

# Mornington Peninsula

Safer Speed Trial Evaluation

Evaluation Summary Report June 2022

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# Summary

## Background

- In 2019, the Mornington Peninsula Shire Council recorded one of its worst rates of fatalities and serious injuries in recent history, with 12 people losing their lives on roads and a further 200 acute hospitalised claims to the TAC following crashes within the Shire's boundaries.
- To reduce risks across the municipality, Mornington Peninsula Shire Council elected to undertake a Safer Speeds trial. A total of 33 local sealed roads managed by the municipality were included in the trial which commenced in December 2019.
- The Department of Transport supported the trial and funded an evaluation to understand the effectiveness of the trial, including:
  - whether the trial changed the speed of traffic
  - whether drivers and riders complied with the new speed limits
  - the community's acceptance and perception of the changes
  - the impact on fatality and serious injury rates resulting from crashes.

## Methods

This study used a mixed-methods approach, including two key elements:

- To understand the impacts of the trial on traffic speed and compliance with new speed limits, traffic speed and flow data were collected on 59 trial and control routes at four time points:
  - November/December 2019 - before trial commencement
  - May 2020 - five months after trial commencement
  - November 2020 - one year after trial commencement
  - November/December 2021 - two years after trial commencement.
- Community sentiment was assessed via a quantitative survey of a representative sample of 1,059 members of the Mornington Peninsula Shire community, as well as 15 in-depth, qualitative interviews.

## Findings

### *Impact on vehicle travel speeds*

- There is strong evidence of a reduction in travel speeds as a result of reducing speed limits from 100 km/h or 90 km/h to 80 km/h, with higher speed reductions observed on roads with higher travel speeds before the trial commenced (i.e., 100 km/h to 80 km/h changes).
- Average travel speeds initially reduced by 3-5 km/h, with a greater reduction of close to 7 km/h seen on a subset of higher volume roads. These reductions translate into valuable reductions in the risks of deaths and serious injuries.

### *Speed limit compliance*

- There was an initial increase in the proportion of vehicles travelling above the new speed limit when speed limits were lowered to 80 km/h. The increase was higher on roads where speed limits were reduced from 100 to 80 km/h. While compliance rates with the new 80 km/h speed limit have improved with time, they are currently lower than the rates before the new speed limits were reduced.
- Despite the lower rates of compliance with the new posted speed limit, there has been a substantial overall improvement in the proportion of drivers travelling at or below the target safer speed of 80 km/h.

### *Community sentiment*

- Most residents (59%) are supportive of the reduced speed limits, as well as the retention of the reduced speed limits and the expansion of reduced speed limits to unsealed roads.
- There is an understanding in the community, especially among supporters of the trial, that lower speeds equate to more survivable crashes.

- Providing evidence of the link between speed limits, travel speeds and road trauma is likely to build community acceptance of safer speeds. However, some respondents claim they will remain unconvinced.

#### *Impact on fatal, serious and casualty crashes*

- 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.
- Since the beginning of the trial, to date, there have been no fatalities on roads included in the trial.

#### *Impact of COVID*

- The trial and data collection took place during the COVID-19 public health directions, which may have impacted the trial. Specifically, this may be expected to have an impact due to the potential for increased travel speeds due to lower traffic volumes. However, this was not observed in the data. In addition, COVID-19 travel limitations were no longer in place during the November/ December 2021 traffic counts, resulting in comparable traffic volumes to the data collection before the 80 km/h speed limits.

## Insights

- The Safer Speeds Trial in Mornington Peninsula Shire appears to be meeting its original objectives. These were to better match the speed limit with the road environment and characteristics of the high-risk rural roads to reduce the likelihood of crashes occurring, and also to reduce the risk of vehicle occupants being seriously injured or killed if a crash does occur.
- Most community members support the trial, as well as the continuation of the new 80 km/h speed limits and the expansion of safer speed limits to unsealed roads in the municipality.
- The implementation of safer speed limits should be coupled with community education about the benefits of reduced speed limits and, potentially, enforcement activity to improve compliance.

## About this report

### Approach

This report has been prepared by the Department of Transport for the Mornington Peninsula Shire Council to support the communication of the key findings from the evaluation of the Safer Speeds Trial, which commenced in December 2019. This report provides a consolidated summary of the evaluation reports procured and delivered to the Department of Transport to evaluate the safer speeds trial, including:

- Background to the trial and the evaluation framework
- Methods used to evaluate the trial
- Findings from the evaluation
- Insights gained from the trial.

The findings from the Mornington Peninsula Shire Council Safer Speeds Trial Evaluation are presented in this report, aligned to the four key evaluation criteria used to undertake the study:

- Impact on traffic speed – whether the speed limit reductions led to lower average travel speeds
- Speed limit compliance – whether the number of people who travel at or below the posted speed limit changed
- Community sentiment – the acceptance, perceptions and impacts of the speed changes and the trial on those who regularly use the roads
- Casualty crashes – the impact of speed on fatalities and serious injuries.

This report draws on findings from the following reports:

- Mornington Peninsula Safer Speeds Trial – Community Sentiment Survey – Wallis Group. June 2021
- Mornington Peninsula Speed Limit Change Interim Evaluation Report – Abley. March 2022 (covering the first and second after-periods)
- Mornington Peninsula Speed Limit Change Interim Evaluation Report – Abley. June 2022 (covering the third after-period).

## Background

### Mornington Peninsula Shire Council Safer Speeds Trial

In 2019, the Mornington Peninsula Shire was one of the two worst municipalities for road trauma in Victoria, with 12 people losing their lives and a further 200 acute hospitalised claims to the TAC following crashes on roads within the Shire. Half of these deaths occurred on roads included in the trial. In the period 2014-2021, Mornington Peninsula Shire was the equal worst Victorian municipality (equal with the City of Greater Geelong) for road deaths, with 64 people killed over eight years. Despite the efforts of the Department of Transport, Mornington Peninsula Shire Council, Transport Accident Commission and Victoria Police, road safety remains a concern on the Peninsula. While annual fatality data tend to fluctuate from year to year, the long history, spanning decades, of ongoing severe trauma is indisputable evidence of the inherently risky nature of many roads throughout the Peninsula.

In 2016, the Mornington Peninsula Shire Council committed to the vision of no lives lost on their roads. Since this time, the Shire has been developing programs in partnership with the abovementioned road safety partners in a coordinated effort to reduce road-related serious injuries and fatalities.

In late 2019, the Mornington Peninsula Shire Council approached the Department of Transport to seek support to undertake a large-scale speed zoning trial on 38 sealed, locally-managed roads within the municipality, beginning in December 2019 for a two-year period. A total of 33 roads were included in the trial which implemented speed limit changes from 90 or 100 to 80 km/h. While the initial proposal was for 38 roads, five were later assessed as more suited to speed limits below 80 km/h. Figure 1 shows a list and map of the final set of 33 roads included in the trial.

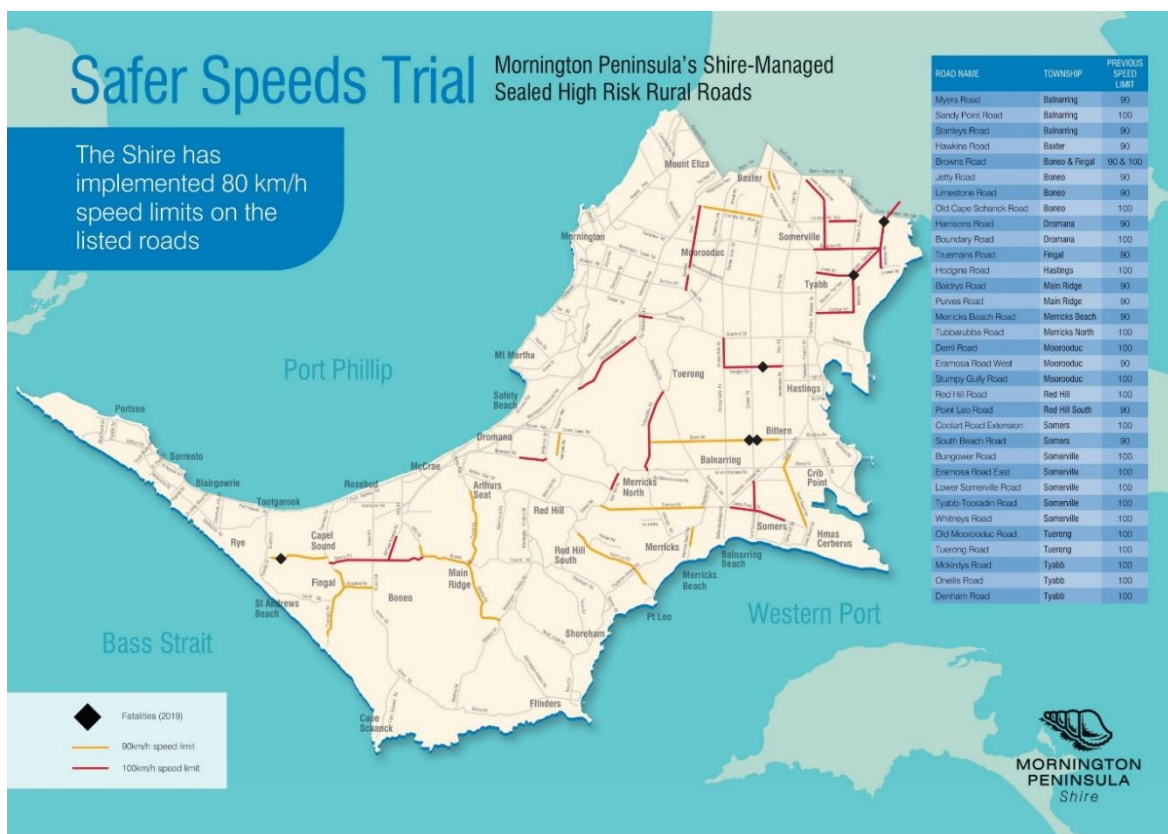


Figure 1: Road list and map of Mornington Peninsula Shire Council roads included in the trial

The Department of Transport, as the State's department responsible for speed zoning in Victoria, agreed to support the trial as well as to fund and manage an independent evaluation to support Mornington Peninsula Shire Council to determine the effectiveness of the trial and to ensure key lessons from the trial were captured to inform future speed zoning policy.

## Speed and road trauma

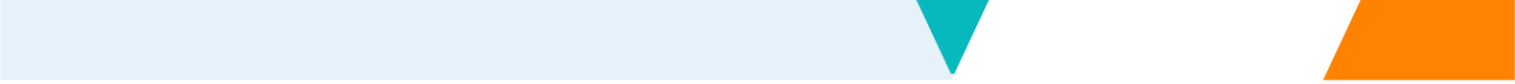
Safer Speeds is one of the four pillars of the Safe System approach to road safety. The Safe System acknowledges that humans are vulnerable, make mistakes and cannot withstand the forces of many commonly occurring crashes, even at legal speeds. The Safe System also acknowledges that road design, vehicle speeds, vehicle safety features and human factors all contribute to crash and injury outcomes and that the system pillars need to interact to ensure that when crashes occur, crash forces don't exceed the limits that the human body can tolerate.

Speed plays a fundamental role in the forces experienced in a crash and, as a result, speed and road safety outcomes are closely correlated. Setting appropriate speed limits is an essential element in reducing risk to road users. Evidence shows that speed strongly influences both the chances of a crash occurring and the severity of injuries, should a crash occur. This is particularly relevant on high-speed roads (over 80 km/h) where injury risk reduction infrastructure, such as flexible safety barriers, is not available.

A relatively small reduction in the average speed of vehicles has been found globally to result in a disproportionately large decrease in the risks of people being killed or seriously injured. While the DoT and its road safety partners are investigating what speed limit/s should apply in the longer-term along high-speed, undivided roads where there is potential for fatal head-on or other lane departure crashes, the transition to 80 km/h is currently believed appropriate for roads of the type included in the trial. However, this position may change as more evidence on the effectiveness of safety features in the future Victorian vehicle fleet, especially in relation to the potential for head-on crashes, is gathered as part of planning to halve deaths on Victorian roads by 2030.

The reasons why 80 km/h is considered safer and more appropriate for low-volume, high-speed roads with no safety barriers include:

- There is a direct correlation between speed limits and average vehicle speeds.
- The risk of being killed in a run-off road or head-on collision, even in a modern 5-star vehicle, increases sharply above 70 km/h to 80 km/h.
- High-speed roads (i.e., speed limits above 80 km/h) without adequate safety features are highly-represented in Victoria's severe road trauma, relative to comparable roads with 80 km/h speed limits. Across Victoria, 38% of all fatal crashes occur on roads with speed limits of 100 km/h or higher. Over 80% of these fatal crashes (31% of all fatal crashes) occur on C-class state-managed arterials or local roads with 100 km/h speed limits, demonstrating the high risk of fatalities on this type of high speed road.
- By reducing the average travel speeds on these roads by 10 km/h, the risks of serious injuries and deaths would be reduced by an estimated 35% and 40%, respectively.
- A head-on collision at 100 km/h will very likely result in at least one fatality (90+% probability), whereas at 80 km/h, the probability falls to just 30–40%. In comparison, a head-on impact at 70 km/h has an approximate 10% probability of resulting in at least one fatality.
- The kinetic energy of a vehicle travelling at 100 km/h is 56% more than for a vehicle travelling at 80 km/h. In the event of a crash, this additional kinetic energy must be absorbed by the vehicle structure and its occupants, resulting in much more severe injuries and a much higher probability of death.
- At 80 km/h, events unfold more slowly, allowing drivers more time to react to avoid a crash or lessen its severity.
- Speed is critical to a driver's ability to brake to avoid a crash or to reduce the speed at impact to low-risk levels. Austroads reports that a distance of 115 m is required to stop from 80 km/h and 165 m to stop from 100 km/h (a 43% increase in braking distance for a 25% increase in speed). With the rate of speed reduction increasing during the braking event, the slower the speed a vehicle is travelling when the driver begins braking, the greater the chance of reducing speeds to harmless levels.
- Roads that don't have roadside and centre barriers are high-risk at speeds above 80 km/h. High-volume, State-managed, arterial roads with 100 km/h speed limits are increasingly having roadside safety barriers



installed, thereby reducing fatalities and serious injuries by up to 85%. Safety barriers make these roads more suitable for their 100 km/h speed limits. However, it is neither affordable nor practical to upgrade all high-speed roads with safety barriers to be safe for travel speed at 100 km/h.

## Evaluation Framework

The Department of Transport established the following key metrics to provide a holistic evaluation of the effectiveness of the Mornington Peninsula Shire Council's Safer Speed Trial:

### *Deaths and serious injuries*

- Deaths and serious injuries resulting from road crashes are the key metric for measuring road safety.

### *Traffic speed*

- Travel speed is a major determinant of both crash and injury risk, a fact that has been demonstrated both globally and locally by many road safety researchers. The strong relationship between travel speed and road trauma is unsurprising as it is simply an everyday illustration of the laws of physics.

### *Speed limit compliance*

- Speed limit compliance by road users measure how many vehicles are exceeding the speed limit. Setting a speed limit that is easily understood and complied with by road users is a desirable feature of good speed zoning practice.

### *Community sentiment*

- Community sentiment can be measured to assess the level of support that the community and road users have for a speed limit change. A high level of support and awareness can be expected to result in better outcomes for the community through better acceptance and compliance with speed limits and, hence, fewer severe injuries and deaths.

The following are indicators of success for the trial:

- Reductions in deaths and serious injuries
- Reductions in traffic speed by drivers and riders
- Satisfactory speed limit compliance by road users
- Community satisfaction levels with speed limits.

## Methods

To understand the impacts of the trial on traffic speed and compliance with new speed limits, speed and traffic flow data were collected for each of the study routes (both treated routes and control routes) using tube count technology. Data collection comprised a total of 59 trial and control routes at four time points:

- November/December 2019 - before trial commencement (Before)
- May 2020 - five months after trial commencement (After 1)
- November 2020 - one year after trial commencement (After 2)
- November/December 2021 - two years after trial commencement (After 3).

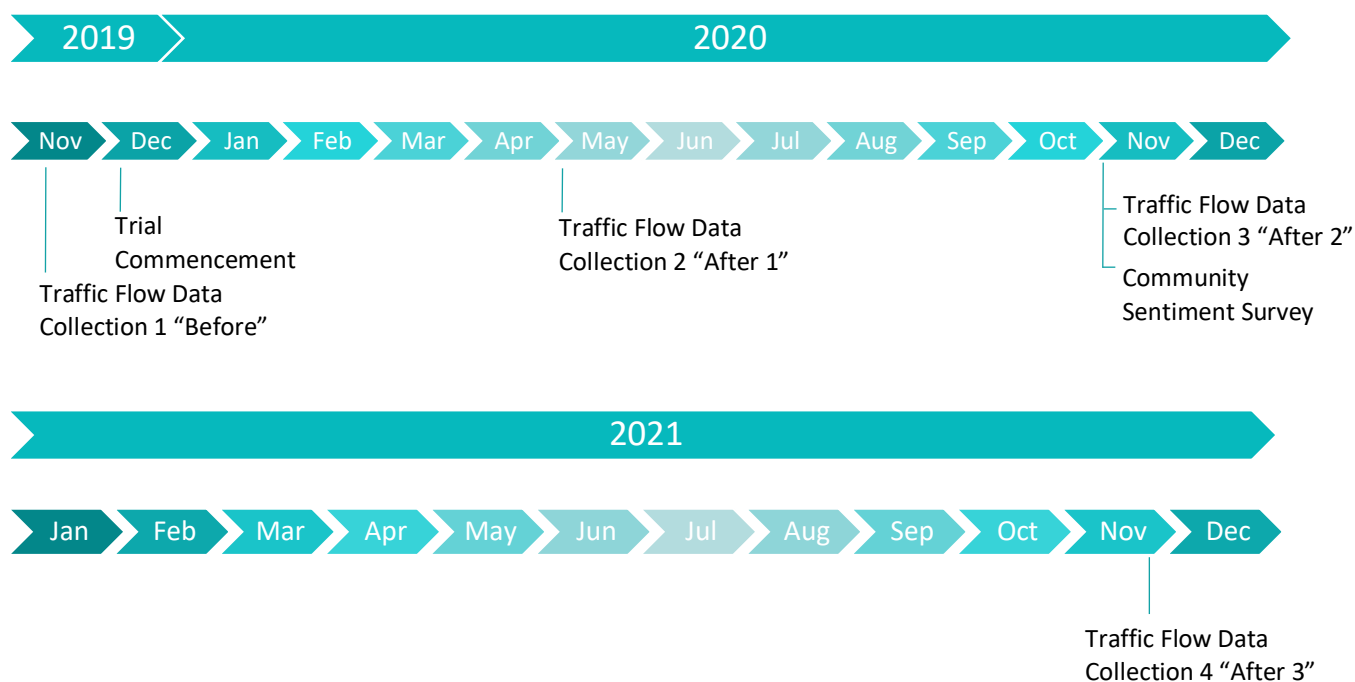
Collection at these times enabled the comparison of driver speed behaviour before and after introducing the new speed limits. The evaluation design used control roads (i.e., comparable roads not subject to changes in speed limits during the study period) to account for any other factors that may have influenced driver speed behaviour.

Community sentiment was assessed via quantitative surveys of a representative sample of 1,059 members of the Mornington Peninsula Shire community, as well as 15 in-depth, qualitative interviews. To achieve this, a random sample of 6,126 residents of Mornington Peninsula Shire was collected, using addresses available in the VicRoads Registration and Licensing Database. The survey was open for four weeks, with a primary approach letter mailed on 11 November 2020 and the last response accepted on 8 December 2020. Overall, 1,059 online and telephone surveys were completed, corresponding to a response rate of 17%.

To understand the impact on fatalities and serious injuries, preliminary results have been garnered from a comparison of TAC-validated injury claims data, before and after the trial was implemented, as well as from



reported fatalities and serious injuries on roads. Estimates of effectiveness have been made using observed mean travel speeds. These results are not final, as it is too soon to reliably measure the full impact of the trial on the incidence of fatalities and serious injuries. A comprehensive analysis is planned and will be undertaken once an adequate period has elapsed. Evaluations of this type typically require about five years after the start of the trial.



## Findings

### Impacts on travel speeds

This component of the evaluation has added to Victoria’s understanding of the impact reduced speed limits can have on travel speeds, and the savings in deaths and serious injuries that can result.

The objective of the evaluation of travel speeds was to assess the changes associated with speed limit reductions from 100 or 90 km/h to 80 km/h on:

- free-flow mean speeds, that is, the average speed of motorists travelling on the treated roads
- speed limit compliance, that is, the number of drivers and riders observing the speed limit
- estimated fatal and serious injury savings as a result of speed changes.

The main findings of this preliminary study are:

- There is very strong evidence to confirm that a 5 km/h mean operating speed reduction has been achieved after two years for roads that had a reduced speed limit from 100 km/h to 80 km/h. The most recent results show even larger reductions in mean operating speeds than found at both six months and 12 months after the speed limit reduction. Larger reductions in mean speeds of 7 km/h were observed along a subset of roads carrying more than 1,000 vehicles per day, as well as along roads having higher travel speeds before the trial commenced. Reductions as high as 8-10 km/h were found on three of the routes where speed limits were reduced from 100 to 80 km/h.
- Reductions in mean speeds of 4 km/h were found where speed limits were reduced from 90 to 80 km/h, though a lack of suitable control roads restricts the statistical reliability of findings for 90 to 80 km/h.
- There is evidence of a narrower spread of travel speeds after the speed limit changes. Results before the survey showed a wider band of speeds between about 75 km/h and 100 km/h. The after-surveys, particularly the more recent surveys, showed many more vehicles travelling closer to the 80 km/h limit.

- There was a large increase in the number of drivers travelling below the target safer speed of 80 km/h for all roads on which speed limits were reduced. Regardless of whether the initial speed limit was 100 or 90 km/h, more than half to two-thirds of drivers drove at or below 80 km/h in the after-period. That is, many more drivers now drive at speeds more closely aligned with the principles of the Safe System, resulting in reduced risks of deaths and serious injuries.
- Using globally-endorsed scientific methods, 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 to 80 km/h routes, estimated reductions in persons fatally or seriously injured are less, at around 15% across the treated routes.
- As expected, speed limit compliance rates fell when speed limits were dropped to 80 km/h. The effect was greater on roads where speed limits were reduced from 100 to 80 km/h. Over one-third of all drivers were found to have exceeded the new lower limit.

Preliminary findings from the analysis of the speed data collected during the third after-period (late 2021) indicate even more positive results for roads on which the speed limit was reduced from 100 to 80 km/h. Control-corrected speed reductions of around 5 km/h were found, compared with 3-4 km/h for the earlier after-periods. Even higher reductions (around 6 km/h) were found along higher volume treated roads, translating into even larger estimated reductions in the risk of deaths and serious injuries.

Compliance with the 80 km/h speed limits is expected to improve naturally over time, as drivers continue to adjust to the new speed limits.

## Community sentiment

DoT engaged Wallis Social Research in June 2020 to conduct research to understand community sentiment relating to the Safer Speeds Trial. Because COVID-19 restrictions affected traffic volumes in the trial area, fieldwork was postponed until November 2020 to minimise the effects on perceptions gained during a time of reduced traffic.

The research findings show the frequency of driving was somewhat lower than reported a year prior (both measures taken in the survey). However, the difference in driving frequency is unlikely to have had a substantive impact on community sentiment towards the speed limit reductions. To our knowledge, this is the first time in Victoria a survey of this scale has been conducted in a speed limit setting context, using a simple random sampling approach from a high coverage sample source.

The community sentiment research consisted of two phases:

- A quantitative survey of MPSC residents, followed by
- Individual interviews.

### *Community Sentiment Survey*

The research objectives of the survey were to:

- Measure awareness of, and familiarity with, the Safer Speeds Trial
- Determine the level of understanding of which roads are affected by the trial
- Understand attitudes towards the trial
- Understand attitudes towards speed and speed limits
- Record reasons for support for, and opposition to, the trial
- Understand the perception of the level of road trauma on the Mornington Peninsula
- Identify the impact of the trial on those surveyed
- Capture opinions about the future of the trial.

### *Community Sentiment Interviews*

The community sentiment *interviews* involved discussing the trial with fifteen MPSC residents who had already completed the quantitative survey in 2020. The purpose of the interviews was to deepen the understanding of the sentiments and perceptions behind the responses obtained in the quantitative *survey*. The research objectives complemented the objectives for the quantitative research:

- Understand awareness and communications relating to the trial, including
  - The information that was communicated to respondents
  - The most effective communication methods
- Understand the reasons behind support for, and opposition to, the trial, including
  - Reasons for support or opposition
  - Benefits and problems arising from the trial
  - Feelings when driving on speed trial roads
  - Understandings of road trauma at differing levels of speed
  - Opinions about avoiding future fatalities on the road
- Understanding the reasoning behind opinions about the future of the trial, including
  - Maintaining the new speed limits or returning to the old speed limits.

### *Awareness and familiarity with the trial*

- About three-quarters (76%) of respondents had heard of the Mornington Peninsula trial of reduced speed limits and, of these, three-quarters (75%) are familiar with the trial. The qualitative research found that familiarity is generally an awareness that the speed limits have been reduced and that the intention is to reduce road trauma on the Mornington Peninsula.
- Just over half (52%) of respondents agree that 'I know which roads have reduced speed limits' and a fifth (21%) agree that 'I was not aware that speed limits had been reduced'.
- Among the 15 participants in the qualitative research, most did not recall much detail regarding what they had heard about the trial. The most common source of awareness was observing changed speed limit signs and, in some cases, adjacent signage highlighting the new speed limit.

### *Support for the reduced speed limits*

- Residents are nearly three times as likely to support the reduction of the speed limits (59%) as they are to oppose them (22%), while 20% take a neutral stance.
- Among the 59% supporting the trial, reasons for supporting the trial include that there will be fewer crashes (31%), slower speeds are safer (27%) and many roads are in poor condition (18%).
- Among the 22% not supporting the trial, reasons for opposition include 'too slow/speeds should be higher/travel will take longer' (42%) and 'it will cause congestion and frustration' (21%).
- Respondents underestimate the level of community support for the trial demonstrated in the survey. Only about a third (34%) agree that 'most people I know are supportive of the trial', whereas 59% of respondents actually support the trial.

### *Attitudes towards the trial*

- The community understands that the reason the trial has been introduced is to reduce 'road accidents/fatalities' (52%). Just over half (54%) agree that 'the speed limits are appropriate' (versus 25% disagree) and half (50%) agree that 'the speed limits make me feel safer' (versus 29% disagree).

### *Impact of the trial*

- Just over four in ten (43%) respondents agree that 'I am personally affected by the reduced speed limits.' (versus 30% disagree). Around one in seven (15%) report that they have been affected as 'I use those roads and I drive slower/trips take longer'.
- Six in ten (59%) respondents agree that 'my local journeys will have minimal time difference because of the trial' (versus 23% disagree).

### *The future of the trial*

- About half of respondents (51%) agree that the reduced speed limits should be made permanent, versus three in ten (29%) who disagree.
- There is also majority support to expand the trial to unsealed roads, with over half (55%) agreeing to this proposition (22% disagree with this statement).

### *Ongoing community sentiment*

- The minority who opposed the reduced speed limits, or reported a neutral position, also reported feelings of frustration and annoyance at the reduced speed limits. Key factors driving this sentiment are the perceived increase in journey time and a feeling of driving too slow on these roads, and the risk of being penalised when driving at the incorrect speed due to a change in the speed limit. This is underpinned by a strong habitual driving speed on these roads, often formed over many years of driving on the same roads.
- The qualitative research found that it is likely that residents who initially oppose the trial or are neutral will move to a position of acceptance over time and that some already have moved in the trial period. Parallels were made to other public safety initiatives, especially the shift of the national default urban speed limit in 2001 from 60 km/h to 50 km/h.

### *Providing evidence to the community*

- The reduced speed limits are based on the fact that reduced speed limits that match the road environment and safety features of roads lower road trauma. Supporters agree with this in-principle with nearly nine in ten (87%) supporters agreeing that 'the reduced speed limits will help reduce the level of road trauma in the Peninsula'.
- Those who oppose and some who are neutral doubt the efficacy of this approach. Less than one in ten (7%) of those opposed to the reduced speed limits agree that 'the reduced speed limits will help reduce the level of road trauma in the Peninsula'.
- Common rejections include scepticism regarding the veracity of statistics used to demonstrate efficacy, the belief that road trauma is caused by other factors, and compliant and skilled drivers are not at risk if driving at 100 km/h on these roads. The fundamental role played by speed in determining crash and injury risk is indisputable but too often overlooked because of these common misconceptions.

### *Understanding of the road safety benefit of lower speed limits*

- All participants in the qualitative research demonstrated an understanding that a crash which involves cars colliding head-on where they are travelling at 80 km/h will be less likely to result in a fatality than a head-on crash at 100 km/h.
- Further, two-thirds (66%) of respondents agree that 'lower speed limits reduce road trauma' (compared with 16% who disagree). Eight in ten (79%) nominated a speed of 60-80 km/h as the most appropriate speed to reduce the risk of injury should a head-on collision occur.

### *Aspects of road safety which are not well understood in the community*

- Participants in the qualitative research tended to believe that risk for any given road should be demonstrated by a count of incidents on that road. Understanding of the spatially distributed nature of risk of severe road trauma across the entire length of the road network and classes of roads was not an intuitive concept for some participants.
- There is also a belief that a compliant and skilled driver is safe and road trauma is caused by unskilled and non-compliant drivers. Thus, reducing speed limits is seen to unnecessarily affect skilled and compliant drivers who are believed to be not at risk. In this view, risk controls would target unskilled and non-compliant drivers, or that the risk from such drivers cannot be controlled.

## Impacts on deaths and serious injuries

Travel speed and impact speed are the fundamental determinants of injury risk, in the event of a crash, and at the system level, crash risk. Therefore, assessing changes in road trauma (primarily in the numbers of deaths and serious injuries) is a key part of the evaluation. But, reaching meaningful conclusions about the impacts of changes in travel speed on road trauma takes time. Past evaluations indicate that it may be feasible to obtain a statistically reliable indication after two to three years, potentially longer, depending on the size of any effects. In this context, and given the lag in receiving serious injury data, adequate time must be allowed for this most important component of the evaluation and will also need to ensure the influence of the COVID-19 pandemic does not compromise the evaluation's ability to draw reliable conclusions.

Preliminary advice from the Mornington Peninsula Shire indicates that no death occurred on the treated roads for at least two years from the commencement of the trial late in 2019. Further, a simple comparison has been undertaken of TAC-validated road casualty data before and after introducing the lower speed limits on these 33 Peninsula roads. In the two years before the lower limits were introduced, there were 38 casualties, while in the 18 months to mid-2021, there were nine casualties. This equates to a 68% reduction in the annual average number of casualties in the after-period. While very encouraging, these results are indicative only, due to the relatively short trial period and lower levels of vehicle movement during parts of the trial period. The full evaluation will include a comparison of deaths and serious injuries, over a longer after-period, to provide a more reliable estimate of effectiveness of the lower speed limits.

## Impacts on travel times

To assess the impact of the trial on travel times, the Shire conducted several field tests, finding for Browns Road, the longest stretch of road in the trial (12 km), the new limit adds less than a minute to a journey.

Because of time constraints at the commencement of the trial, no detailed travel time data could be collected for the before-period. This means that direct measurement of the impacts of reduced speed limits on travel times will not be possible unless reliable, alternative data sources can be found. To offset these practical difficulties, respondents to the community sentiment survey were asked about the impacts of lower speed limits on their journey times. On balance, respondents believed that reduced speed limits had minimal impact on travel times (59%). Only one in seven respondents to the survey believed that their travel time had been impacted. Respondents (a total of fifteen) to the in-depth survey were provided with the opportunity to expand upon their views on potential travel time impacts, whether perceived positively or negatively. Those who were less supportive of the trial were more likely to note the longer time taken to travel between locations and the frustration felt when driving more slowly on the roads.

## Insights

The Mornington Peninsula Shire Council has a large and sustained problem with severe road trauma due to the nature of their road network and inherent risks which cannot be effectively and practically treated through investment in safe road infrastructure alone. It is well established that speed limits are a primary determinant of travel speeds, that travel speeds are a primary determinant of crash risk and impact speed, given a crash. In turn, impact speed largely determines the risk of death or serious injury.

This evaluation of the trial of lower speed limits on 33 Mornington Peninsula Shire Council roads has, to date, found:

- Reducing speed limits significantly reduces travel speeds
- Reducing travel speeds to improve safety is supported by a clear majority of residents. Opposition is limited to just one in five residents, while strong opposition is confined to just one in 14 residents
- Early indications are fatal and serious injuries have fallen by 68% and that no deaths have occurred on treated roads since the trial of lower speed limits commenced in December 2019. However, there have been lower levels of vehicle movement for parts of the trial period which may account for some of the

observed reductions. Accounting for lower vehicle movement, a more conservative estimate is that the trial has resulted in a 20% reduction, or some four fewer casualties per annum along treated roads.

- Based on observed reduction in average speeds, the average estimated 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 risk reductions as high as 39%. For the 90 km/h to 80 km/h routes, the estimated reduction in the risk of persons being fatally or seriously injured is 15%.
- Travel time impacts are perceived by the community to be minimal, a finding which is supported by Council's field assessments.

Overall, the trial appears to be meeting its original objectives, though further time is needed before a reliable indication can be gained of the true effect of lower speed limits on severe road trauma.

The trial also provides insights into the future implementation of speed zone changes, specifically:

- Even small reductions in travel speed contribute disproportionately to enhanced safety.
- Compliance with the 80 km/h speed limits would be expected to improve naturally over time, as drivers continue to adjust to the new speed limits.
- Because a shift towards safer travel speeds takes time, as people adjust to new limits, updated speed data should be collected periodically to monitor speeds along treated roads. The preliminary results of the final period from late 2021 showed even larger reductions in travel speeds.
- Supporting actions like education campaigns can help people to understand the importance of safer speeds. Helping the community to understand that crashes, even at legal speeds, commonly result in death or severe injury will be critical to building the required understanding.
- There is evidence from the community survey of majority support; however, a small minority of community members may always be opposed to speed limit reductions.

This component of the evaluation has added substantially to Victoria's understanding of the impact reduced speed limits can have on travel speeds and, hence, the reductions in the risks of deaths and serious injuries that result.