# Posted Speed Limit Review: Frankston – Flinders Rd, Merricks Beach



February 2024

Prepared for Prepared by:

**Merricks Beach Residents' Association Inc** 

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#### **EXECUTIVE SUMMARY**

This report<sup>1</sup> has been prepared in response to the Merricks Beach Residents' Association Inc's (MBRA) request for an independent review of the posted speed limit for the section of Frankston-Flinders Rd between Balnarring and Merricks.

The report is intended to facilitate representations from the MBRA to the Mornington Peninsula Shire Council, Paul Mercurio MP (Hastings) and The Hon Melissa Horne, Minster for Roads and Road Safety, requesting that the Department of Transport and Planning reduce the current speed limit from 100 kph to 80 kph.

The question confronting this review is whether an 80 kph or 100 kph speed limit best aligns with the State's policy and guidelines. Is this section of Frankston-Flinders Road a "rural road where there is no elevated risk of crashes", or is it a road with "a high crash rate or demonstrates high crash risk"?

This review found that this section of the road has an Infrastructure Risk Rating of "mediumhigh", which, according to the Victorian guidelines, should have a posted speed limit of no more than 80 kph. Furthermore, at 1.8km in length, this zone is too short for a 100 kph posted speed according to the guidelines.

The review also found that this section has an accident history, showing the injury rate is higher than expected on a road of this type. Excessive speed is generally accepted as one factor contributing to an increase in both the rate and severity of accidents. It is reasonable to assume that the current posted limit is also a factor contributing to the current high accident rate.

This review of the current posted speed limit has found that the 100 kph speed is inconsistent with the Victorian speed zoning guidelines. It is recommended that a review be undertaken by the responsible road authority, with consideration given to reducing the speed limit to no more than 80 kph. This review should be prioritised given the high observed accident rate indicates that urgent action is needed.

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#### 1 INTRODUCTION

# 1.1 Purpose

This report has been prepared in response to the Merricks Beach Residents' Association Inc's (MBRA) request for an independent review of the posted speed limit for the section of Frankston-Flinders Rd between Balnarring and Merricks.

The report is designed to facilitate representations from the MBRA to the Mornington Peninsula Shire Council, Paul Mercurio MP (Hastings) and The Hon Melissa Horne, Minster for Roads and Road Safety, requesting that the Department of Transport and Planning reduce the current speed limit.

## 1.2 Background

The MBRA has repeatedly requested a review of the current posted speed limits. The history of these representations provides important context for the assessment that follows.

Peter Cash, the President of the MBRA, wrote to VicRoads in April 2019, expressing the community's concern with the existing speed limit. He concluded his email as follows:

I am unable to conceive of any justifiable rationale for retaining a 100kmh speed limit in this section of Frankston-Flinders Road. On my calculation, the 'saving' in time for a driver by travelling these 2 kilometres at 100kmh as compared with 80kmh is less than 18 seconds. Plainly, this is a trifling advantage, and certainly cannot warrant the danger to other road users – including bicyclists, which are now common on Frankston-Flinders Road as there is no bicycle path – caused by this arbitrary increase in the speed limit. The cost to change the speed limit signs would, I imagine, be very small indeed.

I therefore ask that, as a matter of urgency, VicRoads reduce the speed limit in this section of road from 100kmh to 80kmh. (email 7 April 2019)

VicRoads' response sent in the following month dismissed the residents' request saying:

A default speed limit of 100km/h is adopted on the arterial roads in the rural areas. Frankston-Flinders Road near Merricks Beach Road in (sic) an arterial road abutting farmland/undeveloped land which is appropriate for the speed limit of 100km/h. Historical safety records also suggest that there have been no reported crashes at the intersection of Merricks Beach Road and Frankston-Flinders Road in the past 10 years. (email 9 May 2019)

The claim that there were "no reported crashes" caused the residents to question VicRoads' diligence in responding to their concerns. The residents lived experienced evidenced several crashes and near misses in this area. The residents' experience is supported by the State's

crash database<sup>2</sup>, which records one accident in 2015 and another in 2017. The accident history of this site is further discussed later in this report.

During this period, the Mornington Peninsula Shire Council, citing concerns over road safety, launch a trial of Safe Speed Limits. The Shire, in a significant departure from VicRoads' stance, was concerned with high levels of road trauma in the area, noting that:

The Mornington Peninsula has a long history of high rates of road trauma. We have experienced the equal highest number of road deaths of Victoria's 79 municipalities for the period 2014 to 2021 with 64 deaths, and over 1,200 serious injuries which have devastating and often lifelong impacts to victims and their families. Our community has consistently highlighted road safety as a significant concern<sup>3</sup>.

A total of 33 roads were included in this trial, including Merricks Beach Rd, but Frankston-Flinders Rd was excluded.

The Shire's trial ran for two years and the results were evaluated by the Department of Transport. The summary evaluation report released in June 2022 found, amongst other things, that:

- The average predicted reduction in the risk of persons being fatally or seriously injured along routes with speed limits lowered from 100 to 80 km/h is approximately 20%, with some routes showing estimated reductions as high as 39%. For the 90 km/h to 80 km/h routes, the predicted reductions in the risk of persons being fatally or seriously injured averages 15%, estimated across the treated routes.
- Actual data from Mornington Peninsula Shire Council and the Transport Accident Commission (TAC) indicate positive findings since the trial commenced in late 2019, with a 68% reduction found in persons fatally or seriously injured.<sup>4</sup>

In November 2022 the Shire resolved to make the trial speed limits permanent, improving safety on those roads within the trial. Other roads, including Frankston-Flinders Rd, remained at the previous 100 kph default limit.

Considering the success of the trials, members of the MBRA again sought to have the existing 100 kph limit reduced to 80 kph. Emails were sent to the Shire and the Member for Hastings, Paul Mercurio MP. The latter subsequently wrote to the responsible Minister requesting that:

<sup>&</sup>lt;sup>2</sup> Victorian Crash Data <a href="https://discover.data.vic.gov.au/dataset/victoria-road-crash-data">https://discover.data.vic.gov.au/dataset/victoria-road-crash-data</a> accessed 23 Dec 2023. The data only includes crashes which occurred from Jan 2012.

<sup>3</sup> https://www.mornpen.vic.gov.au/Community-Services/Roads-Footpaths-and-Parking/Roads/Safer-Speeds#:~:text=The%20Mornington%20Peninsula%20Shire%20Speeds%20Trial%20is%20a%20two.changed%20to%2080%20km%2Fh. Accessed 1 Jan 2014

<sup>&</sup>lt;sup>4</sup> Mornington Peninsula Safer Speed Trial Evaluation Summary Report, June 2022. p.4

Consider making this section of road from Balnarring to Merricks General Store a more consistent 80kph zone (Letter from Paul Mercurio 20/11/2023)

The Minister replied in the following month, stating that:

Whilst DTP has advised there are no plans to implement changes to speed limits along Frankston-Flinders Road at this stage, DTP will consider the feedback shared as part of its management of Victoria's road network. (Letter from Melissa Horne 12/12/2023)

The Minister's reply highlights the role played by the Department's guidelines. She noted that "so that speed limits are set in a consistent and credible way...the Victorian Speed Zoning Technical Guidelines outline the decision-making principles to follow." Those Guidelines were last updated in December 2021, a year before the Mornington Peninsula Safer Speed Trials were completed.

It is understood that the MBRA has been frustrated by its inability to engage productively with VicRoads and the Department of Transport and Planning, notwithstanding the success of the recent Council trials.

The abovementioned experience has led the MBRA to seek an independent review of the current speed limit to assist in further engagement with the Department of Transport and Planning.

# 1.3 Report Structure

Following this introduction, the next section reviews the Victorian Speed Zoning policies and guidelines, including Austroads' recent research on road risk assessment and the quantitative risk assessment tool now used to inform decisions on appropriate speed limits.

The third section then describes the section of the Frankston-Flinders Rd around the intersection with Merricks Beach Rd. A risk assessment is undertaken using the Infrastructure Risk Rating methodology developed by Austroads and the associated online assessment tool. This risk assessment is then compared to the observed crash history along this section of road. Finally, the Victorian decision-making principles are applied in accordance with the VicRoads guidelines to independently determine the appropriate speed limit.

The final section summarises the findings arising from this assessment and the implications for road safety along this stretch of road.

#### 2 SETTING SPEED LIMITS

# 2.1 Victorian Policy and Guidelines

The Department of Transport and Planning provides guidance for the setting of speed limits in two complementary documents: Speed Zoning Policy and Speed Zoning Technical Guidance (Figure 1 below).

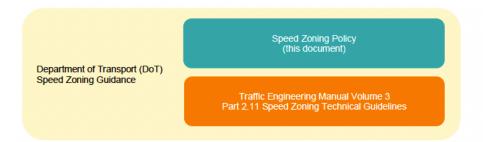


Figure 1: Speed Zoning Guidance<sup>5</sup>

The speed setting policy organises the decision-making principles into five key themes:

- Road safety (Safe System approach)
- Transport network efficiency
- Road user expectation
- Community engagement
- Community wellbeing

These principles will frame the discussion of this review's findings in the last section of this report.

The speed zoning policy is itself divided into 17 considerations. The relevant considerations for this review include:

- Speed limit setting approach (3.1) the management of speed is "an integral part" of the Victorian Road Safety Strategy to eliminate "death from our roads"
- Road geometry and infrastructure to complement speed zoning (3.2) the "concept of self-explaining roads"
- Allocated speed limits (3.3) limits of 60, 80, 100 and 110 kph may be applied
- Default speed limits (3.4) 100 kph is the default limit outside built areas
- Speed limit rationalisation (3.5) speed limits should not focus on isolated sections of road; "minimising the number of speed limit changes is a key objective"
- Addressing community concerns (3.17) The department will consider all aspects of a community request through a "site-specific investigation"

<sup>&</sup>lt;sup>5</sup> extracted from Speed Zoning Policy Ed 2, 2021

According to State policy, setting speed limits is a decision-making process that follows the guidelines contained within Victoria's Traffic Engineering Manual (Volume 3 Part 2.11). Table 1 of those guidelines provides an "Overview of regulatory speed limits" and their typical application. The highest speed limit (110kph) is applicable only on "high standard rural freeways". The second highest (100kph) is applicable in situations including:

- Rural roads where there is no elevated risk of crashes
- Rural roads where roads are unsigned and use the State default speed limit
- Freeways where there is no elevated risk of crashes.

The next slower limit (80kph) is deemed appropriate in a wider range of applications, including:

- Rural roads with developed abutting land, poor geometry or a high crash rate or demonstrated high crash risk
- Divided arterial roads in built-up areas
- Undivided roads on the urban/rural fringe
- Roads through small settlements
- Freeways where there is an elevated risk

The question confronting this review is whether an 80 kph or 100 kph speed limit best aligns with the State's policy and guidelines. Is this section of Frankston-Flinders Road a "rural road where there is no elevated risk of crashes", or is it a road with "a high crash rate or demonstrates high crash risk"?

The guidelines provide a five-step process to implement a new speed limit. This review only concerns the first step - to "determine the notional speed limit". The other steps follow once an agreement is reached that a change in the notional speed limit is warranted.

The guidelines provide further information describing the legislative framework for determining speed limits, the safe system approach, the movement and place framework, and the types of speed signs. For the purposes of this review, the safe system approach provides important guidance when it states:

Where the operational safety of road or length of road is unsatisfactory (i.e. the crash rate or crash risk is high) the preferred response is to identify and implement infrastructure improvements that address the specific safety problem. However, where infrastructure improvement options have been exhausted or are not feasible in the short term and current risks are unacceptably high, a reduced speed limit may be appropriate. (p.12)

Section 3 of the guidelines provides more explicit advice for the "determination of notional speed limit". The process for determining speed outside of built-up areas is reproduced below in Figure 2. It should be noted that a key question for determining a notional speed limit of 80 kph is "Does the road have an overall low alignment and/or cross section standard, high crash risk or a high crash rate?". To answer this question, the guidelines advise that "the Austroads Infrastructure Risk Rating (IRR) tool should be used to assist with making speed zoning

assessments" (p17). The guidance recommends 80 kph for High, Medium-High and Medium risk assessed roads, whilst 100 kph is appropriate only for roads assessed as Medium-Low and Low risk.

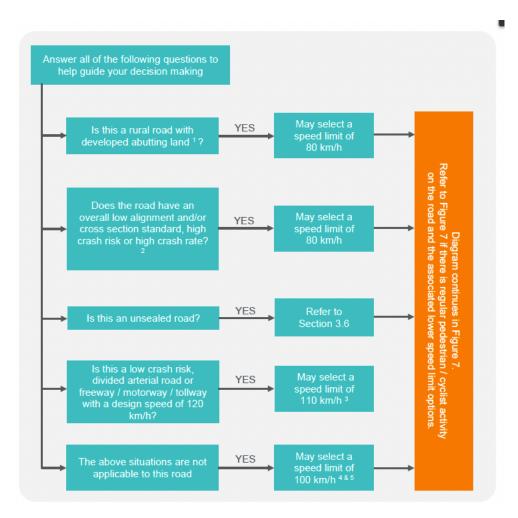


Figure 2 – Process for commencing speed limit setting for outside built-up areas<sup>6</sup>

The guidelines also recommend a minimum length for each speed zone (Table 6). A 100 kph zone should have a minimum length of 2km, whilst an 80 kph zone has a minimum length of 800m in most situations.

The balance of the guidelines addresses the steps taken after it is determined that a change in the notional speed limit is warranted.

<sup>&</sup>lt;sup>6</sup> Taken from Figure 5 Speed Zoning Technical Guidelines, Ed 2, 2021

#### 2.2 Austroads' Risk Assessment

The Victorian speed zone guidelines require that notional speed limits be set according to the risk rating determined by Austroads' Infrastructure Risk Rating (IRR) tool. The IRR tool is a web-based application developed by Austroads to "help practitioners calculate the IRR of any section of road in Australia or New Zealand" (p.i).

The tool, initially developed in New Zealand, has been modified by Austroads for use in Australia. The IRR approach was selected following a literature review of speed management interventions used in other countries. Austroads confirms that speed management is a major factor in promoting road safety, stating that:

There exists a large body of evidence associating lower speeds with reductions in injury crashes and injury severity. (p.17, Austroads 2021)

In developing the IRR tool, Austroads noted the importance of pre-emptively setting speed limits independent of crashes occurring. The "Safe System philosophy", the basis of the State's goal for zero road fatalities<sup>7</sup>, requires speed limits to be set according to "the function and characteristics of the road and the ability of the human body to cope with the forces likely to be experienced in a crash" (p.10, Austroads 2019). This proactive approach to road safety, acting to minimise risk before crashes occur, is considered by Austroads to represent best practice.

The details of the IRR can be found in Austroads (2019). The application of IRR to Flinders-Frankston Rd is discussed in the next section. For the purposes of this report, we note that a risk assessment considers seven road attributes. These are:

- Road stereotype
- Horizontal alignment
- Land use
- Traffic volume
- At-grade intersection density
- Access density
- Roadside hazard

For an assessment, each of these attributes is considered and scored. The individual scores are then aggregated into an overall IRR score. The IRR score defines the risk band (low, medium, high etc) for the road in question. The risk band is then used to determine the appropriate posted speed limit as shown in Table 1 below (taken from Austroads 2019).

Victorian Road Safety Strategy 2021-2030, Department of Transport, 2020. <a href="https://www.tac.vic.gov.au/road-safety/victorian-road-safety-strategy/victorian-road-safety-strategy-2021-2030">https://www.tac.vic.gov.au/road-safety-strategy/victorian-road-safety-strategy-2021-2030</a>

Austroads applied this methodology in a series of trials in Victoria, New South Wales, Tasmania and Western Australia. Austroads concluded from these trials that "the IRR mode is a strong predictor of road risk on rural roads in Australia" (p. i, Austoads 2019).

| Function/ Feature                                                                                                                                                                                                            | Road Safety<br>Performance                                                                                         | Infrastructure<br>Risk Rating | Safe and<br>Appropriate<br>Speed |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------|
| <ul> <li>ONRC Class 1 (National Strategic High Volume), and</li> <li>median-divided with at least two lanes in each direction, and</li> <li>no direct property access, and</li> <li>grade separated intersections</li> </ul> | Personal Risk is Low<br>or Low-Medium, and     Collective Risk is Low<br>to Medium-High                            | Low                           | 110 km/h                         |
| <ul> <li>ONRC Class 1-3 (National Strategic, Regional<br/>Strategic, Arterial or Collector), and</li> <li>sealed road</li> </ul>                                                                                             | <ul> <li>Personal Risk is Low<br/>to Medium, and</li> <li>Collective Risk is Low<br/>to Medium-High</li> </ul>     | Low or<br>Low-Medium          | 100 km/h                         |
| Any ONRC                                                                                                                                                                                                                     | Personal Risk is Low<br>to Medium-High                                                                             | Low to Medium                 | 80 km/h                          |
| Any ONRC, and     not a rural town                                                                                                                                                                                           | Not required                                                                                                       | Low to High                   | <80 km/h                         |
| ONRC Class 1 or 2 (National Strategic, Regional Strategic or Arterial), and     rural town                                                                                                                                   | <ul> <li>Personal Risk is Low<br/>or Low-Medium, and</li> <li>Collective Risk is Low<br/>to Medium-High</li> </ul> | Low or<br>Low-Medium          | 80 km/h                          |
| <ul> <li>ONRC Class 1-3 (National Strategic, Regional<br/>Strategic, Arterial or Collector), and</li> <li>rural town</li> </ul>                                                                                              | Personal Risk is Low<br>to Medium                                                                                  | Low to Medium                 | 60 km/h                          |
| Any ONRC, and     rural town                                                                                                                                                                                                 | Personal Risk is Low<br>to Medium-High                                                                             | Low to Medium                 | 50 km/h                          |
| Rural town, and     high place function and concentration of active road users.                                                                                                                                              | Not required                                                                                                       | Low to High                   | <50 km/h                         |

Table 1: Safe and appropriate speed criteria – rural roads<sup>8</sup>

The tool can be applied through a first principles approach using either the methodology provided by Austroads or using the web-based tool.

<sup>&</sup>lt;sup>8</sup> Taken from Table 3, Austroads 2019

### 3 FRANKSTON-FLINDERS RD

# 3.1 Description of Road

This assessment focuses on the 100 kph segment of Frankston-Flinders Rd located between Balnarring and Merricks (Figure 3). The segment is abutted by the 60 kph speed zone in Balnarring and the 80 kph speed zone in Merricks. The total segment length is approximately 1.8km. There is a Tee intersection with Merricks Beach Rd, two access points to the Hann Creek Reserve, and approximately seven additional access points to properties along the road segment. Public transport is provided by the No. 782 bus route. This road is also the only walking and cycling route connecting Merricks and Merricks Beach and is the most direct route between Merricks Beach and Balnarring.



Figure 3: Frankston-Flinders Rd, Merricks Beach

A site visit was conducted on  $23^{rd}$  December 2023 to measure and determine the road attributes for the purposes of this assessment.



Figure 4: Frankston-Flinders Rd at Merricks Beach Rd: Typical View

### 3.2 Risk Assessment

Table 2 below calculates an IRR score of 1.57 for the road using Austroads (2019).

Using the online version of the tool<sup>9</sup> produced a higher risk rating of 2.08, or Medium-High band, based on the current posted speed of 100 kph (Figure 3). Reducing the posted speed limit to 80 kph reduces the risk rating to 1.83, placing the road in the Medium band.

<sup>&</sup>lt;sup>9</sup> <u>https://irrtool.austroads.com.au/</u> Access 2 Jan 2024

| Road<br>Attribute    | Category                | Score                  | Comment                                      |
|----------------------|-------------------------|------------------------|----------------------------------------------|
| Stereotype           | Two-lane undivided      | 3.7                    |                                              |
| Horizontal alignment | Straight                | 1                      | (<50 degrees of turn/km)                     |
| Land use             | Rural residential       | 1.5                    |                                              |
| Traffic volumes      | 6000-12000 vehicles/day | 2.2                    | AADT 6100 (2020)                             |
| Intersection density | 1-2 intersections/km    | 1.15                   | Merricks Beach Rd, Hann Creek<br>Reserve x 2 |
| Access density       | 2 to <5 accesses/km     | 1.03                   | 7 access points over 1.8km                   |
| Roadside<br>hazard   | Moderate                | 1.43                   | Trees within 5-10m of road                   |
| Shoulder width       | Very narrow (<0.5m)     | 1.79                   | Measured on-site                             |
| Lane width           | Medium (3-3.5m)         |                        |                                              |
| Total Score          |                         | 1.57                   | Calculated as per Austroads (2019)           |
| IRR Risk Band        | Medium                  | 1.2 to <1.6<br>(rural) |                                              |

Table 2: Risk Rating

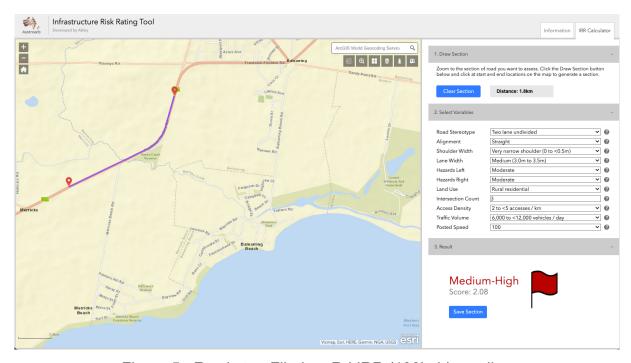


Figure 5: Frankston-Flinders Rd IRR (100kph) - online

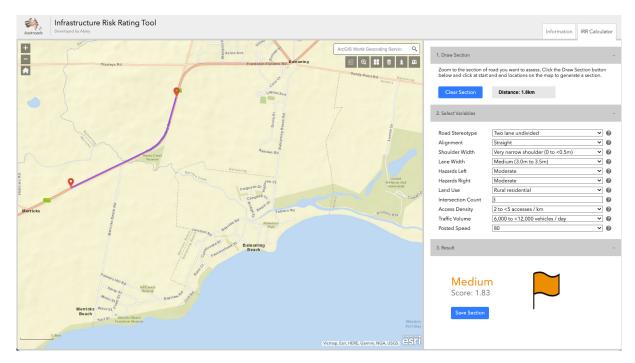


Figure 6: Frankston-Flinders Rd IRR (80kph) - online

# 3.3 Crash History



Figure 7: Aftermath of a recent crash

An examination of the Victorian Road Crash Data set<sup>10</sup> revealed five accidents along this segment of Frankston-Flinders Rd since 2012, as shown in Table 3.

<sup>&</sup>lt;sup>10</sup> https://discover.data.vic.gov.au/dataset/victoria-road-crash-data Accessed 2 Jan 2024

| ACCIDENT Id  | DATE      | TIME | ТҮРЕ                             | No. of Serious<br>Injuries |
|--------------|-----------|------|----------------------------------|----------------------------|
| T20150003291 | 15/2/2015 | 1205 | Collision with a fixed object    | 0                          |
| T20160015161 | 12/7/2016 | 1413 | Collision with some other object | 1                          |
| T20170000174 | 4/1/2017  | 1117 | Collision with vehicle           | 1                          |
| T20200016693 | 16/9/2020 | 0830 | Collision with a fixed object    | 0                          |
| T20210007537 | 4/4/2021  | 1550 | Collision with a fixed object    | 4                          |
|              |           |      | Total                            | 6                          |

Table 3: Accident History, Frankston-Flinders Rd, Merricks Beach

To determine whether this section of road has a "high crash rate", it is necessary to estimate the rate of fatal and serious injury per 100 million vehicle kilometres travelled (VKT). The observed crash rate for a particular location can then be compared to the crash rates experienced more typically on roads of similar type. Figure 8 shows the relationship between the IRR and the average crash rate. An increase in risk rating typically sees a corresponding increase in the crash rate. The IRR for Frankston-Flinders Rd is 1.6, suggesting an expected accident rate of 7.5 fatal or serious injuries per 100 million VKT.

The Victorian Road Crash Data set records crashes since the start of 2012. From then until the end of 2023, there were approximately 45.7 million VKT along this section of road<sup>11</sup>. The total of 6 serious injuries during this period equates to an injury rate of over 13 injuries per 100 million VKT. This crash rate is 73% higher than the expected rate. It can therefore be concluded that this section of road has a high crash rate.

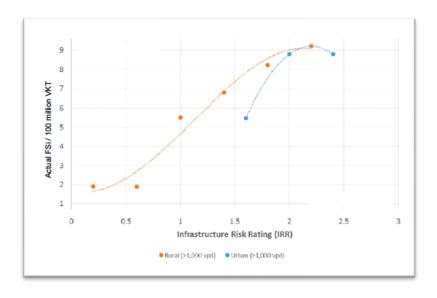


Figure 8: Injury Rates compared with Infrastructure Risk Rating<sup>12</sup>

Estimated from the Vicorads Traffic Volume data <a href="https://vicroadsopendata-vicroadsmaps.opendata.arcgis.com/datasets/traffic-volume/explore">https://vicroadsopendata-vicroadsmaps.opendata.arcgis.com/datasets/traffic-volume/explore</a> Accessed 2 Jan 2024 and 11 Dec 2016.

<sup>&</sup>lt;sup>12</sup> Page 13 Austroads 2019

An examination of the road crash data is warranted to understand why this stretch of road appears to be more dangerous than other similar roads:

- All crashes occurred during the daytime;
- Four of the five accidents were a single vehicle colliding with a fixed object;
- Three of the accidents involved the vehicle moving off the carriageway; and
- Three of the accidents occurred on the curve near the Hann Creek reserve.

Under the IRR assessment tool, this section of Frankston-Flinders Rd is rated as "straight" – having only one curve along its length. However, at the apex of this curve is the Hann Creek reserve with two acute junctions, giving rise to a more complex geometry than typical rural road. The transiting of the curve is also made more difficult by the road vegetation restricting the field of view. All of these may be factors causing, or at least contributing to, the higher-than-expected accident rate.

## 3.4 Determining an Appropriate Speed Limit

The Austroads' risk assessment provides guidance as to the "safe and appropriate speed" for a road based on the road's function and features, the road safety performance and IRR. This advice is shown in Figure 9.

Frankston-Flinders Rd would be classified as an arterial road under the ONCR classification system, and its IRR assessment ranks it as Medium risk, whilst the actual crash history shows a high rate of injury. Under this model, a speed limit of no more than 80 kph would be appropriate. A 100 kph speed limit is only appropriate if the infrastructure risk rating is Low or Low-Medium and the personal risk is also low-medium.

As a consequence of the established ratings, the crash history of this road section suggests that an assessment of the current road geometry and speed limits is required. Not only does the current speed limit not conform to the zoning guidelines, but there is also a crash history demonstrating users of this section of the road continue to be at risk.

This need for further assessment aligns with Austroads' recommendation that:

Road sections where the safe and appropriate speed differs from the current speed limit are assessed further to identify potential speed management intervention strategies. (p.20, Austroads, 2019)

It should also be noted that the current 100 kph speed limit does not comply with the minimum distance requirement of 2km (noting the actual length of the zone is 1.8km). On this basis, the adoption of an 80kph speed limit between Balnarring and Merricks would provide an appropriate graduation in speed limit increases, which also complies with the minimum distance requirements to provide clarity of expectations to drivers travelling along this section of road.

| Function/ Feature                                                                                                                                                                         | Road Safety<br>Performance                                                              | Infrastructure<br>Risk Rating | Safe and<br>Appropriate<br>Speed |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------|----------------------------------|
| ONRC Class 1 (National Strategic High Volume), and     median-divided with at least two lanes in each direction, and     no direct property access, and     grade separated intersections | Personal Risk is Low<br>or Low-Medium, and     Collective Risk is Low<br>to Medium-High | Low                           | 110 km/h                         |
| ONRC Class 1-3 (National Strategic, Regional Strategic, Arterial or Collector), and     sealed road                                                                                       | Personal Risk is Low<br>to Medium, and     Collective Risk is Low<br>to Medium-High     | Low or<br>Low-Medium          | 100 km/h                         |
| Any ONRC                                                                                                                                                                                  | Personal Risk is Low<br>to Medium-High                                                  | Low to Medium                 | 80 km/h                          |
| Any ONRC, and     not a rural town                                                                                                                                                        | Not required                                                                            | Low to High                   | <80 km/h                         |
| ONRC Class 1 or 2 (National Strategic, Regional<br>Strategic or Arterial), and    rural town                                                                                              | Personal Risk is Low<br>or Low-Medium, and     Collective Risk is Low<br>to Medium-High | Low or<br>Low-Medium          | 80 km/h                          |
| <ul> <li>ONRC Class 1-3 (National Strategic, Regional<br/>Strategic, Arterial or Collector), and</li> <li>rural town</li> </ul>                                                           | Personal Risk is Low<br>to Medium                                                       | Low to Medium                 | 60 km/h                          |
| Any ONRC, and     rural town                                                                                                                                                              | Personal Risk is Low<br>to Medium-High                                                  | Low to Medium                 | 50 km/h                          |
| Rural town, and     high place function and concentration of active road users.                                                                                                           | Not required                                                                            | Low to High                   | <50 km/h                         |

Figure 9: Safe and appropriate speed criteria – rural roads

#### 4 CONCLUSION

The findings of this review can be organised using the framework provided in Victoria's speed-setting policy guidelines.

Road safety (Safe System approach)

- The road is a narrow two-lane undivided arterial carrying moderately high volumes of traffic for a road of this type
- The lack of shoulders, the roadside hazards and the acute intersections increase the risk of accident
- This risk is further evidenced by the high rate of injury revealed in the crash history of this section of road. The actual accident rate for this section of road is 73% higher than the level expected for this type of road
- The IRR risk rating of Medium warrants a lower posted speed of 80 kph

## Transport network efficiency

- The increased journey time for someone travelling at the posted speed is approximately 18 seconds this would have no material impact on the network efficiency
- An 80 kph speed limit is consistent with the role of function of the road in its current state

### Road user expectation

• The length of this segment at 1.8km is also less than the minimum distance for 100 kph zone of 2km, as per the Victorian guidelines

## Community engagement

- The residents of Merricks Beach have for many years raised concerns about the dangers posed along Frankston-Flinders Rd and have requested the speed limit be reduced
- The resident concerns are further supported by the Mornington Peninsusla Shire who initiated their own trial of safer speeds demonstrating the safety gained by reducing speed limits from 100 kph to 80 kph
- Furthermore the Member for Hastings has also indicated wide spread community support for such a change

# Community wellbeing

• A reduced speed would enhance the amenity around the existing bus stop and encourage the greater use of walking and cycling

Regarding the above, this review of the current posted speed limit has found that the 100 kph speed is inconsistent with the Victorian speed zoning guidelines. It is recommended that the responsible road authority undertake a further review, with consideration given to a speed limit of 80 kph. This review should be prioritised given the high observed accident rate.

## **5 REFERENCES**

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