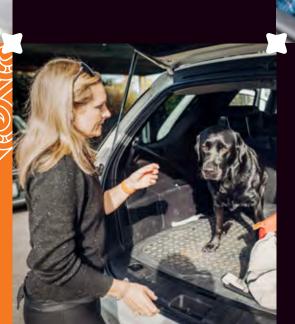


Katoa, Ka Ora

Why we are making a speed management plan for Tāmaki Makaurau Auckland









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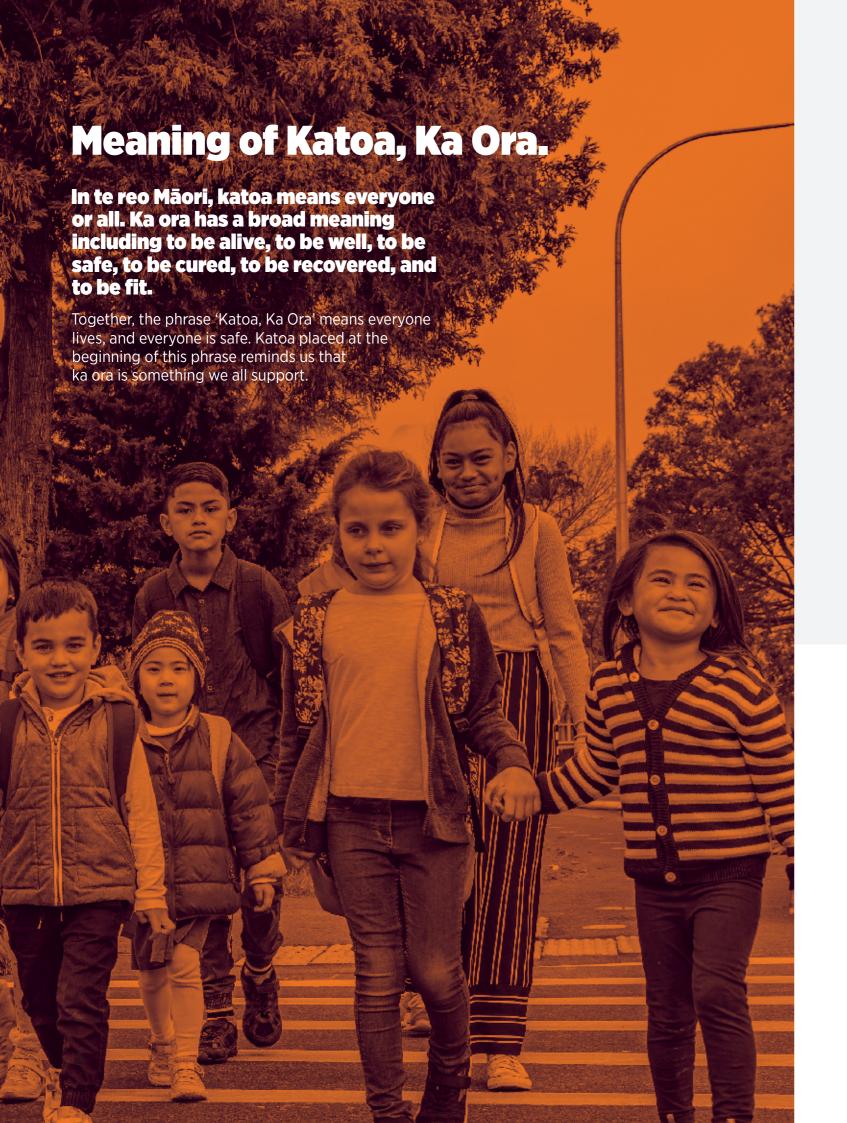
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A message from the Tāmaki Makaurau Transport Safety Governance Group

We are making a speed management plan for Tāmaki Makaurau Auckland

As organisations committed to improving and protecting the lives of Aucklanders, we, the Tāmaki Makaurau Transport Safety Governance Group, are committed to working together to achieve a vision of a transport system where no-one is killed or seriously injured by 2050.

This document, Introducing Katoa, Ka Ora – Why we are making a speed management plan for Tāmaki Makaurau Auckland, is a conversation starter with you to explain what's at stake, share the facts and evidence

behind our decision-making and provide the costs of the alternatives. It spells out our rationale for creating a speed management plan. It has been written to share our future planning on setting safe speed limits across our region, as part of our shared vision to keep everyone safe, healthy, and well on our roads and streets.

Introducing Katoa, Ka Ora – Why we are making a speed management plan for Tāmaki Makaurau Auckland is the next step in the way we manage and set speed limits. Auckland Transport's Safe Speeds programme has set safe speed limits on 1500 km of roads since 2020.

Katoa, Ka Ora is overseen by the Tāmaki Makaurau Transport Safety Governance Group.























A message from Stacey Van Der Putten, Executive General Manager, Safety, Auckland Transport

Auckland Transport (AT) is a Council Controlled Organisation of Auckland Council, established in 2010. Our primary function is to contribute to a safe and effective transport system.

One of AT's key priorities is keeping Aucklanders safe as we walk, cycle, bus, train, ferry, and drive. Our Vision Zero goal for Tāmaki Makaurau Auckland is to have no one die or be seriously injured on our roads by 2050. We have committed to this goal because we believe that no one should die or be seriously injured for simply getting around Tāmaki Makaurau Auckland.

As the guardian of our region's transport systems, it is our responsibility to transport and connect people as safely and efficiently as possible. Roads and streets bring people together – connecting Aucklanders and New Zealanders with each other, creating a sense of community, and promoting well-being and human health.

How we design our transport infrastructure, and how we set speed limits, plays a direct role in strengthening the connections between people and the places we share. We refuse to accept that some deaths or serious injuries are a price to be paid for our mobility and freedom.

AT and its Tāmaki Makaurau Transport Safety Governance Group partners are working together to ensure that we create a safe road system, where parents feel confident enough to let children walk or cycle to school, sports practice, the local dairy, or the cinemas, without having to reach for their car keys.

Auckland Transport takes a holistic approach to improving road safety by investing in improving the quality of our roads and working with partners and communities to improve driver behaviour. An important component of the Safe System is managing speed limits.

We know that most of the current speed limits in Tāmaki Makaurau Auckland are no longer fit-for-purpose. This means that the speed limits are too fast for the current design, layout, and use of the roads. We also know that no matter what causes a crash, vehicle speed directly affects both the likelihood of a crash as well as the force of impact and severity of outcome.

As we work towards improving road safety in Tāmaki Makaurau Auckland, I invite you to partner with us as we work on making a speed management plan for Auckland that will go a long way in creating a safe road transport system for everyone to enjoy.







Our Vision: Everyone alive, healthy, and well on our roads

Wherever we live and whatever our situation, every one – including children, the elderly, and differently abled – should be able to move about easily in ways that keep us safe, healthy and, which contribute to their improved well-being.

A transport system that is good for our health and the environment, is one which provides for safe use of walking, cycling, public transport, motorcycle or car transport options.

We want this to become reality for all Aucklanders, those who already live here and those who will call it home in the next 30 years. As our region grows, there will be more people walking, cycling, using public transport, and driving. This is why we are now preparing a plan to take another step towards this vision and demonstrating how safe speed limits can support Aucklanders to move with confidence.



Key strategic directions

Katoa, Ka Ora is aligned with regional (Auckland Council and Mana Whenua Kaitiaki Forum) and national (NZ Government) transport safety plans, policies, and strategies.

Figure 2: Strategic Alignment

Auckland Transport Alignment Project 2021-31

- Encourages mode-shift and supports housing and climate change objectives
- Expected reduction in deaths and serious injury of 60 per cent by 2031

<u>Vision Zero for Tāmaki</u> Makaurau

- Vision of no deaths or serious injuries on our transport system by 2050
- Target of 65% reduction in deaths and serious injuries by 2030

Government Policy Statement on Land Transport

- Purpose of the transport system to improve people's wellbeing, and the liveability of places
- Four strategic priorities; safety, climate change, better travel options and improving freight connections

Auckland Regional Land Transport Plan 2021-31

 Four key challenges to respond to; climate change and the environment, travel options, safety, and access and connectivity

Katoa, Ka Ora:

Auckland speed management plan 2023-26

Auckland Plan 2050

- Vision of no deaths or serious injuries on our transport system by 2050
- Outcome of Aucklanders being able to get where they want to go more easily, safely and sustainably
- Priorities to advance Māori tamariki and whanau wellbeing

Mana Whenua Kaitiaki Forum Strategic Plan 2030

 Decreasing number of mana whenua and mātāwaka killed or injured on Auckland Roads by 2030

<u>Te Tāruke-ā-Tāwhiri:</u> <u>Auckland's Climate</u> Plan

- A low carbon, safe transport system that delivers social, economic and health benefits for all
- Goal to reduce greenhouse gas emissions by 50 per cent by 2030

Road to Zero: New Zealand's road safety strategy 2020–2030

- Vision of New Zealand where no one is killed or seriously injured in road crashes
- Target to reduce deaths and serious injuries by 40% by 2030
- Focus area one: infrastructure improvements and speed management





The role of safety and speed limits in achieving our transport vision

We know that where safe and appropriate speed limits have been implemented, injuries and deaths have reduced. Data from the first phase of speed limit changes (speed limits were lowered on 30 June 2020) shows a 47 per cent reduction in deaths and an 18 per cent reduction in serious injuries, in the 18-months following the changes.

In comparison, across all Auckland roads for that same time period, road deaths increased by 8 percent.¹

In addition to reducing serious crashes, safe speed limits have other flow-on effects on human health and the environment.

¹ All Auckland road deaths numbers, including treated roads, as extracted from Ministry of Transport data on April 2021 which may be subject to change following coroner investigation. Baseline is five-year annual average prior to changes.





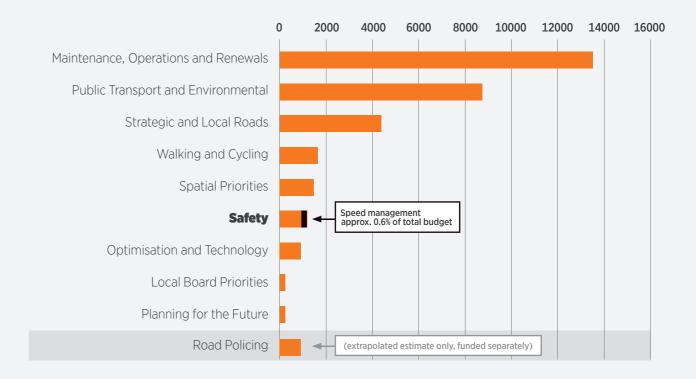
We are investing across the system

Auckland Transport,
Waka Kotahi and our
other partners will invest
approximately \$31 billion
over the next ten years
to improve Auckland's
transport system.²

A large proportion of this will improve the safety of our roads, including maintenance, road and intersection upgrades, better walking and cycling facilities and improvements to public transport, the safest mode of travel³.

This includes spending about 0.6% of this budget (\$193 million) on speed management, which has been proven worldwide to be one of the most highly effective tools in reducing deaths and serious injuries⁴. In addition, Auckland's proportion of national road policing budget is more than \$80 million per year⁵. Together with speed management and other improvements, enforcement goes a long way in helping improving driver behaviour.

Planned investment in Auckland's transport system 2021-2031



² Auckland Regional Land Transport Plan 2021–2031

https://www.transport.govt.nz/assets/Uploads/Presentation/Overview-of-Road-Safety-in-NZ-Data-packs-for-reference-groups.pdf Page 17

https://documents1.worldbank.org/curated/en/206691614060311799/pdf/Guide-for-Road-Safety-Interventions-Evidence-of-What-Works-and-What-Does-Not-Work.pdf

⁵ Auckland Regional Land Transport Plan 2021–2031 Appendix 8: "\$826 million is invested in road policing activities (2018-2021), with around 30 percent allocated to Tāmaki Makaurau". Graph shows an extrapolation if current rates were to continue.



The link to human health

An important flow-on effect on setting a safe speed environment is that people "feel" it is safe to try out different things.

When we "feel" safe, we tend to walk and cycle more often. We allow our children to walk to school, without having to reach for our car keys. More people walking, cycling and using more public transport is good for all business – large and small.

With more people using active transport modes (walking, cycling, public transport), the knock-on effects go a long way in keeping people fit and healthy.

• Social health benefits – building connections

By getting out and about and using active transport, people have more opportunities to engage and feel connected, rather than sitting by themselves in a car.

• Mental health improvements

Walking or cycling, improves our mental health. Being more active gives people more independence and removes the stress of driving and adding to congestion on our roads.



The link to climate change

In addition to being a good and ethical imperative, safety and speed limits also support climate change actions and is vital for an efficient transport system.

Figure 3 illustrates how safe speeds, can contribute to Auckland Council and NZ Government carbon emission reduction targets by encouraging more walking, cycling and public transport use.

Safe speeds go a long way in reducing serious crashes (which disrupt the road network), and lower traffic noise, benefitting communities.

"Auckland Regional Public Health
Service supports plans to set safe
speed limits across Tāmaki Makaurau
Support sett
Auckland. These speed limits are
one of the many ways we reduce
harm on our roads, especially for
our roads and the most vulnerable. Safe speed
limits have many additional benefits
from improving environmental
sustainability to enabling individuals
and communities to be more active
and healthier."

"Lower speed
sums up the
support sett
and cost-eff
our roads and
is worth not
lower speed
from improving environmental
on human he
quieter street
active transpand healthier."



Dr Michael Hale
Public Health
Medicine
Specialist
Auckland
Regional Public
Health Service

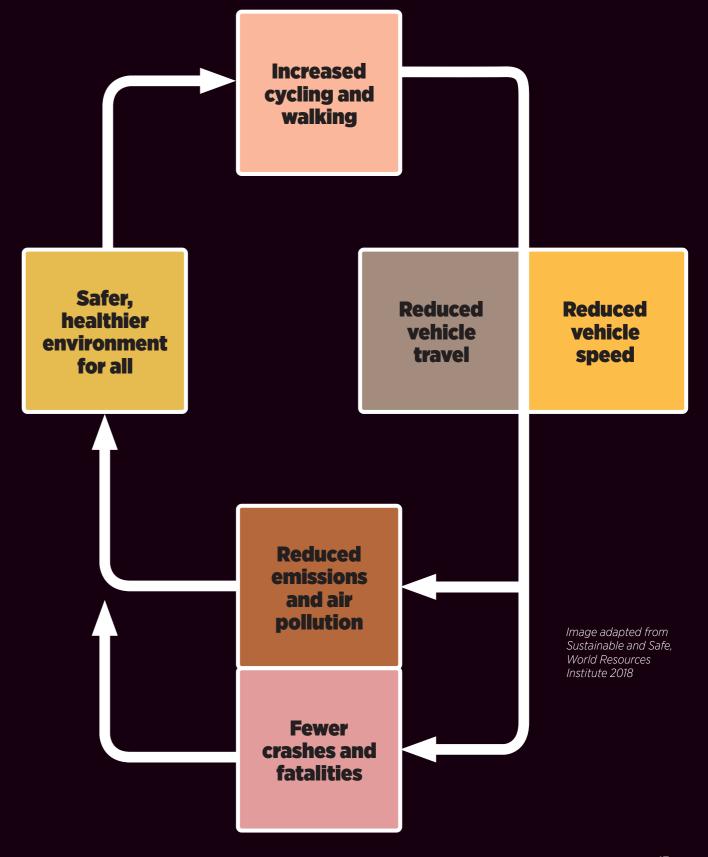


"Lower speeds save lives. That pretty well sums up the science of road safety! I fully support setting safe speed limits across Tāmaki Makaurau Auckland. This is a quick and cost-effective way to reduce harm on our roads and protect all road users. And it is worth noting there are other benefits of lower speeds. They include positive impacts on human health as a result of cleaner air and quieter streets, more attractive spaces for active transport (walking and cycling), and reduced carbon emissions."



Alistair Woodward Professor, Medical Health and Sciences The University of Auckland

Figure 3: Safe speeds support achieving climate goals



Safety and efficiency essential for productivity

Just as we expect our workplaces to be safe or expect stringent safety regulations when we fly, safe systems for our roads have the same effect in keeping us safe.

Safe speeds and safe roads are fundamental for productivity as they enable the reliable movement of goods and people. In 2017, the social cost of road harm in Auckland was about \$1.1 billion⁶, or approximately 1% of Auckland's GDP7. This is similar to that of the estimated cost of Auckland's congestion of \$0.9 billion to \$1.3 billion per year (estimated in 2017)8. These costs are paid by all Aucklanders. There is the cost of health care for those injured and for some, lifetime rehabilitation and support. There is the cost to families, businesses and our region of those who can no longer live and work as they did before due to road deaths and serious injuries.

Providing safe conditions so people who wish to walk or cycle can, frees up road space for road-reliant freight that is key to economic productivity. Safe roads are more reliable. In overseas research, freight managers said they would be prepared to pay six times more for reliability versus journey time⁹.

- sheet/social-cost-of-road-crashes#:~:text=The%20average%20social%20cost%20
- Auckland GDP 2017 \$118B https://gem.infometrics.co.nz/auckland/indicators/
- Reliability and freight literature and practice review October 2013 Research Report 538 Reliability and freight literature and practice review | Waka Kotahi NZ Transport Agency
- https://at.govt.nz/cycling-walking/travelwise-school-programme/safe-school-travel-plans/ Every morning close to 260,000 children travel to Auckland schools; over half these trips are made by car. Assumed 1.3 child trips per car. Auckland Harbour Bridge capacity approx. 14,000 vehicles per hour
- Understanding attitudes and perceptions of cycling & walking NZ Transport Agency ember 2019 https://www.nzta.govt.nz/assets/resources/understanding-attiti and-perceptions-of-cycling-and-walking/Waka-Kotahi-Attitudes-to-cycling-andwalking-final-report-2020.pdf
- 12 https://www.iea.org/reports/a-10-point-plan-to-cut-oil-use

100,000

On a typical day, 130,000 children are driven to school¹⁰, adding an estimated 100,000 cars to Auckland's peak time traffic. Even if a quarter of these trips were switched to public transport, walking or cycling, it would reduce Auckland's traffic flows by the equivalent of 14 full traffic lanes. Or it would reduce Auckland's traffic flows by the equivalent of the total daily traffic flow on Dominion Road.

56%

of Aucklanders who don't currently cycle say they are open to start cycling, yet four in 10 say they do not cycle because they are concerned about the speed of other vehicles¹¹.

10 point plan

The International Energy Agency's 2022 10-Point Plan recommends setting safe speed limits to reduce fuel consumption for vehicles powered by internal combustion engines¹².



Where we are now - the cost of doing nothing

New Zealand is behind other developed countries in implementing a safe system approach and reducing the deaths and serious injuries on our roads.

Figure 6 shows New Zealand has a road death rate per capita, which is approximately 70% higher than Australia in 2018.

The cost of doing nothing is, that over the next five years one in two Aucklanders will be personally connected to someone seriously injured or killed on our roads.

Based on assumptions that on average we know at least 100 other Aucklanders and current rates of road harm continue.¹³

96%

Our data shows that 96% of children in Auckland would prefer to walk or cycle to school, but less than 50% do, so if given the freedom, option and a safe environment to do so more children will be actively commuting school

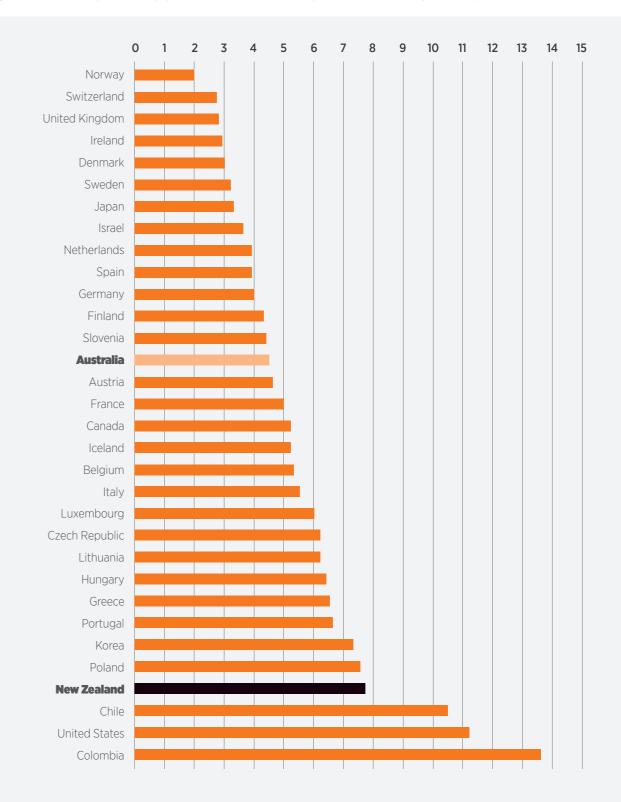
1 in 10

Aucklanders do not walk because they do not feel safe due to the way people drive - higher than any other NZ city¹⁵

3 in 10

concerns for children near schools received by Auckland transport are about speeding cars¹⁶

Figure 6 Road fatalities per 100,000 population 2018 International Transport Forum's Road Safety Annual Report 2020- OECD countries 17



¹⁵ Based on a total of 7,614 road deaths and serious injuries, reported on Waka Kotahi's CAS between 2016-2020, for the Auckland Region. The serious injuries have been factored up in accordance with the under-reporting figures reported in Safety of People Outside Vehicles Research (Phase 2). The Auckland population of 1,571,718 was used, as per 2018 Census data. Assumes road harm is evenly spread throughout population, whereas in reality, some people may know several people in crashes and others, none. Assuming each person knows 100 individuals and there's no overlap, this equates to 1,571,718/100 =15,717 contact groups, of which 7,614 have suffered death or serious injuries in the last five years (2016-2020), 15,717/7,614 = 2.06 (about 1 every 2 Aucklanders).

AUT University 2016 survey revealed 96 per cent of children preferred active modes of travel, despite the majority of kids travelling by car. https://www.stuff.co.nz/life-style/ parenting/81393406/study-reveals-9-in-10-auckland-children-want-to-walk-to-school

¹⁵ Understanding attitudes and perceptions of cycling & walking NZ Transport Agency September 2019

¹⁶ 29% of customer concerns for children near school are about speeding cars. Understanding the voice of children analysis of customer queries received by Auckland Transport from July 2019 to July 2021.

The facts:

A typical Auckland road death or serious injury (DSI)

When?

A weekday afternoon

3pm-6pm a weekday is the most common for DSI to occur.

Who?

Someone outside a vehicle

Two in three serious injuries are someone walking, cycling, scooting or motorcycling. Young people, older people, and people walking, cycling and motorcycling are over-represented in road harm in Auckland.

Why?

Failure to protect people from harmful crash forces

Two in three deaths or serious injuries involve common combinations of speed, road. road user and vehicle factors which fail to protect people making a mistake from seriously harmful crash forces. Note: These mistakes are typically an unintentional error or momentary lapse.



62% of crashes are within **11**km of home

61% of DSI crashes occur somewhere with no crash history for past 5 years



50km/h arterial road Where? Close to home, with no crash history. om on a weekday, when 15% of all death and serious injuries have occurred in the past 5 years Based on data extracted from CAS on 12 October 2021, for the years 2016-2020, nclusive. Where: 58% of death and serious injuries have occurred in past 5 years, between 2016 and 2020 inclusive, on 50km/h urban arterials. Who: People traveling outside vehicles, i.e walking, cycling and motorcycling, makes up 52% of deaths and serious injuries over the past 5 years, between 2016 and 2020 inclusive. Why: System failure. "Serious Injury Crashes: How do they differ from fatal crashes? What is the nature of injuries resulting from them?", Hamish Mackie, Mackie Research, 2017 reports that 64% of all death and serious injuries across New Zealand, extracted from CAS for the period July 2015 to June 2016, are caused by system failure.



When it comes to road safety, the Safe System approach works

The New Zealand Government's Road to Zero strategy is built on an approach to risk management called the Safe System, a globally recognised road safety method proven to reduce road harm.

To manage risk, there are standards and regulations in place to reduce harm to people. In the places of employment, business owners and employers are

required and often go beyond the minimum requirements to keep their staff safe. For example, physically separating people from high-risk work, or providing adequate safety gear. We do this in a proactive way, so we can prevent harm before it happens.

We can do the same on our roads, by setting speed limits to what a human body can survive in places where people walking and cycling mix with vehicles and setting higher speed limits where people are separated from lethal risks.



Working in partnership to achieve our vision

To get to our vision, we need everyone - our communities, elected members and **business leaders to accept** that survivable speed limits play a part in how we care for everyone. Safe speeds are a catalyst for change and support wider investments.

The information on page 27 illustrates how all of the different Tāmaki Makaurau Transport Safety partner organisations have lead roles in the workstreams that combine to make up a safe transport system for Auckland.



Work-related road safety



Health Care Response



Safe Roads and Roadsides



Safe **Speeds**



Policy and Regulation



Working together on all parts of the system

Safe Vehicles



Enforcement

WAKA KOTAHI NZ TRANSPORT

Public Transport Investment







Cycling Facilities



Development Controls



Maintenance and Renewals



Education & Engagement



Katoa, Ka Ora May 2022 Katoa, Ka Ora May 2022

Why speed matters

Speed is involved in more than 70% of injury crashes in New Zealand¹⁹

In addition to survivability, speed also increases the likelihood of a crash in several ways. As speed increases, peripheral vision decreases, which reduces the chances of drivers to spot other road users, such as people walking or people waiting to cross the road.

- 19 Understanding the role of Speeding and Speed in Serious Crash Trauma: A Case Study of New Zealand | Published in Journal of Road Safety
- ²⁰ Guide-for-Road-Safety-Interventions-Evidence-of-What-Works-and-What-Does-Not-Work, World Bank Global Road Safety Facility (GRSF), 2021

"There is a direct, causal link between speed and safety outcomes. Indeed, there are no other risk factors that have such a substantial and pervasive impact on safety as speed." 20



Risk of death vs impact speed

Impact speed

Km/h



Percentage risk







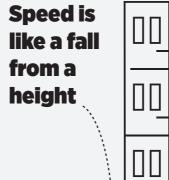






 \Box







2nd floor

floor















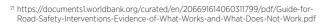
Survivability rates vary significantly based on

a number of factors and scenarios. AT takes

Integrated speed management and the cost of alternatives

In keeping with international evidence²¹ of what delivers the greatest benefit for investment, we support an integrated, area-based approach to speed management where speed limits are supported by safety infrastructure, community engagement and police enforcement with results being closely monitored.

The alternative, a very expensive one, of gold plating our roads to hold onto our current unsafe speed limits is simply not affordable. There is no realistic way to construct roads so that they are safe at high speed limits when there are many people walking or cycling. It would only work by building many overhead footbridges or underpasses, which evidence shows, are not often used.







Costs to make roads safer at higher speeds

Urban roads

There are approximately 5,600 km of urban roads in Auckland.

The information on page 33 shows the costs to make those roads safer at various speeds. Apart from these costs, and the construction disruption that would arise from implementing the safer higher speed urban road design, there are also impacts on how our communities can move around the streets and on the quality of neighbourhoods along these streets.

If we wanted to upgrade all of Auckland's urban roads to operate at 50km/h without exposing people to high risk of harm it would require physical separation for people walking or cycling and cost somewhere between \$40-80 billion, plus the cost of the land required, at massive disruption to the community. To upgrade the safety of just 2,000 km of Auckland's busiest urban roads would cost \$14 to \$26 billion, which equates to about \$23,000 to \$43,000 per Auckland ratepayer, plus costs of loss of quality of life for residents and limited access for people who are differently abled²².







At 50 km/h, only one in 10 people hit by a vehicle would survive a direct impact crash. To maintain the 50 km/h

speed limit and keep everyone safe would require grade separated crossings (footbridges or underpasses) to prevent people crossing the road.

Costs

To upgrade all roads to a 50 km/h speed limit would cost between \$7 million and \$13 million per km.

Further issues to consider include extensive construction disruption, parking removal, potential land purchases and limiting access to the roads for people walking.

At 40 km/h, five in 10 people hit by a vehicle would survive a direct impact crash.

To maintain the 40 km/h speed limit, we would need to build protected cycle lanes and raised crossings.

Costs:

To upgrade all roads to a 40 km/h speed limit would cost between \$2.5 million to \$4.4 million per km. At 30 km/h, nine out of 10 people would survive a direct impact crash.

Costs:

Vary between \$20,000 to \$620,000 per km, depending of level of supporting infrastructure used.







Rural roads

Auckland has approximately 1,900 km of sealed and about 800 km of unsealed rural roads.

The information on page 35 shows the costs to make those roads safer at various speeds, along with the considerable construction disruption and community impacts.

To upgrade all of Auckland's rural roads to safely operate at 100km/h would not be possible, as many are simply too windy or hilly for median barriers. To install wire rope barriers to prevent head on and run off road crashes on the entire rural network, would cost up to \$20 billion, depending on whether only median barriers, or median and roadside

barriers are required. This equates to about \$30,000 per Auckland ratepayer, plus costs of road widening and straightening where required. Median barriers prevent right turns into and out of driveways, so residents would need to make detours to get to and from their properties.

In conclusion, to achieve safety outcomes through infrastructure alone would be simply unaffordable and create large scale construction disruption. For urban streets, only allowing people to cross the street by overbridge or tunnel would also create significant issues of severance and damage the liveability and quality of roads and streets as place to live, work and play.





At 100 km/h, there is a very low chance of surviving a direct side impact crash.
Only one in 10 would survive a direct head-on crash.

To maintain the 100 km/h speed limit and keep everyone safe would require the road lay-out to be modified significantly (geometry), with median and edge barriers installed.

Costs:

To upgrade all roads to a 100 km/h speed limit would cost between \$3 million to \$8 million per km.

Further issues to consider include needing very good road alignment, additional space required for barriers and restrictions to driveway access.



At 80 km/h only one in 10 people hit by a vehicle would survive a direct head-on crash

To maintain the 80 km/h speed limit and keep everyone safe would require very precise road geometry, and well-designed road edges.

Costs:

To upgrade all roads to a 80 km/h speed limit would cost between \$250,000 to \$5,000,000 per km.

Further issues to consider include access controls and ensuring safety of all intersections and driveways with adequate visibility.

At 60 km/h five in 10 people would survive a direct side-impact crash. Nine out of 10 people would survive a head-on crash.

Costs:

To maintain the 60 km/h speed limit would cost approximately \$100,000 to \$270,000 per km, depending on level of supporting infrastructure used.





What does this mean for people I care about?

We all have people we care about who deserve protection from harm and have different needs. This is Tara's story, and shows what safe roads and streets might mean for different people.

If we do nothing, over the next five years one in two Aucklanders will be personally connected to someone seriously injured or killed on our roads.

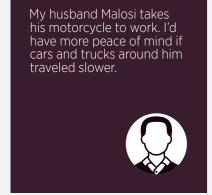
To upgrade infrastructure alone is unaffordable, would take decades and create large scale disruption.

Speed management with improved infrastructure offers us an affordable, and quicker solution to reduce deaths and serious injuries on our roads.



I drive my son Kai to school on my way to work, but he'd rather walk with his friend. Lower speed limits might make my drive to work take a couple of minutes longer, but if I let Kai walk to school I could save a 10 minute detour.





My friend Mia lives on a windy rural road. She says she wants it to be safer when she's got the kids in the car.



My mum's doctor said she needs to get out and walk more. She'd feel more relaxed crossing several busy roads to the park with calmer speeds.







