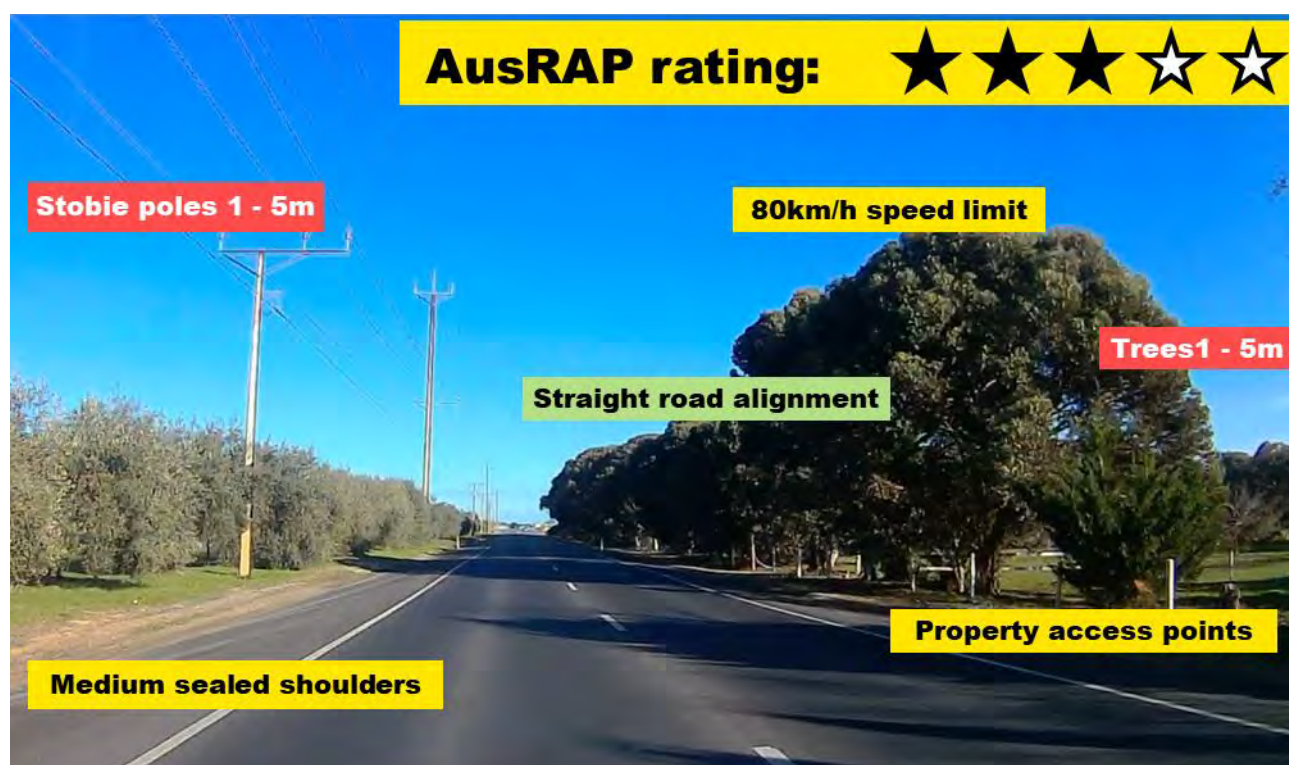


Figure 61: Typical AusRAP star rating on Aldinga Road

Other Observations

The primary issue raised by survey responses was in relation to the poor pavement condition of Aldinga Road. As discussed earlier, works undertaken in March 2021 have substantially addressed undulating road sections. However, there are still sections between Almond Grove Road and Willunga that require rehabilitation, with rutting and fatigue cracking evident.

Recommendation 13A

Undertake additional pavement rehabilitation works, particularly between Almond Grove Road and Willunga.



Figure 62: Fatigue cracking just east of the intersection with Almond Grove Road

The intersection with Aldinga Road and Main South Road in Aldinga was frequently raised by survey respondents, mostly due to difficulty turning right onto Main South Road. RAA supports the construction of a roundabout at this intersection, which is proposed as part of the first stage of Main South Road duplication, set to commence in early 2022.

Intersection with California Road/Almond Grove Road

RAA reviewed the four-way intersection with Aldinga Road, California Road and Almond Grove Road due to its poor crash history. Almond Grove Road and California Road form part of a significant north-south collector route through the McLaren Vale region and provide access to several popular tourist destinations including wineries and bed and breakfasts.

Four casualty crashes occurred at the intersection between 2016 and 2020, including:

- In October 2016, a right-angle crash resulting in serious injuries between a northbound vehicle on Almond Grove Road and an eastbound vehicle on Aldinga Road.
- In July 2019, a right-angle crash resulting in minor injuries between a northbound vehicle on Almond Grove Road and an eastbound vehicle on Aldinga Road.
- In December 2019, a right-angle crash resulting in serious injuries between a southbound vehicle on California Road and a westbound rigid truck on Aldinga Road.
- In February 2020, a right-angle crash resulting in minor injuries between a southbound vehicle on California Road and a westbound vehicle on Aldinga Road.

Almond Grove Road and California Road are both well signed on the approaches to Aldinga Road, and significantly exceed Australian Standards with relation to intersection warning signage. This signage was upgraded between April and June 2021 and has substantially improved visibility of warning signage and prominence of the intersection. Table 48 below shows the updated signage layout on the southbound approach to the intersection on California Road, which is similar to the northbound approach.

Table 48: Intersection warning and advisory signage on the California Road approach to Aldinga Road

Distance to intersection	Sign type	Image
500m	G2-5 'advance street name' sign	
400m	Duplicated W2-3 'give way sign ahead' signs with 400m distance plates	
200m	Duplicated W2-3 'give way sign ahead' signs with 200m distance plates and yellow backboard	
0m	Duplicated R1-2 'give way' signs with yellow backboard	

However, if signage or line marking are not properly observed by a driver, or are damaged by weather, vehicle impacts or vandalism, there are few other visual cues that an intersection is being approached. The line of stobie poles, grape vines and trees follows Almond Grove Road and California Road, giving the appearance of a through road. Furthermore, grapevines and structures near the intersection reduce visibility of Aldinga Road or vehicles travelling along it. This is highlighted

in Figure 63, which was taken only 70m from Aldinga Road. Other than give way signs, there are no other visual cues that an intersection is present.



Figure 63: When approaching the intersection from the minor road approach, it can appear to drivers as though they are on a continuing road.

Providing some horizontal displacement by staggering the intersection will reduce this see-through effect, however it is noted that the site is quite constrained by high voltage power lines which are already located close to the road edges, and the SA Water facility on the southwestern corner of the intersection. Extending and widening the pavement bar treatment on approach to the intersection or installing rumble strips would also assist in alerting drivers to the presence of the upcoming intersection.

Recommendation 13B

Upgrade the intersection with Aldinga Road and Almond Grove Road/California Road to complement the recent improved warning signs. This should consider treatments such as staggering side-road approaches, enhancing the pavement bar treatment, and installing rumble strips.

Summary of recommendations for Aldinga Road

Recommendation 13A

Undertake additional pavement rehabilitation works, particularly between Almond Grove Road and Willunga.

Recommendation 13B

Upgrade the intersection with Aldinga Road and Almond Grove Road/California Road to complement the recent improved warning signs. This should consider treatments such as staggering side-road approaches, enhancing the pavement bar treatment, and installing rumble strips.

Armstrong Road/Welch Road (Victor Harbor ring route)

Armstrong Road and Welch Road form the Victor Harbor Ring Route, providing a 5.8km link between Victor Harbor Road and Inman Valley Road, bypassing built up areas of Victor Harbor. The road is under the care and control of City of Victor Harbor Council and is a key route for local and freight traffic.

In the Fleurieu Peninsula community survey the road was raised 73 times overall, making it the most frequently raised council road in the region. 15 of these survey mentions referenced the intersection with Armstrong Road and Greenhills Road, which made this the highest raised intersection in the region that is not located on Victor Harbor Road or Main South Road (9th overall).

On 24 November 2020, a head on crash tragically claimed the life of an 18-year-old local woman on Armstrong Road. The community survey was open for responses from 23 November to 16 December 2020, and RAA considers that this crash, which was widely reported by media at the time, would have influenced the number of nominations received for the Victor Harbor Ring Route.

Survey respondents were particularly concerned with the road design and speed limit on Armstrong Road. Road design issues raised focussed on intersection design, with a lack of turning lanes and sight distance the most raised problems. Speed limit concerns mostly related to a belief that the existing 100km/h speed limit is too high or to difficulties faced entering the road from side roads due to the speed and volume of traffic.

Table 49: Total number of survey responses raising the Victor Harbor ring route

Category	No. of responses	Overall rank
Top issue in region	10	9
Maintenance	1	-
Road design	8	7
Congestion	4	10
Speed limit	22	4
Speed enforcement	2	12
Driver behaviour	5	10
Freight	5	13
Motorcycling	1	-
Cycling	0	-
Combined	56	9

A sample of typical survey responses is included below.

“At Greenhills Road, drivers cannot see cars coming from left (shoulder could be cleared) and the pole from the bridge interrupts view of cars from right. Very dangerous, used to use this intersection multiple times a day”.

“The intersection between Greenhills Road and the Victor Harbor ring road is on a corner. There is no turning lane when turning off the ring road and people slow down very suddenly because it can be hard to see the turn-off. When turning right from Greenhills on to the ring road there is a very short line of sight to see the traffic coming along the ring road to turn safely”.

“Intersections onto Armstrong Road from Crozier road and Greenhills Road need some serious attention. The Greenhills Road ramp in particular, as the intersection requires you to stop and hope no cars are coming around a blind corner which is 100km/h. Many near misses occur”.

“No pull off lane for left turns on a 100 km/h road”.

“100 km/h road with many entries and exits to roads for residents. Blind corners and up/down hill blind spots on many entries and exits”.

In 2016, the Department for Transport and Infrastructure installed a roundabout at the intersection with Welch Road and Victor Harbor Road at a cost of \$4.3 million. This upgrade substantially improved safety at this location and set a benchmark for how roundabouts can be used effectively in a rural setting.

Crash History

Between 2016 and 2020, seven casualty crashes occurred on the Victor Harbor Ring Route. Five of these occurred on midblock sections, one at the intersection with Victor Harbor Road and one at the intersection with Waggon Road (south).

Tragically, in November 2020, a head on crash south of Greenhills Road claimed one life and injured others.

Table 50: Armstrong Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Number of casualties		
		Minor	Serious	Fatal
Rear End	2	2	0	0
Hit Fixed Object	2	2	0	0
Other	1	1	0	0
Head On	1	0	0	1
Hit Pedestrian	1	1	0	0
Total	7	6	0	1

Cars are the predominant unit type involved in crashes on Armstrong Road. In 2019, a crash occurred that involved a pedestrian crossing the road in the 60km/h zone near Encounter Bay Football Club.

Table 51: Units involved in crashes on the Victor Harbor ring route (2016 – 2020)

Unit type	Approximate number of units
Car	9 (75%)
Pedestrian	1 (8%)
Truck	1 (8%)
Other/Unknown	1 (8%)

Road Widths

The Victor Harbor ring route has 3.2m wide travel lanes, and sealed shoulders that vary in width along the route but are typically about 0.5m wide. Lanes widen substantially and eventually divide into two lanes through intersections at Stirling Court, Lipizzaner Drive, Waggon Road, Greenhills Road, Henderson Road, Crozier Road and at the entrance to the Encounter Bay Football Club.

Speed Limits

The Victor Harbor Ring route is subject to a 100km/h speed limit for most of its length, other than a 900m section on the southern end approaching Inman Valley Road, and a 750m section on the northern end, approaching Victor Harbor Road.

Table 52: Speed limit on the Victor Harbor ring route

Segment	Speed limit (km/h)
Inman Valley Rd – Encounter Bay Football Club	60
Encounter Bay Football Club – Lipizzaner Drive	80 – 100 – 80
Lipizzaner Drive – Victor Harbor Road	80

Many survey respondents called for a reduced speed limit on the Victor Harbor ring route following a fatal crash in November 2020. Whilst the function of the corridor is largely as a bypass of the town centre, there are five side roads over the 4km 100km/h zone length which introduce additional risk in high-speed zones; however, there are no property access points.

RAA's preference is to upgrade intersections along the corridor to provide safer travel. However, implementation of an 80km/h speed limit would result in improved intersection and midblock safety, whilst resulting in a travel time increase of about 30 seconds per trip along the entire length of the road.

As a minimum, extending the southern 80km/h zone by 450m to the north should be considered, which will result in a reduced speed limit through the intersection with Crozier Road. This intersection, whilst raised several times in the community survey, has also been raised previously with RAA due to drivers not appreciating the 50km/h to 100km/h speed limit differential when entering Armstrong Road from Crozier Road.

Recommendation 14A

Consider extending the southern 80km/h zone by 450m to the north, which will reduce travel speeds and improve safety through the intersection with Crozier Road.

AusRAP Star Ratings

The Victor Harbor ring route is mostly defined as a three-star road due to the wide lanes, good vertical and horizontal geometry and absence of a high number of fixed roadside hazards (or wide clear zone). All intersections are rated as one star, mostly due to the 100km/h speed limit, which cannot be compensated for with intersection design unless they are grade separated due to the high severity of crashes at this speed. Improvements to channelisation do improve the intersection star ratings quite significantly, increasing it from a very low one star to a high one star, but star rating scores are still within the one-star band. Intersection upgrades combined with a speed reduction to 80km/h would see the star rating increase to a high two stars at intersections.

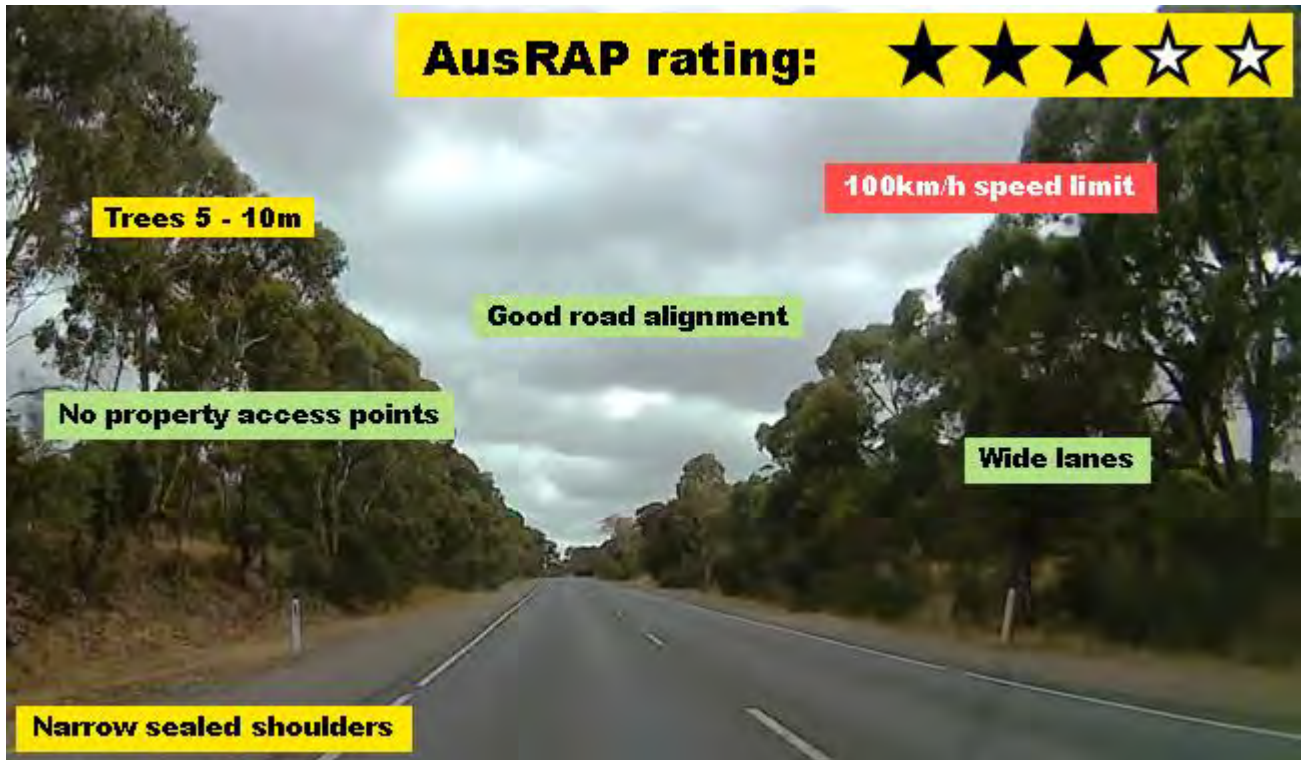


Figure 64: Typical AusRAP star rating on the Victor Harbor ring route

Other Observations

Armstrong Road and Welch Road are in serviceable condition, with shallow ruts (10mm) and binder bleeding present in localised areas. These minor defects pose negligible safety concerns at this stage, however, should be monitored to ensure the road remains in good condition.

Clear zones along the length of the road are generally maintained to about five metres, with w-beam safety barrier installed where vegetation encroaches on this width. Fixed hazards in the form of large trees are occasionally located 5 metres or more from the road edges. Whilst these still pose a hazard, installation of additional barrier protection may be of greater benefit on other corridors where alignment is poor and/or vegetation exists closer to the road.

Intersection design was a highly raised issue and survey respondents were critical of the lack of protected turn lanes. Table 53 below details the varying intersection layouts along the Victor Harbor Ring Route.

Table 53: Current left and right turn treatments to side roads from the Victor Harbor ring route

Side road intersection	No. of legs	Left turn treatment	Right turn treatment
Stirling Ct	3	Channelised left turn lane	Right-through lane
Lipizzaner Dr	3	Widened shoulder	Channelised right turn lane
Waggon Rd (N)	3	None	Right-through lane
Waggon Rd (S)	3	None	Right-through lane
Greenhills Rd	3	Widened shoulder	Right-through lane
Henderson Rd	3	Channelised left turn lane	Right-through lane
Crozier Rd	3	Channelised left turn lane	Right-through lane
Encounter Bay Football Club	3	Channelised left turn lane	Right-through lane
Encounter Centre	3	Channelised left turn lane	None

RAA considers channelised turn lanes to be substantially safer than turn lanes that also act as a through lane due to the additional separation provided to different traffic streams. RAA recommends that all right-through lanes on the Victor Harbor ring route be converted into right turn only lanes, ensuring that intersection treatments are consistent along the route. Furthermore, channelised left turn lanes should be installed at both legs of the Waggon Road intersection, and at the Lipizzaner Drive intersection.

Recommendation 14B

Provide right turn lanes at intersections along Armstrong Road and Welch Road by converting right-through lanes into right turn only lanes. Channelised left turn should also be considered where possible.

Whilst channelised turn lanes would be highly desirable at the Greenhills Road intersection, there are constraints in carriageway width due to the Greenhills Road Bridge pylons. Notwithstanding, minor road widening and realignment of the through lanes may result in a workable solution that would provide a left turn lane whilst also improving sight distance from Greenhills Road. This intersection is discussed in further detail below.

Greenhills Road intersection

Fleurieu Peninsula survey respondents raised the intersection of Greenhills Road and Armstrong Road highly in the survey, making it the most raised intersection in the region that is not located on Victor Harbor Road or Main South Road.

The majority of survey respondents mentioning this intersection raised the poor sight distance when entering Armstrong Road from Greenhills Road, combined with a high speed limit on Armstrong Road. This has reportedly been leading to regular near misses as drivers misjudge a safe gap when entering Armstrong Road.

Minimum gap sight distance is defined in *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*¹⁶ as the distance corresponding to the critical acceptance gap that drivers are

¹⁶ Austroads, 2021, *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*, accessed at <https://austroads.com.au/publications/road-design/agrd04a>.

prepared to accept when undertaking a crossing or turning manoeuvre at intersections. Using a 5 second critical acceptance gap, the minimum gap sight distance for a side road onto a 100km/h road (two lane/two way) is 139m, as referenced in Table 3.6 of the guide.

During RAA's site assessment, the available sight distance was measured to be approximately 160m to the south. The measurement to the north was not formally measured, however was deemed to be greater than this, provided that the driver selected an appropriate holding position on Greenhills Road. However, in certain holding positions, the bridge pylon provides a physical obstruction to sight distance. This pylon is located approximately 53m from the holding position of a right turning vehicle, and in cases where a driver selects a poor holding position, minimum gap sight distance is reduced to less than 100m to the north.



Figure 65: Sight distance to the north is obscured by the Greenhills Road bridge pylon

RAA recommends that the intersection be upgraded to provide improved sight distance and introduce channelised turn lanes onto Greenhills Road as shown in the concept sketch in Figure 66 . This treatment may require some pavement widening on the north-western side of Armstrong Road, however detailed surveys and measurements will be required to determine the full extent of the required widening and whether it is achievable without having to modify the existing embankment.

Recommendation 14C

Upgrade the intersection with Armstrong Road and Greenhills Road to provide improved sight distance and channelised turn lanes into Greenhills Road.

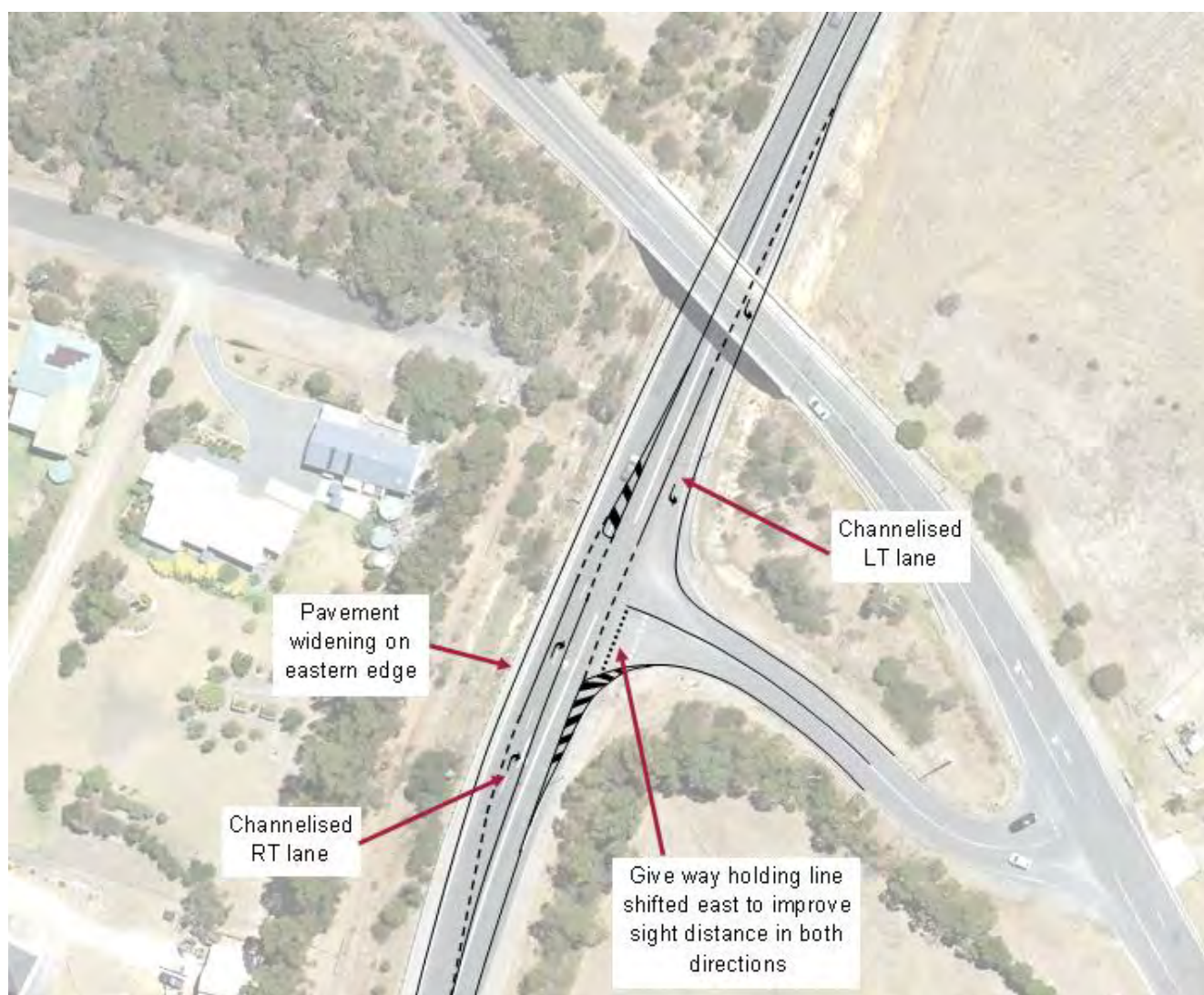


Figure 66: RAA concept sketch of an upgraded Armstrong Road/Greenhills Road intersection

In the longer term, consideration should be given to installing an additional access road between Greenhills Road and Armstrong Road, north of the bridge. This would remove the need for right turns altogether and allow both intersections to operate as 'left in-left out' to/from Armstrong Road. This should be strongly considered if the South Coast Freight Corridor is implemented along the route, and largely funded by state government. Due to the likely high cost of this proposal, RAA considers this to be infeasible for council to fund in the short term.

Summary of recommendations for Armstrong Road

Recommendation 14A

Consider extending the southern 80km/h zone by 450m to the north, which will reduce travel speeds and improve safety through the intersection with Crozier Road.

Recommendation 14B

Provide right turn lanes at intersections along Armstrong Road and Welch Road by converting right-through lanes into right turn only lanes. Channelised left turn should also be considered where possible.

Recommendation 14C

Upgrade the intersection with Armstrong Road and Greenhills Road to provide improved sight distance and channelised turn lanes into Greenhills Road.

Main Road (McLaren Vale to Willunga)

Main Road is a sub-arterial road extending for 8.5km between Victor Harbor Road and Aldinga Road via McLaren Vale and Willunga. For the purposes of this assessment, the 4km section between McLaren Vale and Willunga was reviewed.

On average, 4,100 vehicles travel the section between McLaren Vale and Willunga each day, which includes 7.5% heavy vehicles.

The road received a moderate number of survey responses, with the most frequent concern regarding the poor pavement condition between McLaren Vale and Willunga. Comments also related to its current width being too narrow for the high volume of recreational cyclists. Concerns were raised over safety at some intersections, notably the intersection with Kangarilla Road in the McLaren Vale built up area, where congestion was a concern. Other intersections receiving multiple mentions included the intersection with McMurtrie Road and the intersection with High Street in Willunga.

Table 54: Total number of survey responses raising Main Road

Category	No. of responses	Overall rank
Top issue in region	2	14
Maintenance	9	11
Road design	4	9
Congestion	4	9
Speed limit	4	13
Speed enforcement	1	-
Driver behaviour	6	9
Freight	7	9
Motorcycling	0	-
Cycling	14	6
Combined	51	10

A sample of typical survey responses received is included below.

“Coming from Kangarilla the intersection with Main Road is up a hill with limited vision to the left and a busy road to the right, with traffic coming from the right also turning right into Tatachilla Road. Traffic coming from Willunga are quite often still in open road mode and having to enter Main road up a hill means a slower entry into a busy road. This can be frustrating for more cautious drivers like me, especially with traffic backed up behind you.”

“Very undulating, not wide enough (lots of cyclists).”

“Give way sign on McMurtrie should be a Stop sign. McMurtrie is a long road and drivers get complacent with who has right of way.”

“Lots of cyclists who ride side by side on the road when there is a designated cycle path for them to use.”

At the time of our assessment, a 500m section of Main Road, north of Branson Road was being resealed. A follow-up review of the surface condition revealed that this had removed most of the undulations in the surface; however, reactive soils and high groundwater use in the vicinity can often lead to undulations to returning shortly after. Full road reconstruction between McLaren Vale and Willunga may be required to address the recurring issue.



Figure 67: 500m of resealing north of Branson Road has significantly improved comfort between McLaren Vale and Willunga

Crash History

Between 2016 and 2020, eight casualty crashes occurred on Main Road between McMurtrie Road and Little Road. Six of these crashes were at intersections, with only two crashes occurring on mid-block sections. Three casualty crashes occurred at the intersection with Malpas Road and Binney Road, whilst two occurred at the intersection with McMurtrie Road and Johnston Road.

Table 55: Main Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Number of casualties		
		Minor	Serious	Fatal
Right Angle	3	3	0	0
Rear End	2	2	0	0
Roll Over	2	2	0	0
Right Turn	1	1	0	0
Total	8	8	0	0

Cars were the predominant unit involved in crashes on Main Road, with one cyclist crash occurring at the intersection with Malpas Road and Binney Road.

Table 56: Units involved in crashes on Main Road between McMurtrie Road and Little Road (2016 – 2020)

Unit type	Approximate number of units
Car	14 (93%)
Bicycle	1 (7%)

Tragically, in 2020, two fatal crashes occurred at intersections along Main Road, which generated significant community concern about the safety of the corridor.

- In February, a crash between a westbound vehicle on Binney Road and another vehicle travelling on Main Road.
- In March, a crash between three vehicles at the intersection with Main Road and McMurtrie Road.

These intersections are typical of many four-way intersections in the McLaren Vale wine region, where two roads intersect each other at right angles, with signage the primary means of controlling traffic. Due to a high number of conflict points, and a lack of horizontal deflection, this intersection layout is inherently high risk, particularly when high traffic volumes and speeds greater than 60km/h are involved. Whilst the intersection design is more suitable to a quiet rural environment, where local drivers are aware of the risk and traffic volumes are low, the design is not fit for purpose on an arterial road corridor in an extremely popular wine region.

Road Widths

Main Road is quite narrow for a high-volume arterial road, with 3.2m lanes and narrow sealed shoulders.

Table 57: Sealed width of Main Road

Location	Lane width	Sealed shoulder width	Total seal width
N of Branson Road	3.2m	0.5m	7.4m
S of Branson Road	3.2m	0.2m	7.0m

Shoulder widening should be considered along Main Road, which will provide additional space for cyclists, and allow vehicles to completely leave the through lane when accessing properties along the road.

Recommendation 15A

Install 2.5m wide sealed shoulders along Main Road between McLaren Vale and Willunga which will allow vehicles to leave the through lanes when accessing properties, provide additional space to drivers if they inadvertently leave the road and provide additional space for road cyclists.

Speed Limits

The speed limit between McLaren Vale and Willunga is 80km/h, however this 80km/h zone only lasts for about 3.2km from a point just south of the McMurtrie Road intersection to a point just north of the Little Road intersection. Whilst some survey respondents suggested that the lower speed limits on the approaches to McLaren Vale and Willunga started too far out of the built-up area, these limits have been implemented to reduce speeds through the McMurtrie Road and Little Road intersections. Compliance may be poor at times though, and as such, additional infrastructure improvements should be considered to further improve safety at these intersections.

Table 58: Speed limit on Main Road

Segment	Speed limit (km/h)
McLaren Vale	50 - 60
S of McMurtrie Rd – N of Little Rd	80
Willunga	50

AusRAP Star Ratings

Main Road is typically rated three stars under AusRAP star rating protocols. It receives this rating largely due to its straight and flat alignment and 80km/h speed limit. Roadside hazards including trees and stobie poles are still present along the majority of the corridor and removing these or providing suitable crash barriers would cause the star rating to increase to four stars.

Intersections in the 80km/h zone are all rated one star due to the high speeds through the intersection and lack of turn lanes. Installing turn lanes would improve the intersection star rating to two stars, and roundabouts would create a three-star intersections. The intersections in the 50km/h and 60km/h zones are rated three stars due to the lower speed limit reducing crash severity and likelihood.

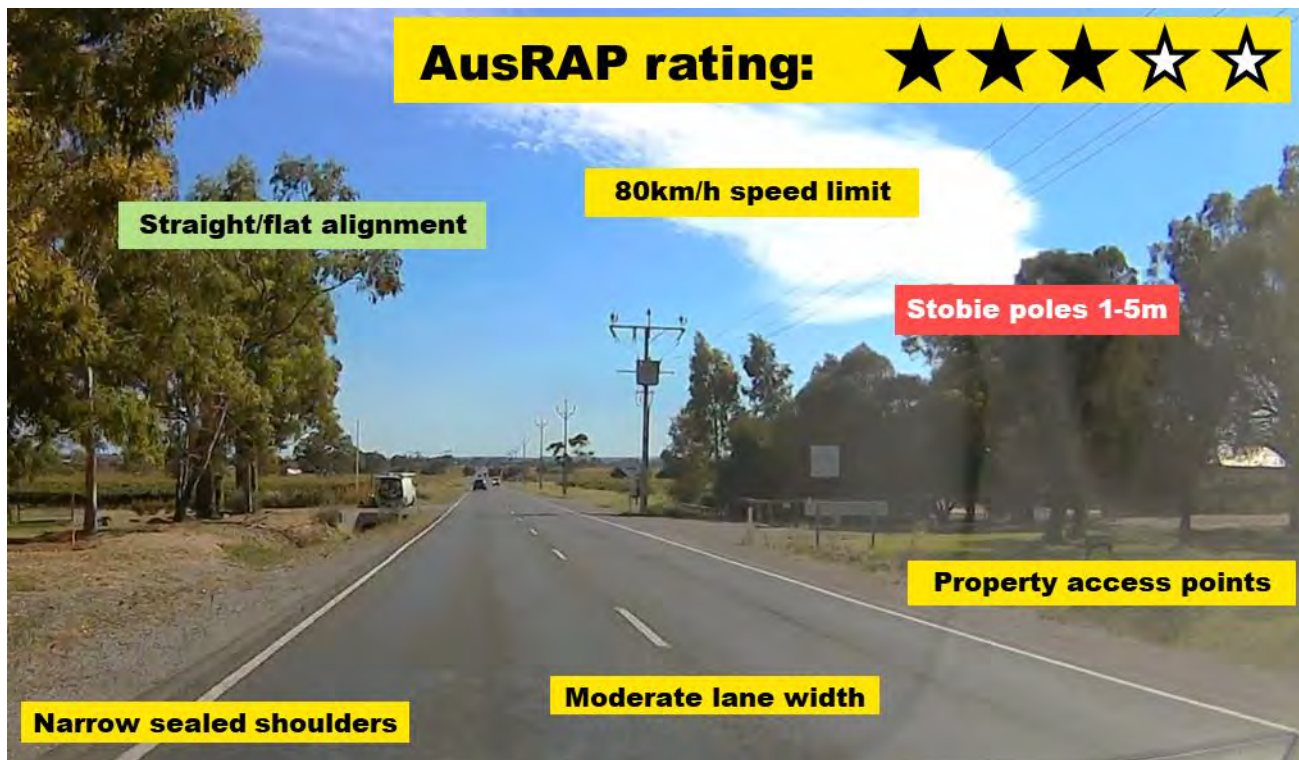


Figure 68: Typical AusRAP star rating on Main Road

Other Observations

RAA welcomes the recent resealing of 500m of Main Road, north of Branson Road which has addressed the majority of undulations that were highly raised in the Fleurieu Peninsula community survey. The road surface between Branson Road and Willunga, whilst less undulating, is still showing significant signs of wear with cracking and binder bleeding present, particularly in the wheel paths. This can lead to the formation of potholes in wet weather and reduces skid resistance. RAA recommends that reseal works are undertaken between Branson Road and Willunga, and that these include widening of the narrow sealed shoulder.

Recommendation 15B

Undertake road resealing works on Main Road between Branson Road and Willunga.

RAA's primary safety concern for Main Road is the design of intersections between McLaren Vale and Willunga, with the current four-way crossroad design not fit for the current purpose and function of the road. There are four crossroad intersections along the corridor which should all be prioritised for upgrade, with the highest priority for the intersection with Malpas Road and Binney Road due to the higher traffic volumes on Malpas Road compared to other side road approaches and the 80km/h speed limit.

Upgrades at Binney Road/Malpas Road and McMurtrie Road/Johnston Road must strongly consider roundabouts given the collector and sub-arterial function of the intersecting roads. They provide an important east-west link across the region and carry high volumes of tourist traffic with several highly popular destinations along each road.



Figure 69: A roundabout will improve safety at the intersection with Main Road, Johnston Road and McMurtrie Road

RAA considers Barossa Valley Way between Nuriootpa and Tanunda is similar in function to Main Road, as an arterial road link between two townships in a highly popular tourism region. This section of Barossa Valley Way is about 4km in length, has daily traffic volumes of approximately 7,400 vehicles, has three roundabouts, and a 2.5km section of 80km/h speed limit (compared with Main Road which has 4,100VPD and is 4km long between McLaren Vale and Willunga).

Recommendation 15C

Install a roundabout at the intersection with Malpas Road/Binney Road.

Recommendation 15D

Install a roundabout at the intersection with McMurtrie Road/Johnston Road.

Upgrades at the intersection with Little Road/Gaffney Road and Branson Road/Rifle Range Road should consider providing horizontal deflection on the side road approaches to reduce impact angles in the event of a crash and additional delineation to improve conspicuity of the intersection. RAA supports the implementation of teardrop island treatments with channelised right turn lanes at these locations. An effective example of a teardrop island treatment is the intersection with Lucindale Road and Four Mile Road in Lucindale in the Limestone Coast region. This intersection has operated effectively for the past decade, recording no casualty crashes despite being in a high-speed environment and intersection traffic volumes close to 1,000 vehicles per day.

Recommendation 15E

Upgrade the intersection with Branson Road/Rifle Range Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

Recommendation 15F

Upgrade the intersection with Little Road/Gaffney Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

It was also observed that along Main Road, W2-1 'crossroad' intersection warning signs were absent, and in the short term, these should be installed on Main Road in advance of all crossroad intersections to provide additional visual cues of upcoming intersections on Main Road.

Recommendation 15G

Install W2-1 'crossroad' intersection warning signs on Main Road in advance of all crossroad intersections.

Kangarilla Road/Tatachilla Road intersection

Several complaints were received regarding congestion and difficulties entering Main Road at the staggered intersection with Main Road, Kangarilla Road and Tatachilla Road in McLaren Vale. The most prominent issue at this location regards the right turn from Kangarilla Road onto Main Road, which is one of the more substantial turn movements at the intersection. This is made more difficult by the upwards slope on Kangarilla Road and the vertical alignment of Main Road which can impact sight distance if drivers don't position the vehicle well at the intersection.

Between 2016 and 2020, no casualty crashes occurred at the intersection, however survey respondents report witnessing near misses and minor crashes occurring.

A roundabout could be constructed at the location, which would remove the staggered intersection layout and provide safer turning movements; however, this would require a high amount of land acquisition. A dual or peanut roundabout treatment, with two smaller roundabouts (potentially joined by a median) could reduce land acquisition but would potentially be more complex than a single roundabout. This also may not be able to accommodate the needs of heavy vehicle movements. Signalisation could also be considered, which would require minimal land acquisition.

Recommendation 15H

Investigate a possible upgrade which may include a roundabout or traffic signals to improve safety and efficiency at the intersection with Main Road, Kangarilla Road and Tatachilla Road in McLaren Vale.

Intersection with Aldinga Road and High Street (Willunga)

Two cyclist crashes occurred at the four-way intersection with Main Road, Aldinga Road, High Street and St Peters Terrace in Willunga. One involved a collision between a northbound bicycle on High Street and a westbound car on St Peters Terrace (crossing onto Aldinga Road), and the other involved a northbound bicycle and an eastbound vehicle on Aldinga Road.



Figure 70: The intersection with Main Road, Aldinga Road and High Street is complex and has a history of cyclist crashes.

This intersection layout is complex due to its four-way layout, the bend in High Street, and the proximity of the intersection between High Street and St Andrews Terrace. Cyclist volumes are typically high as this intersection lies between the end of the Shiraz Trail and the bottom of Old Willunga Hill Road, which are both highly popular cycling routes. Whilst cycle lanes are provided through the intersection, these are somewhat inconspicuous to drivers due to the complex nature of

the intersection. These cycle lanes could be made more noticeable by installing green road surface in the cycle lanes through the intersection to increase driver awareness of the presence of cyclists.

Recommendation 15I

Install green cycle lanes through the intersection with Aldinga Road and Main Road in Willunga to increase awareness of cyclists travelling through the intersection.

Partial road closures or restricting some turn movements into and out of St Peters Terrace and St Andrews Terrace should also be considered to reduce the complexity and number of conflict points at this intersection, which will have a positive impact on road safety.

Summary of recommendations for Main Road

Recommendation 15A

Install 2.5m wide sealed shoulders along Main Road between McLaren Vale and Willunga which will allow vehicles to leave the through lanes when accessing properties, provide additional space to drivers if they inadvertently leave the road and provide additional space for road cyclists.

Recommendation 15B

Undertake road resealing works on Main Road between Branson Road and Willunga.

Recommendation 15C

Install a roundabout at the intersection with Malpas Road/Binney Road.

Recommendation 15D

Install a roundabout at the intersection with McMurtrie Road/Johnston Road.

Recommendation 15E

Upgrade the intersection with Branson Road/Rifle Range Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

Recommendation 15F

Upgrade the intersection with Little Road/Gaffney Road to provide channelised right turn lanes, whilst improving delineation and horizontal deflection on the side roads.

Recommendation 15G

Install W2-1 'crossroad' intersection warning signs on Main Road in advance of all crossroad intersections.

Recommendation 15H

Investigate a possible upgrade which may include a roundabout or traffic signals to improve safety and efficiency at the intersection with Main Road, Kangarilla Road and Tatachilla Road in McLaren Vale.

Recommendation 15I

Install green cycle lanes through the intersection with Aldinga Road and Main Road in Willunga to increase awareness of cyclists travelling through the intersection.

Kangarilla Road

Kangarilla Road is a state maintained arterial road extending for 3.5km between McLaren Vale and McLaren Flat. Traffic volumes are high, with 3,700 vehicles using the road daily, and 5,600 for the short section between McLaren Vale and Sand Road. Kangarilla Road is a gazetted 26m b-double route, with heavy vehicle traffic making up 9.5% of the average daily traffic volumes.

Kangarilla Road also serves an important function for property access, with more than 30 property access points and three side road intersections within the 3km long 80km/h zone.

Survey respondents consistently raised road maintenance and drainage issues, freight issues, and expressed concerns with the high volume of cyclists travelling the road. Several respondents also suggested that the 80km/h speed limit be returned to 100km/h. There were also a number of mentions that a footpath was required along the road between McLaren Vale and McLaren Flat.

Table 59: Total number of survey responses raising Kangarilla Road

Category	No. of responses	Overall rank
Top issue in region	1	-
Maintenance	7	13
Road design	0	-
Congestion	0	-
Speed limit	5	9
Speed enforcement	6	6
Driver behaviour	1	-
Freight	6	10
Motorcycling	2	12
Cycling	13	7
Combined	41	12

The below comments are typical of what was raised in the community survey.

“Various potholes, some parts unclearly marked/lined, gravel verge is dangerous, severe undulations near Serafino Winery, speed limits inconsistent.”

“Undulating surface which causes you to bottom out or causes difficulty with steering.”

“No drainage in wet weather on southern side of road near Tinlins Bulk Wines at the lowest point of the road. Massive pools of water over the road after storms etc. Needs urgent attention.”

“Speed limit used to be 100km/h, and due to accidents the speed limit has been reduced to 80km/h. Being a well-used road and the length of the road, could it be reconsidered to being put back to 100km/h zone?”

“Nowhere to pass slow vehicle which causes some people to pass unsafely.”

“The route is popular with cyclists but with the many bends and 80km/h limit and cyclists riding 2 or 3 abreast an accident seems likely.”

“We need some sort of footpath from McLaren Flat to McLaren Vale, at the moment you need to walk along the edge of some very narrow roads.”

Crash History

Between 2016 and 2020, two casualty crashes occurred on Kangarilla Road between McLaren Vale and McLaren Flat. In January 2017, a rear end crash resulting in minor injuries occurred, involving two westbound vehicles, just west of the Lewsey Street intersection in McLaren Vale. In October 2018, a right-angle crash resulting in minor injuries occurred at the intersection with Foggo Road. This involved a southbound vehicle on Foggo Road and a southwest bound vehicle on Kangarilla Road.

Road Widths

Kangarilla Road is narrow, with a total sealed width of approximately 6.5m, and no sealed shoulder.

Table 60: Sealed width of Kangarilla Road

Location	Lane width	Sealed shoulder width	Total seal width
E of Foggo Road (McLaren Flat)	3.2m – 3.3m	N/A	6.5m

Given the high traffic volumes and popularity of cycling between McLaren Vale and McLaren Flat, shoulders should be sealed to 1.5m wide between McLaren Vale and McLaren Flat. This will provide additional space for cyclists, whilst also allowing vehicles to move between the road and adjacent properties more safely.

Recommendation 16A

Install 1.5m wide sealed shoulders between McLaren Vale and McLaren Flat.

Speed Limits

The speed limit on Kangarilla Road is 80km/h, which reduces to 50km/h on the approaches to McLaren Vale and McLaren Flat.

Table 61: Speed limit on Kangarilla Road

Segment	Speed limit (km/h)
McLaren Vale	50
McLaren Vale – McLaren Flat	80
McLaren Flat	50

Several community survey respondents suggested that the 80km/h speed limit should be changed to 100km/h. RAA does not support this increase, given that the 80km/h zone is only 3km long, the road has high traffic volumes, high cyclist volumes, and a high number of side road intersections and property access points.

Consideration should be given to installing ‘50 ahead’ advance warning signs on the approaches to McLaren Flat and McLaren Vale.

Recommendation 16B

Install '50 ahead' advance warning signs prior to speed limit reductions in McLaren Vale and McLaren Flat.

AusRAP Star Ratings

Kangarilla Road is typically rated between 1 and 2 stars, with the presence of roadside hazards one of the key contributing factors to this rating. Sections with trees and stobie poles on both sides of the carriageway are rated one star, whereas sections with hazards on only one side of the carriageway are more likely to be rated as two stars.



Figure 71: Typical AusRAP star rating on Kangarilla Road

Installing sealed shoulders and resealing the road will bring Kangarilla Road to a two-three star standard and protecting roadside hazards in conjunction with this will see the road receive a four star rating due to its straight and flat alignment.

Other Observations

Kangarilla Road was in relatively poor condition, with damage on the road edges likely due to drainage issues, as it was evident that water pools on the shoulders after rainfall. Moderate undulations were present for about 400m between Sand Road and Park Drive, which may require localised pavement reconstruction. RAA recommends that Kangarilla Road be resealed, including localised reconstruction near McLaren Vale. Roadside drainage upgrades should also be considered, and 1.5m shoulder sealing should be undertaken in conjunction with these works.

Recommendation 16C

Reseal Kangarilla Road between McLaren Vale and McLaren Flat, including localised reconstruction near McLaren Vale and 1.5m wide shoulder sealing. Roadside drainage upgrades should also be considered.

Community survey respondents were vocal about the need to construct a footpath between McLaren Vale and McLaren Flat, with several suggesting that a footpath alongside Kangarilla Road would be appropriate. The City of Onkaparinga has identified and approved an off-road corridor between McLaren Vale and McLaren Flat, deemed the 'Flat to Vale Trail', which loosely follows the alignment of Pedler Creek and Chalk Hill Road between the McLaren Vale Football Club and McLaren Flat. Initial cost estimates range between \$1.6m and \$1.85m. The alignment of this proposed path is shown in Figure 72, sourced from the City of Onkaparinga website¹⁷.

Proposed McLaren Vale to McLaren Flat Trail



Figure 72: Approved alignment of the proposed Flat to Vale trail, extending 3.6km between McLaren Vale and McLaren Flat (Image source: City of Onkaparinga, 2020)

Recommendation 16D

Fund and construct the Flat to Vale Trail, a 3.6km shared path connecting McLaren Vale and McLaren Flat.

¹⁷ City of Onkaparinga, 2020, *Flat to Vale Trail*, accessed at <<https://yoursay.onkaparinga.sa.gov.au/flat-to-vale>>.

A shared path alignment adjacent to Kangarilla Road has been explored, however, this presents challenges with safety due to its close proximity with a high speed, high volume road, as well as with stormwater drainage, due to swales on the verge. The removal of several significant trees would also be required to construct a shared path alongside Kangarilla Road.

Summary of recommendations for Kangarilla Road

Recommendation 16A

Install 1.5m wide sealed shoulders between McLaren Vale and McLaren Flat.

Recommendation 16B

Install '50 ahead' advance warning signs prior to speed limit reductions in McLaren Vale and McLaren Flat.

Recommendation 16C

Reseal Kangarilla Road between McLaren Vale and McLaren Flat, including localised reconstruction near McLaren Vale and 1.5m wide shoulder sealing. Roadside drainage upgrades should also be considered.

Recommendation 16D

Fund and construct the Flat to Vale Trail, a 3.6km shared path connecting McLaren Vale and McLaren Flat.

Nangkita Road

Nangkita Road is under the care and control of Alexandrina Council. Nangkita Road extends for 13km between Victor Harbor Road in Mount Compass and Bull Creek Road in Tooperang and is a gazetted 26m b-double route.

The road forms part of the most direct east-west b-double freight route through the region and is part of a link between Adelaide's southern suburbs and the South Eastern Freeway at Callington, which avoids travelling down the notorious South Eastern Freeway descent and through Adelaide's inner southern suburbs. For comparison, the distance between the Callington interchange and the Victor Harbor Road/Main South Road intersection is 80km via the South Eastern Freeway, Cross Road and South Road, or 83km via Callington Road, Alexandrina Road, Nangkita Road and Victor Harbor Road.

In terms of local connectivity, Nangkita Road forms part of the most direct route between Strathalbyn and the west coast of the Fleurieu Peninsula including Aldinga, Sellicks Beach, Willunga, Mount Compass, Myponga, Yankalilla and Normanville.

Given the current arterial function of Nangkita Road, particularly as a heavy freight corridor, it would be beneficial for the state government to take ownership of the road, which would allow for additional funding for the upkeep of the road. Understandably, this may also result in Alexandrina Council having to take ownership of a section of state-maintained road in the region.

Recommendation 17A

Transfer ownership of Nangkita Road to the state government to allow for additional funding for the upkeep of the road.

Survey respondents were most vocal about road maintenance on Nangkita Road, particularly in relation to heavy vehicle use, and that temporary repairs only have a short lifespan before the issue resurfaces.

Table 62: Total number of survey responses raising Nangkita Road

Category	No. of responses	Overall rank
Top issue in region	4	10
Maintenance	12	9
Road design	3	18
Congestion	1	18
Speed limit	0	-
Speed enforcement	1	-
Driver behaviour	3	14
Freight	4	13
Motorcycling	2	12
Cycling	1	-
Combined	29	15

Some typical survey responses are included below.

“There is always a bad pothole somewhere in this section, usually the same couple that are never repaired properly. I believe the potholes keep reappearing because they are poorly repaired (not to the standard needed for the wear they will receive). I'm fairly certain the methods used appear inadequate for this road as it's a main thoroughfare for heavy vehicles. The repair job is trashed within hours of it being done every time.”

“The road is always just patched up and never fixed properly. Being a b-double route there is a large number of vehicles using the road and within 24 hours of holes being fixed, they are opening up and forming again – often with large chunks of asphalt left on the road to fly up into oncoming traffic.”

“As this is an authorised b-double route, damage to this council-owned road is significant. In addition, much of this road is built on swampy land so damage is an ongoing concern. Unfortunately, state government has refused to take over this road, so the Council is up for significant ongoing costs to maintain this road. Federal black spot and state government funding should be made available to maintain this road.”

“B-double route but the road is not maintained enough to keep up with the volume of traffic using the road.”

Crash History

Between 2016 and 2020, 14 casualty crashes occurred on Nangkita Road. Single vehicle run off road crashes are the most prominent crash type and made up more than 70% of all casualty crashes.

Table 63: Nangkita Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Roll Over	5	2	3	0
Hit Fixed Object	3	3	0	0
Right Angle	2	2	0	0
Left Road - Out of Control	2	2	0	0
Rear End	1	1	0	0
Head On	1	1	0	0
Total	14	11	3	0

Cars were the predominant unit involved in crashes on Nangkita Road, however, motorcycles and trucks were also highly represented.

Table 64: Vehicles involved in crashes on Nangkita Road (2016 – 2020)

Unit type	Approximate number of units
Car	11 (61%)
Motorcycle	4 (22%)
Truck	2 (11%)
Other defined special vehicle	1 (6%)

The four motorcycle crashes were all single vehicle rollover crashes.

Of all crashes, 13 out of 14 occurred on the 6km section between Victor Harbor Road and Stones Ford Road, as highlighted in Figure 73. Whilst traffic volume data is not publicly available for council roads, using an assumption of 1,000 vehicles per day gives this 6km section a very poor casualty crash rate of 119 casualty crashes per 100 million vehicle kilometres travelled.

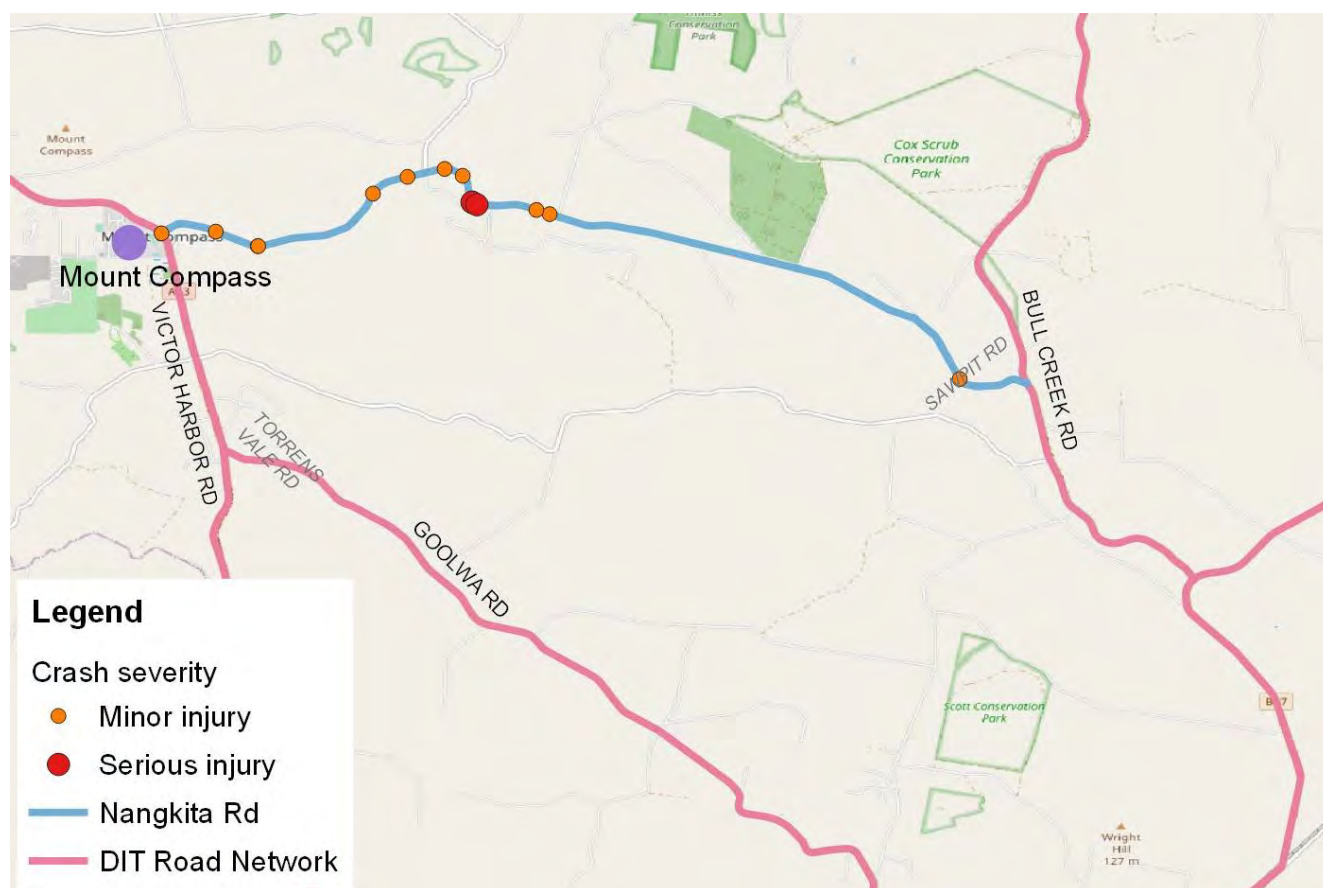


Figure 73: Locations of casualty crashes occurring on Nangkita Road between 2016 and 2020

Road Widths

Nangkita Road is generally constructed to a sealed width of about 7.8m, which consists of 3.5m wide lanes and narrow sealed shoulders. Given that Nangkita Road forms part of a b-double route, 1m shoulder sealing is desirable, and should be considered. Given that pavement replacement works are also necessary, shoulders should be widened whilst reseal works are undertaken.

Recommendation 17B

Widen sealed shoulders to 1m as part of road resealing works.

Table 65: Sealed width of Nangkita Road

Location	Lane width	Sealed shoulder width	Total seal width
1.2km W of Bull Creek Rd	3.5m	0.4m	7.8m
W of Stones Ford Rd	3.5m	0.4m	7.8m

Speed Limits

The default rural speed limit of 100km/h applies on Nangkita Road, with the exception of a reduced speed in Mount Compass, and a short 80km/h section in Nangkita where there are several closely spaced residences.

Table 66: Speed limit on Nangkita Road

Segment	Speed limit (km/h)
Bull Creek Rd - Nangkita	100
Nangkita	80
Nangkita – Mt Compass	100
Mt Compass	80 – 60

A reduction in speed limit to 80km/h should be considered for the 5.5km between Mount Compass and Nangkita, given the high crash rate, high number of property access points (37), poor road condition and the presence of several substandard curves.

Recommendation 17C

Reduce the speed limit to 80km/h between Mount Compass and Nangkita.

AusRAP Star Ratings

Nangkita Road is typically rated between one and two stars under AusRAP star rating protocols. The section pictured in Figure 74 is an example of a high one star rated section of Nangkita Road near Bull Creek Road.

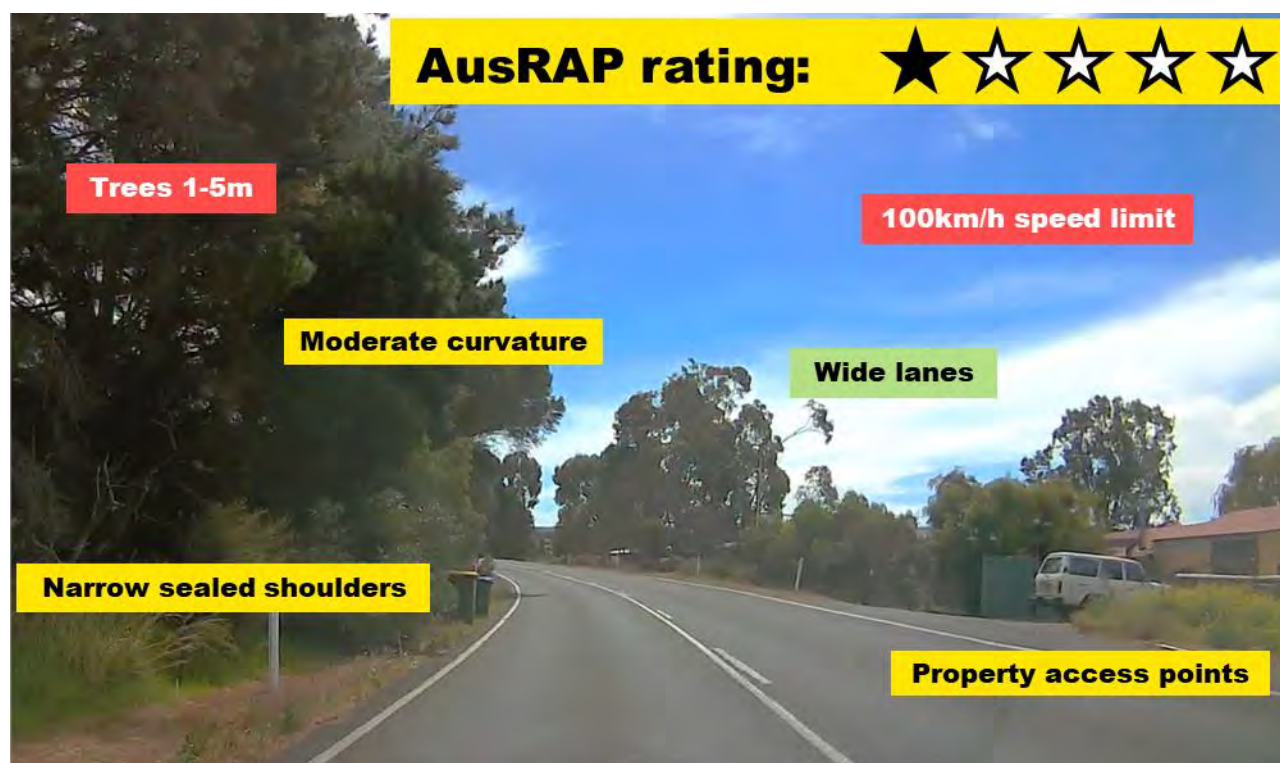


Figure 74: Typical AusRAP star rating on Nangkita Road

The star rating of this section would increase from one to two stars if the sight distance around the curve was improved, or the speed limit was reduced to 80km/h. If trees were located behind a crash barrier, this section would be rated three stars.

A speed limit reduction to 80km/h in isolation would result in a high rated two-star road.

Other Observations

The most notable observation on Nangkita Road was in relation to the poor pavement condition on the western end of the road between Nangkita and Mount Compass. Potholes and rutting are prevalent, particularly on curves. Whilst council responds quickly to reported potholes by making temporary repairs, further rehabilitation is required to address the issue entirely. Detailed geotechnical investigations should be carried out to identify any localised areas where full-depth reconstruction is required.



Figure 75: New potholes forming around recently repaired potholes.

Asphalt binder bleeding is a pavement defect which reduces the skid resistance of the asphalt as the binder compound accumulates on the pavement surface. This pavement failure is particularly prevalent along the western end of Nangkita Road but is evident to some degree along the entire corridor.



Figure 76: Asphalt binder bleeding is prevalent, particularly on the western end of Nangkita Road

Recommendation 17D

Undertake pavement rehabilitation (and possibly full-depth reconstruction) between Nangkita and Mount Compass.

Although many curves are substandard, these are well delineated with curve alignment markers (CAM's), and in some cases large 'REDUCE SPEED' signs, and truck rollover warning signs.

Fixed roadside hazards are present along most of the corridor and generally consist of trees or stobie poles. Whilst some barrier protection has been installed, this has been undertaken sporadically, and likely installed in discrete locations where crashes have occurred previously. This is one of the negative aspects of black spot programs, which only aim to treat locations with a recent crash history, whilst equally risky locations where a crash hasn't occurred out of sheer chance remain untreated. A plan to install additional safety barriers along the length of the corridor in high-risk locations is required to significantly reduce the likelihood of crashes involving fixed objects along the corridor.

Recommendation 17E

Install additional safety barriers uniformly in high-risk locations along the corridor.

Summary of recommendations for Nangkita Road

Recommendation 17A

Transfer ownership of Nangkita Road to the state government to allow for additional funding for the upkeep of the road.

Recommendation 17B

Widen sealed shoulders to 1m as part of road resealing works.

Recommendation 17C

Reduce the speed limit to 80km/h between Mount Compass and Nangkita.

Recommendation 17D

Undertake pavement rehabilitation (and possibly full-depth reconstruction) between Nangkita and Mount Compass.

Recommendation 17E

Install additional safety barriers uniformly in high-risk locations along the corridor.

Encounter Bikeway

The Encounter Bikeway is a pedestrian and cycle route extending over 30km from Goolwa North to Encounter Bay via the coastal towns of Goolwa, Middleton, Port Elliot and Victor Harbor. The route starts at the intersection with Liverpool Rd and Howell St (Goolwa North) and terminates at The Bluff (Encounter Bay) and is a mixture of on-road and shared pathway. It is frequently used by pedestrians and cyclists, particularly for shorter walks and rides on shared sections in Goolwa and Victor Harbor. The bikeway is under the care and control of Alexandrina Council between Goolwa North and Hayborough/Chiton (just west of the intersection with Seagull Avenue and Third Avenue), and City of Victor Harbor Council between Hayborough/Chiton and The Bluff in Encounter Bay.

The Encounter Bikeway was the most frequently nominated cycle infrastructure in the Fleurieu Peninsula community survey, receiving 22 nominations in questions about cycling, with 13 of these coming from respondents who had ridden a bicycle in the six months prior to completing the survey.

Responses from cyclists were more likely to raise concerns about pedestrians and dogs on the path, as highlighted by the comments below.

“Busy path, often congested with pedestrians walking dogs - I tend not to use it as never sure when a dog might come at me - also some cycle at speed”.

“Very popular walking paths for pedestrians and animals. Need to cycle on road to maintain theirs and my safety. Especially those pedestrians who have earphones on”.

“Lots of older pedestrians wearing earphones and don't hear the bell on approaching”.

Responses from pedestrian path users were more likely to raise issues about the behaviour of cyclists, as highlighted in the comments below.

“Cyclists aren't always good at sharing this bike / walking path with walkers. They often come through in large packs and go too fast, even though there are signs in sections asking for cyclists to slow down for blind corners.”

“Some cyclists have no warning bells and have almost been hit by them while walking on this narrow track”.

“Many cyclists ride at great speed. With pedestrians, often elderly, this is very risky!”

Both cyclists and non-cyclists raised safety concerns with the on-road sections of the bikeway and wanted the number of interactions between motor vehicles and bikeway users reduced, ideally through physical separation.

“Needs to be off roads, in particular around Victor Harbor”.

“Needs to be a dedicated bike path rather than painted lines mixing with car traffic”.

“The path often spills out to general roads and the traffic is fast, the roads narrow. The path is popular but making it continuous would improve safety and encourage more families to explore the beautiful ride”.

“This bikeway would be fantastic if there was a way that it could be completely on the cycle path and not on any shared roads, especially when riding with children”.

“There is a dedicated cycle track, but I still see cyclists on the road as it is not easy to find and not good in places. Once in Victor Harbor, more bicycle lanes are required”.

“Too often mixing with cars in back roads. Could follow rail line for less intersections with roads”.

Following this high level of community feedback compared with other cycle infrastructure, RAA reviewed the Encounter Bikeway in two stages as part of our *2021 Encounter Bikeway Assessment Report*¹⁸, undertaken as part of this Fleurieu Peninsula Regional Road Assessment. Initially, the route was reviewed by car with multiple stops and ad-hoc reviews of discrete sites. This identified a need to review the bikeway from the perspective of a user to gain better insight into bikeway condition, wayfinding, and continuity. On Friday 30 April 2021, two e-bikes were hired from Goolwa Bike Hire and RAA staff rode the full length of the bikeway in both directions, cycling a total of 65km.

Several improvements have been made to sections of the Encounter Bikeway in recent years, including (but not limited to):

- Widening and resurfacing of the shared path in Encounter Bay (2020)
- Widening the shared path in Victor Harbor near the Victor Harbor Bowling Club
- Construction of a 75m boardwalk behind the Victor Harbor Visitor Information Centre between the Esplanade Car Park and Granite Island Causeway
- Repair to damaged sections of the path being lifted by tree roots in Goolwa North.

RAA welcomes City of Victor Harbor Council's vision to “establish the Encounter Bikeway as the best coastal bike route in Australia” as highlighted in its 2016 *Victor Harbor Bicycle Strategy*¹⁹, and commends the steps it has taken in recent years to progress this vision.

Summary of recommendations for the Encounter Bikeway

The recommendations in Table 67 were made in RAA's *2021 Encounter Bikeway Assessment Report*, available at www.raa.com.au/roadassessments. For more details, please view the full report.

Table 67: Recommendations from RAA's 2021 Encounter Bikeway Assessment Report

Encounter Bikeway report recommendation no.	Details of recommendation
Recommendation 1	Alexandrina Council and City of Victor Harbor Council work towards providing a continuous off-road path between Goolwa and Victor Harbor by investigating and prioritising future alignments for new off-road sections.
Recommendation 2	Install sharrow pavement markings on all on-road sections of the Encounter Bikeway where they are currently not provided to assist with wayfinding, warn other road users of the possible presence of cyclists and provide guidance on lateral lane position for cyclists.
Recommendation 3	<ol style="list-style-type: none"> Install more distance reminder signs along the Encounter Bikeway route. These may also be incorporated with town entry treatments that also list popular destinations in the town alongside a map of the local area. Clearly signpost both endpoints of the Encounter Bikeway and consider making improvements to facilities at the Goolwa end. Where not already installed, install centre lines on shared paths to encourage path users to keep to the left and reduce conflict between pedestrians and cyclists.

¹⁸ RAA, 2021, *Bikeway Assessment: Encounter Bikeway – June 2021*, available at www.raa.com.au/roadassessments.

¹⁹ Tonkin Consulting, 2016, *Victor Harbor Bicycle Strategy*, accessed at https://www.victor.sa.gov.au/_data/assets/pdf_file/0024/285126/Victor-Harbor-Bicycle-Strategy_Adopted-20160926.pdf.

Encounter Bikeway report recommendation no.	Details of recommendation
Recommendation 4	Ensure continuous shared pathways are provided through the Goolwa Wharf precinct as part of the \$7.5m Goolwa Wharf Precinct Revitalisation Project.
Recommendation 5	<ul style="list-style-type: none"> a) Extend the shared path alongside Barrage Road between Shore Court and Bristow-Smith Avenue. b) Install sharrows along Barrage Road and Bristow-Smith Avenue to assist cyclist wayfinding and warn other road users of the presence of cyclists. c) Install a 115m long section of shared path on the western side of Beach Road, between Bristow-Smith Avenue and the commencement of the off-road path.
Recommendation 6	<ul style="list-style-type: none"> a) Seal the inside of the corner at Andrew Avenue and Newell Avenue in Middleton. b) Install sharrows along all on-road sections of the Encounter Bikeway in Middleton.
Recommendation 7	Review and improve placement of sharrows in Hayborough, Chiton and Port Elliot.
Recommendation 8	Construct a 1.9km long (approx.) shared use path adjacent to the rail line between Hindmarsh River and the Investigator Carpark at Dump Beach, bypassing Hindmarsh Road.
Recommendation 9	<ul style="list-style-type: none"> a) Provide wayfinding signage on the section of path between Hindmarsh River and Bridge Terrace, that directs users across the rail line onto Bridge Terrace. b) Widen the shared path between Coral Street and the Granite Island Causeway. c) Construct a pathway to the west of the Kent Reserve carpark, allowing path users to bypass the carpark. d) Install additional Encounter Bikeway signage and branding along the off-road bikeway through Victor Harbor.
Recommendation 10	Consider sealing the Bluff Jetty Road or providing a sealed walking and cycling path between Franklin Parade and the Bluff Jetty.

Recommendation 18

Adopt recommendations in RAA's *June 2021 Encounter Bikeway Assessment*, which include a long-term objective of providing a continuous off-road shared path between Goolwa and Victor Harbor, and several shorter-term safety and wayfinding improvements.

Other roads assessed

Hindmarsh Island

Several issues were raised by survey respondents specifically relating to transport infrastructure on Hindmarsh Island.

Firstly, Randell Road was raised several times for maintenance issues including potholes and deteriorating road edges which are causing hazards, especially for cyclists, with the below comments received in the community survey.

“Dangerous and unsafe (potholes, poor edges of road, cyclist use and too narrow. Needs immediate attention OR there will be many fatalities.”

“80km/h speed zone just over the bridge needs to be changed to 60km/h until clear of the intersecting roads to the Marina.”

RAA reviewed Randell Road as part of this assessment and concluded that shoulder sealing along Randell Road should be undertaken to improve safety. Shoulders are currently sealed between the Hindmarsh Island Bridge and Tolarno Drive, with localised widening at the Excelsior Parade and Monument Road intersections. Initially shoulders should be sealed at least through to Barker Road, and in the longer term along the route to the Murray Mouth Lookout at Sugars Beach via Semaschko Road, Bongalong Road and Murray Mouth Road.

Recommendation 19A

Seal shoulders on Randell Road from Tolarno Drive through to Barker Road, and through to Semaschko Road, and on Semaschko Road, Bongalong Road and Murray Mouth Road in the longer term.

RAA considers the current 80km/h speed limit appropriate given the existing level of roadside development, however, this may need to be reviewed in future.

The most frequently raised issue by survey respondents on Hindmarsh Island concerned a lack of suitable pedestrian infrastructure, as highlighted by the comments below.

“Captain Sturt Road is getting busier with more subdivisions no footpaths.”

“Particularly in the Marina on Hindmarsh Island - the lack of footpaths means walking on roads which carry a lot of traffic.”

“Most streets on Hindmarsh Island have no footpath.”

“No footpath - have to walk on roads or stumble through the verge.”

There is a shared path linking Goolwa and Hindmarsh Island, however, this path terminates abruptly where it meets Tolarno Drive. Whilst a path exists on the opposite side of Tolarno Drive, this is not connected to the road, and is raised, behind vegetation so not clearly visible from the other side of the road. There is an opportunity to upgrade this path adjacent to Tolarno Drive which will provide a continuous off-road link between Goolwa and the Hindmarsh Island Marina.

Footpaths were not included in the initial development of Coorong Quays, and many verges currently operate to collect rainwater runoff from the adjacent road. Without footpaths, the only means of transport around the island for many residents is by motor vehicle or boat, with active transport options limited to the paths around the marina or on-road.

RAA has subsequently reviewed the local road network on Hindmarsh Island and concluded that provision of footpaths or shared paths should be considered along local collector roads including Excelsior Parade, Providence Place, Blanche Parade and Princess Royal Parade. RAA understands that there are some challenges to this including driveway crossovers, drainage and runoff. Alexandrina Council should seek funding contributions from state government, given that footpaths were initially left out of urban planning under the control of State Government (since the project had major development status).

On the northern shore of the island, a footpath or shared path should be considered along the length of Captain Sturt Parade and Batson Parade in the longer term.

Recommendation 19B

Improve walkability on Hindmarsh Island by upgrading the Tolarno Drive footpath and constructing footpaths along Excelsior Parade, Providence Place and Princess Royal Parade which should provide a continuous link to the Tolarno Drive footpath and subsequently, Goolwa. Footpaths or shared paths should also be considered for Captain Sturt Parade and Batson Parade.

Callington Road

Callington Road is a state maintained arterial road extending for 20km between Strathalbyn and the Callington Interchange of the South Eastern Freeway, via Woodchester. The route carries 2,400 vehicles per day between Strathalbyn and Woodchester, and 2,200 vehicles per day between Woodchester and Callington, with heavy vehicles making up 13% - 17% of this traffic. The road is gazetted for b-double and 30m road train use and provides a critical freight link to the Langhorne Creek wine region as well as the greater Fleurieu Peninsula region.

Between 2016 and 2020, 12 casualty crashes occurred on Callington Road, with the most common crash type involving a collision with a fixed object.

Table 68: Callington Road casualty crash types (2016-2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	5	2	3	0
Right Angle	2	2	0	0
Roll Over	2	1	1	0
Rear End	1	1	0	0
Head On	1	1	0	0
Left Road - Out of Control	1	1	0	0
Total	12	8	4	0

Cars were the predominant vehicle type involved in crashes on Callington Road between 2016 and 2020. Two single vehicle truck crashes occurred, one involving a b-double colliding with a tree and another involving a semi-trailer rolling over.

Table 69: Vehicles involved in crashes on Callington Road

Unit type	Approximate number of units
Car	13 (81%)
Truck	2 (13%)
Bicycle	1 (6%)

The road is generally constructed to a good cross-sectional width with minimum 1m wide sealed shoulders and 3.3m wide lanes provided. There are several pinch points across bridges and culverts between Woodchester and Callington, which should be considered for widening in future.

Recommendation 20A

Consider bridge and culvert widening works on Callington Road between Woodchester and Callington.

The pavement condition between Strathalbyn and the 6-way intersection with Heinjus Road and Prizibilla Road is relatively poor, with undulations present, and the pavement breaking up where the previous shoulder sealing work joins the pavement. RAA suggests that localised pavement rehabilitation be undertaken between Strathalbyn and Heinjus Road, with consideration of a full reseal.

Recommendation 20B

Undertake localised rehabilitation works on Callington Road between Strathalbyn and Heinjus Road, with consideration of a full reseal for this section.

Overtaking opportunities occur relatively frequently along the corridor, however moderate traffic volumes can make it difficult to safely overtake. Further traffic growth along the route should be monitored and the provision of two overtaking lanes considered to allow a safe overtaking opportunity in each direction.

Recommendation 20C

Monitor traffic volumes on Callington Road and consider installing two overtaking lanes.

Roadside hazard protection is present along the corridor, and a three-metre-wide clear zone is generally well maintained. However, additional barrier protection is still needed to reduce the likelihood of serious crashes involving fixed objects on the roadside.

Recommendation 20D

Install additional crash barriers on Callington Road.



Figure 77: Typical cross-section of Callington Road

Range Road

Range Road is a council maintained regional arterial road extending for 42km between Main South Road in Delamere and Victor Harbor. The western end of the road is under the care and control of Yankalilla District Council, whilst the eastern end is under the care and control of the City of Victor Harbor Council. Range Road is the primary link between Victor Harbor and Cape Jervis and the southern Fleurieu Peninsula including popular tourist destinations such as Deep Creek Conservation Park.

Between 2016 and 2020, 11 casualty crashes occurred along the length of Range Road, with seven of these involving a collision with a fixed object. In six of these cases, the fixed object was a tree, and in the seventh it was a stobie pole.

Table 70: Range Road casualty crash types (2016-2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	7	5	2	0
Right Angle	1	1	0	0
Rear End	1	1	0	0
Head On	1	0	1	0
Other	1	1	0	0
Total	11	8	3	0

Survey respondents were concerned about poorly maintained sections of the road, with potholes and a lack of recent maintenance causing frustration. At the time of RAA's assessment of the corridor, the road surface in the section under the control of Yankalilla District Council was mostly good, with recent *Roads to Recovery* funding providing a smooth surface, although a short section of the road, just west of Parawa requires pavement rehabilitation works. The section under the care and control of City of Victor Harbor Council was notably bumpier even though pothole repairs and unsealed shoulder grading had been recently undertaken.

Recommendation 21A

Undertake localised pavement rehabilitation or resealing works just west of Parawa.

Narrow (0.5m) sealed shoulders are provided in the section under the control of Yankalilla District Council, and these are not continued through the section under the control of City of Victor Harbor Council, which is leading to an increased frequency of edge break up and drop off along this section.



Figure 78: Edge break up on the eastern end of Range Road

Given the importance of Range Road as a cross regional arterial corridor serving an important function for freight and tourism, City of Victor Harbor council should apply for state government funding to improve safety on their section of the road, which should include shoulder sealing, pavement rehabilitation and barrier protection.

Recommendation 21B

Seal shoulders and undertake pavement rehabilitation works on the eastern end of Range Road.

Roadside barriers are scarce along Range Road, with roadside hazards mostly in the form of trees present for most of the roads running distance. Additional barrier protection should be gradually installed along the corridor to mitigate the high percentage of crashes involving roadside hazards.

Recommendation 21C

Install additional roadside barriers along Range Road to mitigate the high percentage of crashes involving roadside hazards.

Hindmarsh Tiers Road

Hindmarsh Tiers Road is a state maintained arterial road extending for 21km between Pages Flat Road in Myponga and Victor Harbor Road in Hindmarsh Valley. The road is traversed by an average of 1,100 vehicles per day, of which 7.5% are heavy vehicles. Hindmarsh Tiers Road is not a gazetted b-double route and the largest vehicles that generally take the route are articulated semi-trailers.

The route was raised by Fleurieu Peninsula community survey respondents for sections of uneven surface and poor intersection sight distance, particularly at the intersection with Victor Harbor Road in Hindmarsh Valley where the vertical alignment of Victor Harbor Road hinders visibility.

Hindmarsh Tiers Road has 1m wide sealed shoulders for the length of the corridor, and lane widths are approximately 3.2m wide.

Between 2016 and 2020, 16 casualty crashes occurred on Hindmarsh Tiers Road, including five at the intersection with Victor Harbor Road, which gives the road a moderate casualty crash rate of 38.2 casualty crashes per 100m vehicle kilometres travelled.

Table 71: Hindmarsh Tiers Road casualty crash types (2016-2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	6	4	2	0
Right Angle	5	4	1	0
Roll Over	2	2	0	0
Hit Animal	2	2	0	0
Rear End	1	1	0	0
Total	16	13	3	0

Cars are the primary units involved in crashes on Hindmarsh Tiers Road. The motorcycle and bicycle crashes were both single driver/rider crashes involving the rider rolling over.

Table 72: Vehicles involved in crashes on Hindmarsh Tiers Road

Unit type	Approximate number of units
Car	20 (91%)
Motorcycle	1 (4.5%)
Bicycle	1 (4.5%)

The five crashes at the intersection with Victor Harbor Road involved vehicles entering Victor Harbor Road from Hindmarsh Tiers Road and failing to give way to a northbound vehicle continuing straight through the intersection on Victor Harbor Road. One of these crashes involved a vehicle making a left turn, and the remaining four involved vehicles making right turns. Tragically in 2021, a person lost their life in a crash in similar circumstances.

RAA reviewed this intersection as part of our 2021 Victor Harbor Road Highway Assessment²⁰, where a roundabout was the recommended treatment to improve safety. RAA's preference is still to

²⁰ RAA, 2021, Highway Assessment: Victor Harbor Road 2021, accessed at <www.raa.com.au/roadassessments>.

construct a roundabout at this location due to the increasing trend in serious crashes occurring here. Lower cost treatments that may be considered include a speed limit reduction or installation of a rural junction active warning system (RJAWS).

Recommendation 22A

Install a roundabout at the intersection with Hindmarsh Tiers Road and Victor Harbor Road.

The pavement condition on Hindmarsh Tiers Road is generally fairly poor, with vibrations and undulations in the surface often due to tree roots. RAA recommends that localised resurfacing be undertaken along the length of the corridor to reduce surface roughness.

Recommendation 22B

Undertake localised resurfacing works along the length of Hindmarsh Tiers Road to reduce surface roughness.

Whilst barriers are used along the corridor, roadside vegetation is still the most significant hazard along the length of the road. Large gum trees line the edges of the road and are often unprotected and within 1m of the edge lines. The eastern end of the Road in Hindmarsh Valley has the highest frequency of exposed hazards.

Recommendation 22C

Install additional roadside crash barriers along the length of Hindmarsh Tiers Road, particularly in Hindmarsh Valley.



Figure 79: Large gum trees line the edges of Hindmarsh Tiers Road constitute a significant hazard

On the northwestern end, Hindmarsh Tiers Road terminates at the intersection with Pages Flat Road. A W2-3 'T-intersection, straight approach' warning sign and large red G-9-9 'REDUCE SPEED' signs are used on the approach in combination with several unidirectional hazard markers opposite the terminating leg. This delineation is generally considered appropriate as sight distance to the intersection when travelling on Hindmarsh Tiers Road is good. There is a slight dip in vertical alignment when approaching the intersection, which may reduce the effectiveness of vehicle headlights in illuminating the hazard markers, and street lighting should be considered.

Furthermore, given that there are a moderate number of right turn movements from Pages Flat Road onto Hindmarsh Tiers Road, a channelised right turn lane should be installed. This would allow northeast bound vehicles on Pages Flat Road to pass a right turning vehicle safely, as the current sight distance to the rear of a vehicle turning right is somewhat limited by the horizontal road alignment of Pages Flat Road and vegetation on the inside of the curve.

Sight distance from Hindmarsh Tiers Road is also compromised by the horizontal geometry of Pages Flat Road, which it meets on a high radius, high speed S bend.

The speed limit on Pages Flat Road is 100km/h through the intersection with Hindmarsh Tiers Road and continues to the intersection with Main South Road, where an 80km/h limit applies. Given that there are three intersections and at least five property access points in the last 1.5km of Hindmarsh Tiers Road, RAA considers that extending the 80km/h zone on Pages Flat Road would be an appropriate short-term safety improvement, given that the intersection does not have any recent history of casualty crashes.

Recommendation 22D

At the intersection with Pages Flat Road and Hindmarsh Tiers Road, install street lighting and a right turn lane from Pages Flat Road onto Hindmarsh Tiers Road. In the short term, an 80km/h speed limit on Pages Flat Road between Hindmarsh Tiers Road and Main South Road could be implemented as a low-cost safety improvement.

Brookman Road

Brookman Road is a state-maintained road extending for 20km between Dashwood Gully Road in Meadows and Old Willunga Hill Road in Willunga. Brookman Road carries between 2,200 and 2,500 vehicles per day, consisting of 9% heavy vehicles. At the Willunga end, the road traverses rolling terrain with a curving alignment, however, about two thirds of the road follows a relatively straight alignment.

Brookman Road was not frequently raised in the Fleurieu Peninsula community survey. However, RAA reviewed the corridor en-route to other destinations in the region, due to its relatively poor crash history.

Between 2016 and 2020, half of all casualty crashes involved collisions with fixed objects, and 80% of the time the object was a tree. Tragically, two of these crashes resulted in fatalities.

Table 73: Brookman Road casualty crash types

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	11	8	1	2
Right Angle	4	3	1	0
Rear End	3	1	2	0
Head On	2	1	1	0
Side Swipe	1	0	1	0
Right Turn	1	1	0	0
Total	22	14	6	2

Cars were the primary unit involved in crashes over the 2016-2020 period.

Table 74: Vehicles involved in crashes on Brookman Road

Unit type	Approximate number of units
Car	33 (89%)
Motorcycle	2 (5%)
Bicycle	1 (3%)
Other defined special vehicle	1 (3%)

Between 2017 and 2019, \$1.4m was spent on shoulder sealing along the length of Brookman Road, which has resulted in a vastly improved cross section and improves safety along the road.

The most significant hazard on Brookman Road is the unforgiving roadside, with large trees lining the corridor. Whilst roadside barriers are used in isolated locations, further investment in barrier treatments is required to bring the road to a higher safety standard and reduce the likelihood of high severity crashes involving trees occurring.

Recommendation 23

Install additional safety barriers on Brookman Road.

Paris Creek Road

Paris Creek Road is a state-maintained road extending for 14km between Strathalbyn and Bull Creek Road in Meadows. The road is traversed by 1,500 vehicles per day, of which 9.5% are heavy vehicles. The road is also a popular motorcycling touring route due to its challenging curvilinear geometry.

The topics most frequently raised by Fleurieu Peninsula community survey respondents were the intersection with Bull Creek Road, motorcyclist behaviour, and the 80km/h speed limit. Respondents raising the Bull Creek Road intersection did so due to the poor sight distance, whilst several non-motorcyclist respondents mentioned excessive speeding by motorcycles and roadside barriers that do not offer any safety for motorcyclists. A number of responses also suggested that the 80km/h speed limit should be raised to 90km/h or 100km/h.

Between 2016 and 2020, 11 casualty crashes occurred on Paris Creek Road, with three of these occurring at the intersection with Bull Creek Road.

Table 75: Paris Creek Road casualty crash types

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	6	5	1	0
Right Angle	2	1	1	0
Roll Over	1	0	1	0
Hit Animal	1	0	1	0
Rear End	1	1	0	0
Total	11	7	4	0

Between 2016 and 2020, cars made up the majority of units involved in casualty crashes on Paris Creek Road.

Table 76: Vehicles involved in crashes on Paris Creek Road

Unit type	Approximate number of units
Car	13 (93%)
Motorcycle	1 (7%)

The intersection with Bull Creek Road has been a longstanding safety issue with the local community, and it was nominated as the state's sixth riskiest intersection during RAA's 2017 Risky Roads²¹ campaign. In late 2018, a rural junction active warning system (RJAWS) was installed at the intersection, which lowers the speed on Bull Creek Road to 50km/h when a vehicle approaches the intersection on Paris Creek Road. An analysis of crash data to the end of 2020 highlights that there have been no casualty crashes at the intersection since the system was installed, with three casualty crashes occurring in the 12 months prior to its installation. RAA supports the installation of RJAWS at geographically constrained locations and will continue to monitor the effectiveness of this treatment at this and other locations across the state.

²¹ RAA, 2019, *Risky Roads: 2019 Survey results*, pg.5 2017 results summary, accessed at <www.raa.com.au/riskyroads>.

Lane widths on Paris Creek Road are relatively narrow for the 6km section between Bull Creek Road and the Paris Creek Farms facility, and shoulder sealing is minimal in parts, but mostly not existing. Installing 1m wide sealed shoulders on this section should be prioritised to improve safety.

Recommendation 24A

Install 1m wide sealed shoulders on Paris Creek Road between Bull Creek Road and Vivian Road.

Roadside vegetation is dense, and motorcycle friendly crash barriers are provided relatively well along the corridor. However, there are still many locations where the roadside is unforgiving, and trees and embankments can increase the seriousness of crashes occurring. Further barrier protection incorporating motorcycle underrun protection should be installed along the corridor, particularly between Bull Creek Road and Shadygrove Road where there is currently no protection.

Recommendation 24B

Install additional motorcycle friendly safety barriers on Paris Creek Road.

Bull Creek Road

Bull Creek Road is a state maintained sub-arterial road extending for 28km between Mawson Road in Meadows and Alexandrina Road in Currency Creek. The speed limit between Macclesfield and Ashbourne is 80km/h, with a 60km/h limit imposed through Ashbourne. South of Ashbourne, the speed limit is 100km/h.

From a road infrastructure perspective, Bull Creek Road was not highly raised in the Fleurieu Peninsula community survey. However, it was nominated highly from a motorcycling perspective by non-motorcyclists and attracted the third highest total number of motorcycle nominations. These nominations centred around poor rider behaviour, with a summary of typical nominations below.

“Many corners, poor visibility and the attraction of hoon weekend motorcyclists.”

“The main issue with motorcycles (and other vehicles for that matter) often come over the other side of the road when taking the "racing line" through the corners. In most cases they are not even going over the speed limit, just too lazy to remain safely on their side of the road.”

“Motor cyclists use this as a test of their ability to corner at dangerously high speeds especially on Sunday mornings.”

Generally, Bull Creek Road is winding and relatively narrow, typical of many roads in the Adelaide Hills and Fleurieu Peninsula. Between Meadows and Ashbourne, narrow sealed shoulders are provided where possible, with one metre shoulders provided south of Ashbourne where the landscape is more accommodating. Whilst road and shoulder widening would be a desirable outcome on Bull Creek Road, the cost of this work is likely to be prohibitive and could have more demonstrable road safety benefits if invested in other safety upgrades to the road network.

Single vehicle run off road crashes were the most prevalent crash type on Bull Creek Road between 2016 and 2020, making up 70% of casualty crashes occurring on the corridor. Concerningly, more than half of all casualty crashes resulted in serious injuries, highlighting the unforgiving nature of the roadside.

Table 77: Bull Creek Road casualty crash types (2016 – 2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	9	5	4	0
Roll Over	5	1	4	0
Right Angle	4	1	3	0
Head On	1	1	0	0
Other	1	1	0	0
Total	20	9	11	0

Whilst cars were the predominant unit involved in casualty crashes on Bull Creek Road between 2016 and 2020, motorcycle representation in crashes was far higher than average for the Fleurieu Peninsula region with motorcycles making up 31% of units involved in crashes and involved in 40% of all crashes.

Table 78: Vehicles involved in crashes on Bull Creek Road (2016 – 2020)

Unit type	Approximate number of units
Car	17 (65%)
Motorcycle	8 (31%)
Bicycle	1 (4%)

Centreline audio tactile line marking (ATLM) has been effective at improving rider behaviour and cornering lines in a recent trial on Gorge Road in the Adelaide Hills, and RAA recommends that ATLM be installed on the centreline of Bull Creek Road to reduce the likelihood of riders and drivers crossing the centre line.

Recommendation 25A

Install centreline ATLM on Bull Creek Road to improve rider and driver cornering lines and reduce the occurrences of vehicles crossing the centreline.

The section between Meadows and Ashbourne saw the highest number of casualty crashes, with 70% of casualty crashes occurring on this section (including three crashes at the Paris Creek Road intersection).

Unsurprisingly, given the winding nature of the road, three quarters of crashes occurred on curves.

Bull Creek Road is typically rated one or two stars, with some short three-star sections. The section pictured in Figure 80 below is an example of a high two star rated section north of Ashbourne in the 80km/h zone, which could be improved to three stars by widening the lanes and shoulder or introducing additional barrier protection on the passenger side of the road. These treatments would be costly due to the need to excavate the embankment to widen the road or provide enough clearance behind the barrier for horizontal deflection. For comparison to the section south of Ashbourne, this section would be rated one star if it were in the 100km/h zone.

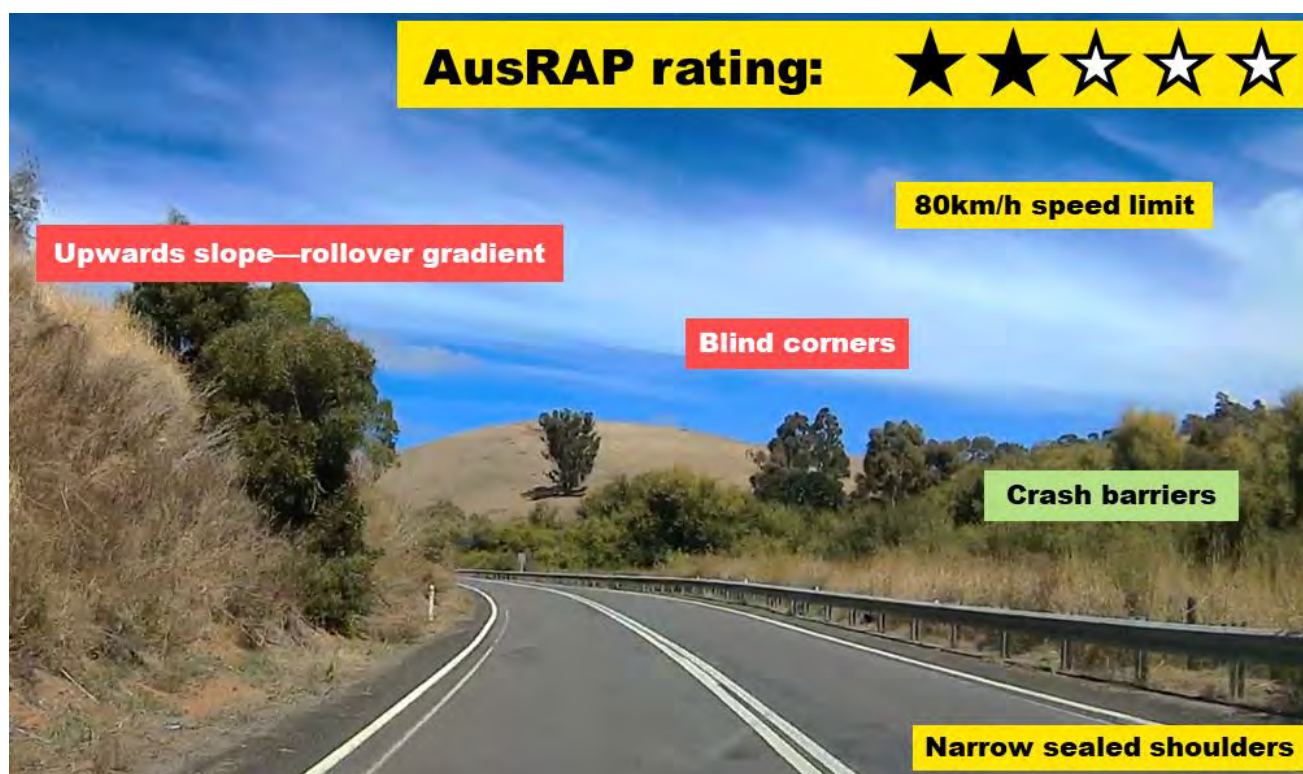


Figure 80: Typical AusRAP star rating on Bull Creek Road

Whilst barriers are used widely along Bull Creek Road, their use can sometimes seem sporadic, with long road segments including barrier protection broken up by equivalent road sections that lack barriers. Roadside hazards, including trees and stobie poles, are therefore regularly exposed on the roadside – often on curves. Many of the existing barriers include motorcycle underrun protection, which is a critical feature of barriers on popular motorcycling routes.



Figure 81: Large exposed trees on the outside of curves present a significant road safety risk on Bull Creek Road

Recommendation 25B

Install additional roadside barriers with motorcycle underrun protection to prevent crashes with trees and stobie poles on Bull Creek Road.

The Y-intersection with Paris Creek Road, south of Meadows was raised by several survey respondents, with this discussion included in the Paris Creek Road section of this report.

Pages Flat Road

Pages Flat Road is a state maintained arterial road extending for 13.5km between Main South Road in Myponga and Victor Harbor Road between Willunga and Mount Compass. The road is traversed by an average of 1,000 vehicles per day, of which 14% are heavy vehicles including a small number of b-doubles as the route is a gazetted 23m b-double route.

Pages Flat Road was not highly raised by Fleurieu Peninsula community survey respondents; however, it was reviewed by RAA en-route to other destinations whilst in the region.

Between 2016 and 2020, 13 casualty crashes occurred on Pages Flat Road, which gives it a relatively high casualty crash rate of 47 casualty crashes per million vehicle kilometres travelled on the road.

Table 79: Pages Flat Road casualty crash types (2016-2020)

Crash type	Number of casualty crashes	Crash severity		
		Minor	Serious	Fatal
Hit Fixed Object	3	1	1	1
Roll Over	3	2	1	0
Right Angle	3	2	1	0
Head On	2	1	1	0
Right Turn	1	1	0	0
Hit Object on Road	1	0	1	0
Total	13	7	5	1

Cars were the primary unit involved in casualty crashes on Pages Flat Road between 2016 and 2020.

Table 80: Vehicles involved in crashes on Pages Flat Road (2016-2020)

Unit type	Approximate number of units
Car	20 (95%)
Motorcycle	1 (5%)

Four of these crashes occurred at the intersection with Main South Road, just outside of the Myponga township. The current intersection alignment creates an unnecessarily high number of conflict points, and the layout can be confusing for those unfamiliar with it. This intersection was discussed in the section about Main South Road, and RAA recommends that a roundabout be installed at this location.

Pages Flat Road traverses rolling terrain with gradual curves and crests situated consistently along its length, which makes overtaking opportunities scarce. The cross-sectional sealed width measured is approximately 9m, which consists of 3.3m wide lanes and 1.2m wide sealed shoulders. The pavement is in relatively good condition, with moderate rutting present up to 20mm deep in the wheel paths which should be monitored for future remediation works.



Figure 82: Rut depth on Pages Flat Road

In 2017, \$2.25 million was invested in 13km of shoulder sealing and in 2020, \$177,000 was invested in roadside barriers and hazard removal under the federal government's *Black Spot Program*. These works have made a notable improvement to safety and star rating along sections of the corridor. However, it was noted that exposed roadside hazards are still prominent in the roadside, and additional barrier protection will be needed over time in order to achieve a three-star AusRAP safety rating.

In 2021, a further \$1.0 million towards safety barriers, surface treatment and audio tactile edge and centrelines was announced in joint 80:20 funding between the federal and state governments as part of the *National Road Safety Program*.

Recommendation 26

Install additional safety barriers on Pages Flat Road to protect against fixed roadside hazards and achieve a three-star AusRAP safety rating.

The intersection with Hindmarsh Tiers Road was discussed in the section on Hindmarsh Tiers Road, where street lighting and a channelised right turn lane were recommended at the intersection. A lower cost short-term suggested treatment is reducing the speed to 80km/h for the 1.5km of Pages Flat Road between Hindmarsh Tiers Road and Main South Road where there are three intersections and at least six property access points.

Langhorne Creek Road (Strathalbyn – Langhorne Creek)

Langhorne Creek Road is an arterial road under the care and control of the state government, which extends for 48km between Strathalbyn and Wellington on the Murray River. Langhorne Creek Road was not raised highly in the Fleurieu Peninsula community survey, yet several comments were received mentioning undulations in the road. The 13km section of Langhorne Creek Road between Strathalbyn and Langhorne Creek was reviewed by RAA as it is a key corridor for tourism, as the primary access between Strathalbyn and the Langhorne Creek wine region.

The 4.5km section between Strathalbyn and Milang Road carries approximately 1,900 vehicles every day, and the 8.5km section between Milang Road and Langhorne Creek carries approximately 1,300 vehicles per day. Commercial vehicles make up 9% of traffic, and the route is a gazetted PBS 2B route between Strathalbyn and Langhorne Creek, meaning road trains up to 30m long can use the route.

The speed limit is mostly 100km/h, with an 80km/h limit in Belvidere extending for 2.5km between Belvidere Winery and the Oasis Gardens Restaurant and Function Centre. This reduced speed limit is justified, given that the road alignment consists of several curves, and there are four side roads, three venues and several residential access points along the length.

Between 2016 and 2020, three casualty crashes occurred between Strathalbyn and Langhorne Creek. Two of these were single vehicle crashes involving a fixed object, whilst the third was a right-angle crash at the intersection with Willyaroo Road.

This section of Langhorne Creek Road is built to a good geometric standard, with 3.3m wide lanes and 1m wide sealed shoulders.

Langhorne Creek Road is typically rated three stars under AusRAP star rating protocols, largely due to its good geometry and relatively well maintained 5m clear zone. Curves, intersections, and areas where hazards are within 5m of the road are more likely to be rated two stars.

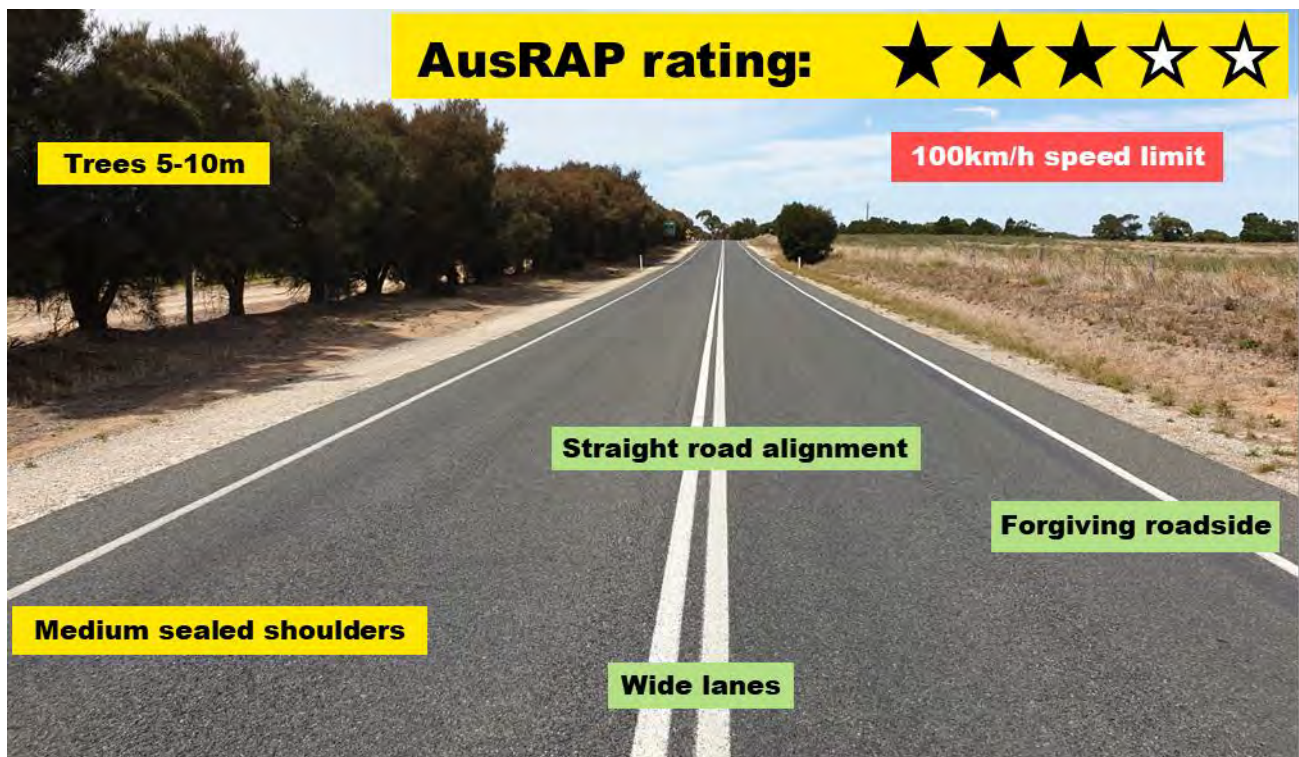


Figure 83: Typical AusRAP star rating on Langhorne Creek Road

RAA observed significant undulations on sections of Langhorne Creek Road between Strathalbyn and Langhorne Creek, which causes discomfort to vehicle occupants, and may impact vehicle stability – especially for motorcycles and heavy vehicles. RAA recommends that localised pavement reconstruction be undertaken to repair undulations.

Recommendation 27

Undertake localised pavement reconstruction to repair undulations on Langhorne Creek Road between Strathalbyn and Langhorne Creek.

Strathalbyn Road

Strathalbyn Road was raised by a number of Fleurieu Peninsula community survey responses, however, this corridor was reviewed by RAA in our *2020 Adelaide Hills Regional Road Assessment*²².

RAA's key recommendations for Strathalbyn Road are based on the findings of the *2020 Adelaide Hills Regional Road Assessment*, and are as follows:

Recommendation 28A

Install centre line ATLM along Strathalbyn Road between Flaxley and Strathalbyn to deter motorcycle riders from crossing the centre line in this high-risk location.

Recommendation 28B

Seal shoulders to 1m wide on Strathalbyn Road (0.5m minimum where environment is constrained)

Recommendation 28C

Install '50 AHEAD' signage on each approach to Macclesfield, and other townships if speed limit consolidation takes place along Strathalbyn Road.

Recommendation 28D

Install additional motorcycle friendly barriers on Strathalbyn Road.

²² RAA, 2020, Regional Road Assessment: Adelaide Hills 2020, accessed at <www.raa.com.au/roadassessments>.

Tourism Assessments

Main Street tourism assessments

General and common strengths and issues across the region

RAA assessed the main streets in seven townships across the Fleurieu Peninsula, focussing on issues that typically affect tourists visiting the areas. The tourism improvements most consistently identified by survey respondents for these townships related to car parking and large vehicle parking.

Through our main street tourism assessments, RAA observed a few consistent strengths across several Fleurieu townships including architecturally attractive buildings; a good selection of bakeries and cafés; nearby public reserves; well-signed public toilets. RAA also observed some excellent examples of pedestrian-friendly infrastructure (including wayfinding, wide footpaths and safe crossings), smart city solutions (including electric vehicle charging and solar powered lighting) and public recycling bins.

RAA observed some consistent areas across the region where there is an opportunity to improve the visitor experience in townships, including: greater use of time restricted parking bays during daytime hours to provide visitors with better access to shops and services; designated parking for large vehicles; further improving walking and cycling infrastructure (e.g. wayfinding, crossings, cycle lanes, cycle parking); greater provision of segregated recycling and non-recycling public bins; and installing signage to electric vehicle charging points once a national design is agreed upon.

Recommendation 29A

Review parking restrictions in Fleurieu townships to give greater priority to short-term access to support shops and services that rely on high customer turnover.

Recommendation 29B

Provide well signed and readily accessible parking to accommodate short-term parking for large recreational vehicles

Recommendation 29C

Encourage visitors to explore Fleurieu townships on foot through further enhancing pedestrian infrastructure including wayfinding, safe crossings, landscaping and improved pedestrian connectivity with nearby attractions

Recommendation 29D

Promote more sustainable tourism in Fleurieu townships through smart solutions including public recycling bins, solar powered lighting and well-signposted electric vehicle charging infrastructure

Strathalbyn

Strathalbyn is a town of over 5,000 people located on the Angas River in the northern part of Alexandrina Council. There are retail precincts on Dawson Street and High Street, located on either side of the Angas River. The Visitor Information Centre is located on South Terrace, which is an arterial route through the town. All three of these streets were visited as part of Strathalbyn's main street tourism assessment.

Strathalbyn was identified 25 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the third most nominated location in the region. The most common improvements identified for Strathalbyn related to:

- Car parking – respondents felt there is a need for more parking and were opposed to parking bays being turned into eating areas
- Large vehicle parking – respondents felt there is a need for designated parking for large vehicles such as caravans and coaches
- Tourism signage – respondents wanted more directional and distance signage to nearby tourist destinations

Through the main street tourism assessment, RAA observed several strengths with Strathalbyn from a visitor perspective:

- There are many architecturally attractive buildings on Dawson Street and High Street and a range of antique and craft shops that encourage walking
- There are many architecturally attractive buildings on Dawson Street and High Street and a range of antique and craft shops that encourage walking
- The main retail precincts of Dawson Street and High Street are not on arterial routes, meaning traffic volumes and heavy vehicle traffic is relatively low
- The Angas River and Soldiers Memorial Gardens provide public reserves located very close to the main shopping precincts
- Dawson Street and High Street have wide, sheltered footpaths
- There are multiple well-signed public toilets, with facilities on each of Dawson Street, High Street and South Terrace
- Pedestrian wayfinding signs and town welcome signage provide assistance in navigating around town
- There is free Wi-Fi available, as advertised on Dawson Street



Figure 84: Strathalbyn has well-signed public toilets and visitor-friendly pedestrian wayfinding signs

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Strathalbyn, including:

- Providing additional time restricted parking bays during daytime hours to provide visitors with better access to shops and services
- Providing additional time restricted parking bays during daytime hours to provide visitors with better access to shops and services
- Installing signage to assist visitors in locating electric vehicle charging points (once a nationally consistent design is agreed upon) and large vehicle parking bays at the Visitor Information Centre, similar to signage currently directing visitors to toilets
- Restricting some parking areas at the Visitor Information Centre to large vehicles only to provide a readily accessible location
- Installing bike rails on Dawson Street, High Street and at the Visitor Information Centre to provide parking for bicycles
- Implementing a 40km/h speed limit to improve ambience and safety. The Dawson Street and High Street shopping precincts currently have 50km/h speed limits in place, despite primarily providing access functions and having high pedestrian volumes. In the case of High Street, this could be implemented by extending the 40km/h wombat crossing speed limit already in place between Rowe Street and Russell Street
- Installing additional pedestrian infrastructure to assist with crossing the road. For example, an additional pedestrian refuge on South Terrace between Dawson Street and West Terrace and a refuge on Dawson Street at the intersection with South Terrace

- Replacing Regional Waste Authority wheelie bins with more sanitary and attractive council waste and recycling street bins
- Providing clearer information at the South Terrace bus stop, including timetable information and simpler bus zone operating hours



Figure 85: Parking bays at Strathalbyn's Visitor Information Centre are suitable for large vehicles but are neither signposted nor restricted to large vehicles only

In March 2021 Alexandrina Council secured \$3.85 million grant funding from the State Government's Local Government Infrastructure Partnership Program to revitalise Strathalbyn's town centre²³. This presents an opportunity to ensure that the identified improvements are implemented.

²³Alexandrina Council, 2021, *Strathalbyn Town Centre Revitalisation*, accessed at <https://www.alexandrina.sa.gov.au/live/projects/strathalbyn-town-centre-revitalisation>.

Goolwa

Goolwa is a coastal town of over 7,000 people located on the Murray River in the southern part of the Alexandrina council area. The main retail precinct is on Cadell Street, which is also the arterial route through the town. Goolwa's main street tourism assessment was focused solely on Cadell Street.

Goolwa was identified 20 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the fifth most nominated location in the region. The most common improvements identified for Goolwa related to:

- Public transport – respondents wanted a bus service for the local area
- Car parking – respondents felt there is a need for more parking, including more off-street parking

During the main street tourism assessment, RAA observed that visitors to Goolwa currently enjoy the following features:

- There are several architecturally attractive buildings on Cadell Street and various cafés/bakeries
- The riverfront provides public reserves located close to the main retail precinct
- Cadell Street has wide footpaths with lot of bench seating on both sides of the road
- There are multiple well-signed public toilets
- Parking on Cadell Street is typically restricted to two hours during daytime hours, which maximises availability, and there is signage to parking off the main street
- Bicycle parking is available at a few locations, including outside the council offices



Figure 86: There is lots of public seating provided on Cadell Street

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Goolwa, including:

- Installing signage to assist visitors in locating electric vehicle charging points at the Visitor Information Centre and large vehicle parking bays near Goolwa Wharf
- Considering installation of a pedestrian actuated crossing or zebra crossing between Dawson Street and Crocker Street. While there are several pedestrian refuges to assist with crossing the road, Cadell Street is a busy arterial route with a relatively high-speed limit (50 km/h)
- Replacing Regional Waste Authority wheelie bins with more sanitary and attractive council waste and recycling street bins
- Providing a more centrally located bus stop in each direction (with a bus shelter and timetable), which would particularly for people with limited mobility. LinkSA bus services to and from Victor Harbor and Adelaide can be accessed via a bus stop on Cadell Street between Moore Street and Gardiner Street, but this is quite far north of the main retail precinct
- Unlike other towns in the region, no signs were seen advertising free public Wi-Fi
- Installing pedestrian wayfinding information to guide visitors to nearby attractions such as the Goolwa Wharf area and the museum
- Improving cycle and pedestrian connectivity between the Encounter Bikeway/Goolwa Wharf Precinct and Cadell Street via Cutting Road by constructing a shared path adjacent to Cutting Road



Figure 87: Public bins on Cadell Street cannot be used hands-free and do not offer recycling options

In May 2021, RAA provided comment on the Goolwa Wharf Precinct Revitalisation Project, as part of the stakeholder engagement stage of the project. This project is long-awaited by the Alexandrina community and the \$7.5 million project plans to deliver the following upgrades²⁴:

- Redevelopment of the Goolwa Wharf Shed and Wharf
- Signal Point Regional Art and Cultural Centre
- Open air function space, shared paths, communal public areas and car park extension
- Improved wayfinding and public Wi-Fi

RAA submitted a letter of recommendations and sees this project as an opportunity to ensure that some of the identified improvements are implemented.

²⁴ https://www.alexandrina.sa.gov.au/__data/assets/pdf_file/0046/685999/Media-Release-Goolwa-Wharf-Precinct-Funding-Announcement-FINAL.pdf

Victor Harbor

Victor Harbor is the largest township in the Fleurieu Peninsula, with a population of over 15,000 people. It is located on the coast in the south-eastern corner of the City of Victor Harbor council area. There is a retail precinct covering Ocean Street and Albert Place, while Victor Central Shopping Centre is located on the opposite side of Torrens Street, which is an arterial route through Victor Harbor.

The Visitor Information Centre is currently in a temporary location on Coral Street. Several streets were visited as part of our Victor Harbor main street tourism assessment, including Ocean Street, Albert Place, Esplanade, Coral Street, Stuart Street and Torrens Street.

Reflective of its size, Victor Harbor was identified 49 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the most nominated location in the region. The most common improvements identified for Victor Harbor related to:

- Large vehicle parking – respondents felt there is a lack of designated parking for large vehicles such as caravans and motorhomes close to the retail precincts
- Car parking – respondents felt there is a need for more parking and opposed having to pay for parking
- Public transport – respondents wanted better public transport around the local area and also better connections to Adelaide, with some calling for a train service

Through the main street tourism assessment, RAA observed several strengths with Victor Harbor from a visitor perspective:

- Ocean Street is a one-way, pedestrian-friendly street with wide footpaths, outdoor dining space, landscaping, plenty of shelter/shade, bicycle parking, low traffic volumes and a 40km/h speed limit
- Most of the streets between Torrens Street and the Granite Island Causeway carry low traffic volumes, with through traffic using Torrens Street
- While Torrens Street has high traffic volumes, it has a pedestrian actuated crossing that provides a safe pedestrian link between the shopping centre and other retail precincts
- In addition to Grosvenor Gardens, the esplanade and Granite Island provide public reserves located close to the main retail precincts
- There are a range of time limited street and shopping centre parking options, as well as paid parking options
- On-street public electric vehicle charging bays are very prominently marked
- Parking bays for large vehicles are provided on the Esplanade
- There is a centrally located taxi bay and bus stop on Stuart Street, with a shelter and service information at the bus stop
- Street bins with separate waste and recycling compartments are provided on Ocean Street
- There are multiple well-signed public toilets
- There is free Wi-Fi available, as advertised on the Esplanade



Figure 88: Ocean Street has wide footpaths, outdoor dining areas, landscaping, seating and a relatively low speed limit

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Victor Harbor, including:

- Installing road signage to assist visitors in locating electric vehicle charging points on Stuart Street and large vehicle parking bays on the Esplanade
- Establishing additional large vehicle parking bays
- Rolling out street bins with separate waste and recycling compartments seen on Ocean Street uniformly across the central area – currently there is inconsistency in the type and quality of bin provided
- Pedestrian wayfinding could be installed to guide visitors to nearby attractions such as Granite Island, the attractions around Warland Reserve and Victor Central Shopping Centre



Figure 89: Street bins in the centre of Victor Harbor vary widely in type and quality

In March 2021 City of Victor Harbor Council secured a \$3.3 million funding grant from the State Government's *Local Government Infrastructure Partnership Program* to continue the revitalisation of its main street precinct, including the transformation of the southern end of Ocean Street and Albert Place²⁵. This presents an opportunity to ensure that some of the identified improvements are implemented.

²⁵ City of Victor Harbor, 2021, *Funding accelerates transformation of Victor Harbor's Tourist hub*, accessed at <https://www.victor.sa.gov.au/notice-board/latest-news/funding-accelerates-transformation-of-victor-harbors-tourist-hub>.

Normanville

Normanville is the largest coastal town on the western coast of the Fleurieu Peninsula, with a population of over 2,000 people and is located within the Yankalilla District Council area.

The retail precinct is located on Main Road, just off Main South Rd, which is the main arterial route through the area. During the assessment, Cheesman Street, Andrew Avenue, Edwards Avenue and Jetty Road were also visited as part of Normanville's main street tourism assessment.

Normanville was identified 32 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the second most nominated township in the region. The most common improvements identified for Normanville related to:

- Normanville Jetty – respondents felt that the length and current state of the jetty required upgrading.
- Car parking – respondents felt there is a need for more parking, especially during peak season
- Large vehicle parking – respondents felt there is a need for designated parking for large vehicles such as caravans and coaches

Through the main street tourism assessment, RAA observed several strengths with Normanville from a visitor perspective:

- Bungala park offers a public reserve and is located close to the main shopping precinct, and also offers dedicated RV parking
- There are multiple well-signed public toilets on Edwards Avenue
- The numerous smart city solutions implemented throughout the town such as the electric vehicle parking station located at the public car park off Edwards Avenue, solar powered benches with wireless mobile charging capabilities and solar powered lighting
- Pedestrian wayfinding board located at the carpark on Jetty Road aids visitors in navigating around town
- Normanville's historic focus on being a coastal tourism town has shaped its main street to have a mix of building styles, with many shops featuring verandas and several providing outdoor dining opportunities
- The Normanville Village Green open space at Andrew Avenue offers a public reserve and is currently used by the council to host community events such as the local farmers market



Figure 90: Example of smart city solutions located on Edwards Avenue and at the Jetty Road carpark

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Normanville, including:

- Considering a complete redevelopment and extension of the existing Normanville jetty infrastructure to further enhance the proposed upgrades to the Normanville Foreshore Masterplan and assist in attracting visitation. RAA recognises the council's role as an advocate of the State Government owned jetty and is open to collaborating on the issue
- Unlike other towns in the region, no signs were seen advertising free public Wi-Fi
- Providing more time restricted parking bays during daytime hours could help to provide visitors with better access to shops and services
- Establishing additional large vehicle parking bays
- Improving road signage and wayfinding to assist visitors in locating public services and facilities such as the electric vehicle charging station on Edwards Avenue



Figure 91: An improvement to the Normanville's jetty infrastructure is highly sought after by locals and would attract visitors

Yankalilla District Council has secured a total of \$6,800,500 in external funding (through programs such as the *Open Spaces and Places for People Grant Program* and the *Local Government Infrastructure Partnership Program*) towards the Foreshore Masterplan project, bringing the total of the project fund to \$11.661,600²⁶. Funding will go towards increased green space, a new nature play area, a new plaza area and boardwalk, as well as the integration of the new Normanville Surf Life Saving Club & Kiosk building to the public realm. This project presents an opportunity to ensure that some of the identified improvements are implemented.

²⁶ District Council of Yankalilla, 2020, *Normanville Foreshore & Jetty Caravan Park Draft Masterplan & Long Term Financial Plan*, accessed at <<https://www.yoursayyankalilla.com.au/foreshoremasterplan>>.

Yankalilla

The township of Yankalilla is located on Main South Road and situated between the hills to the north and the River Bungala to the south. The town is located within the Yankalilla District Council area, slightly south-east of Normanville and has a population of around 1,000 people. As part of Yankalilla's main street tourism assessment, Main South Road and Main Street were assessed. Main South Road is the main arterial route along the west coast of the Fleurieu Peninsula, while Main Street is part of a regional arterial corridor (Inman Valley Road) linking Yankalilla and Victor Harbor.

Yankalilla was identified 17 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the sixth most nominated township in the region. The most common improvements identified for Yankalilla related to:

- Streetscape – respondents felt there is a need for improvements to Yankalilla's streetscape, for example landscaping, planting trees and removing overhead power lines
- Car parking – respondents felt there is a need for more parking, especially during peak season
- Large vehicle parking – respondents felt there is a need for designated parking for large vehicles such as caravans and coaches
- Walking/Cycle paths – respondents sought a designated active transport route connecting Yankalilla to Normanville (and Carrickalinga)

Through the main street tourism assessment, RAA observed several strengths with Yankalilla from a visitor perspective, including:

- Water fountains along Main Street that also serve as wayfinding boards
- A great selection of bakeries, cafés and take away options along Main Street
- Street bins with separate waste and recycling compartments are provided on Main Street
- The public toilet on Main Street is well-signed

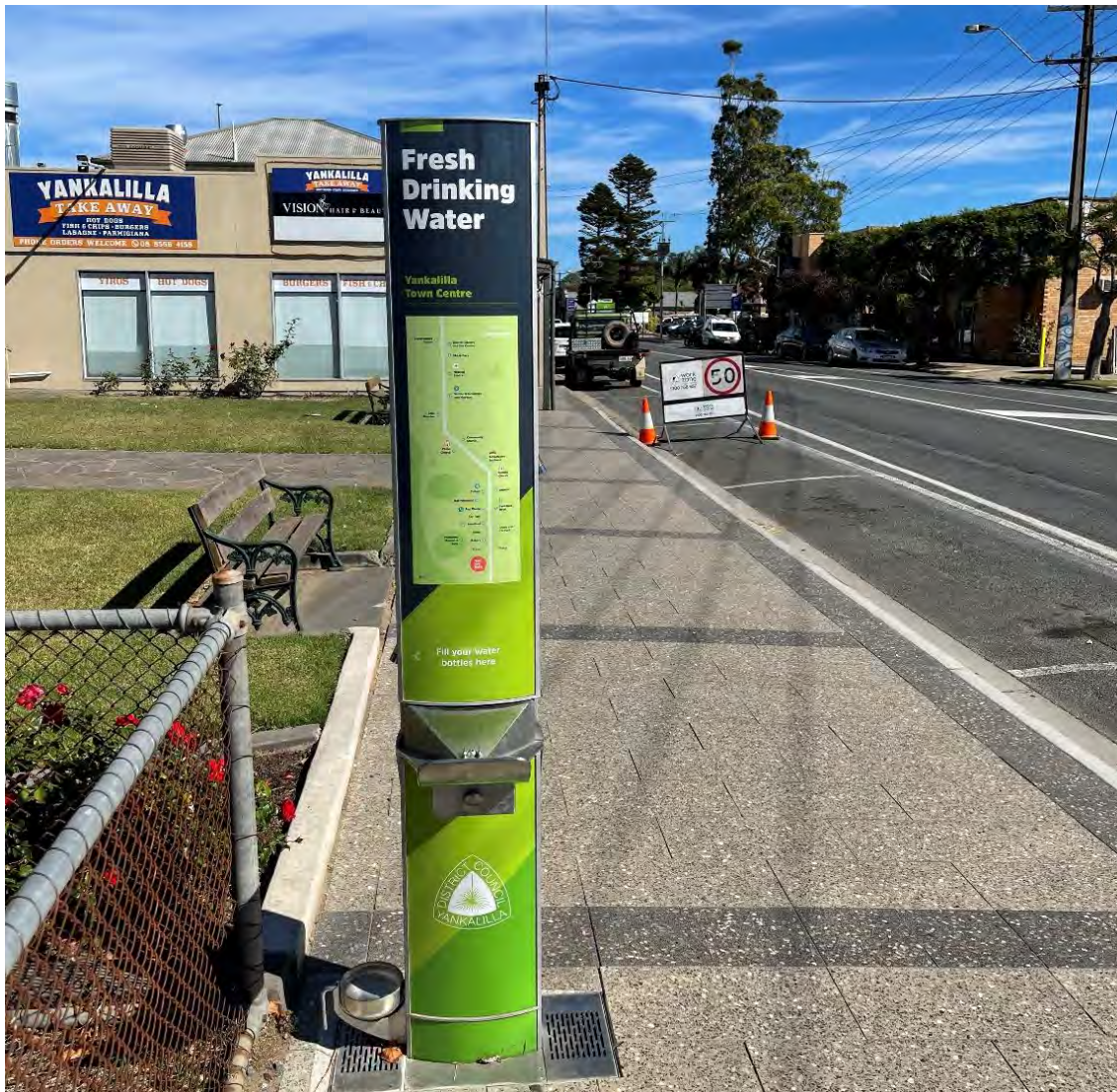


Figure 92: Well situated and effective wayfinding board that has a dual purpose of also being a water fountain

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Yankalilla, including:

- Improving pedestrian and cycling infrastructure through dedicated cycle lanes and pedestrian refuges or crossings on Main Street and Main South Road to make active travel more attractive and encourage visitors to explore the town.
- Unlike other towns in the region, no signs were seen advertising free public Wi-Fi
- Restricting some parking areas at the Visitor Information Centre to large vehicles only to prevent them being filled up with cars
- Improving signage to locate the Visitor Information Centre or a possible relocation of the centre to a location that is closer to the main retail precinct
- Implementing more time restricted parking bays on Main Street during daytime hours to provide visitors with better access to shops and services during peak season
- Improving signage to locate the electric vehicle charger on Charles Street
- Establishing quality public/community spaces close to the retail precinct



Figure 93: There is no pedestrian crossing infrastructure on Main South Road in Yankalilla

In November 2020, Yankalilla District Council adopted the *Yankalilla and Normanville Streetscape Master Plan*, which provides a framework to guide council in the planning and implementation of streetscape improvements for the main roads in, and between, the townships of Yankalilla and Normanville.²⁷

The Master Plan also addresses pedestrian and cycling infrastructure, including linking both Yankalilla and Normanville main streets to a proposed 3m-wide share-use linear trail along the Bungala River, upgrading the footpath along Main South Road and installing a pedestrian crossing of Main South Road in Yankalilla. RAA sees the project as an opportunity to improve safety and amenity for visitors to the area.

²⁷Yankalilla District Council, 2020, *Yankalilla and Normanville Streetscape Master Plan*, accessed at https://www.yankalilla.sa.gov.au/_data/assets/pdf_file/0029/818606/10.001-201208-Yank-Norm-Streetscape-Report_Update-2020_Final_Council.pdf.

McLaren Vale

The McLaren Vale wine region is internationally renowned for its food and wine and is located within the southern part of the City of Onkaparinga Council area. The township of McLaren Vale lies within the eponymous wine region and has a population of around 3,000 people. The main retail precinct is on Main Road, which is also an important connector road between the McLaren Vale township and other localities within the wine region. As part of McLaren Vale's main street tourism assessment, Main Road and Kangarilla Road were assessed.

McLaren Vale was identified 24 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the fourth most nominated township in the region. The most common improvements identified for McLaren Vale related to:

- Streetscape – respondents felt there is a need for improvements to the streetscape along Main Road to improve the ambience and better concentrate attractions together
- Car parking – respondents felt there is a need for more parking
- Walking/cycling paths – respondents sought improvements to the pedestrian infrastructure surrounding the town

Through the main street tourism assessment, RAA observed several strengths with McLaren Vale from a visitor perspective:

- The award-winning McLaren Vale and Fleurieu Coast Visitor Information Centre sets the precedent, showcasing local tourism destinations and provides visitors with a variety of services such as wine tastings, electric vehicle charging and e-bike hire
- Adequate public transport options between Metropolitan Adelaide and McLaren Vale
- The Almond Train is an eye-catching tourist attraction located in the heart of McLaren Vale showcasing an old train carriage that is located near the Shiraz Trail on the old Willunga line and offers visitors local goods and wine tasting experiences
- Ellis Park at the intersection of Aldersey Street and Main Rd offers a public reserve close to the main shopping precinct
- The Coast to Vines Rail Trail (Shiraz Trail) runs through McLaren Vale, providing off-road shared path access to the town centre for cyclists and walkers and incorporating a wombat crossing over Main Road next to the Almond Train



Figure 94: A wombat crossing facilitates safe pedestrian and cyclist movements across Main Road, providing access to the Coast to Vines Rail Trail as well as local attractions such as the Almond Train

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in McLaren Vale, including:

- Improving signage to the Visitor Information Centre on Victor Harbor Road and Main Road
- Considering a main street streetscape upgrade focusing on the planting of trees and improving greenery, adequate shade and shelter, implementing additional safe crossings and a cycle lane along Main Road (to encourage recreational cyclists to visit more local businesses)
- Installing a bus shelter and timetables at bus stops located close to the retail precinct along Main Road
- Rolling out street bins with separate waste and recycling compartments uniformly across the central area
- Implementing smart city solutions along Main Road such as electric vehicle charging points, LED lights and an interactive digital wayfinding board on Main Rd to assist in attracting greater visitation
- Improving wayfinding and signage to assist visitors with locating public services and facilities such as toilets, Wi-Fi and electric vehicle charging points

In April 2021, the City of Onkaparinga Council released its draft vision for improvements to McLaren Vale's Main Road and encourage visitors to "*stop, stay and spend*".²⁸ The draft vision plans to achieve the following:

- Increase the greening along the main street
- Create a better streetscape and provide connectivity through a street theme/visual appeal
- Invest in sustainability, public art and outdoor dining opportunities
- Improve the night-time appeal of the main street
- Find creative solutions to retain on-street parking

To bring their vision to fruition, council is seeking support of the state government, associations and community groups. RAA sees this as an opportunity ensure that some of the identified improvements are implemented.

²⁸City of Onkaparinga, 2021, *Draft Vision released!*, accessed at <https://yoursay.onkaparinga.sa.gov.au/mclaren-vale-main-street-experience/news_feed/draft-vision-released>.

Willunga

Willunga is located at the far south of the Onkaparinga Council area within the McLaren Vale wine region and has a population of around 2,000 people. Willunga's main street tourism assessment was focused solely on High Street, which is part of a connector route linking Willunga to Willunga Hill.

RAA reviewed the Willunga main street as part of this tourism assessment as it received an award-winning streetscape upgrade in 2017, which could be used as an example for other townships across the region. Willunga was only identified six times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this was fewer than any other township included in the Main Street tourism assessments and also fewer than smaller townships such as Myponga and Mount Compass. The only improvement identified by more than one respondent for Willunga related to development of walking/cycling trails, e.g., linking Willunga to Port Willunga.

Through the main street tourism assessment, RAA observed several strengths with Willunga from a visitor perspective:

- Adequate long vehicle parking along High Street
- The recent streetscape makeover on High Street has significantly improved the pedestrian experience, providing safe crossing options and setting the precedent for streetscapes within the area
- Willunga Jubilee Rose Garden offers a public reserve and features an outdoor barbeque facility with shelter and seating, a public toilet, a playground, as well as a bike path and a skate park
- Great selection of bakeries and cafés along High Street
- Public art trail along High Street and Main Road



Figure 95: Willunga's upgraded streetscape with ample greenery, improved on-street car parking and safe crossing options

However, RAA also observed some areas where there is an opportunity to improve the visitor experience in Willunga, including:

- Constructing a well-signed public toilet on or near the main street to improve the overall visitor experience – currently there is no public toilet on High Street
- Improving pedestrian and cycle infrastructure around High Street and Aldinga Rd to improve safety (as discussed earlier in this report) and assist with reducing car dependency by facilitating active transport options
- Implementing additional time restricted parking bays during daytime hours to provide visitors with better access to shops and services

Whilst some further improvements to facilities could be made, RAA considers the main street of Willunga to set a high standard as a result of the recent streetscape upgrade, which is reflected by the lack of major community concern in our Fleurieu Peninsula regional assessment survey.

Specific issues raised in the Fleurieu Peninsula community survey

Bluff boat ramp

The Bluff boat ramp is located at Encounter Bay, 3km west of Victor Harbor, and is one of the four boat ramps located within the City of Victor Harbor where boats and other watercraft can launch.

The Bluff was identified 10 times in RAA's Fleurieu Peninsula regional assessment survey as a location where improvements are needed to enhance the experience of tourists and other visitors to the region – this made it the ninth most nominated location in the region. The most common improvements identified for the Bluff related to:

- The boat ramp – respondents felt that the current boat ramp was unable to meet peak season demand
- Large vehicle parking – respondents felt there is a need for additional parking for large vehicles such as boat trailers
- Public toilets – respondents felt there is a need for a public toilet and washing facility at the boat ramp

RAA conducted an independent assessment of the Bluff boat ramp but was not able to do so during the peak summer season when these issues are most prominent. Some of the positive features of the Bluff boat ramp observed include:

- Prominent four lane boat ramp with onsite large-vehicle parking
- Overflow parking area for vehicles and boat trailers along Jagger Road
- CCTV providing recreational boaters round-the-clock view of the conditions at the boat ramp and car park



Figure 11: Parking bays at the bluff boat ramp shown with CCTV cameras depicted within the backdrop of the image

In December 2019, the City of Victor Harbor Council responded to community calls to address congestion along Jagger Rd, lack of long-vehicle parking options near the boat ramp and lack of facilities such as a public toilet at the Bluff Boat Ramp. In response, the council installed a new pontoon, overflow parking and temporary toilets in time for the peak holiday period²⁹.

Council is currently considering the following permanent solutions to address the growing need for improvements within the area due to the increased usage and lack of existing toilet facilities at the boat ramp³⁰:

- Upgrading the existing toilet facility on Franklin Parade at the intersection with Whalers Road, located approximately 750 meters from the boat ramp. This option requires significant upgrades to the existing facility to become disability compliant.
- The annual leasing of the privately-owned Whalers Inn toilet facility, which is approximately 130 meters from the boat on the same level as the restaurant. This option would require upgrades to include a new disability toilet, adequate onsite disability parking and improved access to the facility.

RAA also understands that, as part of its 2021/22 annual business plan, the council will be developing a Master Plan that outlines a shared vision for The Bluff³¹.

RAA would welcome the opportunity to comment on these issues to assist in finding an optimal solution.

²⁹City of Victor Harbor, 2019, *Bluff Boat Ramp, Encounter Bay*, accessed at <<https://www.victor.sa.gov.au/notice-board/latest-news/bluff-boat-ramp-encounter-bay>>.

³⁰ City of Victor Harbor, 2021, *Ordinary Council Meeting agenda: 26 July 2021*, accessed at <<https://lgasa-web.squiz.cloud/?a=936857>>.

³¹ City of Victor Harbor, 2021, *Annual Business Plan 2021/22*, accessed at <https://www.victor.sa.gov.au/_data/assets/pdf_file/0027/943524/2021-22-Annual-Business-Plan_FINAL.pdf>

Mobile phone coverage on Long Valley Road and south of Range Road

Mobile phone blackspots emerged as a prominent issue in the region, both in survey responses (where 29% identified it as an area for improvement) and in stakeholder meetings with each of the four councils. One council mentioned that there are specific locations where two staff must attend for safety reasons due to lack of mobile phone coverage. Areas nominated as having blackspots included parts of Goolwa Road, Inman Valley Road, Second Valley, Rapid Bay, Hindmarsh Falls and large areas south of Range Road including Deep Creek Conservation Park and Newland Head Conservation Park. However, the most raised location was Long Valley Road, which the primary route between Strathalbyn and Mount Barker.

RAA was able to verify that mobile phone coverage on Long Valley Road was poor at the time of our assessment. However, we are aware that a Telstra base station from Wistow to Strathalbyn (Long Valley Road) was funded as part of Round 4 of the Commonwealth Government's *Mobile Black Spot Program*³², and at the time of writing, Telstra was targeting for this site to be on air in Q2 2021³³. RAA anticipates that this base station should substantially improve mobile phone coverage on Long Valley Road.

Based on a review of online network coverage maps from Australia's main network providers, the largest area in the region that does not even have 3G mobile coverage is south of Range Road. This area contains two conservation parks that are prominent visitor attractions: Deep Creek Conservation Park is popular for hiking, and Newland Head Conservation Park is popular for surfing and fishing. Mobile phone coverage in these conservation parks should be improved to boost tourism and enhance visitor safety.

Recommendation 29E

Improve mobile phone coverage in Deep Creek Conservation Park and Newland Head Conservation Park to boost tourism and enhance visitor safety

³² Australian Government, 2019, *Mobile Black Spot Program – Round 4 Funded Base Stations*, accessed at <<https://data.gov.au/data/dataset/mobile-black-spot-program-round-4-funded-base-stations>>.

³³ Telstra, 2021, *Mobile Black Spot Program*, accessed at <<https://www.telstra.com.au/coverage-networks/mobile-black-spot-program>>.

Rest stops on Main South Road and Victor Harbor Road

Scenic pullout areas (43%) and roadside rest areas (34%) were two of the top five areas survey respondents thought could enhance the experience for tourists and other visitors to the Fleurieu Peninsula. Almost all suggested locations for additional rest stops were for Main South Road and Victor Harbor Road, which are two of the longest and most popular driving routes through the region.

Where roads pass through or near townships, RAA prefers that visitors are encouraged to take a rest stop in the town and support the local economy. However, where there are larger gaps between towns, or if there is particularly attractive scenery along a road, then a designated rest stop should be considered. By South Australian standards, driving distances in the Fleurieu Peninsula are relatively short, with all destinations within a two-hour drive from Adelaide with major roads typically passing through several townships. Therefore, visitors should be encouraged to take rests either in these towns or at rest areas created at scenic viewpoints.

Visitors using Victor Harbor Road have the opportunity to take a rest in the towns of McLaren Vale, Willunga and Mount Compass, at the Cut Hill Wall in Hindmarsh Valley or at the Willunga Hill Lookout. Visitors using Main South Road have the opportunity to take a rest in the towns of Myponga, Yankalilla and Normanville, at the Delamere General Store, at the Myponga Reservoir, at the HMAS Hobart Memorial Lookout or at Garnett Kelly Reserve. These rest opportunities are typically well sign posted.

