September 2023

1 Timaru to St Andrews Safety Improvements

Making our roads safer

Why are changes needed?

State Highway 1 between Timaru and St Andrews is a busy stretch of road with a poor safety record. The pressures of this have been felt for some time.

Around 9000 vehicles travel along this highway every day. People travelling the route include commuters, milk tanker drivers, farmers, contractors and large vehicle drivers. There are multiple side roads along this route where traffic crosses, joins or leaves the highway.

There have been five fatal and 16 serious crashes on this road in the past decade leaving families and communities grieving and many people with life-long injuries.*

Analysis of the crashes shows most were reported as loss of control on bends and straights, and head-on collisions.

* From the beginning of 2013 through to May 2023 – just over 10 years. Source: Crash Analysis System (CAS), May 2023.

Did you know?

- Nearly every day, someone is killed on New Zealand roads and another seven people are seriously injured.
- Around 70% of crashes where people were seriously injured, drivers had generally followed the road rules.
- In 2021, New Zealand ranked 29 out of 33 OECD countries for road deaths, with a death rate of 7.9 deaths per 100,000 people.

WAKA KOTAHI NZ TRANSPORT AGENCY
ROAD TO ZERO
Te Kāwanatanga o Aotearoa New Zealand Government

We're moving towards a Safe System transport network

Crashes happen for many reasons. A 2018 NZ Automobile Association Research Foundation study found that for around 70% of crashes where people were seriously injured, drivers had generally followed the road rules.

Rather than driving recklessly, people had simply made a mistake or something unexpected happened. We all make mistakes, but our mistakes on the road shouldn't cost lives.

Reducing crashes is about much more than just how we drive – it's about all the different parts of the system – roads, vehicles, speeds and people.

Waka Kotahi NZ Transport Agency, together with New Zealand Police Ngā Pirihimana o Aotearoa and Te Manatū Waka Ministry of Transport is focused on delivering a wide range of safety improvements and other actions to make progress towards our road safety strategy target of a 40% reduction in deaths and serious injuries on New Zealand roads by 2030.

We're focusing on five areas over the next decade – infrastructure improvements and speed management, vehicle safety, work-related road safety, road user choices and system management.

Waka Kotahi prioritises median barrier on high-speed corridors with more than 6000 vehicles per day. This greatly reduces the risk of people being killed or seriously injured by head-on collisions while also addressing around 40% of the run-off-road/loss of control type crashes.

Safety improvements like the ones we're planning for SH1 between Timaru and St Andrews are taking place across the country as we work towards a Safe System transport network.

Our work in speed management and infrastructure improvements is underpinned by the internationally proven Safe System approach. It acknowledges that we are all human and that even the best drivers, on familiar roads, can make mistakes – but these mistakes do not need to cost us our lives.

The changes we are planning on SH1 from Timaru to St Andrews will make the road safer and reduce the likelihood of people being killed or seriously injured.

To find out more about what we're doing to make our roads safer, go to www.nzta.govt.nz/road-to-zero

Community drop-in at Pareora, May 2023

Map of fatal and serious crashes on SH1 between Timaru and St Andrews 2012 – 2023*

- Crash history is just one aspect considered when we investigate a corridor – the level of collective risk people face on this road is also important.
- This CAS (Crash Analysis System) data is based on NZ Police reporting.
- The approximate crash locations shown are not to be viewed as crash 'hot spots'. Crashes can happen anywhere.
- Most crashes were reported as loss of control on bends and straights, and head-on collisions.
- There have also been 101 minor injury and non-injury crashes reported along this route.

*2022,2023 data is incomplete and is current from CAS as at 26/05/2023.

Your feedback makes a difference

People giving feedback at the community drop-in at Pareora, May 2023

Feedback from the community considered after the first round of public consultation in May and June 2023 is shaping this project.

A community engagement summary report is available online outlining what we heard – community concerns and ideas and Waka Kotahi responses to this feedback.

Following a second round of public consultation, we'll consider any further adjustments to the design.

The project will then shift into more detailed design stage and the team will progress the necessary consents and approvals as well as apply for construction funding in the first part of 2024.

Improved road design saves lives

Road design is the greatest contributing factor to fatal and serious crashes, according to a series of studies carried out in Sweden. Improving road design is the most likely way to reduce the number of deaths on our roads – and dividing roads with flexible median barriers is the most effective way to avoid crash injuries.

To make SH1 from Timaru to St Andrew safer, we plan to:

- widen the road to provide for sections of median barrier, to give greater recovery distance and consistency across the corridor. This will also help to improve visibility
- add sections of flexible median barrier and roadside barrier along the highway. Barriers are highly effective in preventing deaths and serious injuries for people using the road, including motorcyclists
- make intersections safer with new infrastructure including wide shoulders and turning bays. As well as making it safer to cross and get on and off the highway, the roundabout at Pooke Road will help to manage vehicle speed through Pareora.

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How speed contributes

Speed contributes to the energy released in a crash so managing speed can have a big impact on whether someone can walk away from a crash, unharmed. This is important when we choose not to install safety infrastructure.

Speed management alone would achieve approximately a 15–30% death and serious injury reduction, while median barriers would achieve at least a 65% injury reduction (installed fully as per initial design).

Once we have finalised the high-level infrastructure design, we'll undertake a speed review for this section of highway to recommend the safe and appropriate speed limits. Key locations are the final stretch of highway into Timaru and Pareora.

Deciding speed limits is a legal process still to be completed. Please subscribe to project updates and we'll keep you informed of progress.

A new roundabout at Pareora will be effective in managing speed. Roundabouts require people to reduce their speed and pay attention in order to navigate the intersection. People are much more likely to survive a crash at a lower speed.

Barriers work

Because of the poor crash record and volume of traffic on SH1 between Timaru and St Andrews, a mix of median and roadside barriers, plus turnarounds and intersection upgrades are being investigated to manage the safety risk for people using the road and to significantly reduce fatal and serious crashes.

Roadside safety barriers

- Roadside barrier or edge barrier 'catch' vehicles that leave the road, grabbing them before they hit something harder, like a pole, tree or ditch.
- Roadside barriers at high-risk locations can reduce deaths and serious injuries by up to 30%.
- We provide space on road shoulders for people on bikes by widening the road where we can and setting barriers as far back as possible.
- We widen the road, build stopping bays, or put gaps in the barriers where we can, so people driving slower agricultural vehicles have room to pull over to let others past, buses can safely pull-over and let passengers off and our maintenance crews have safe spaces to work.

Flexible median barriers

When you hit a flexible barrier, the cables flex, slowing your vehicle and keeping it upright. Like a safety net.

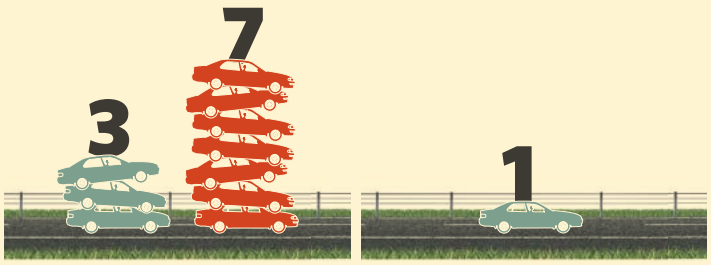
They're designed to absorb the impact, protecting you and others in the vehicle, ensuring your vehicle doesn't cross the centreline into oncoming traffic.

Flexible median barriers are making a difference around the motu (country):

- Several kilometres of flexible median barriers were installed on SH1 between Cambridge and Piarere in 2020. In the first four months following installation, the barriers were hit 40 times. That's 40 incidents which had the potential to result in serious head-on crashes.
- On SH2 at Bethlehem Tauranga, 1km flexible median barrier was installed in 2013. In the 10-year period before installation, one person died and 11 people were seriously injured along this short section of highway. Since the barriers were installed, there have been no crashes causing death or serious injury. Since 2015, the barrier has been hit 78 times.
- On SH1 north of the Brynderwyn Hills in 2015, 14km of flexible median barrier was installed. This section of SH1 was considered high-risk with five deaths and four serious injuries between 2006–2010. Since the barriers were installed, there have been no deaths. In 2021, the barriers were hit 15 times.
- Following installation, there's been a significant reduction in fatal and serious injuries at these four sites – SH1 Rangiriri (Waikato), SH58 Haywards (Greater Wellington), SH1 Centennial Highway (Kāpiti Coast) and SH3 Te Awamutu (Ōhaupō).

Where flexible road safety barriers are working to reduce harm

Serious crash Fatal crash



5 years before barrier 5 years after barrier

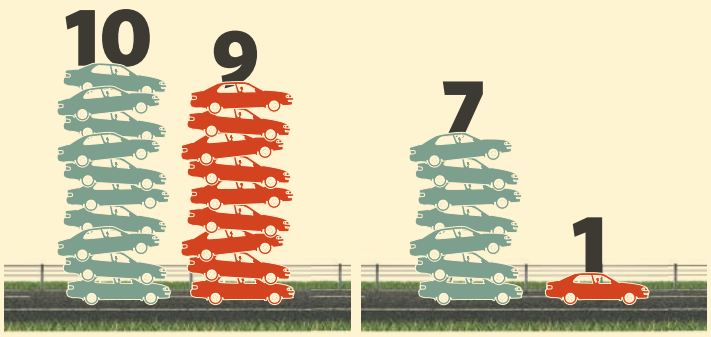
SH1 Centennial Highway - Kāpiti Coast

Barrier installed 2005/2006

5 years before barrier 5 years after barrier

SH58 Haywards - Greater Wellington

Barrier installed 2003



5 years before barrier 5 years after barrier

SH1 Rangiriri - Waikato

Barrier installed 2005

Do road safety barriers prevent large agricultural vehicles from pulling over?

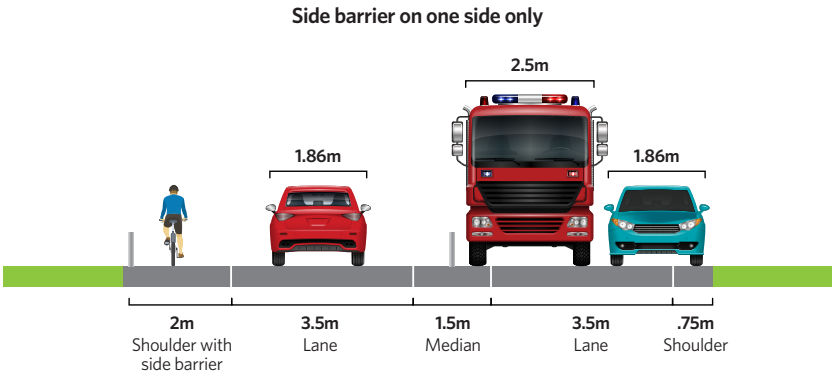
SH1 sits within a rural farming community and is an important road for agricultural vehicles, meaning more people are often travelling behind large vehicles such as combine harvesters and tractors.

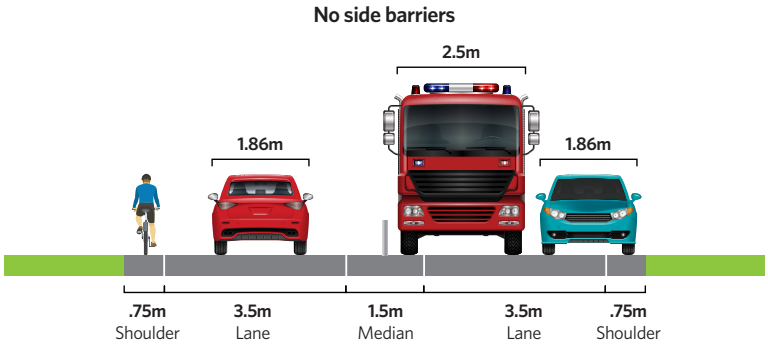
We've had discussions with farmers, landowners and businesses who operate machinery along this stretch of SH1 to better understand the types and dimensions of their vehicles and how often they are using the road.

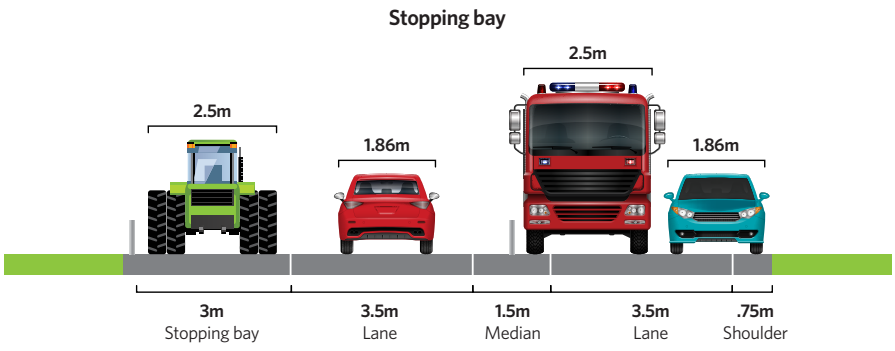
These details will be considered as part of the recommended design where we'll consider adding stopping bays to allow these vehicles to pull over and let people past.

Indicative highway cross-section

This diagram shows lane widths; with and without side-barrier and with stopping bays.







Is there enough room for emergency services to get past in an emergency?

The minimum 6.25m space between the guardrail at the edge of the road and the flexible safety barrier in the centre allows room for emergency services vehicles to get past other vehicles in an emergency.

We cannot rule out the possibility of some small delays to emergency services response times. However, there is little to no evidence to show this has been recognised as a concern in other countries applying the Safe System approach such as Australia and Sweden.

In contrast, the risks of people being killed or seriously injured on this road are well known. There have been five fatal and 16 serious crashes in just over a decade. These safety upgrades will significantly reduce this known risk and there is plenty of evidence supporting the effectiveness of median barrier.

There will be stopping bays for people to pull over, the natural verge, as well as entrances to driveways and accessways adjacent to the highway which can also be used to let emergency services vehicles past.

Will the roundabout allow for large trucks?

A single lane roundabout with a 36m central island outside diameter will be the minimum to enable the turning of a high productivity motor vehicle (HPMV) 25m truck-trailer unit.

Does having a median barrier mean I have to travel further?

To achieve the greatest safety benefit for the flexible median safety barriers, we need to have as few gaps as possible.

Waka Kotahi has a vision where no one is killed or seriously injured on our roads. To achieve this, we must put the safety of people first before efficiency and travel time.

This does mean those entering the highway from a private access or side road may only be able to turn left unless a safe turnaround has been provided.

We acknowledge the changes will be inconvenient for some people. We're asking the community for some compromise so we can achieve this.

To lessen the inconvenience to residents and businesses, we're looking at how we can reduce the distances between turning opportunities. We'll update our website once we have a better idea of how these will be placed.

What about motorcyclists and flexible safety barrier?

Motorcyclists are more likely to survive hitting a flexible safety barrier than a tree, pole or oncoming vehicle.

New Zealand motorcycle barrier crash data from January 2001 to July 2013 shows that of the 20 motorcycle fatalities sustained as a result of riders hitting a roadside or median barrier, three involved flexible safety barriers, while 13 involved traditional steel barriers and other barrier types.

Over the same time period, there were 97 motorcyclist fatalities from collisions with posts or poles, 70 from hitting traffic signs and 93 from crashing into unprotected trees.

Motorcycle protection on some barrier, road shoulders for recovery and good maintenance practices also help to improve safety for people riding motorcycles.

What is the distance between turnarounds where flexible median safety barrier is installed?

Spacing between turnarounds in our initial design ranges between 2.3kms to 3.6kms. This is currently under review as we work through feedback from residents, businesses and landowners, and undertake further investigations.

For more information about how these safety measures work and how they help make our roads safer, go to:

nzta.govt.nz/safety/driving-safely/safety-infrastructure

For answers to frequently asked questions, videos and project information, and to subscribe to project updates, go to:

nzta.govt.nz/t2sa