Speed management guide

Road to Zero edition

ROAD TO ZER0
TE ARA KI TE ORA

Imagine an Aotearoa where everyone gets to where they're going safely.

WAKA KOTAHI
NZ TRANSPORT AGENCY

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Foreword

Welcome to the *Speed management guide: Road to Zero edition.*

Far too many people are dying on Aotearoa New Zealand streets and road

Imagine an Aotearoa New Zealand where everyone can get where they need safely. Where it's safe to drive to work and home again or visit whanau and friends. Where it's safe to ride bikes and let tamariki walk to school. Where transport improves our health and wellbeing, creating liveable places for our communities. This is our vision for Aotearoa New Zealand.

Road to Zero – a 40 percent reduction in deaths and serious injuries by 2030

Vision Zero is a world-leading approach to road safety where no loss of life, or serious injury, on the road is acceptable. This can be avoided by building, maintaining and operating a safe, forgiving transport system, so that even when crashes do occur, they do not result in people dying or suffering serious injuries.

Road to Zero is Aotearoa New Zealand's Vision Zero strategy to significantly reduce road trauma. It has an ambitious target of reducing deaths and serious injuries on the roads by 40 percent by 2030 (from 2018 levels). Road to Zero is underpinned by the Safe System approach.

Road to Zero is focused on implementing a range of interventions including road infrastructure improvements, targeted enforcement, safer road user behaviour through driver training and licencing, a safer vehicle fleet and safe and appropriate speed limits.

Setting speed limits using evidence and data

Speed makes a major difference in a crash; it affects a driver's ability to react, and worsens the injuries sustained. Regardless of the cause of a crash, speed is the difference between someone being unharmed or being seriously injured or killed.

Speed management is a proven way to improve safety, saving lives and preventing debilitating injuries. It also represents a major, yet under-appreciated, opportunity to improve the climate change impacts of travel, support better health and wellbeing, and create greater inclusion.

As a signatory to the Stockholm Declaration on global road safety, Aotearoa New Zealand has pledged, among other road safety initiatives, to 'focus on speed management … noting that efforts to reduce speed … will have a beneficial impact on air quality and climate change as well as being vital to reduce road traffic deaths and injuries'.

Setting safe and appropriate speed limits

Currently only around 15 percent of our speed limits are aligned to achieving this vision.

Setting safe and appropriate speed limits will save lives. Aotearoa New Zealand has lost more people to traffic deaths per capita than most other countries in the OECD. In 2019, we were in the bottom six of 36 countries – that is unacceptable. Setting speed limits to safe levels is a key tool being used to great effect in many countries with world-leading road safety records.

The Land Transport Rule: Setting of Speed Limits 2022 and this guide will help authorities set safe and appropriate speed limits for our streets and roads, using a principles-based approach to creating a safe transport system that has safe speed limits at its heart for all people no matter their mode of transport. It will also assist our contribution to global sustainability targets by reducing harmful emissions and noise pollution and making communities more attractive for living, working or visiting.

We want you to get home safely every time

Speed management is critical to reducing harm and is a central component of Road to Zero. Our speeds really matter – they can make a substantial difference to safety and to creating safe and sustainable communities. It takes everyone to get to no one and adopting safe speeds on our networks is part of the role we can all play in making our roads safer for everyone.

Kane Patena
Director of Land Transport, Waka Kotahi

Introduction

This section explains:

- the purpose of this guide

- who will use this guide

- how this guide fits into the bigger picture

- the Land Transport Rule; Setting of Speed Limits 2022

- how to find your way around this guide.

Safe speeds are fundamental to improving safety, saving lives and preventing debilitating injuries. Safe speeds also generate wider societal benefits that are fundamental to sustainable mobility, including reduced climate change impacts of road transport, increased fuel and vehicle efficiency, improved inclusion and walkability, improved accessibility and greater physical activity.[1]

Purpose of this guide

The *Speed management guide: Road to Zero edition* supports regional transport committees (RTCs), regional councils and road controlling authorities (RCAs) to develop high-quality speed management plans that will deliver safe and appropriate speed limits in line with Te Ara ki te Ora – Road to Zero (New Zealand's road safety strategy to 2030)[2] and the Land Transport Rule: Setting of Speed Limits 2022 (the Rule).

This guide sets out an approach to speed management planning for Aotearoa New Zealand that draws together the Rule and the main elements of Road to Zero with Toitū te Taiao (the Waka Kotahi sustainability action plan)[3] and the One Network Framework (the national classification system for streets and roads).[4] The result is a principles-based approach to setting speed limits and managing speeds.[5]

This guide and the Rule enable RTCs and RCAs to set and manage speed limits in a coordinated and consistent manner across the country, so like roads are treated in like manner. This approach will help achieve safe speed limits throughout the road network to reduce deaths and serious injuries and contribute towards Vision Zero – an Aotearoa New Zealand where no one is killed or seriously injured in road crashes. The community will also experience a variety of wellbeing benefits from safer speeds such as improved accessibility, physical activity rates and environmental outcomes.

Waka Kotahi estimates that over 85 percent of speed limits in New Zealand are above the safe and appropriate speed limit. Achieving safe speed limits across the network requires significant change and will take time. Changes across the network will be prioritised and phased, balancing changes to:

- corridors, where lowering speed limits to safe and appropriate speed limits will save the largest number of people from death and serious injuries
- all streets surrounding schools, including streets outside school frontages and within 100m of a school boundary
- areas where the highest concentrations of active road users are expected.

Who will use this guide

This guide is primarily for people responsible for preparing, contributing to or making decisions about speed management plans (for example, people in RTCs, RCAs (including Waka Kotahi), regional councils and New Zealand Police).

A secondary audience comprises people interested in understanding safe and appropriate speeds and speed management at a national, regional or local level or who are providing feedback on a draft speed management plan during the consultation process. This audience encompasses a broad variety of people, including people involved with schools, health organisations, marae, retirement homes, sports clubs, churches, other community-oriented organisations, transport sector–related organisations and businesses.

> Further information
>
> - For the policy and regulatory framework underpinning this guide, see appendix one: Context.
> - For how to prepare a speed management plan, see section 3.

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1   RFS Job & LW Mbugua. 2020. Road crash trauma, climate change, pollution and the total costs of speed: *Six graphs that tell the story*. Washington DC: Global Road Safety Facility, World Bank.
2   New Zealand Government. 2019. Road to Zero: New Zealand's road safety strategy 2020–2030. Wellington: Waka Kotahi NZ Transport Agency.
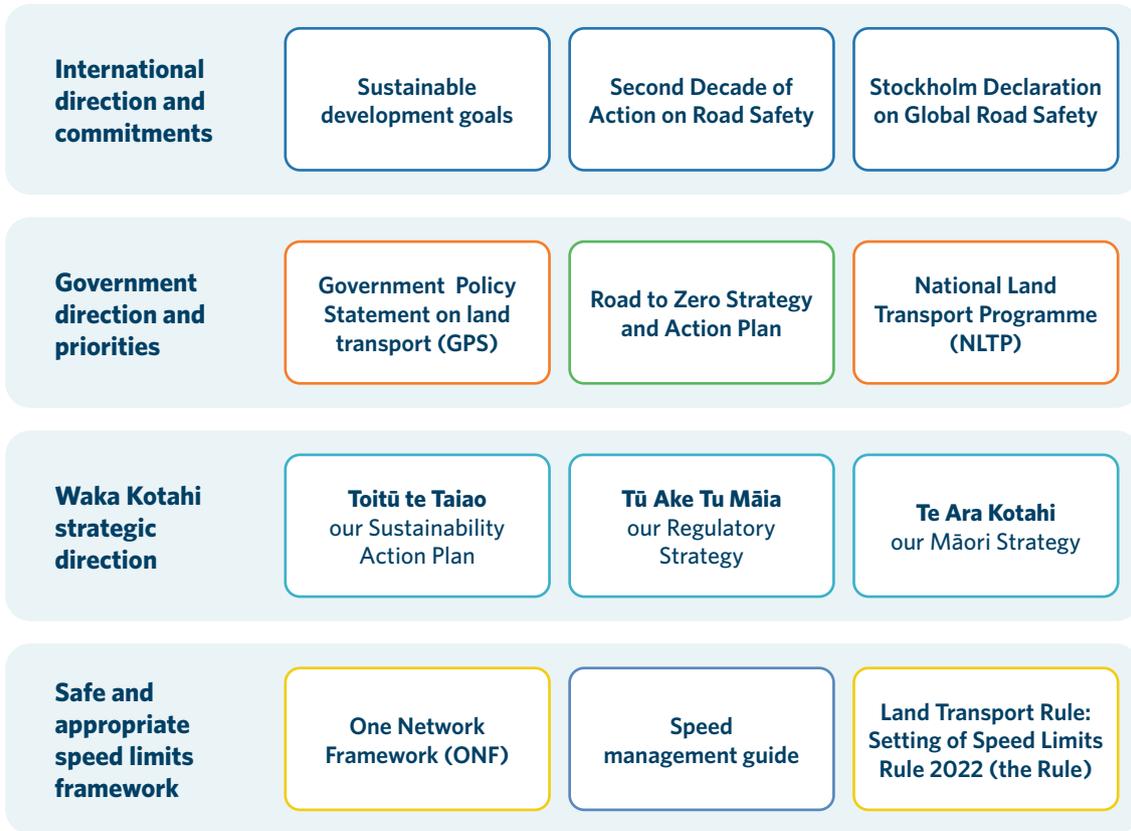3   Waka Kotahi NZ Transport Agency. 2020. Toitū te Taiao – our Sustainability Action Plan. Wellington.
4   Waka Kotahi NZ Transport Agency. 2022. One Network Framework (webpage).
5   Global Road Safety Facility. 2022. Speed management hub: frequently asked questions (webpage).

How this guide fits into the bigger picture

Figure 1: How this guide fits into the strategic direction of the government and of Waka Kotahi

International direction and commitments	Sustainable development goals	Second Decade of Action on Road Safety	Stockholm Declaration on Global Road Safety
Government direction and priorities	Government Policy Statement on land transport (GPS)	Road to Zero Strategy and Action Plan	National Land Transport Programme (NLTP)
Waka Kotahi strategic direction	Toitū te Taiao our Sustainability Action Plan	Tū Ake Tu Māia our Regulatory Strategy	Te Ara Kotahi our Māori Strategy
Safe and appropriate speed limits framework	One Network Framework (ONF)	Speed management guide	Land Transport Rule: Setting of Speed Limits Rule 2022 (the Rule)

This guide is aligned with the government direction and priorities, as well as the strategic direction of Waka Kotahi, in terms of transport and road safety. For more information on how the strategies, policies, plans and programmes shown in Figure 1 relate to speed management, see Appendix 1. Context for the Speed management guide. For more information about the safe and appropriate speed limits framework see Section 1 of this guide.

The guide reflects the Waka Kotahi values and principles of te whakaū i ngā tikanga Māori, e pūmautia ai mā te mahi pono (grounded in te ao Māori and underpinned by good practice) – be decisive and consistent with our values of whanaungatanga (integrity), manaakitanga (caring for people), whanaungatanga (relationships), kotahitanga (unity), mana o te reo Māori (Māori language) and rangatiratanga (individual autonomy and authority of Māori).

Review and update of the guide

This is the first version of the guide. Suggestions on how to improve the guide are welcome and will be taken into account for future revisions of the guide.

Please submit any feedback to speedmanagementprogramme@nzta.govt.nz

Land Transport Rule: Setting of Speed Limits 2022

The Land Transport Rule: Setting of Speed Limits 2022 (the Rule) replaces the Land Transport Rule: Setting of Speed Limits 2017, which required speed limits to be set through bylaws. The new Rule makes the setting of speed limits more efficient for RCAs by enabling a network approach rather than a piecemeal, road-by-road approach. This will improve speed management planning and consultation.

The Rule requires RCAs and RTCs to prepare speed management plans that establish a 10-year vision and three-year action plan to implement safe and appropriate speed limits and associated speed management activities. It empowers RCAs to set speed limits for roads in their jurisdictions, while also encouraging regional coordination. The Rule also sets out requirements when setting speed limits.

The Rule:

- introduces a regional speed management planning approach on a three-year cycle that complements the three-year cycle of the National Land Transport Programme

- takes a more holistic approach to network management where speed management is considered alongside investment in infrastructure and safety cameras

- requires Waka Kotahi (as RCA) and RTCs to develop speed management plans that set out their 10-year vision (which may include principles) and three-year implementation plan that includes proposed speed limit changes and safety infrastructure treatments (and can include information about safety cameras)

- requires RTCs to coordinate input from RCAs in their region to create a regional speed management plan, aligning with the regional land transport plan process

- allows flexibility for RCAs to produce independent speed management plans or for the speed management planning process to occur out of alignment with the regional land transport planning process

- gives the Waka Kotahi Director of Land Transport responsibility for certifying regional speed management plans

- establishes the independent Speed Management Committee to review the state highway speed management plan and provide recommendations to the Director of Land Transport regarding its certification and to oversee the information and guidance on speed management that Waka Kotahi (as regulator) provides to RCAs

- introduces a new process for setting speed limits outside speed management plans and for RCAs that are not territorial authorities

- requires all speed limits, other than temporary speed limits, to be entered into the National Speed Limit Register (managed by Waka Kotahi as regulator) to be given legal effect

- requires RCAs to use reasonable efforts to reduce speed limits around all schools by 31 December 2027 with an interim target of 40 percent of schools by 30 June 2024 (see 4.5)

- requires Waka Kotahi (as RCA) and regional councils to establish and maintain processes to provide opportunities and information for Māori to contribute to the preparation of speed management plans and consider ways to foster the development of Māori capacity for this.

> **Further information**
>
> For guidance on preparing a speed management plan in accordance with the Rule see section 3: Speed management plans.
>
> For the full detail of the rule see:
> nzta.govt.nz/resources/rules/setting-of-speed-limits-2022/

Waka Kotahi has three functions under the Rule:

1. Waka Kotahi provides information and guidance to RCAs, sets deadlines and monitors compliance with the Rule.

2. Waka Kotahi (as RCA) – develops, implements and reviews the state high speed management plan.

3. The Director of Land Transport certifies speed management plans and comments on the extent to which speed management plans comply with Road to Zero.

Waka Kotahi functions are delegated to the Director of Land Transport to retain independence from Waka Kotahi as an RCA.

How to find your way around the guide:

Introduction	provides an overview of the purpose and audience for the guide and a brief summary of the Land Transport Rule: Setting of Speed Limits 2022.
Principles	The **guiding principles for speed managment** are designed to sum up key concepts to help guide the speed management plan process and understand the rationale behind advice about speed limits from Waka Kotahi.
Speed limits	outlines the **setting of speed limits framework**, which provides the rationale for assessing and confirming the safe and appropriate speed limits for all streets and roads.
Speed management plans	detailed information on the concept, content, process and roles and responsibilities for **developing a speed management plan**.
Appendix one: Context	contextual information on speed management and road safety in Aotearoa New Zealand, and government and Waka Kotahi direction including the Road to Zero Strategy.
Appendix two: Partnership with Māori	overview of **best practice for partnering with Māori** for the development of speed management plans to meet Rule requirements and improve Māori road safety outcomes and to reduce the impacts of unsafe speed limits on Māori communities.
Appendix three: Communications and engagement	overview of **best practice for communications and engagement** on speed management to meet Rule requirements and build public understanding and awareness of safe and appropriate speed limits.
Appendix four: Monitoring and evaluation	overview of **monitoring and evaluation of speed management** interventions, performance and outcomes in relation to the Road to Zero monitoring framework.
Appendix five: Transitional provisions	guidance on the process for developing and certifying interim speed management plans.
Certification template	This optional template can support the process of submitting a speed management plan for certification by Waka Kotahi. It provides a basic structure and tables for organising the information required under the Rule for a speed management plan.
Additional technical information	additional technical information relevant to speed management including examples of assessed safe and appropriate speeds, sign requirements, minimum speed limit distances, intersection speed zones and threshold treatments.

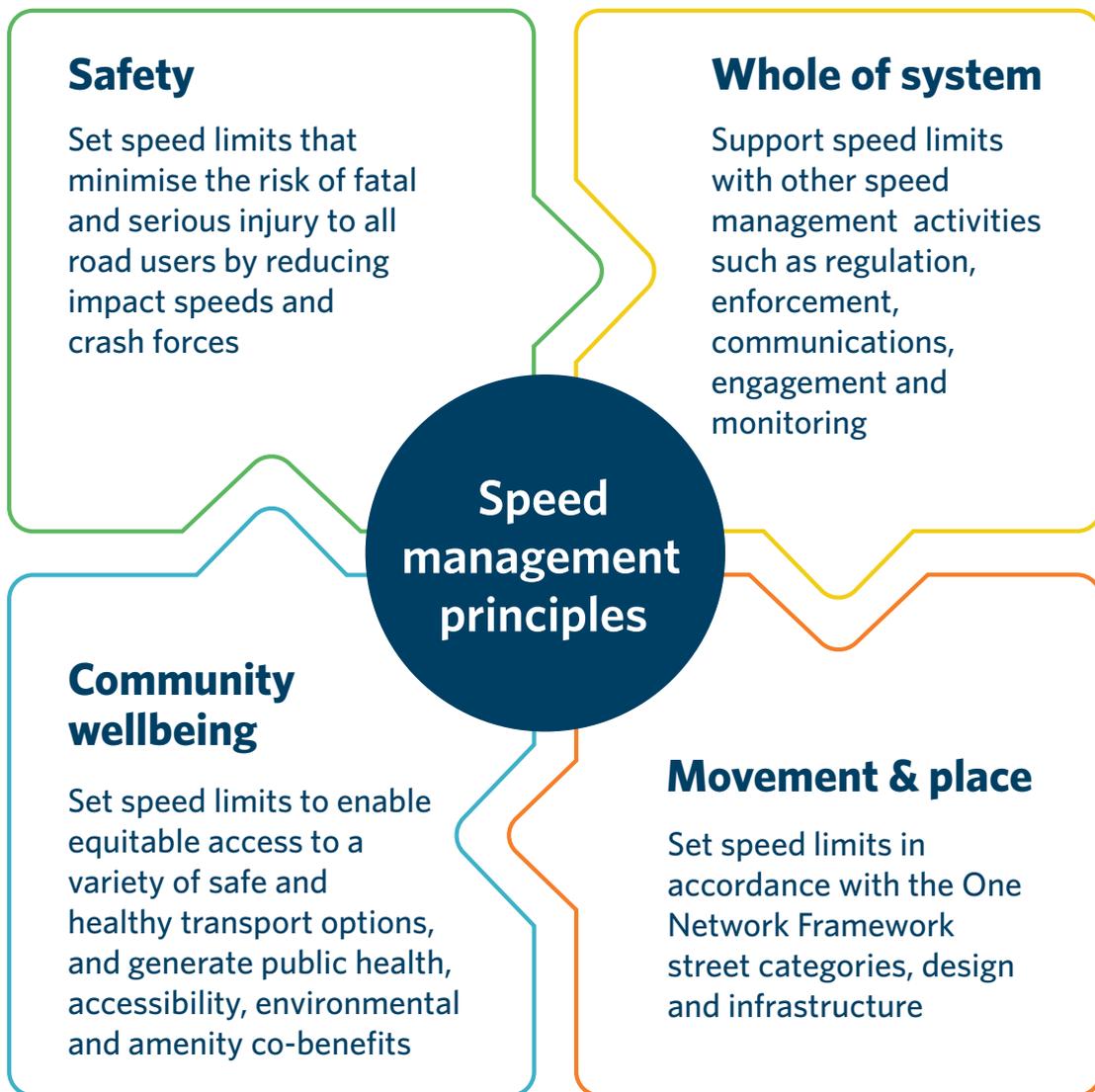# 1. Guiding principles for speed management

These principles are drawn from international best practice,[6] and policies and strategies of Waka Kotahi. They provide a practical and enabling approach to improving speed management planning and implementation.

The four principles are designed to be applied together and complement each other. An integrated, Safe System approach to speed management increases the effectiveness of each individual measure and prevents gaps in the system that result in poor road safety and community outcomes. The Safe System approach to road safety promotes the understanding of systemic factors and opportunities to intervene across the whole transport system rather than at any one level or part of the system[7]. This is particularly relevant when it comes to speed management, which cuts across all elements of the transport system – infrastructure, workplace road safety, vehicle safety, system management and road user behaviour.

For more information on how these principles can be applied to identify safe and appropriate speed limits, see section 2: Setting of speed limits framework.

Figure 2: Guiding principles for speed management

Safety

Set speed limits that minimise the risk of fatal and serious injury to all road users by reducing impact speeds and crash forces

Whole of system

Support speed limits with other speed management activities such as regulation, enforcement, communications, engagement and monitoring

Speed management principles

Community wellbeing

Set speed limits to enable equitable access to a variety of safe and healthy transport options, and generate public health, accessibility, environmental and amenity co-benefits

Movement & place

Set speed limits in accordance with the One Network Framework street categories, design and infrastructure

6   Global Road Safety Facility. 2022. Speed management hub: frequently asked questions (webpage).
7   P Salmon. 2021. Systems thinking in road safety (presentation). Australasian Road Safety Conference, 2021, Melbourne, 30 September 2021.

1.1 Principle 1 - safety

Set speed limits that minimise the risk of fatal and serious injury to all road users by reducing impact speeds and crash forces

The safety principle establishes the basic Safe System concept of human vulnerability – the human body's tolerance to physical force – at the core of speed-limit setting.

The starting point for achieving safe speeds is to set a safe speed limit, which can be complemented by other elements of the Safe System approach (such as road infrastructure and design) to encourage a safe operating speed.

To set safe speed limits, a Safe System approach to road safety identifies impact speeds at which the possible types of crash that could occur in a given part of the transport network would have a survival rate of about 90 percent (see Table 1). These speeds are well evidenced and becoming widely adopted globally.

Table 1: Survivable impact speeds for different collision scenarios

Road users combined with road and section type	Safe System speed
Roads and sections with people present outside and inside vehicles	No more than 30km/h
Roads with intersections with potential for side-on conflicts between vehicles	No more than 50km/h
Roads with potential for head-on conflicts between vehicles	No more than 70km/h
Roads with no potential for head-on or side-on conflicts between vehicles and no people present outside vehicles	No more than 100km/h

Source: International Transport Forum. 2016. *Zero road deaths and serious injuries: leading a paradigm shift to a Safe System.* Paris: OECD, p 88.

An example of speed limit setting using a Safe System approach is found in rural settings on roads with no physical separation of opposing traffic flows to prevent head-on crashes. In countries such as the Netherlands and Sweden, rural speed limits in these environments are set at 70–80km/h to minimise the risk of head-on crashes above 70km/h.[8] The European Safety Transport Council reported in 2019 that, 'Most of the countries with a significantly lower road mortality rate than the EU average of 50 deaths per million inhabitants apply a 70km/h or 80km/h standard speed limit on rural roads.' [9]

For the second Decade of Action for Road Safety, 2021–2030, the United Nations endorsed the setting of 30km/h maximum speed limits wherever pedestrians, cyclists or other vulnerable road users mix with motor vehicles.[10]

> ### Further information
>
> New Zealand Government. 2019. Road to Zero: New Zealand's road safety strategy 2020–2030
>
> International Transport Forum. 2008. Towards Zero: Ambitious road safety targets and the safe system approach – summary document
>
> OECD & European Conference of Ministers of Transport. 2006. Speed management
>
> International Transport Forum. 2018. Speed and crash risk
>
> For the evidence and impacts of speed on crash occurrence and injury, with particular reference to Aotearoa, see – RFS Job & C Brodie. 2022. *Understanding the role of speeding and speed in serious crash trauma: a case study of New Zealand.* Journal of Road Safety 33(1), 5–25.

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8   International Transport Forum. 2016. *Zero road deaths and serious injuries: leading a paradigm shift to a Safe System.* Paris: OECD.

9   European Safety Transport Council. 2019. *Reducing speed in Europe*. PIN Flash Report 36. ETSC

10   In 2020, the UN General Assembly adopted resolution 74/299 *Improving global road safety* proclaiming the Decade of Action for Road Safety 2021-2030, with the ambitious target of preventing at least 50 percent of road traffic deaths and injuries by 2030. UNECE, 2020. Second Decade of Action website.

1.2 Principle 2 – community wellbeing

Set speed limits to enable equitable access to a variety of safe and healthy transport options, and generate public health, accessibility, environmental and amenity co-benefits

The community wellbeing principle establishes that speed-limit setting needs to consider environmental, economic and other benefits in addition to reducing deaths and serious injuries. It also covers the difficult-to-quantify impacts of poor road safety on people's choice of travel mode and route and accessibility.

Making safe and accessible roads and streets for all

Everyone who uses streets and roads in Aotearoa New Zealand should be able to choose a transport option that best fits their needs from a variety of safe and accessible options. Safe and appropriate speeds will reduce stress for road users, including drivers and passengers, and help people feel safer to walk, bike, scoot or travel with children. This is because safe speeds make it safer and more comfortable for people biking and driving to share the road. They also make it easier to cross the road. Research shows that drivers travelling at safe speeds are significantly more likely to yield to pedestrians than drivers travelling at higher speeds.[11]

Protecting children around schools

Children are some of the most vulnerable road users because, compared with adults, they are generally less visible, less able to see the road over parked vehicles and other obstacles, have a less developed ability to judge distance and speed, have lower levels of impulse control, and have less life experience on which to base judgements. Safe speeds have significant benefits, especially for children, because they not only reduce the risk of death, injury and near misses, but they increase the opportunity for children to walk and bike to school, developing healthy habits of physical activity and independence.

Encouraging active modes

Safe speeds make travel more comfortable and accessible for people outside vehicles because of improved safety, reduced noise and emissions, and the reduced division of communities by high-speed roads.

When vehicle speeds are closer to those of bicycles or electric bikes, cyclists are safer and more comfortable sharing the street on low traffic volume roads and segregated infrastructure is less likely to be needed.

As safe speeds are achieved on more of the network and more people walk and cycle, a positive feedback loop can be created where private vehicle use is reduced and comfort and health grows (see Figure 3).

> **Box 1**
>
> **Reason for a 30km/h speed limit around schools**
>
> International best practice is that 30km/h is the desirable Safe System speed on roads and streets where high numbers of active road users, especially children, are present or desired. A pedestrian struck by a motor vehicle at this speed has a strong chance of surviving and avoiding a serious injury. The probability of a pedestrian being killed rises as impact speed increases. The probability approximately doubles between 30km/h and 40km/h and doubles again from 40km/h to 50km/h.
>
> Source: International Transport Forum. 2018. *Speed and crash risk* (research report). Paris: OECD. (2018)

Improving equity

Establishing safe speeds that make it safer and easier for all people to get around their communities, not just those travelling in private vehicles, has a significant impact on equity as it provides people with more safe and comfortable options for travel, including walking, biking or using public transport, which are free or lower cost than operating a private vehicle.

When considering the equity benefits of safe and appropriate speeds, it is important to note that the rate of Māori people killed or seriously injured between 2014 increased faster than for non-Māori. Various research findings have estimated that, overall, road traffic mortality rates are between 60 percent and 200 percent higher for Māori compared with non-Māori.

Furthermore, aside from the road trauma figures, it is important to understand how unsafe speed limits may be affecting accessibility, opportunity and travel choices for Māori, or causing other concerns in communities, such as having the community split by

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11   T Bertulis & DM Dulaski. 2014. Driver approach speed and its impact on driver yielding to pedestrian behavior at unsignalized crosswalks. Transportation Research Record 2,464, 46–51.

high-speed roads. Locations where Māori community hubs such as marae, kura or papakainga are located may be strongly in need of safe speed limits and further speed management approaches as they are destinations that concentrate particularly vulnerable populations such as tamariki, kaumātua or particularly large groups of people for events such as hui and tangihanga.

Figure 3: Positive feedback cycle catalysed by safe speeds[12].
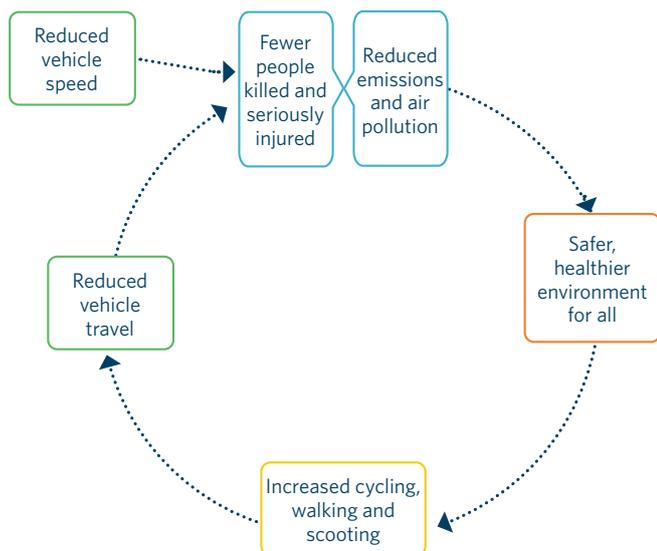
Generating environmental benefits

Environmental benefits from lowering speeds overall and reducing acceleration and deceleration include reduced particulate matter, emissions and noise pollution.

Research has found that reducing speed to safe speed limits reduces particulate matter from diesel vehicles. The reduction is more significant on higher speed roads such as motorways than on local roads, but the research noted a reduction in all contexts.[13]

When a vehicle travels at a lower average speed, the wind and rolling resistance decreases, so the car requires less energy and fuel to maintain speed. Therefore, fewer emissions are produced on safe speed roads. A vehicle moving at a constant speed (with minimal acceleration and deceleration) produces fewer emissions than a vehicle moving between speeds and needing to use more fuel accelerating and decelerating.[14] This is particularly relevant for urban areas where lowered speed limits can contribute to more consistent travel speeds and reduce acceleration and deceleration.[15]

Lower speeds mean the main source of noise comes from propulsion. As speed increases, noise comes from the tyres on the road as well as propulsion and contributes to greater overall vehicle noise levels.[16] Lower speeds result in less road surface noise, less propulsion noise and no aerodynamic noise which typically become evident at speeds over 50km/h. And less overall vehicle noise, means less noise pollution on local roads.[17]

Generating economic and efficiency benefits

To be efficient, the transport network needs to be safe. Road crashes cost Aotearoa New Zealand an estimated $4.6 billion in 2019.[18] Safe and appropriate speed limits reduce serious crashes and associated crash costs, including the costs of disruption to the transport network, public health costs, and social costs.[19] They improve efficiency in the rural and state highway network by supporting savings in fuel consumption and having more reliable overall journey times.[20] Overall, this contributes to a significant reduction in the total social costs on rural highways when all the benefits of reduced road trauma, air pollution emissions and vehicle operating costs from reduced speeds are considered.[21]

In urban areas, safe and appropriate speeds can also contribute to improved efficiency as they ease congestion by reducing bottlenecks.[22]

12   Adapted from World Resources Institute. 2018. Sustainable and safe: a vision and guidance for zero road deaths. Washington, DC.
13   European Environment Agency. 2020. Do lower speed limits on motorways reduce fuel consumption and pollutant emissions? Copenhagen: EEA.
14   F Perez-Prada & A Monzon. 2017. Ex-post environmental and traffic assessment of a speed reduction strategy in Madrid's inner ring-road. Journal of Transport Geography 58 (January), 256–268.
15   20's Plenty for Us. 2021. New research on emissions strengthens case for a 20mph default urban speed limit.
16   World Road Association, Technical Committee E2. 2020. Traffic noise: best practice guide. France: World Road Association (PIARC).
17   Waka Kotahi NZ Transport Agency. 2022. Vehicle emissions prediction model (webpage).
18   Ministry of Transport. 2021. Social cost of road crashes and injuries: June 2020. Wellington.
19   RFS Job & LW Mbugua. 2020. Road crash trauma, climate change, pollution and the total costs of speed: Six graphs that tell the story. Washington DC: Global Road Safety Facility, World Bank.
20   International Energy Agency. 2022. A 10-point plan to cut oil use (webpage)
21   RFS Job & LW Mbugua. 2020. Road crash trauma, climate change, pollution and the total costs of speed: Six graphs that tell the story. Washington DC: Global Road Safety Facility, World Bank.
22   Bray, Sharpin et al. 2021. Low speed zone guide. World Resources Institute.

Encouraging active transport options also has significant positive impacts for physical and mental wellbeing, which saves public health costs. Furthermore, in locations with a high 'place' value (see 2.2), safe speeds contribute to a sense of place and can increase amenity value, making the location more attractive to visitors, thus generating economic activity.

> **Further information:**
>
> - He Pūrongo Whakahaumaru Huarahi Mō Ngā Iwi Māori: Māori road safety outcomes
> - Ministry of Transport. 2021. Social cost of road crashes and injuries: June 2020. Wellington
> - Stockholm Declaration. 2020. Third Global Ministerial Conference on Road Safety: Achieving global goals 2030, Stockholm, 19–20 February 2020

1.3 Principle 3 – movement and place

Set speed limits in accordance with the movement and place based approach in the One Network Framework street categories and the standard of the transport (safety) infrastructure.

The movement and place principle establishes that speed limit setting should align with the movement and place functions of the streets and roads of Aotearoa New Zealand. This means establishing safe speed limits that are appropriate for the function and design of the street or identifying places in the network where the design and infrastructure needs to be improved so it is better attuned to the speed limit.

Linking intended street and road functions with safe speed limit ranges

The One Network Framework street categories (section 2.2) provide information for applying speed limits that support the Safe System and the community wellbeing principle by linking safe speed limits to the function of the street or road and its design and infrastructure. This includes setting speeds limits that reflect intended street use and existing infrastructure, planning changes to infrastructure to suit more appropriate speed limits, and planning changes to infrastructure so speed limits can stay the same .

The movement and place principle recognises streets and roads have a place function as well as a movement function and the place function may be more significant than the movement function. The approach to street categorisation places a strong emphasis on adjacent land uses and intended function for all types of road users rather than current vehicle traffic volume. This links directly to safe speed limits.

As movement and place approach, the One Network Framework provides the opportunity to clearly link the intended function of a street, indicated by street category to a safe and appropriate speed limit range established by this guide. The specific safe and appropriate speed can then be identified, depending on the presence and design of safety infrastructure.

Impact of infrastructure on safe speeds

While a speed limit is foundational to influencing the operational speed of vehicles, it is not the only factor. The distinction between the speed limit and actual operating speed is important to understand and measure.

Operating speed is strongly influenced by both the speed limit and road design. The risk of a crash and the likelihood of survival are heavily influenced by the design of the road and the speed travelled. From a road infrastructure perspective, this means design features have an important role in achieving survivable impact speeds. Although serious road trauma can happen on almost any stretch of road, infrastructure measures can prevent or reduce the likelihood of conflicts and their severity.

> **Further information**
>
> - Waka Kotahi NZ Transport Agency. 2022. *One Network Framework* (webpage)
> - Austroads. 2020. *Integrating Safe System with movement and place for pedestrians and cyclists.*

1.4 Principle 4 – whole of system

Combine safe and appropriate speed limits with an integrated, consistent and balanced approach to regulation and through the use of regulatory tools such as enforcement, engagement, and education, supported by monitoring and adaptation.

The whole of system principle is about being integrated and consistent in establishing safe and appropriate speed limits, applying a balanced and proportionate approach to regulation, driving improvements to regulatory settings, and using monitoring, evaluation and communications to demonstrate benefits and support further planning and adaptation. This principle also acknowledges that the approach to speed management may be incremental, as even initially small reductions in mean operating speeds will have positive safety impacts.

Building public trust and understanding

The process of developing and implementing speed management plans should include engaging effectively with a wide variety of stakeholders about the change process, including why change is happening and how it will affect stakeholders. This includes educating and engaging road users about the concepts of safe and appropriate speeds and what is required of stakeholders and why it is important – so 'getting it right' is easier. This will help to build cohesion and develop shared understanding and public acceptance for speed limit changes.

Understanding and influencing behaviour as an outcome of the system

The whole of system principle acknowledges that people's perception and understanding of safe and appropriate speeds will be varied and will change, and that people's behaviour is influenced by many different factors. Most people want to comply with rules and regulations; however, we know people make mistakes, and some take deliberate risks that may harm themselves and others. It is important to be responsive to the reasons for people's behaviour.

Changes to the regulatory framework and settings is supported by the firm and fair regulatory approach of Waka Kotahi. This means balancing the diverse needs and interests of a wide range of parties through a core set of regulatory tools and using the right tool at the right time. It also means being pragmatic and proactive to achieve the right outcomes. Waka Kotahi will work closely with New Zealand Police to encourage compliance with speed limits and hold people to account when they create unnecessary risk in the system or cause harm.

Partnership with Māori

As with other aspects of the mobility system, road safety for Māori should be assessed from a Safe System perspective. However, there are Māori road safety factors not easily explained through conventional data sources such as the Crash Analysis System (CAS), especially when it comes to understanding how factors come together to result in high severity crashes. This is another reason why direct partnership that takes a whole of system view of understanding how speed management affects Māori, and in turn Māori road safety outcomes, is so important.

Continually reflect, learn and adapt to maximise public understanding and lower mean operating speeds

As with all elements of road safety under Road to Zero, speed management is ongoing and will be adapted through incremental improvements over time. For this reason, monitoring, evaluation, and adaptation form an important part of the whole of system principle. This also ensures we are informed by evidence and intelligence when we respond to risk, assess the reasons for people's behaviour, and evaluate the performance of the system. This allows us to drive and influence changes in the regulatory framework to ensure it is fit-for-purpose and keeps pace with change.

For more information on:

- Taking a whole of system view is central to the Waka Kotahi regulatory approach and is described in Tū ake, tū māia 2022. This acknowledges how regulation is used in conjunction with other activities, how different functions contribute to the regulatory system for land transport, and the connected relationships for supporting the achievement of road safety outcomes. For more information see:
  Waka Kotahi. 2020. Tū Ake, Tū Māia (Stand Up, Stand Firm): Regulatory Strategy 2020–25

- For system impacts of speed (including economic efficiency), see RFS Job & LW Mbugua. 2020. Road crash trauma, climate change, pollution and the total costs of speed: Six graphs that tell the story.

- For engaging with stakeholders to develop plans, see World Health Organisation. 2013. A road safety manual for decision makers and practitioners

2. Setting of Speed Limits Framework

This section explains:

- safe and appropriate speed limits

- the One Network Framework street categories as they relate to speed limits

- safe and appropriate speed limit ranges

- additional considerations for a safe and appropriate speed limit such as infrastructure, phasing, the role of mean operating speed, variable speed limits and 70km/h and 90km/h speed limits.

2.1 Safe and appropriate speed limits

The Setting of Speed Limits Framework provides the rationale for identifying the safe and appropriate speed limits for all streets and roads.[22] This framework is informed by the principles that underpin this guide: safety, community wellbeing, movement and place, and system thinking.

A safe and appropriate speed limit is a speed limit that is safe according to standards set by the Safe System approach and appropriate in terms of aligning with community wellbeing objectives as well as with the movement and place function, design and infrastructure of the street or road.

The inputs into a safe and appropriate speed limit should be:

- the Safe System speed thresholds for crash survivability
- the One Network Framework street categories that reflect the movement and place functions of a street or road
- the infrastructure risk rating, which is a road assessment methodology to assess road safety risk [23]
- the presence or planned implementation of safety infrastructure to reduce the risk of harm for people outside vehicles (for example, bike lanes and raised crossings).

The inputs based on well-established evidence (Safe System thresholds) or available in nationally consistent datasets (One Network Framework categories and the infrastructure risk rating) are called 'baseline factors' and contribute to the initial MegaMaps assessment of a safe and appropriate speed limit, referred to in the Rule as the 'Agency's assessment'. For more information about MegaMaps, see Box 2.

The inputs based on locally available data and information, particularly safety infrastructure for walking, cycling and scooting in urban areas, are called 'moderating factors'. These can be taken into account by RCAs and Waka Kotahi (as regulator) to discuss and review a safe and appropriate speed limit. For information on how to discuss and review a safe and appropriate speed limit in MegaMaps based on moderating factors, see section 3.4: developing a speed management plan.

> **Box 2**
>
> **MegaMaps – an online geospatial tool**
>
> Waka Kotahi must provide each RCA with speed management information for its network. This information is provided using MegaMaps.
>
> MegaMaps is an interactive digital platform that presents the safe and appropriate speeds for all roads and streets in Aotearoa New Zealand. It allows RCAs to view and review relevant information required for the speed management planning process.
>
> Online training modules for MegaMaps are available on the Waka Kotahi website MegaMaps includes information on:
>
> - assessed safe and appropriate speeds
> - corridors where a safe and appropriate speed will avoid the largest number of deaths and serious injuries
> - implementation priorities, for example, where safety can be significantly improved for vulnerable road users around schools and built-up areas
> - One Network Framework street categories
> - infrastructure risk rating – a predictive road assessment methodology to proactively assess road safety risk at a personal risk level
> - collective risk – a measure of the number of deaths and serious injuries per kilometre that can be expected on a road over the next five years, based on the injury crash record over the last five years
> - personal risk – the 'crash risk' of an individual dying or being seriously injured on a road corridor, calculated by dividing the collective risk by traffic volume
> - all schools, including their risk and accessibility prioritisation
> - mean operating speeds
> - the number of crashes reported by New Zealand Police (historic) and whether they were fatal, serious or minor
> - posted speed limits for each road segment.

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23   Road stereotype, horizontal alignment, volume, carriageway width, access density and land use are inputs from the infrastructure risk rating. Roadside hazards and intersection density are not inputs. For more information about the infrastructure risk rating, see Waka Kotahi. 2022. *Infrastructure risk rating manual: Road to Zero edition*. Wellington.

2.2 One Network Framework

The setting of safe and appropriate speed limits aligns with the urban and rural One Network Framework street categories, which closely align with Safe System principles.

A direct correlation exists between the function of a street or road and the safe speed limit. For example, rural highways are often intended to support vehicle movement at higher speeds, while city centres are places where pedestrians need to feel and be safe sharing the street with vehicles.

RCAs need to align their roads and streets with the One Network Framework street categories (current state and aspirational) and take that alignment into consideration when undertaking speed management planning. To support this process, ranges of safe and appropriate speed limits have been established for each street category.
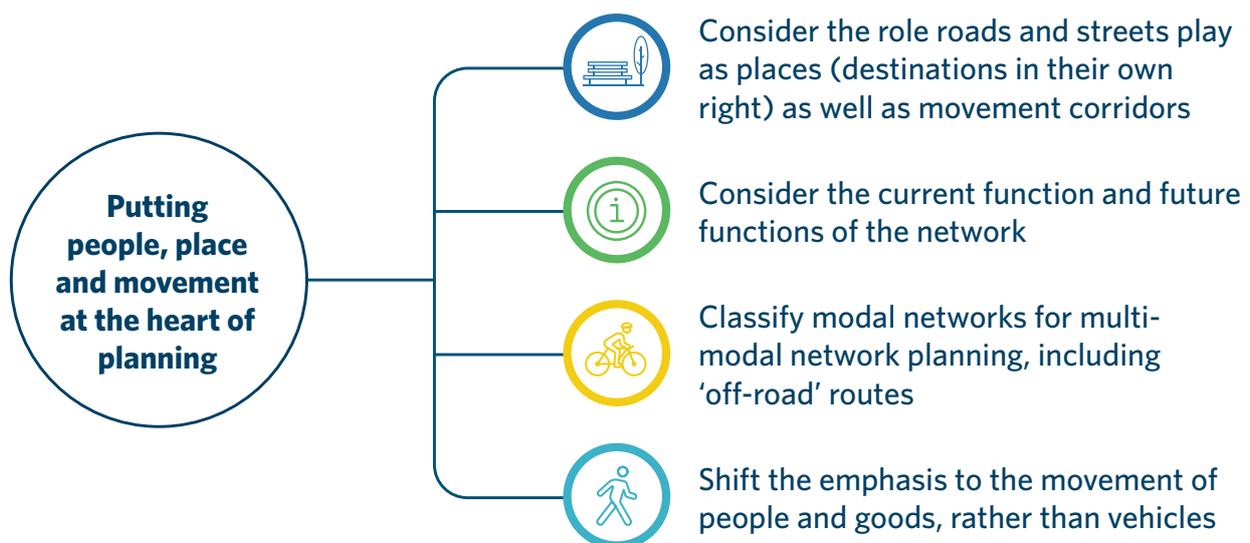
One Network Framework street categories

The One Network Framework is the national classification system for Aotearoa New Zealand roads and streets.[24] It recognises that the transport network has a 'place' function as well as a 'movement' function – roads and streets are destinations (places) for people as well as serving a transport purpose (movement) (see Figure 4). The framework uses an approach that includes consideration of surrounding land use, community wellbeing, economic activity and growth aspirations. This approach links transport more clearly with land use, the people present and how they're travelling around. The movement and place classifications provide a strong foundation for consistently and clearly linking safe speed limit ranges to the current and future use of streets and roads.

Under the framework, roads and streets are grouped into categories, depending on their movement and place importance (see Figure 5).

The framework also includes classifications for different modes of transport (for example, freight and public transport), recognising that roads and streets have different functions for different modes.

Figure 4: One Network Framework – putting people, place and movement at the heart of planning

Putting people, place and movement at the heart of planning

- Consider the role roads and streets play as places (destinations in their own right) as well as movement corridors
- Consider the current function and future functions of the network
- Classify modal networks for multi-modal network planning, including 'off-road' routes
- Shift the emphasis to the movement of people and goods, rather than vehicles

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24   Waka Kotahi NZ Transport Agency. 2022. One Network Framework (webpage).

Figure 5: – One Network Framework street categories and examples

Transit corridors

Urban connectors

Local streets

Urban

Movement

M1 — Transit Corridors | Urban Connectors | City Hubs
M2 — Urban Connectors | | Main Streets
M3 — Urban Connectors | Activity Streets | Main Streets
M4 — Local Streets | Activity Streets | Civic Spaces
M5 — Local Streets | Civic Spaces

Place: P5 P4 P3 P2 P1

City hubs

Main streets

Activity streets

Civic spaces

Inteterregional connectors

Rural connectors

Rural roads

Rural

Movement

M1 — Interregional Connectors | Stopping Places
M2 — Rural Connectors | Peri-urban Roads | Stopping Places
M3 — Rural Connectors | Peri-urban Roads | Stopping Places
M4 — Rural Roads | Peri-urban Roads | Stopping Places
M5 — Rural Roads | Peri-urban Roads | Stopping Places

Place: P5 P4 P3

Stopping places

Peri-urban roads

The relationship between safe speeds and movement and place is outlined in the discussion of the Setting of Speed Limits Framework (section 4).

The safe speed limit ranges associated with the street categories and descriptions of the categories are summarised in Tables 2 and 3 with more detailed criteria within the speed range outlined in Tables 5, 6 and 7.

For further explanation of the classifications, see Tables 2 and 3 or the Waka Kotahi One Network Framework webpage.[25]

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25   Waka Kotahi NZ Transport Agency. 2022. One Network Framework (webpage).

Taking into account the Network Operating Framework

From a speed management perspective, understanding the future land use and modal network is necessary for finding the correct level of speed management. The speed management planning process should take into account the local network operating framework when setting a vision and planning for speed limit changes and other speed management activities.

The Network Operating Framework provides a process for understanding the necessary function of a transport network to deliver on future land use.[26] This understanding enables the form of the network that will realise the future land use to be determined.

This framework provides a strategic view of all modes across the network, focusing on moving people and goods, not vehicles, and balancing the competing demands for limited road space. This enables an understanding of the modal trade-offs according to place and time of day. Strategic modal networks are derived from existing strategy and are clearly linked to operations.

2.3 Safe and appropriate speed limit ranges

The setting of a safe and appropriate speed limit involves integrating and aligning the One Network Framework street categories with safe and appropriate speed limit ranges (see Table 2 and Table 3)[27], then using criteria, either manually, or provided by MegaMaps, to identify the safe and appropriate speed limit from within that range for the specific street or road.

To support the process, this guide sets out the range of safe and appropriate speeds for each urban and rural street category, a baseline speed limit is identified for each street category, along with the criteria that must be satisfied to select a different speed limit from within the range. The criteria are established in relation to typical road characteristics, including the type of road users present, road design and safety infrastructure Where multiple sets of criteria are listed, only one set needs to be met for the safe and appropriate speed to apply.

For a number of the street categories desired characteristics have also been defined as these describe the infrastructure features that should be present as part of the 'end state' for those roads and streets. However investment in these features should not be considered a requirement to change to the safe and appropriate speed limit. As these features can be introduced later.

The full criteria are in tables 4, 5, 6 and 7. Where the baseline speed limit is not the lowest speed limit in the range, criteria associated with the lowest speed limit must be checked before confirming the baseline speed limit.

This section explains the:

- safe and appropriate speed limit tables
- urban safe and appropriate speed limit ranges
- rural safe and appropriate speed limit ranges.

Urban safe and appropriate speed limit ranges

For urban areas, safe and appropriate speed limits align with survivable safe system limits, including for people outside vehicles (who are considered vulnerable road users). The safe and acceptable speed limit can increase where additional safety infrastructure to manage speeds to safe levels for people outside vehicles is provided (for example, raised crossings or separated cycling facilities). The safe and appropriate speed limits always link to the One Network Framework street categories.

The characteristics of each street category and associated safe speed limits range are summarised in Table 2.

Rural safe and appropriate speed limit ranges

For rural areas, safe and appropriate speed limits align with survivable safe system limits and key risk factors. The safe and appropriate speed limit can increase where additional primary Safe System treatments (for example median barriers) reduce the risk of particular crash types. The safe and appropriate speed limits always link to the One Network Framework street categories.

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26   For more information about the Network Operating Framework, see Waka Kotahi. 2022. ONF use in other frameworks (webpage).
27   Speed limits of 70km/h and 90km/h are not included in the tables, so must be considered specifically. See the discussion in 4.2.

The characteristics of each street category and safe speed limit range are summarised in Table 3. Further detail on the criteria for higher speed limits in the range is provided in tables. For example, safe and appropriate speed limits above 80km/h require design and infrastructure criteria to be met to avoid the possibility of head-on collisions.

The intention is to work towards predominant speed limits across the network of 60km/h, 80km/h or 100km/h. The preference is to use 20km/h increments for speed limits between 60km/h and 100km/h so that there are fewer and more recognisable speed limit categories for people to understand and recall. Over time, this will result in a greater distinction between different speed limits and better alignment with the One Network Framework, making it easier for road users to recognise the safe speed for the road they are travelling on.

Table 2 – One Network Framework urban street categories and safe speed limit ranges

Category	Description	Safe and appropriate speed limit*
Civic spaces	These streets have a higher place classification than other urban street categories, representing a higher level of on-street activity and higher-density adjacent land use generating that activity. These streets have a lower movement classification because they are mainly intended for localised on-street activity with little or no through movement.	10–20km/h
Local streets	These streets provide quiet and safe residential access for people of all ages and abilities and foster community spirit and local pride. They are part of the fabric of Aotearoa New Zealand neighbourhoods, and they facilitate local community access.	30km/h
Activity streets	These streets provide access to shops and services by all modes. They have a significant movement demand as well as place, so competing demands need to be managed within the available road space.	30–40km/h
Main streets	These streets have an important place function and a relatively important movement function. They support businesses, on-street activity and public life and connect with the wider transport network.	30–40km/h
City hubs	These are dense and vibrant places that have a high demand for people movement.	30–40km/h
Urban connectors	These streets provide safe, reliable and efficient movement of people and goods between regions and strategic centres and mitigate the impact on adjacent communities.	40–60km/h
Transit corridors	These streets provide for the fast and efficient long-distance movement of people and goods within the urban realm. They include motorways and urban expressways.	80–100km/h

*The safe and appropriate speed limit will typically be at the lower end of the range unless design and infrastructure criteria are met to justify a higher speed limit. For details on the criteria for each ONF street category see tables 4 and 5.

Table 3 – One Network Framework rural street categories and safe speed limit ranges

Category	Description	Safe and appropriate speed limit*
Interregional connectors	These roads provide safe, reliable and efficient movement of people and goods between regions and strategic centres in a rural context.	60–110km/h
Rural connectors	These roads provide the link between rural roads and interregional connectors.	60–100km/h
Rural roads	These roads primarily provide access to rural land for people who live there and support the land-use activity being undertaken.	60–80km/h
Peri-urban roads	These roads primarily provide access from residential property on the urban fringe, where the predominant adjacent land use is residential, but usually at a lower density than in urban residential locations.	50–80km/h
Stopping places	These are where people gather in a rural setting. Adjacent land use generates on-street activity, and people are likely to be crossing the road.	40–80km/h

*The safe and appropriate speed limit will typically be at the lower end of the range unless design and infrastructure criteria are met to justify a higher speed limit. For details on the criteria for each ONF street category see tables 6 and 7.

Table 4: Safe and appropriate speed limit ranges, criteria and desirable characteristics for urban One Network Framework street categories: civic spaces, local streets, activity streets, main streets and city hubs

ONF street category	Safe and appropriate speed limit 10km/h	Safe and appropriate speed limit 20km/h	Safe and appropriate speed limit 30km/h	Safe and appropriate speed limit 40km/h	Safe and appropriate speed limit 50km/h	Safe and appropriate speed limit 60km/h
Civic spaces	SAAS is 10 km/h unless the criterion is satisfied for a higher SAAS	**Criterion** • Not a fully mixed environment, with some street space allocated for different users such as footpath separate from vehicle lane				
Local street			SAAS is 30km/h			
Activity streets, main streets, city hubs			SAAS is 30km/h unless the criterion is satisfied for a higher SAAS	**Criterion** • On-street cycle lane or separated cycling facility provided **Desirable or future characteristics** • All walking and cycling crossings along the corridor designed to achieve an operating speed of no more than 30km/h		

Note: AADT = annual average daily traffic, SAAS = safe and appropriate speed, vpd = vehicles per day, land use refers to the Statistics New Zealand classification, urban access density refers to the frequency of accessways (driveways or intersections) on a road or street section

Table 5: Safe and appropriate speed limit ranges, criteria and desirable characteristics for urban One Network Framework street categories: urban connectors and transit corridors

ONF street category	Safe and appropriate speed limit 40km/h	Safe and appropriate speed limit 50km/h	Safe and appropriate speed limit 60km/h
Urban connectors	SAAS is 40km/h unless criteria are satisfied for a higher SAAS	**Criteria** Continuous formed footpath provided on at least one side of the road and either: • is median divided, and • land use is not residential OR: • land use is controlled access OR: • is median divided or multi-lane undivided, and • AADT > 12,000 vpd (per carriageway for divided streets), and • on-street cycle lane is provided OR: • Separated cycling facility is provided. **Desirable characteristics** • Formal crossing facilities for pedestrians at all major intersections, and • All walking and cycling crossings along the corridor designed to achieve operating speeds of no more than 30km/h.	**Criteria** Continuous formed footpath provided on at least one side of the road and: • is median divided, and • land use is not residential, and • separated cycling facility is provided, and • on-street parking is prohibited. **Desirable characteristics** • Formal crossing facilities for pedestrians at all major intersections, and • All walking and cycling crossings along the corridor designed to achieve operating speeds of no more than 30km/h.
	Safe and appropriate speed limit 60km/h	Safe and appropriate speed limit 80km/h	Safe and appropriate speed limit 100km/h
Transit corridors		SAAS is 80km/h unless criteria are satisfied for a higher SAAS	**Criteria** Road is: • median divided, and • land use is 'no access' or 'controlled access', and • alignment is straight or curved, and • right-turn movements across opposing lanes are not permitted except at roundabouts. **Desirable Characteristics** • A fully separated cycling along or adjacent to the corridor.

Note: AADT = annual average daily traffic, SAAS = safe and appropriate speed, vpd = vehicles per day, land use refers to the Statistics New Zealand classification, urban access density refers to the frequency of accessways (driveways or intersections) on a road or street section

Table 6: Safe and appropriate speed limit ranges, criteria and desirable characteristics for rural One Network Framework street categories: stopping places, peri-urban roads and rural roads

ONF street category	Safe and appropriate speed limit 40km/h	Safe and appropriate speed limit 50km/h	Safe and appropriate speed limit 60km/h	Safe and appropriate speed limit 80km/h
Stopping place	**Criteria** • No formal off-road parking provided (roadside parking occurs), and • pedestrians are expected on the roadside or crossing the road.		SAAS is 60km/h unless criteria are satisfied for a higher or lower SAAS NoteOTE: SAAS must be no higher than the adjacent sections of rural road; for instance, if criteria are met for a SAAS of 80km/h but the SAAS of adjacent road sections either side of the Stopping Place are 60km/h, then the SAAS of the Stopping Place would also be 60km/h.	**Criteria** • All parking is provided off road and is physically separated from traffic lanes, and • Parking area is accessed via appropriate turning facilities on the main road (for example, a right-turn bay). **Desired characteristics** • All walking and cycling crossings along the corridor designed to achieve an operating speed of no more than 30km/h
Peri-urban roads		**Criteria** • Land use is not rural (that is, adjacent land use is transitioning to urban and has an access density of 10/km or more). **Desired characteristics** • Continuous formed footpath provided on at least one side of the road.	SAAS is 60km/h unless criteria are satisfied for a higher or lower SAAS	**Criteria** Is sealed, has a marked centreline and: • alignment is straight, and • carriageway width is 7.6m or more OR: • alignment is curved, and • carriageway width is 8.5m or more. **Desirable characteristics** • Has some form of edge delineation such as edgeline pavement markings and/or edge marker posts.
Rural roads			SAAS is 60km/h unless criteria are satisfied for a higher SAAS	**Criteria** Is sealed, has a marked centreline and: • is multilane undivided OR: • alignment is straight OR: • alignment is curved, and • land use is remote rural or no access OR: • alignment is curved, and • land use is rural residential, and • carriageway width is 8.5m or more OR: • alignment is curved, and • land use is rural residential, and • AADT is less than 6,000vpd, and • carriageway width is 7.6m or more, and OR: • alignment is winding, and • AADT is less than 3,000vpd, and • carriageway width is 7.6m or more, and • access density is less than 5/km. **Desirable characteristics** • Has some form of edge delineation such as edgeline pavement markings and/or edge marker posts.

Note: AADT = annual average daily traffic, SAAS = safe and appropriate speed, vpd = vehicles per day, land use refers to the Statistics New Zealand classification, urban access density refers to the frequency of accessways (driveways or intersections) on a road or street section.

Table 7: Safe and appropriate speed limit ranges, criteria and desirable characteristics for rural One Network Framework street categories: rural connectors and interregional connectors

ONF street category	Safe and appropriate speed limit 60km/h	Safe and appropriate speed limit 80km/h	Safe and appropriate speed limit 100km/h	Safe and appropriate speed limit 110km/h
Rural connector	**Criteria** • Road stereotype is unsealed • OR: • Alignment is tortuous • OR: • Infrastructure Risk Rating is 1.8 or over • OR: • Access Density ≥ 10/km	SAAS is 80km/h unless criteria are satisfied for a higher or lower SAAS **Criteria** • Road is sealed and has a marked centreline and • edgeline pavement markings OR: • edge marker posts. NOTE: Any roads that do not meet these criteria should have a SAAS of under 80km/h until such time that delineation is improved to the minimum standard.	**Criteria** Road is: • median divided, and • alignment is straight or curved.	
Interregional connectors	Criteria • Road stereotype is unsealed OR: • Alignment is tortuous OR: • Infrastructure Risk Rating is 1.8 or over OR: • Access Density ≥ 10/km	SAAS is 80km/h unless criteria are satisfied for a higher or lower SAAS **Criteria** Road is: • sealed and has a marked centreline and • edgeline pavement markings • **OR:** • edge marker posts. NOTE: Any roads that do not meet these criteria should have a SAAS of under 80km/h until such time that delineation is improved to the minimum standard.	**Criteria** Road is: • median divided, and • alignment is straight or curved.	**Criteria** Corridor is at least 5 km in length, and has: • stereotype is dual carriageway or median divided, and • alignment is straight or curved, and • land use is No Access, and • 2 or more lanes in each direction, and • AADT is less than 25,000 per direction, and • intersections are grade separated and have spacing of 1.5km or more, and • personal Risk of Low or Low-Medium. NOTE: Approval is required from Waka Kotahi for a speed limit of 110km/h. The implications of increased emissions from a 110km/h speed limit should also be considered

Note: AADT = annual average daily traffic, SAAS = safe and appropriate speed, vpd = vehicles per day, land use refers to the Statistics New Zealand classification, urban access density refers to the frequency of accessways (driveways or intersections) on a road or street section.

2.4 Additional considerations for a safe and appropriate speed limit

The safe and appropriate speed criteria must be met for the selection of the specific speed limit. The One Network Framework street category (see Figure 5) is one of many inputs that helps to determine the safe and appropriate speed range for a road or street. That safe and appropriate speed range then becomes one of the baseline factors for identifying a safe and appropriate speed limit.

This section discusses additional considerations of:

- transitioning towards safe and appropriate speed limits in a Safe System
- the role of safety infrastructure in speed management planning applying variable speed limits
- considering the mean operating speed when considering the speed limit
- applying variable speed limits
- using 70km/h speed limits
- using 90km/h speed limits.

Transitioning towards safe and appropriate speed limits in a Safe System

Safe and appropriate speed limits described in this guide show how speed limits should change over time to align with Safe System outcomes.

In progressing towards a Safe System, speed limits on urban and rural roads are expected to progressively change to align with safe and appropriate speeds. RCAs need to consider how to progress towards this 'end state', which may require interim or phased steps towards a safe and appropriate speed limit. Phasing means considering how much of the network is intended to be treated at different times. Speed management plans then outline proposals for what the network is expected to look like in 10 years along with three-year implementation plans.

Progressing towards safe and appropriate speeds may also require short to medium term speed limits (see the sections below 'Using 70km/h speed limits' and 'Using 90km/h speed limits', for example) in lieu of infrastructure improvements to support higher speed limits, or they may require a phased approach to a lower and safe and appropriate speed.

Guidance on prioritising speed management implementation

Application of the Setting of Speed Limits Framework indicates that about 88,000km of the 95,000km of streets and roads in the Aotearoa New Zealand network have a speed limit that is higher than the safe and appropriate speed limit. Full implementation of a safe and appropriate speed limit on every road and street could take many years, so Waka Kotahi is providing guidance on implementation priorities for the purposes of speed management plan development.

Waka Kotahi has identified high-benefit areas for speed management interventions to be implemented in the short to medium term. In MegaMaps, these high-benefit corridors and areas are highlighted in a single layer to help RCAs focus their speed management efforts over the next 10 years.

The three elements of the high-benefit areas are as follows.

- Corridors where lowering speed limits to align with the safe and appropriate speed limit will produce the most safety benefits. These corridors are primarily interregional connectors, rural connectors and urban connectors.
- All streets surrounding schools, including streets outside school frontages and within 100m of a school boundary. These streets are likely to be subject to lower permanent or variable speed limits.
- Areas where the highest concentrations of active road users are expected, such as town centres, employment areas, other commercial areas and surrounding local streets.

Collectively, the high benefit areas capture about 21,500km, which represent 25 percent of all roads where the safe and appropriate speed limit is less than the current posted limit. Most of the remaining 75 percent of roads are sealed and unsealed rural roads, which typically carry low traffic volumes and have low levels of active road use.

When preparing a speed management plan, RCAs should focus on the high-benefit areas. This does not mean these must be the sole focus for short- to medium-term delivery - an area-wide approach is recommended to deliver sensible, consistent and intuitive safe and appropriate speed limits. For more information on taking an area-wide approach (see Section 3.4: Developing a speed management plan.

Using 70km/h and 90km/h speed limits

Waka Kotahi discourages the use of a permanent speed limit of 70km/h and 90km/h, as its preference is for 20km/h increments for speed limits between 60km/h and 100km/h.

However, it is acknowledged that a pragmatic approach may be required by an RCA as it works towards widespread implementation of safe and appropriate speeds that are better understood by communities, partners and stakeholders.

A 70km/h or 90km/h speed limit could be considered as a short- or medium-term step towards achieving a Safe System 'end state'. It could be implemented to improve safety in anticipation of either future infrastructure upgrades sufficient to support a higher speed limit, or further lowering of the speed limit to a speed limit that is safe and appropriate for the existing infrastructure.

If an RCA proposes a 70km/h speed limit where the assessed safe and appropriate speed is 80km/h, it does not need to put an explanation in its speed management plan. However, all other circumstances require an explanation.

The role of safety infrastructure in speed management planning

An integrated speed management planning approach considers the appropriateness of safety infrastructure, safety cameras and the setting of safe and appropriate speed limits in a combination that most effectively and efficiently aligns the transport network with the Safe System approach. This ensures that a wider range of road users is accommodated and may take considerable time with selected transformation of the physical environment, there will be a greater acceptance of the safe and appropriate speed limits.

The level of safety infrastructure present on a road or street should reflect One Network Framework street categorisation considering its movement and place requirements now and into the future.

Investment in safety infrastructure to retain the existing high-speed limits relative to achieving safe system outcomes in both urban and rural environments is not affordable or aligned with the speed management principles and broader transport network aspirations.

There will be roads where the categorisation within the One Network Framework would warrant the minimum investment of appropriate safety

infrastructure (for example, median barrier, separated cycle infrastructure, roundabouts) to support the existing high posted speed limits. However, in most circumstances the existing posted speed limit will not reflect the road or street categorisation and will not warrant the level of investment required to justify retaining a higher speed limit.

Considering the mean operating speed when considering the speed limit

The Land Transport Rule: Setting of Speed Limits 2022 (the Rule) defines 'mean operating speed' as 'the mean speed of traffic, including all classes of vehicle, measured in a way that is representative of all traffic speeds on the road over a seven-day period.'

Mean operating speeds can be strongly influenced by the speed limit. However, road design and safety infrastructure and factors such as enforcement; road user perceptions, understanding and behaviour; intersection and access frequency; traffic volume; and adjacent land uses, urban design, landscape architecture, and roadside activities all play a part in further reducing mean speeds.

The Rule does not require speed limit changes to be considered in relation to current mean operating speeds. Safe speed limits can be set without requiring the simultaneous installation of new design and infrastructure, which could be a costly and time-consuming barrier to achieving safe speed limits.

Mean speed information can be used to support a network-wide and phased approach to speed management. To identify locations for priority investment in additional speed management, consider mean operating speeds and the gap between these speeds and the safe and appropriate speed limit both at a network-wide level and within the context of movement and place and community wellbeing. Once speed limit changes have been made, mean operating speeds should be monitored. Then, decisions can be made at a network-wide level about locations where additional speed management tools such as communications enforcement and infrastructure can be implemented.

Applying variable speed limits

A variable speed limit can be an effective option to address road safety and traffic management priorities. They can apply at specified times or be activated under certain traffic and weather conditions. They can be operated manually for specific timeframes or events or be operated automatically by specific triggers such as a vehicle nearing an intersection.

3. Speed management plans

This section explains:

- purpose of a speed management plan
- types of speed management plans
- key roles and responsibilities for speed management plans
- developing a speed management plan
- content of a speed management plan
- certification of a speed management plan
- Speed Management Committee
- National Speed Limit Register.

3.1 Purpose of a speed management plan

The Land Transport Rule: Setting of Speed Limits 2022 (the Rule) strongly encourages collaboration at a regional level across road controlling authorities (RCAs) and regional transport committees (RTCs) to prepare draft speed management plans.

These plans present state highway, regional and local views of why and how RCAs plan to better manage speed to make it safer for people to move around. This includes how integration of safety-related infrastructure improvements, speed limit changes and safety camera placement will make the speed management planning process more transparent and enable stakeholders and communities to better understand the full picture.

A speed management plan is the primary means by which proposed speed limit changes and other speed management activities are developed, shared and certified. Figure 6 illustrates how speed management planning fits into existing transport planning and investment processes.

Figure 6: How speed management planning fits into transport planning and investment processes

System
- ▶ Road to Zero
- ▶ Setting Speed Limits Rule 2021
- ▶ One Network Framework
- ▶ Speed management guide
- ▶ RtZ speed and infrastructure programme
- ▶ **NLTP**

Region
- ▶ Transport strategies and plans
- ▶ Regional speed management plans*
- ▶ **RLTPs**

Local
- ▶ Transport strategies/plans
- ▶ Individual speed management plans*
- ▶ Safety programmes
- ▶ **LTPs**

Community
- ▶ Area wide or individual school approach
- ▶ Projects

3.2 Types of speed management plans

The three types of speed management plan[28] are the:

- **state highway** speed management plan – this is prepared by Waka Kotahi (as RCA) for the whole state highway network
- **regional** speed management plan – this is coordinated by an RTC using material provided by RCAs
- **territorial (local) authority** speed management plan – this may be prepared by an RCA if they are working outside the timelines of the regional speed management plan process.

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28 Note: During the interim period, each of these types can also be made as interim plans. For more information on interim plans, see Appendix 5: Preparing speed management plans during the transitional period.

Developing speed management plans under The Land Transport Rule: Setting of Speed Limits 2022

Where do I begin?

The One Network Framework

Streets and roads are categorised according to both their movement and place function. This helps set speed limits that consider land use and the safety of road users, especially people outside vehicles.

The Rule

The Land Transport Rule: Setting of Speed Limits 2022 specifies the content and process for speed management plans and Waka Kotahi guidance.

Road to Zero

The government road safety strategy sets a vision for zero road deaths in Aotearoa New Zealand, starting with a 40% reduction in deaths and serious injuries by 2030.

The Speed management guide Road to Zero edition

Provides guidance for road controlling authorities (RCAs), regional councils and regional transport committees (RTCs) on the development of speed management plans.

It contains information on the following Aotearoa New Zealand context:

- ▶ Principles for speed management
- ▶ Speed limits
- ▶ Developing plans
- ▶ Partnership with Māori
- ▶ Communications & engagement
- ▶ Monitoring & evaluation

Understand/identify roles, responsibilities and details

What type of plan are you preparing?

- ▶ State Highway Speed Management Plan
- ▶ Regional Speed Management Plan
- ▶ Territorial Authority (independent) speed management plan

Understand how the process fits in with other planning and funding processes

Consider alignment with National Land Transport Programme (NLTP) funding cycle in order to line up investment in speed limit changes, safety infrastructure and communications and engagement.

Understand where your organisation fits in to the roles and responsibilities

Waka Kotahi as RCA drafts, engages and consults on the State Highway Speed Management Plan

Road controlling authorities (RCAs) provide information to regional transport committees to enable development of a consistent regional speed management plan

- ▶ can choose to independently undertake speed management planning and consultation or follow the regional process (unless notified by regional transport committees to follow the regional process)

Regional Transport Committees (RTCs) consolidate information from RCAs into a regional speed management plan, and provide a forum to address regional or boundary consistency **issues,** including facilitating Maori engagement on plan development.

Regional councils facilitate the administrative function of regional consultation for all regional speed management plans, and engagement with Māori on the development of plans.
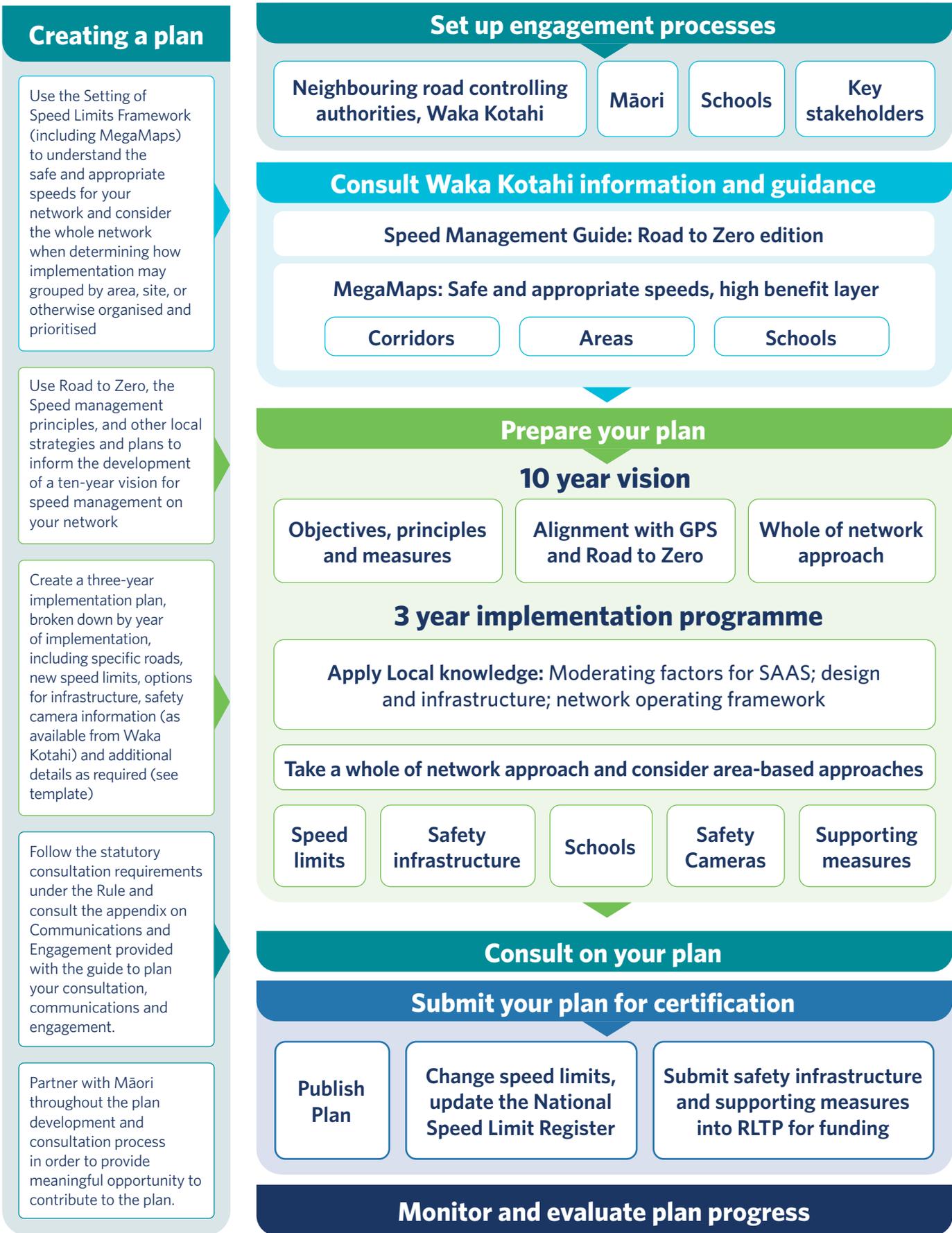
What else do I need to think about?

- ▶ RCAs must make reasonable efforts to have safe speeds around schools by 2024 (40%) and 2027 (100%)
- ▶ Māori must be engaged with from the development stage of the plan
- ▶ Communications and engagement should take place throughout the process in addition to any statutory consultation processes

What other resources are there?

- ▶ To register current speed limits use the **National Speed Limit Register** (NSLR).
- ▶ To see advice on safe and appropriate speed limits (SAAS) see the speed limit framework in the guide, and **MegaMaps** geospatial tool
- ▶ To understand plan certification requirements see the plan section of the guide and the **Certification Template**
- ▶ For information on the Road to Zero Monitoring Framework, which includes data on speed management, see the ***Road to Zero Monitoring Report.***
- ▶ To discuss specific questions or support needs contact your local Waka Kotahi staff or email: speedmanagementprogramme@nzta.govt.nz
- ▶ For further information see the Waka Kotahi webpage: Speed and Infrastructure

Developing Speed Management Plans under The Land Transport Rule: Setting of Speed Limits 2022

Creating a plan

Use the Setting of Speed Limits Framework (including MegaMaps) to understand the safe and appropriate speeds for your network and consider the whole network when determining how implementation may grouped by area, site, or otherwise organised and prioritised

Use Road to Zero, the Speed management principles, and other local strategies and plans to inform the development of a ten-year vision for speed management on your network

Create a three-year implementation plan, broken down by year of implementation, including specific roads, new speed limits, options for infrastructure, safety camera information (as available from Waka Kotahi) and additional details as required (see template)

Follow the statutory consultation requirements under the Rule and consult the appendix on Communications and Engagement provided with the guide to plan your consultation, communications and engagement.

Partner with Māori throughout the plan development and consultation process in order to provide meaningful opportunity to contribute to the plan.

Set up engagement processes

| Neighbouring road controlling authorities, Waka Kotahi | Māori | Schools | Key stakeholders |

Consult Waka Kotahi information and guidance

Speed Management Guide: Road to Zero edition

MegaMaps: Safe and appropriate speeds, high benefit layer

| Corridors | Areas | Schools |

Prepare your plan

10 year vision

| Objectives, principles and measures | Alignment with GPS and Road to Zero | Whole of network approach |

3 year implementation programme

Apply Local knowledge: Moderating factors for SAAS; design and infrastructure; network operating framework

Take a whole of network approach and consider area-based approaches

| Speed limits | Safety infrastructure | Schools | Safety Cameras | Supporting measures |

Consult on your plan

Submit your plan for certification

| Publish Plan | Change speed limits, update the National Speed Limit Register | Submit safety infrastructure and supporting measures into RLTP for funding |

Monitor and evaluate plan progress

Partnership with Māori on speed management

Land Transport Rule: Setting of Speed Limits 2022

- ▶ The Rule requires Waka Kotahi (as RCA) and regional councils to, establish and maintain processes to provide opportunities and information for Māori to contribute to the preparation of speed management plans and consider ways to foster the development of Māori capacity for this. It also requires consultation with Māori on draft plans.
- ▶ A variable speed limit outside a marae may be required in addition to a permanent safe and appropriate speed limit, particularly in rural areas or on arterial roads where the safe and appropriate speed limit for the road will be too high under certain circumstances, for example activities associated with tangihanga or other large events.
- ▶ Under the Rule a road controlling authority does not require Waka Kotahi (as regulator) permission to set a variable speed limit for a marae and .

Speed management guide: Road to Zero edition

Partnership refers to working with Māori as Waka Kotahi treaty partners. In addition to partnership with Māori at the level of Waka Kotahi as a regulator, this guide discusses partnership in terms of a joint journey with RCAs to develop speed management plans. It is a continuous and ongoing relationship. It means working together with open communication to achieve better understanding and outcomes for both parties.

- ▶ The guide embeds information and guidance relevant to partnership with Māori in multiple sections:
- ▶ Guide: Overview of the rule; guiding principles for speed management, development and content of a speed management plan
- ▶ Appendix 1. Context: Information on current Māori road safety outcomes and the opportunity for speed management to improve these
- ▶ Appendix 2. Partnership with Māori: Guidance on partnership to develop speed management plans with Māori under the Rule
- ▶ Speed Management Plan optional template for certification

Hononga ki te iwi – our Māori engagement framework

The Waka Kotahi Māori engagement framework, and has been developed to guide our thinking when planning our Māori engagement. While it was developed for Waka Kotahi, other organisations will find it useful for guiding their own engagement with Māori when developing their land transport investments.

The framework is an adaptation of the engagement framework developed by Te Arawhiti (The Office for Māori Crown Relations) for the public sector

Te Ara Kotahi – our Māori strategy

Te Ara Kotahi is the Waka Kotahi Māori strategy. It provides strategic direction on how Waka Kotahi works with and responds to Māori as the Crown's Tiriti partner. Waka Kotahi has an important role in finding opportunities to better respond to Māori aspirations while delivering transport solutions. Achieving safe speeds in locations where Māori experience a disproportionate level of road harm and around focal points of Māori communities such as marae is key to this.

He Pūrongo Whakahaumaru Huarahi Mō Ngā Iwi Māori – Road Safety Outcomes Report

This is a key milestone on the Waka Kotahi journey to achieve better road safety outcomes for Māori, with Māori. Sadly, Māori are over-represented in many of the statistics reported on and this has to change. We are working to partner with Iwi Māori to explore risks identified in the report and work together to determine how to improve Māori road safety outcomes with Māori.

He tohu huarahi Māori bilingual traffic signs programme

Waka Kotahi has a multi-disciplinary team working with Te Mātāwai and local government to enable the use of bilingual traffic signs and to ensure safe and consistent use across state highways and local roads. Technical specifications for Kura School signs and Marae signs are now available. Further signs are planned.

3.3 Key roles and responsibilities for speed management plans

At all levels of government, many partnering agencies have a role in implementing speed management plans: Waka Kotahi, Te Manatū Waka Ministry of Transport, New Zealand Police, RCAs and regional councils.

The roles of the core entities involved in developing speed management plans are in Table 8.

Table 8: Role of core entities in developing a speed management plan

Entity	Role
Waka Kotahi	Sets timelines for speed management plans
	Provides guidance on safe and appropriate speeds and preparing a speed management plan
	Develops and maintains information about speed management (for example, MegaMaps)
	Convenes the Speed Management Committee (SMC)
	Manages the National Speed Limit Register (NSLR)
Waka Kotahi (as an RCA)	Provides a draft state highway plan to RCAs for feedback before preparing a consultation draft
	Provides a consultation draft of the state highway plan for public feedback
	Provides a final draft of the state highway plan for review by the SMC and certification by the Director of Land Transport
Director of Land Transport	Assesses and certifies state highway and regional speed management plans before Waka Kotahi publishes them
Regional transport committee (RTC)	Consolidates information from RCAs into a draft regional speed management plans
	Provides a forum to address regional boundary or consistency issues
	Prepares a final draft regional speed management plans for certification by the Director of land Transport
Regional councils	Facilitates the administrative function of regional consultation, for all RCA plans following the regional process
	Provides opportunities for Māori to contribute to the preparation of regional speed management plans
Road controlling authority (RCA)	Develops territorial authority speed management plans
	Can choose to independently undertake speed management planning and consultation or follow the regional process (unless notified by RTCs to follow the regional process)
	Provides information to RTCs to enable development of a consistent regional speed management plan
Minister of Transport	Appoints members to the Speed Management Committee and confirms what document(s) form the government's road safety strategy[29]
Speed Management Committee	Reviews state highway speed management plans and advises the Director of Land Transport on a plan's compliance with the Rule
	Comments on information and guidance provided by Waka Kotahi

29 Publication of this guide Te Ara ki te Ora Road to Zero strategy forms the government road safety strategy.

3.4 Developing a speed management plan

The key steps to developing a high-quality speed management plan are in Table 9, and Figure 7 contains a flowchart showing the speed management planning process.

This section discusses the importance of:
- developing regional consistency in speed management plans
- taking a whole-of-network approach to speed management planning
- integrating safe speeds around schools, safe speeds around marae, safety infrastructure, and safety cameras into speed management plans.

Developing regional consistency within speed management plans

Early in the regional planning process, regional councils should engage with RCAs to ensure that regional consistency is taken into account in the RCA development of speed management plans. This is most important in relation to establishing the 10-year vision and the approach each RCA will follow in developing its plan. The intention of early engagement is for regional councils to support alignment between plans so that the regional council can sensibly provide a regional theme that incorporates the various RCA policies. This early engagement should take place regardless of whether an RCA ultimately joins the regional process or develops a territorial authority speed management plan independently, because it can inform the RTC's decision about whether to require RCAs to follow the regional process.

An RTC may notify an RCA that it plans to convene a regional speed management plan process. In this case, the RCA is required to join the regional process rather than run an independent process, as long as the RCA has not already published a consultation draft, and the RTC intends to publish a regional plan within the next 28 calendar days.

The RTC also plays an important role in addressing any identified issues with speed limits at adjoining roads in the region's network, with boundary roads at neighbouring regional networks, or with the state highway network.

The regional council also has a role to play in supporting the regional speed management planning process. Once the RCAs develop their territorial authority speed management plans and provide them to the relevant RTC, the RTC compiles the RCAs' plans to create a regional speed management plan. RTCs, RCAs and regional councils then coordinate to publish and consult with the public on the regional speed management plan.

Regional councils facilitate consultation by publishing the draft plan and then providing the administrative support to help collate submissions and then pass them back to the RCAs to take the next steps. RCAs should then consider submissions, amend their plans as appropriate, and advise the RTC of any changes it's proposing. The RTC then collates changes from all its RCAs into the regional speed management plan. The RTC may need to facilitate discussion and consideration of any remaining regional inconsistencies between the RCAs during this part of the process. Once the RTC is satisfied and there are no regional inconsistencies then it submits the plan to the Director of Land Transport for certification.

Table 9: Key steps in developing speed management plans (SMPs)

State highway SMP	Regional and territorial authority SMPs	
• Waka Kotahi (as road controlling authority – RCA) develops a draft state highway SMP.	• RCAs and regional transport committees (RTCs) consider and provide feedback on the first draft of the state highway SMP.	
• Waka Kotahi (as RCA) provides the draft state highway SMP to other RCAs and RTCs.	• Regional councils facilitate RCA development of overarching vision, principles and prioritisation.	
• Waka Kotahi (as RCA) reviews feedback and updates the draft state highway SMP.	• RCAs develop their local SMP. • RCAs decide to follow the regional process or the independent process.	
• Waka Kotahi (as RCA) prepares a consultation draft state highway SMP.	**Regional process**	**Territorial authority (independent) process**
• Waka Kotahi (as RCA) publishes and undertakes consultation on the state highway SMP consultation draft.	• RCAs develop territorial authority SMPs and provide them to RTCs.	• RCAs develop a territorial authority SMP.
• Joint or independent consultation is undertaken based on regional engagement and timing.	• RTCs compile the RCAs' plans and create a regional SMP.	• RCAs publish and consult with the public on the draft territorial authority SMP.
• Waka Kotahi (as RCA) considers feedback from consultation and updates the state highway SMP.	• RTCs, RCAs and Regional Councils coordinate to publish and consult with the public on the regional SMP.	• RCAs assess consultation feedback and may update local plans in response.
• Waka Kotahi (as RCA) finalises the state highway SMP and submits it for Speed Management Committee review.	• Regional Councils collate feedback from consultation for RCAs. RCAs assess, respond to and update local plans and update the regional SMP.	• RCAs finalise the territorial authority SMP and submit it to the Director of Land Transport for certification.
• Director of Land Transport certifies the state highway SMP.	• RTCs finalise the regional SMP and submit to the Director of Land Transport for certification.	• Director of Land Transport certifies the territorial authority SMP.
• Waka Kotahi publishes the state highway SMP, certificate and associated material.	• Director of Land Transport certifies the regional SMP.	• Waka Kotahi publishes the territorial authority SMP, certificate, and associated material.
• Waka Kotahi (as RCA) submits certified speed limit changes to the National Speed Limit Register before changes are implemented.	• Waka Kotahi publishes the regional SMP, certificate, and associated material.	• RCAs provide the territorial authority SMP to the RTC to enable consistent regional planning to progress.
	• RCAs submit certified speed limit changes to Waka Kotahi before changes are implemented.	• RCAs submit certified speed limit changes to Waka Kotahi before changes are implemented.

Please note that, where feasible, there should be joint consultation between an RCA and Waka Kotahi (as RCA) but Waka Kotahi can withdraw and consult separately if timing becomes an issue.

Figure 7: Speed management planning process
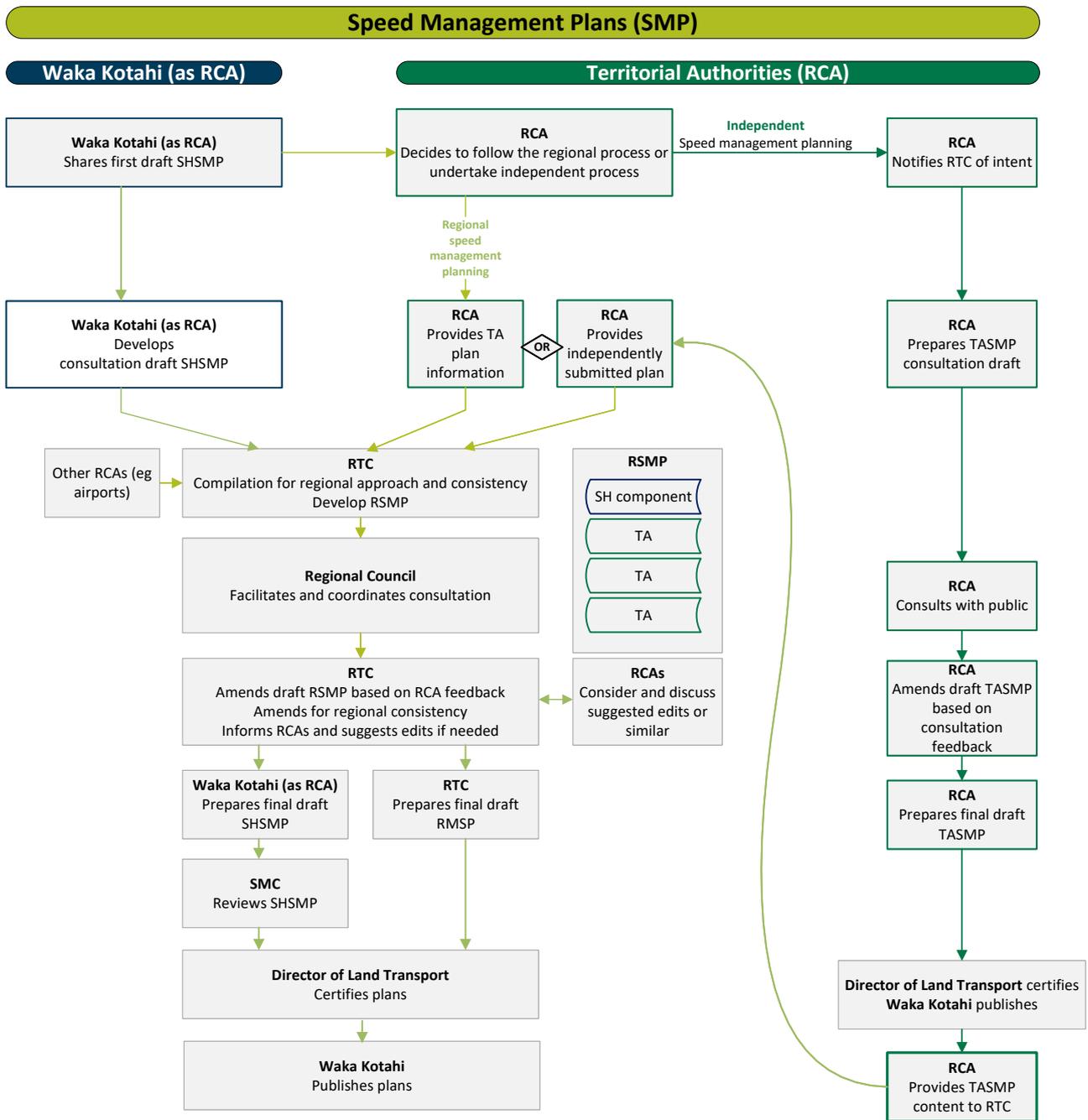
Note: RCA = road controlling authority; RSMP = regional speed management plan; RTC = regional transport committee; SH = state highway; SMC = Speed Management Committee; SHSMP = state highway speed management plan; TA = territorial authority; TASMP = territorial authority speed management plan.

Taking a whole-of-network approach to speed management planning

Speed management plans allow RCAs, or groups of RCAs coordinated by RTCs, to consider the whole network together for planning and prioritising speed limit changes, infrastructure, safety cameras and other speed management activities, rather than taking a piecemeal, road-by-road approach.

Within a whole of network approach, there may be particular areas that are identified for change, for example, whole suburbs, neighbourhoods, town centres, school catchment areas or papakainga. Speed limit changes made at scales such as these, rather than on individual streets, roads or corridors, are referred to as area-wide.

Area-wide approaches can vary in scale and multiple areas for change may be included within a regional or local speed management plan.

They:

- facilitate the implementation of safe and appropriate speed limits at scale

- help identify the most impactful locations for interventions through factors such as design, infrastructure, enforcement and communications

- can encompass many neighbourhood institutions that would greatly benefit from safe and appropriate speeds but do not have a target associated with them as schools do, for example, preschools, kohanga reo, marae and retirement villages

- can make travel safer and active modes more attractive, because the approach considers all roads and streets in a given area. (For example, to make a child's journey to school safer, an area-wide approach considers all roads and streets in the school catchment area not just those immediately outside the school)

- be complemented by site-specific speed management activities when necessary

- improve speed limit awareness and compliance.

Figure 8 – The relationship between the whole-of-network and area-wide approaches to speed management planning
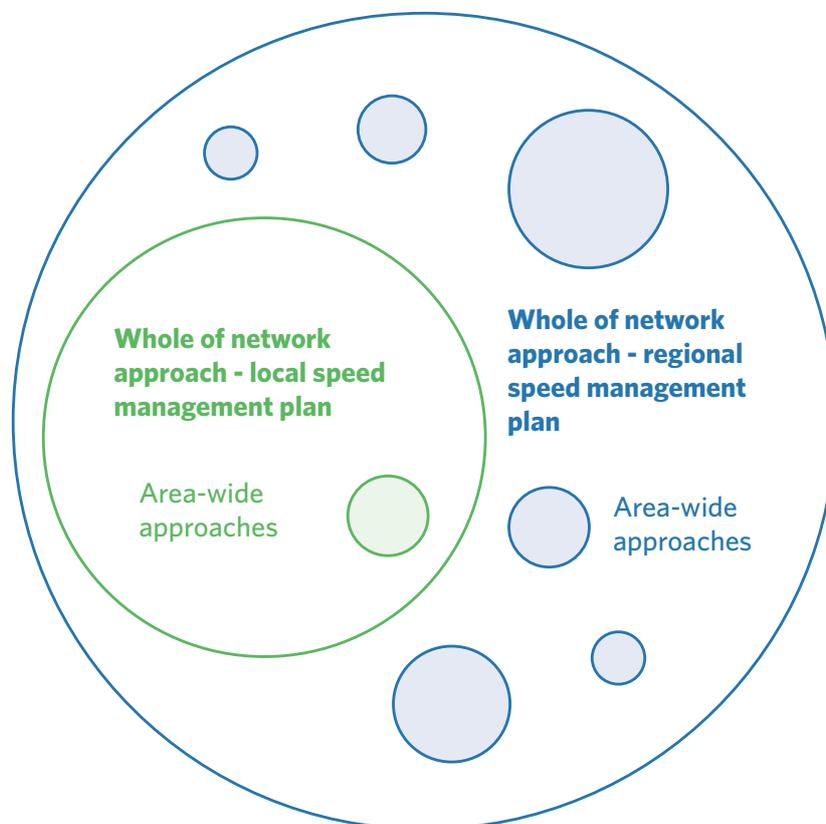
Integrating safe speeds around schools into the speed management plan

School speed limits form an integral part of speed management plans, so should be considered alongside plans for speed limit changes on other parts of the network, investment in safety infrastructure and deployment of safety cameras.

Area-wide approaches (described above) are particularly useful where several schools are in a relatively small geographic area. The recommended safe and appropriate speed for most residential areas is 30km/h due to their high place function and presence of vulnerable and active road users. This means it may often be more impactful and cost-effective to reduce speed limits in a school catchment area at the same time as reducing the limit immediately outside the school.

Factors to be considered for schools overlap with considerations for speed management on the wider network, including:

- plans for speed limit changes on the network as a whole
- safe and appropriate speeds provided in MegaMaps
- adjacent and nearby land uses
- adjacent and nearby One Network Framework street categorisations
- current and planned safety infrastructure
- deployment of road policing and safety cameras
- broader objectives, such as school travel planning and facilitating walking and cycling, and present or planned programmes to support this.

Consider, also, the roads and streets in a school catchment area that form part of children's journeys to and from school. Some of these surrounding roads and streets may also be in line for permanent speed limit changes, so there are benefits in adopting area-wide approaches .

Applying the safe and appropriate speed to an area (or network) that includes schools is the most cost-effective way to implement lower speed limits outside schools..

Safe speed limits around schools

Setting safe speed limits around all schools improves actual and perceived safety to encourage and enable more active travel to and from school. It also reduces the risk to tamariki and whānau of being killed or seriously injured while travelling to or from school. Under Road to Zero and the Rule, RCAs must use reasonable efforts to implement safe speed limits around schools by 31 December 2027, with an interim target of 40 percent of schools by 30 June 2024.[30]

A safe speed limit around a school is considered to be 30km/h unless:

- a specific reason exists for a higher speed, and
- sufficient safety infrastructure is present to meet Safe System principles at a higher speed limit, and
- the risk of conflict with people outside vehicles has been eliminated.

Identifying roads outside schools

Under the Rule, an RCA defines what it considers to be a 'road outside a school'. This may be a road or roads immediately adjacent to a school, or a road that includes a key access point for the school. The factors to be considered are:

- Location of main entrance and any other entrances.
- Advice from the school itself regarding presence and use of entrances.
- Typical or expected routes for active travel to school.
- The objective of making people feel safe walking or using other active modes to and from school.

School categories

To provide structure to this process, the Rule uses the concept of school categories:

- **Category 1 schools** require a safe and appropriate speed limit on the roads and/or streets outside the school to be 30km/h (permanent or variable), or where pre-existing 40 km/h speed limits are retained as in interim measure.
- **Category 2 schools** are those where the RCA deems a safe and appropriate speed limit of 60km/h or less (permanent or variable) is suitable for the roads and/or streets outside the school.

Category 1 schools

Under the Rule, all schools are category 1 schools unless an RCA reviews a school on a road under its jurisdiction and assigns it to category 2. It is expected that most schools will remain category 1 because even if the safe and appropriate speed for surrounding streets is higher than 30km/h, a permanent or variable speed limit of 30km/h on the roads outside

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30 Schools means all schools and kura under the *Education and Training Act 2020*

the school (as defined by the RCA) is desired to address the risk of pedestrian crash conflicts.

Category 2 schools

Under the Rule, an RCA must specifically define a school as category 2. This should be reviewed each time the speed management plan is reviewed.

For a school to be category 2, it is expected to have the appropriate level of entranceway design and supporting safety infrastructure that removes or manages potential pedestrian crash conflicts to align within Safe System injury tolerances.

RCAs should assign the safe and appropriate speed limit based on the road environment and presence of safety features that address pedestrian crash risk such as:

- separated footpath and cycle lanes
- raised priority-controlled pedestrian crossings designed for speeds of 30km/h or less
- off-road parking and/or off-road bus pick up/drop off facilities.

Permanent speed limits around schools

In order to better enable permanent safe speed limits around schools, the Rule exempts schools from the requirement for an obvious change in the road environment to be associated with a change in speed limit. This provision, along with the guidance on safe and appropriate speed limits linked to One Network Framework street categories, and the emphasis on taking a network-wide, area-based approach to achieving safe speeds, is expected to facilitate broad scale achievement of safe permanent speed limits on the streets outside schools, and in many cases, also the wider school catchment area.

This is because in urban areas, the estimated safe and appropriate speeds now include a significantly larger proportion of recommended permanent 30km/h and 40km/h speed limits and fewer recommended 50km/h limits than in previous guidance. Therefore, the safe and appropriate speed limit in an urban area is much more likely to align with the safe and appropriate speed limit required outside a school.

Variable speed limits around schools

Due to better enablement of permanent safe and appropriate speed limits on roads outside schools under the Rule, the need for a school variable speed

limit (that is, a speed limit that varies from the usual speed limit in relation to times of activity around the school) is expected to be less than under the previous rule, particularly in urban areas.

A variable speed limit should be considered only when all other alternatives have been exhausted.

A variable speed limit should only be installed where no permanent changes to a safe speed for a school are planned and a review of the school location (including engagement with the school community) determines that a permanent change is not appropriate.

A variable speed limit:

- of 30km/h could be effective as an interim measure on roads where a permanent speed limit of 30km/h is planned but may not be implemented until after the deadline for reducing school speed limits
- of 40–60km/h could be effective in cases where a permanent speed limit change of 60km/h or higher is planned for the road but the road design, infrastructure and presence of vulnerable road users means this is not a safe speed for the section of road outside the school.

Under the Rule, a variable speed limit outside a school does not require Waka Kotahi (as regulator) approval.

Integrating safe speeds around marae into the speed management plan

In addition to the provisions in the Rule specific to partnership with Māori (section 6), the area-based approach to speed management plans and the Safe System safe and appropriate speed limits are expected to contribute to improved speed management for Māori communities and improved Māori road safety outcomes overall.

This section notes that the speed limit setting approach around marae is similar to that used around schools as is the need for variable speed limits.

Permanent speed limits around marae

Many Māori institutions are expected to benefit from an area-based approach and broader application of safe and appropriate speed limits. For example, kōhanga reo and marae in urban areas are likely to be in locations where a street or area is changing to a safe and appropriate speed limit, which reduces the need for a location-specific speed limit.

In some cases, a change to the permanent safe and appropriate speed limit on the road outside a

marae may still be too high in the case of specific circumstances, such as events, that take place at and around the marae. For example, a marae on a state highway. In this case, a variable speed limit may be necessary to complement the safe and appropriate permanent speed limit.

Variable speed limits around marae

Under the Rule, the need for a variable speed limit (that is, a speed limit that varies from the permanent speed limit during a specific time or event) is expected to be less than under the previous rule, particularly in urban areas once a safe and appropriate speed limit has been applied.

A variable speed limit outside a marae may be required in addition to a permanent safe and appropriate speed limit, particularly in rural areas or on arterial roads where the safe and appropriate speed limit will be too high under certain circumstances.

The addition of a variable speed limit is most likely to be appropriate when:

- kaupapa at the marae generate significant changes in the volume of traffic entering and exiting the marae
- kaupapa at the marae such as tangi require processions of people to walk on the road (for example from wharenui to urupā)
- a complex or dangerous turn is required to access the marae entrance and a vehicle-activated variable speed limit would improve safety.

Further information on implementing variable speed limits around marae is being developed by Waka Kotahi.

Integrating safety infrastructure into the speed management plan

Road controlling authorities develop their safety infrastructure projects and activities as part of the Road to Zero Speed and Infrastructure Programme. These should be integrated into the speed management plan.

In some cases, it may be appropriate to take a tactical approach and install temporary or semi-permanent infrastructure to support safe and appropriate speed limit changes on urban roads and streets. A trial approach may be more cost-effective than installing permanent infrastructure or can be used to test a new approach and engage the public before committing to a permanent design.

He Tohu Huarahi Māori Bilingual Traffic Signs programme

As part of the Waka Kotahi commitment to support te reo Māori being seen, spoken and heard wherever possible, to continue the revitalisation of the language, Waka Kotahi has a multi-disciplinary team working with Te Mātāwai[29] and local government to enable the use of bilingual traffic signs.

Technical specifications for a suite of Kura School signs were published on the Waka Kotahi website in 2022. Technical specifications are also available for marae signs in te reo only. Public consultation on a further selection of traffic signs is planned.

Example of Kura School warning sign (illuminated when activated)

Example of permanent speed limit sign outside a school

Example of a variable speed limit sign outside a marae

The technique of making tactical changes that can be implemented relatively quickly is well evidenced and has the potential to deliver significant safety benefits in a short timeframe.

The Streets for People programme aims to make it faster and easier to transition streets to safer and more liveable spaces.[31] This programme helps the sector plan, design and develop towns and cities by providing a toolkit of support options for retrofitting streets with infrastructure to reduce vehicle speeds and create more space for people. A fund is available for council projects .

Testing enables communities to get a sense of what their streets could be like and builds community confidence that their needs and input to changes are valued. An iterative testing and learning process involving stakeholders will result in better-informed decisions.

By testing innovations with communities, RCAs can be more assured that they're getting the direction of change right – before committing to major investment.

Integrating safety cameras into the speed management plan

Waka Kotahi is responsible for developing the national strategic approach for expanding the safety camera network on state highways and local roads. Waka Kotahi will engage with RCAs and other stakeholders regionally to understand and gain insights into RCA views on proposed speed limit changes, infrastructure changes and how safety camera sites can support safe and appropriate speed limits.

3.5 Content of a speed management plan

Under the Rule, a speed management plan should reflect an aligned and coordinated approach to the setting of speed limits, where speed management planning aligns with land transport planning. The plan should demonstrate the 10-year vision for the network and set out the principles used to identify or prioritise areas for speed limit changes. The context for regional speed management planning is illustrated in Figure 6.

The below guidance is appropriate for state highway, regional and territorial authority speed management plans. For further information on requirements for interim plans (until 2024), see Appendix 5.

The Rule requires a speed management plan to include information on the following:
- The 10-year vision including objectives, policies and measures for managing speed – possibly including principles.
- The plan's alignment with Road to Zero and the current Government Policy Statement on land transport.
- How a whole-of-network approach was taken.
- The three-year implementation programme (to enable steady transition to the desired end state).
- How partnership with Māori was undertaken.
- Safe and appropriate speeds around schools.
- Any supporting information.

Ten year vision

In this section of the plan:
- set out the long-term context for the speed limit changes proposed
- give objectives, policies, and measures in the plan that are consistent with broader regional land transport strategies.
- outline the principles   that will guide your speed management approach through the planning process - the guiding principles provided in this guide should be considered: safety, community wellbeing, movement and place, and system thinking. It is recommended that they are adapted and/or expanded upon to reflect the local or regional context.
- identify connections and alignment with other local objectives and policies (for example, the local road safety strategy, local transport strategy and sustainability strategy).
- provide information in a narrative form which may be accompanied by maps to visually describe and support the narrative.
- do not include speed limit change information for corridors or speed limit areas in this section as it is included in more relevant sections of the plan.

In addition to informing the development of the three-year implementation plan, a clear vision is critical for effective engagement and consultation. For more information on this, see Appendix 3: Engagement and communications

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31   Waka Kotahi NZ Transport Agency. 2022. Streets for People programme 2021–2024 (webpage).

Alignment with Road to Zero and Government Policy Statement

In this section, explain how the plan is consistent with Road to Zero and the current Government Policy Statement on land transport.

This information should principally be in the form of a narrative.

Whole-of-network approach

In this section, explain how a whole-of-network approach has been adopted through the speed management plan and how safe and appropriate speed limits have been considered alongside safe speed limits for schools, as well as investment in safety infrastructure and safety cameras, as part of the regional transport planning process.

What framework, particularly considering the types of road users and vehicles present as well as speed limits, did you use to select the appropriate combination of speed limit reduction and investment in safety infrastructure? This may include consideration of an area-based approach or approaches. This may also include your process for selection and prioritisation of speed management work.

This section may also include details on:

- what criteria have been applied to determine where investment in safety infrastructure is proposed
- how speed limit changes and investment in safety infrastructure will operate in tandem
- consideration of connecting roads or surrounding areas where a particular priority road or area is being reviewed, to ensure consistency

This information should principally be in the form of a narrative.

Three-year implementation programme

In this section, explain your three-year programme for implementation (to achieve the desired 10-year end-state). Detail any proposed speed limit and safety infrastructure changes, and associated information, broken down by year of planned implementation, for at least three years from the start of this plan.

The three-year implementation programme should address:

- speed limits on the relevant roads, including, information on each proposed speed limit relating to the geographical area, the type of speed limit, the proposed speed limit in kilometres per hour, and,

for a seasonal or variable speed limit, the conditions under which each speed limit will apply

- the timeframe within which each change is proposed to occur
- corridors and locations where safety infrastructure is planned and detail on the type of treatment where possible , or an overview of the options for safety infrastructure on the network and the process for selection.

This section may be presented as narrative, maps and/ or tables.

Safe and appropriate speeds around schools

This section must provide an explanation for any school with a category 2 designation including the proposed speed limit (40km/h, 50km/h or 60km/h permanent or variable)and an explanation of how Safe System principles are met, and why a 30 km/h speed would not be appropriate.

This section should also provide an explanation for any category 2 school in the previous plan and retained in this plan, and details of any 40km/h speed limits (permanent or variable) outside schools that were set on or before 20 April 2021 and which remain in place on the commencement of the Setting of Speed Limits Rule 2022.

This information may be captured in a table and/or identified in a map.

For more information about the categories and their implications for safe speed limits around schools, see the previous section on developing a speed management plan.

Partnership with Māori

Waka Kotahi (as an RCA) and regional councils must establish and maintain a process to provide opportunities for Māori to contribute to the preparation of speed management plans and to foster the development of Māori capacity to so contribute. Waka Kotahi (as an RCA) and regional councils must provide relevant information to Māori for this purpose.

Speed   management plans should describe the partnership process with Māori and its outcomes, including how Māori have been engaged and contributed to the development of the plan. It should explain how the development of Māori capacity has been fostered so Māori can actively contribute to the plan's preparation and the information provided to Māori.

Supporting information

Speed management plans must also include explanations or supporting information about any 70km/h or 90km/h speed limits (see also Section 2). In the next plan, 70 km/h or 90 km/h speed limits must be reviewed.

The RCA must then either confirm that a speed limit of 70 km/h or 90 km/h is safe and appropriate for the road; or propose to change the speed limit to be other than 70 km/h or 90 km/h. An explanation on this might also include details on:

- adjustments to the boundaries of the application of a speed limit to support network management or safety
- land use or local circumstances and how they have changed
- where speed limits may need to be smoothed or take a network-based approach be taken to support network management or safety (that is not accounted for in the SAAS)
- where consultation identifies an effect on road

users (that is not accounted for in the SAAS)
- where, due to the function of the road, the RCA is considering investing in safety infrastructure to safely retain current speed limits
- any assessments Waka Kotahi has made on relevant roads
- an explanation of how speed limits on adjoining roads under the control of other RCAs are aligned
- consideration of speed limits on adjoining roads (for example, at RCA boundaries) - provide any other relevant matters
- any other relevant matter..

This information may be provided as a narrative and/or a table.

State highway components

- In this section, which is only required for regional speed management plans, include a copy or summary of the relevant state highway components as produced by Waka Kotahi (as RCA).

3.6 Certification of a speed management plan

The Director of Land Transport must certify all plans before they can be published. Plans may be full, interim, or variations to plans.

The state highway speed management plan of Waka Kotahi (as RCA) must be reviewed by the Speed Management Committee before the Director of Land Transport considers it.

For a plan to be certified, it must meet the certification requirements of the Rule.[32]

Box 4

Speed Management Plan certification template

The Rule states that a plan must be in the form (if any) set by Waka Kotahi as regulator. At the time of printing, Waka Kotahi has not set a form for plans. An optional certification template has been developed and Waka Kotahi encourages everyone to use the template, to support consistency in speed management plans. However, it is noted that the template is focused on the information required by Waka Kotahi for certification, and may not produce a plan in an appropriate form for public consultation.

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32   Clause 3.11(1) of the Rule.

3.6.1 Speed Management Committee

The Rule and the Land Transport Act requires Waka Kotahi to establish a national Speed Management Committee (SMC), with members appointed by the Minister of Transport. Te Manatū Waka Ministry of Transport facilitates the appointment process in consultation with the Director of Land Transport (though consultation with the Director of Land Transport is not required by the Rule). The Rule sets out the functions, powers, and duties of the SMC. This , together with the fact that the members are appointed by the Minister of Transport provides the SMC with independence from Waka Kotahi and the Director of Land Transport.

The Speed Management Committee will:

- review the draft state highway speed management plan and provide advice to the Director of Land Transport about the plan's certification
- provide oversight of the information and guidance on speed management that Waka Kotahi provides under this Rule, to ensure that the information is up to date and is fit-for-purpose

If necessary, the SMC can request an independent review of the speed management information and guidance Waka Kotahi provides to RCAs.

The SMC may also provide comments to Waka Kotahi (as RCA) on a state highway speed management consultation draft plan during the consultation process.

3.6.2 National Speed Limit Register

The National Speed Limit Register is a publicly available online maps-based source of speed limits for roads in Aotearoa New Zealand. It makes it easier for organisations responsible for speed management to comply with the Rule; record, update and share speed limit data; and make informed speed management decisions.

The public, enforcers and, increasingly, intelligent systems in vehicles use speed limit data. The National Speed Limit Register will make it easier for people to access and use that data. Third-party consumers will be able to easily access consistent speed limit data from one electronic source.

Following certification of the speed management plan, each RCA must provide Waka Kotahi (as regulator), details about:

- the geographical area (that is, the road, roads, part of a road or other described land) for which the speed limit is set
- the speed limit expressed in kilometres per hour
- whether the speed limit is a permanent, seasonal, variable or temporary speed limit, and:
  - if a seasonal speed limit, the specified dates in each year during which each speed limit will apply
  - if a variable speed limit, the conditions under which each speed limit will apply
  - the date on which the speed limit comes into force
  - the speed limit's end date, if known
- a declaration that legal requirements in relation to setting the speed limit have been satisfied
- any other information that Waka Kotahi (as regulator) requests.

List of appendices

List of additional technical information

- Speed limit signs
- Variable speed limits
- Minimum road lengths for speed limits
- Intersection speed zones

Glossary

Term	Explanation
Amenity value	The characteristics that influence and enhance people's appreciation of a particular area.
Auckland Transport	The organisation responsible for preparing the Auckland regional land transport plan. It is also a road controlling authority.
consultation	Consultation is one type of engagement, with a legal definition and statutory obligations for local government.
Director of Land Transport	The role in Waka Kotahi responsible for certifying and commenting on speed management plans. Waka Kotahi functions are delegated to the Director of Land Transport to retain independence from Waka Kotahi as an RCA.
Engagement	Engagement is the practice of actively bringing community or public voices into decisions that affect or interest them.
Government Policy Statement on land transport	The policy statement that sets out how money from the National Land Transport Fund will be allocated through Waka Kotahi towards achieving the government's transport priorities.
International Association for Public Participation	An association to advance and extend the practice of public participation.
km/h	Kilometres per hour
Land Transport Management Act 2003	The purpose of this Act is to contribute to an effective, efficient and safe land transport system in the public interest.
Land Transport Rule: Setting of Speed Limits 2017	The previous rule setting out how speed limits are to be set that ceases to be in effect from 19 May 2022.
Land Transport Rule: Setting of Speed Limits 2021	The latest rule setting out how speed limits are to be set from 19 May 2022 (the Rule).
Mean operating speed	'The mean speed of traffic, including all classes of vehicle, measured in a way that is representative of all traffic speeds on the road over a seven-day period' (Land Transport Rule: Setting of Speed Limits 2022)
MegaMaps	An online geospatial tool that provides road controlling authorities with speed management information for the network.
Ministry of Transport	The government's principal transport policy adviser that leads and generates policy and helps to set the vision and strategic direction for the future of transport in Aotearoa New Zealand.
National Land Transport Fund	A ring-fenced transport fund administered by Waka Kotahi. All the revenue that goes into the fund is spent on the land transport system through the National Land Transport Programme.
National Land Transport Programme	The three-year programme of investment in national, regional, and local transport activities.
One Network Framework	The framework used to categorise streets and roads that takes a movement and place-based approach to determine safe and appropriate speeds.

Term	Explanation
National Land Transport Programme	The three-year programme of investment in national, regional, and local transport activities.
One Network Framework	The framework used to categorise streets and roads that takes a movement and place-based approach to determine safe and appropriate speeds.
Permanent speed limit	A speed limit that applies at all times on a road.
Pipeline Tool	The software that Waka Kotahi and road controlling authorities use to develop the Road to Zero Speed and Infrastructure programme.
RCA	Road controlling authority
Regional council	New Zealand has 16 regional and unitary councils. These 16 councils are charged with the integrated management of land, air, and water resources, supporting biodiversity and biosecurity, providing for regional transport services, and building more resilient communities in the face of climate change and natural hazards.
Regional transport committee	A committee that prepares regional land transport programmes and provides advice as requested by the regional council. It promotes the objectives of the Land Transport Management Act 2003 within the region.
Road controlling authority	The body responsible for the management of particular sections of road. For local roads, local councils are the RCA and for state highways, Waka Kotahi is the RCA. There are 68 RCAs in New Zealand.
Road to Zero	The national road safety strategy for the 10 years to 2030, which sets an an interim target of a 40 percent reduction in deaths and serious injuries (from 2018 levels).
RTC	regional transport committee
Rule	Land Transport Rule: Setting of Speed Limits 2022
SAAS	Safe and appropriate speed limit
Safe and appropriate speed limit	A speed limit that is safe according to standards set by the Safe System and appropriate in terms of aligning with community wellbeing objectives as well as with the movement and place function, design and infrastructure of the street or road.
Safe System	The Safe System approach aims to eliminate fatal and serious injuries for all road users. It does so through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels.
Speed Management Committee	An independent committee that certifies the Waka Kotahi state highway speed management plan and oversees the information and guidance on speed management that Waka Kotahi (as regulator) provides to road controlling authorities.
Tactical urbanism	Low-cost, temporary changes to the built environment intended to improve local neighbourhoods and gathering places

Term	Explanation
Territorial authority	Territorial authorities are the second tier of local government in New Zealand, below regional councils. The 67 territorial authorities comprise 13 city councils, 53 district councils and the Chatham Islands Territory.
Variable speed limit	A speed limit that applies at only certain times
Vision Zero	Vision Zero is a world-leading approach to road safety where no loss of life, or serious injury, on the road is acceptable. By building, maintaining and operating a safe, forgiving transport system, when crashes do occur, they will not result in people being killed or seriously injured.
Waka Kotahi	Waka Kotahi NZ Transport Agency
Waka Kotahi NZ Transport Agency	Waka Kotahi has three functions under the Land Transport Rule: Setting of Speed Limits 2022: • The Agency – provides information and guidance to RCAs, sets deadlines and monitors compliance with the Rule. • Waka Kotahi as RCA – develops, implements and reviews the state highway speed management plan. • The Director of Land Transport – certifies speed management plans and comments on the extent to which speed management plans comply with Road to Zero.

References

Associate Minister of Transport. 2019. *Tackling unsafe speeds programme* (Cabinet paper, redacted version released under the Official Information Act 1982). www.transport.govt.nz/assets/Uploads/Cabinet/Cabinet-paper-Tackling-Unsafe-Speeds-programme_Redacted.pdf

Bertulis, T, & Dulaski, DM. 2014. Driver approach speed and its impact on driver yielding to pedestrian behavior at unsignalized crosswalks. *Transportation Research Record* 2,464, 46–51. https://doi.org/10.3141/2464-06

BITRE. 2021. *International road safety comparisons 2019.* Canberra: Bureau of Infrastructure, Transport and Regional Economics. www.bitre.gov.au/publications/ongoing/international_road_safety_comparisons

Bray Sharpin et al. *Low-speed zone guide* 2021. World Resources Institute. https://www.wri.org/research/low-speed-zone-guide#:~:text=This%20Low%2DSpeed%20Zone%20Guide,will%20suit%20their%20specific%20context.)

Cabinet. 2019. *Minute of decision – tackling unsafe speeds programme* (CAB-19-MIN-0575). www.transport.govt.nz/assets/Uploads/Cabinet/Cabinet-minute.pdf

Child and Youth Mortality Review Committee. 2019. *14th data report: 2013–17.* Wellington: Health Quality & Safety Commission. www.hqsc.govt.nz/assets/Uploads/CYMRC-14th-data-report-2013-17-final-June2019-v2.pdf

Department of the Prime Minister and Cabinet. 2019. *Guide for central government engagement with local government.* Wellington: DPMC. www.lgnz.co.nz/assets/Uploads/9df337b770/Guide-for-central-government-engagement-with-local-government_compressed.pdf

Department of the Prime Minister and Cabinet. 2020. *Good practice guide for community engagement.* Wellington: DPMC. https://dpmc.govt.nz/publications/good-practice-guide-community-engagement

Department of the Prime Minister and Cabinet. 2021. *Community engagement* (webpage). https://dpmc.govt.nz/our-programmes/policy-project/policy-methods-toolbox/community-engagement

Department of the Prime Minister and Cabinet. 2021. *Community Engagement design tool.* https://dpmc.govt.nz/sites/default/files/2021-06/policy-project-community-engagement-design-tool-editable.pdf

European Safety Transport Council. 2019. *Reducing speed in Europe.* PIN Flash Report 36. ETSC
Elvik, R. 2013. A re-parameterisation of the power model of the relationship between the speed of traffic and the number of accidents and accident victims. *Accident Analysis & Prevention* 50, 854–860. https://doi.org/10.1016/j.aap.2012.07.012

Elvik, R. 2019. A comprehensive and unified framework for analysing the effects on injuries of measures influencing speed. *Accident Analysis & Prevention* 125, 63–69. https://doi.org/10.1016/j.aap.2019.01.033

European Environment Agency. 2020. *Do lower speed limits on motorways reduce fuel consumption and pollutant emissions?* Copenhagen: EEA. www.eea.europa.eu/themes/transport/speed-limits-fuel-consumption-and

European Safety Transport Council. 2019. *Reducing speed in Europe.* PIN Flash Report 36.

Global Road Safety Facility. 2021. *Guide for Road safety interventions: evidence of what works and what does not work.* Washington, DC. www.roadsafetyfacility.org/publications/guide-road-safety-interventions-evidence-what-works-and-what-does-not-work?msclkid=de6f239ab7f011ecb9681ef01a91f378

Global Road Safety Facility. 2022. *Speed management hub: Frequently asked questions* (webpage). www.roadsafetyfacility.org/faq

International Energy Agency. 2022. *A 10-point plan to cut oil use* (webpage). www.iea.org/reports/a-10-point-plan-to-cut-oil-use

International Transport Forum. 2008. *Towards Zero: ambitious road safety targets and the Safe System approach – summary document.* http://www.itf-oecd.org/sites/default/files/docs/08targetssummary.pdf

International Transport Forum. 2016. *Zero road deaths and serious injuries: leading a paradigm shift to a Safe System.* Paris: OECD. www.itf-oecd.org/sites/default/files/docs/zero-road-deaths.pdf

International Transport Forum. 2018. *Speed and crash risk.* Paris: OECD. www.itf-oecd.org/sites/default/files/docs/speed-crash-risk.pdf?msclkid=fd7cfa4eb7f411ec860d74f038032b43

International Transport Forum. 2020. *Road safety annual report 2020.* Paris: OECD. www.itf-oecd.org/sites/default/files/docs/irtad-road-safety-annual-report-2020_0.pdf

Job, RFS, & Brodie, C. 2022. Understanding the role of speeding and speed in serious crash trauma: a case study of New Zealand. *Journal of Road Safety* 33(1), 5–25. https://doi.org/10.33492/JRS-D-21-00069

Job, RFS, & Mbugua, LW. 2020. *Road crash trauma, climate change, pollution and the total costs of speed: six graphs that tell the story.* Washington DC: Global Road Safety Facility, World Bank. www.roadsafetyfacility.org/publications/road-crash-trauma-climate-change-pollution-and-total-costs-speed-six-graphs-tell-story

Local Government New Zealand. 2019. *The good governance guide for community boards.* Wellington: LGNZ. www.lgnz.co.nz/assets/cf6ea91049/Good-Governance-Guide-for-Community-boards-2019-edition-v2.docx

Local Government New Zealand. 2022. Council Māori engagement: *Useful resources for Māori engagement in local government* (webpage). www.lgnz.co.nz/about/governance/maori-committee/council-maori-engagement/

New Zealand Government. 2019. *Road to Zero: New Zealand's road safety strategy 2020–2030.* Wellington: Waka Kotahi NZ Transport Agency. www.transport.govt.nz/assets/Uploads/Report/Road-to-Zero-strategy_final.pdf

New Zealand Government. 2020. *Government Policy Statement on land transport: 2021/22 – 2030/31.* Wellington: Ministry of Transport. www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2021/

New Zealand Government. No date. *Content design guidance* (webpage) www.digital.govt.nz/standards-and-guidance/design-and-ux/content-design-guidance/

New Zealand Police. 2021. *Safe roads control strategy.* Wellington. https://www.police.govt.nz/sites/default/files/publications/safe-roads-control-strategy.pdf

New Zealand Police. 2021. *Local initiative reduces road deaths to zero* (webpage). www.police.govt.nz/news/release/local-initiative-reduces-road-deaths-zero

New Zealand Police. 2022. *Safe speed cameras* (webpage). www.police.govt.nz/advice-services/driving-and-road-safety/speed-limits-cameras-and-enforcement/safe-speed-cameras

OECD European Conference of Ministers of Transport. 2006. *Speed Management.* Paris: www.roadsafetyfacility.org/publications/speed-management-guide-oecd-2006

Perez-Prada, F, & Monzon, A. 2017. Ex-post environmental and traffic assessment of a speed reduction strategy in Madrid's inner ring-road. *Journal of Transport Geography* 58(January), 256–268. https://www.sciencedirect.com/science/article/abs/pii/S0966692316302332

Road Safety Partnership (Waka Kotahi NZ Transport Agency, New Zealand Police, and Ministry of Transport). 2021. *2021–2024 Road safety partnership programme* (version 1.0). Wellington: Waka Kotahi NZ Transport. www.nzta.govt.nz/resources/road-safety-partnership-programme/?category=62&start=30

Salmon, P. 2021. *Systems thinking in road safety* (presentation). Australasian Road Safety Conference, 2021, Melbourne, 30 September 2021. https://psalmon2014.files.wordpress.com/2021/09/road-safety-conference-2021-salmon-website-version.pdf

Special issue: Current and future issues in transportation safety and sustainability. 2022. *Sustainability* 14(5). www.mdpi.com/journal/sustainability/special_issues/Transportation_Safety_Sustainability

Stockholm Declaration. 2020. *Third Global Ministerial Conference on Road Safety: achieving global goals 2030.* Stockholm, 19–20 February 2020. www.roadsafetysweden.com/about-the-conference/stockholm-declaration/

Te Manatū Waka Ministry of Transport. 2020. *Road safety penalties* (website). www.transport.govt.nz/area-of-interest/safety/road-safety-penalties/

Te Manatū Waka Ministry of Transport. 2020. *Social cost of road crashes and injuries: June 2019 update.* Wellington. www.transport.govt.nz/assets/Uploads/Report/SocialCostof-RoadCrashesandInjuries2019.pdf

Te Manatū Waka Ministry of Transport. 2020. *Te whakatika i te parahuti – tackling unsafe speeds* (webpage). www.transport.govt.nz/area-of-interest/safety/tackling-unsafe-speeds/

Te Manatū Waka Ministry of Transport. 2021. *Social cost of road crashes and injuries: June 2020.* Wellington. www.transport.govt.nz/assets/Uploads/Social-Cost-of-Road-Crashes-and-Injuries-2020_final.pdf

UNECE. 2020. *Second Decade of Action.* https://unece.org/second-decade-action#:~:text=In%20August%202020%2C%20the%20UN,deaths%20and%20injuries%20by%202030.

Vinther, D. 2012. Children who walk to school concentrate better. *ScienceNordic* (30 November). www.nzta.govt.nz/roads-and-rail/streets-for-people/streets-for-people-programme-2021-2024

Waka Kotahi NZ Transport Agency. 2016. *Public engagement guidelines.* Wellington. nzta.govt.nz/assets/resources/public-engagement-manual/docs/nzta-public-engagement-guidelines.pdf

Waka Kotahi NZ Transport Agency. 2020. *Te Ara Kotahi – our Māori Strategy.* Wellington. www.nzta.govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategy-august-2020.pdf

Waka Kotahi NZ Transport Agency. 2020. *Toitū te Taiao – our Sustainability Action Plan.* Wellington. www.nzta.govt.nz/about-us/about-waka-kotahi-nz-transport-agency/environmental-and-social-responsibility/toitu-te-taiao-our-sustainability-action-plan/

Waka Kotahi NZ Transport Agency. 2020. *Tū Ake, Tū Māia (Stand Up, Stand Firm): Regulatory Strategy 2020–25.* Wellington. www.nzta.govt.nz/assets/regulatory/docs/tu-ake-tu-maia-regulatory-strategy-2020-25.pdf

Waka Kotahi NZ Transport Agency. 2021. *He Pūrongo Whakahaumaru Huarahi Mō Ngā Iwi Māori: Māori road safety outcomes.* Wellington. https://nzta.govt.nz/resources/maori-road-safety-outcomes-report/

Waka Kotahi NZ Transport Agency. 2022. *He Tohu Huarahi Māori Bilingual Traffic Signs programme* (webpage). www.nzta.govt.nz/roads-and-rail/he-tohu-huarahi-maori-bilingual-traffic-signs-programme/

Waka Kotahi NZ Transport Agency. 2022. *Infrastructure improvements* (webpage). www.nzta.govt.nz/safety/partners/speed-and-infrastructure/infrastructure-improvements/

Waka Kotahi NZ Transport Agency. 20xx. *Infrastructure risk rating manual: Road to Zero edition.* Wellington.

Waka Kotahi NZ Transport Agency. 2022. *One Network Framework* (webpage). www.nzta.govt.nz/roads-and-rail/road-efficiency-group/one-network-framework/

Waka Kotahi. 2022. *ONF use in other frameworks* (webpage). www.nzta.govt.nz/roads-and-rail/road-efficiency-group/one-network-framework/onf-use-in-other-frameworks/#:~:text=The%20Network%20Operating%20Framework%20(NOF,be%20closed%20to%20deliver%20strategy

Waka Kotahi NZ Transport Agency. 2022. *Planning and investment* (webpage). www.nzta.govt.nz/planning-and-investment/

Waka Kotahi NZ Transport Agency. 2022. *Road to Zero resources* (webpage). www.nzta.govt.nz/safety/partners/road-to-zero-resources/

Waka Kotahi NZ Transport Agency. 2022. *Speed and infrastructure* (webpage). www.nzta.govt.nz/safety/partners/speed-and-infrastructure/

Waka Kotahi NZ Transport Agency. 2022. *Streets for People Programme 2021–2024* (webpage). www.nzta.govt.nz/roads-and-rail/streets-for-people/streets-for-people-programme-2021-2024

Waka Kotahi NZ Transport Agency. 2022. *Vehicle emissions prediction model* (webpage). www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/air-quality-climate/planning-and-assessment/vehicle-emissions-prediction-model

Waka Kotahi NZ Transport Agency. 2020. *Hononga ki te Iwi – our Māori engagement framework*. Wellington. www.nzta.govt.nz/resources/hononga-ki-te-iwi-our-maori-engagement-framework/

Waka Kotahi NZ Transport Agency. No date. *Road to Zero activity class overview.* Wellington. www.nzta.govt.nz/assets/P-and-I-Knowledge-Base/docs/Activity-Class-Overview-Road-to-Zero.pdf

World Resources Institute. 2018. *Sustainable and safe: a vision and guidance for zero road deaths.* Washington, DC. www.wri.org/research/sustainable-and-safe-vision-and-guidance-zero-road-deaths

World Road Association, Technical Committee E2. 2020. *Traffic noise: best practice guide.* France: World Road Association (PIARC). www.piarc.org/en/order-library/31457-en-Traffic%20Noise%20%E2%80%93%20Best%20Practice%20Guide