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Interim speed management plan 2023-26 high-level options

For decision: ☒ **For noting:** ☐

Ngā tūtohunga / Recommendations

That the Auckland Transport Board (board):

a) Endorse the proposed approach to progress development of an interim speed management plan 2023-26.

b) Endorse Option 2 as the preferred high-level option to progress for further development.

c) Note the significant opportunity to achieve Vision Zero outcomes together with wider co-benefits, including supporting active modes, emissions reduction and more equitable road safety outcomes presented by the interim speed management plan.

d) Note the significant risks, including public and political acceptance, from the interim speed management plan and the proposed ways to mitigate those risks based on learnings from our successful Safe Speeds Programme to date, customer research and early engagement.

Te whakarāpopototanga matua / Executive summary

1. This paper outlines a significant opportunity to further advance our successful Safe Speeds Programme with an interim speed management plan. Under the proposed Land Transport Rule: Setting of Speed Limits 2021 (Rule), Auckland Transport (AT) could take a more streamlined and customer-centric approach to speed management, contributing to achieving Road Safety Business Improvement Review 2021(Road Safety BIR) recommendations, safety and climate change targets.
2. The recommended option seeks to treat 30-40% of the network with speed management over three years. This would take the total percentage of the network treated with speed management to 68-78% by 2026 if Tranche 2 is completed as proposed. There is an option to further increase this with the 10-year regional speed management plan that is expected to be required from 2024.
3. The benefits of the recommended option conservatively range from 10-17 fewer reported annual road deaths and serious injuries (DSI) and 4-6 fewer reported active mode user DSI. When adjusted for under-reporting in the Crash Analysis System, the potential benefits increase to 22-36 fewer overall DSI and 10-16 fewer active mode user DSI. Safe speeds also support safe active mode use, contributing to climate change targets and providing safe access to wider transport improvements.
4. From our proven track record in leading safe speeds changes to date, we have experience with the key risks and concerns often raised. This paper outlines additional customer, engagement and research tools to address these.

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Ngā tuhinga ō mua / Previous deliberations

Date and meeting	Report Title	Key Outcomes
9 November 2021 Safety Committee	Speed management communications approach	The Committee supported the proposed update of the speed management communications strategy.
28 October 2021 Board	Tranche 1 Speed limit changes	The board noted the positive evaluation results from Tranche 1 of the speed limit changes.
7 September 2021 Safety Committee	Acceleration of speed management approach	The Committee supported the proposal. It requested information on DSI savings if speed management was fully implemented with safe cycling network on arterial roads.
29 July 2021 Board	Road Safety BIR and management response	The board approved the public release of the Road Safety BIR and supported management and partners' response

Te horopaki me te tīaroaro rautaki / Context and strategic alignment

Significant opportunity to build on successful Safe Speeds Programme

5. Accelerating speed management strongly aligns with Vision Zero for Tāmaki Makaurau and Road Safety BIR recommendations. The Road Safety BIR recommended full implementation of safe speed limits by 2024.
6. Safe speeds support safe active mode use and safe access to public transport. This aligns with Te-Tāruke-ā-Tāwhiri: Auckland's Climate Plan by reducing vehicle kilometres travelled through shifts to lower-carbon modes. Safe speeds can complement several wider transport projects by providing safe active mode access from surrounding neighbourhoods to key locations. They can also improve journey-time reliability and support a steady vehicle flow on arterials.
7. The proposed Rule is signalled to be in force in 2022. Under the Rule, we expect to be required to create a 2024-2034 regional speed management plan. Speed limit changes before 2024 will be through interim speed management plans.
8. The Rule offers an opportunity to set safe speed limit areas and respond to customer requests at less cost than the current rule. Unlike now, the proposed Rule does not require special consultative procedure just accordance with the principles of consultation in the Local Government Act 2002. There is also no requirement to aim to achieve a mean operating speed within 10% of the posted speed limit.

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Ngā matapakinga me ngā tātaritanga / Discussion and analysis

What is the interim speed management plan 2023-26 and why is it important?

9. The interim speed management plan is the proposed next step to continue and accelerate our Safe Speeds Programme under the proposed Rule. The plan covers a three-year programme of speed limit changes with high-level identification of integrated infrastructure, deterrence, and engagement activities. We propose to consult on the interim plan in late 2022. Attachment 1 outlines the objectives, principles, priorities and consultation timeline for the plan.

10. The primary objective of the plan is to reduce DSI through speed management. Potential co-benefits include increased safe active mode use, emissions reduction, journey-time reliability and more equitable transport safety outcomes.

11. Speed management is the most cost-effective, scalable, and deliverable-at-pace road safety critical control that AT owns. Attachment 2 outlines recent analysis of potential benefits of safe and appropriate speed limits across 100 % of AT's network showing the potential to decrease overall reported DSI by 15% and walking and cycling reported DSI by more than 20 %. Based on this work, the estimated benefits of the options below may be conservative, particularly for active modes.

12. Attachment 2 also responds to questions raised by directors at the 7 September 2021 Safety Committee meeting. In a hypothetical scenario, where operating speeds are fully aligned to safe and appropriate speeds together with safe cycling infrastructure throughout the arterial network, DSI savings could increase to 41 % less reported DSI and 84 % less walking and cycling reported DSI.

13. The table below shows three potential high-level options for the plan. Option 2 is recommended because it accelerates work from the current pace while still managing delivery and public acceptance risks. The transition to a more principles and area-based approach, with lighter engineering in some areas, is significant. This option allows this to be communicated and executed successfully. There is further opportunity to increase the percentage of the network treated over three years with the regional speed management plan starting from 2024.

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Potential high-level options for the plan

Potential options	% network (2023-26)	Total % network treated by 2026	Road Safety BIR alignment	DSI savings estimate	Active modes DSI savings estimate	Delivery risk	Early indicative delivery cost
One	20-30%	58-68%	45-55%	Reported: 8-14 Adjusted*: 18-29	Reported: 3-5 Adjusted: 8-13	• Similar scale, pace, and risk profile to Tranche 2 of Safe Speeds Programme. • Will address some challenging roads. • Delivery supported by Tranche 1 monitoring results and interim speed management plan as strategic guide.	Est. $30m to $55m
Two Recommended	30-40%	68-78%	55-65%	Reported: 10-17 Adjusted: 22-36	Reported: 4-6 Adjusted: 10-16	• Similar scale to Tranches 1 and 2 together, delivered in three years instead of five. • Principles approach rather than road by road reviews. • Moderate increase in resourcing. • Includes areas with demand and challenging roads.	Est. $45m to $70m
Three	40-50%	78-88%	65-75%	Reported: 11-21 Adjusted: 24-43	Reported: 4-7 Adjusted: 11-19	• Aggressive rollout including very challenging roads. • Very heavily reliant upon principles approach. • Significant increase in programme resourcing. • Heavily reliant on public and political support.	Est. $60m to $90m

*Adjusted for under-reporting in Crash Analysis System using scaling factors based on hospitalisation data.

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Ngā tūraru matua / Key risks and mitigations

Key risks	Mitigation
Faster pace of change than community can accept	• Work with the willing and focus on areas of community demand. • Refreshed communication narrative tested with customers and delivered with partners in Attachment 3. • Equity-based and deliberative engagement to hear voices of quiet majority and reach the undecided. • Engage early and adjust scale and pace following feedback. • Prepare evidence and data to counter narratives, including economic and operational disadvantages.
Slower pace of delivery than needed to achieve outcomes	• Advocate to central government partners on importance of timely completion of proposed Rule. • Maximise delivery efficiencies through having approved three-year programme to ensure timely delivery.

Ngā ritenga-ā-pūtea me ngā rauemi / Financial and resource impacts

15. The recommended option is estimated to cost $45-70m to deliver. This includes developing and consulting on the plan, technical design for the three-year programme, and delivery of speed limit changes and supporting infrastructure.

16. Delivery costs will be under AT's Regional Land Transport Plan road safety budget, with co-funding sought from Waka Kotahi New Zealand Transport Agency (Waka Kotahi). The recommended option is within the funding allocations in the Road Safety Programme Business Case for speed management activities over the 3-year delivery period.

Ngā whaiwhakaaro ō te taiao me te panonitanga o te āhuarangi / Environment and climate change considerations

17. The Ministry for the Environment's Emissions Reduction Plan (ERP) consultation document 2021 has a target to reduce vehicle kilometres travelled by cars and light vehicles by 20% by 2035 through providing better travel options, particularly in our largest cities. Speed management and traffic calming are identified as potential actions in the ERP as safe speeds can facilitate mode shift to active modes and public transport.

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18. Tranche 1 of the Safe Speeds Programme has been selected as a case study in a Waka Kotahi research report on safety interventions that lead to mode shift. Perception survey results following residential and town centre changes show self-reported increases in active mode use. The research will explore objective and control site data to see if this can be confirmed and further quantified. This will contribute to understanding connections between safety, mode shift, reduced vehicle travel and reduced emissions.
19. Lower speeds on current high-speed roads can improve vehicle efficiency, up to a point. Reductions of a steady-state vehicle engine below 60km/h slightly increase emissions, however in urban environments with intersections and traffic, vehicle engines do not operate at a steady speed. Lower posted speeds in urban environments may reduce braking and acceleration and provide net efficiency benefits.
20. Speed-calming devices that increase braking and acceleration also have the potential to increase emissions, harmful particulates and noise at point locations. Further work is being explored on which speed calming devices and designs are most appropriate and the net climate impacts of speed management overall.

Ngā whakaaweawe me ngā whakaaro / Impacts and perspectives

Mana whenua

21. Mana whenua have requested safe speeds near urban and rural marae. Engagement is planned to start in early 2022.

Ngā mema pōti / Elected members

22. Several local boards have requested further speed management changes. Elected member engagement is planned to start in early 2022.

Ngā rōpū kei raro i te Kaunihera / Council Controlled Organisations

23. Partnership conversations with Eke Panuku and neighbouring road controlling authorities will start in late 2021.

Ngā kiritaki / Customers

24. Customer insights research is underway to understand customer perspectives and test narratives.

Ngā whaiwhakaaro haumaru me ngā whaiwhakaaro hauora / Health, safety, and wellbeing considerations

25. The interim speed management plan responds to four of the top 10 priority recommendations in the Road Safety BIR and aligns with the Vision Zero Action Plan and strategic pillars in the draft Safety and Wellbeing Strategy.

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Ā muri ake nei / Next steps

26. Commence engagement with elected members, mana whenua, partners and stakeholders and provide an update to the Safety Committee in first half of 2022.

27. Seek board approval for public consultation on the Interim Speed Management Plan 2023-26 in second half of 2022.

Ngā whakapiringa / Attachments

Attachment number	Description
1	Overview of interim speed management plan 2023-26 objectives, principles, and engagement approach
2	Estimates of road user DSI reductions from speed management and infrastructure programmes – Colin Brodie memo
3	Speed management communications approach

Te pou whenua tuhinga / Document ownership

Submitted by	Ping Sim **Transport Safety Technical Lead (and)**	[signature]
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Recommended by	Andrew Allen **Executive General Manager Service Delivery**	[signature]
Approved for submission	Shane Ellison **Chief Executive**	[signature]

Attachment 1

Overview of interim speed management plan

Objectives, principles and engagement approach

Working objectives
Interim speed management plan 2023-26

Note: Blue text shows outcomes linked to Road to Zero.

Outputs: What we make

Primary outputs:

1. An approved interim Speed Management Plan 2023-2026 including implementation plan and geospatial map
2. Budget and co-funding approved to deliver first implementation plan
3. Three-year speed management programme

Interim outputs: (key interim outputs only)

1. Develop and deliver an aligned communications and engagement plan with key partners
2. Research to understand customer benefits, health and climate change, and economic impact
3. AT's speed limits migrated to national speed limit register
4. Enhanced monitoring and evaluation system
5. Data analysis on equity in road harm

Results: Shorter term outcomes

- Build on success of safe speeds programme by leading change and engagement partnership with communities
- Accelerate safe speed limit setting following the new Rule and Road Safety Business Improvement Review 2021
- Safe speeds protect people outside vehicles and encourage active mode use
- Principles based approach to speed management where safe speed limits are supported by engineering, enforcement and education interventions
- Tāmaki Makaurau Transport Safety Governance Group partners deliver a comprehensive, cohesive and collective communications and engagement plan
- Robust monitoring data used to identify and deliver further engineering, enforcement and education interventions post speed limit changes

Benefits: Longer term outcomes

- Less road death and serious injury
- Increased safe active mode use, including to school
- Less greenhouse gas emissions due to reduced vehicle kilometres travelled
- Increased community understanding and support of speed management
- Improved equity in road safety outcomes including for Māori
- Improve public health outcomes through active mode shift and less road noise
- Improved journey time reliability

Primary benefit: safety
Working performance indicators

Note: Blue text are Road to Zero indicator. Dark blue text are indicators written to align with Waka Kotahi Speed and Infrastructure Programme.

Output indicator	Lead performance indicator	Benefits (lag) indicator
• Kilometres of network treated with speed limits to align with Safe and Appropriate Speed • Kilometres of high risk roads treated with speed limits to align with Safe and Appropriate Speed* • % of schools with 30km/h speed limits • % of schools with 60km/h speed limits or lower*** • Mobile speed camera deployment activity (hours) • Number of Police operations targeting restraints, impairment, distraction and speed offences	• % of road network where speed limits align with Safe and Appropriate Speed • Mean speed of vehicles (urban, rural, urban centres) • % of road network covered by automated safety cameras	• # overall DSI reduction** • # of pedestrian and cyclist DSIs** • # of motorcyclist DSIs** • # of ACC entitlement claims related to walking and cycling injuries (motor vehicle involved) • # of DSIs where the speed limit does not align with the Safe and Appropriate Speed

*In this indicator 'high risk' means 'high' or 'medium high' collective risk in Urban KiwiRap and at the time when the speed changes were made.
'Safe and Appropriate Speed' in these indicators refer to what was defined as such at the time when speed changes were made. Posted speeds lower than the Safe and Appropriate Speed also meet this indicator. These are cumulative indicators based on adding the total kilometres of roads together across the duration of the programme.
** When reporting on these indicators we will explore using Ministry of Health data in additional to Crash Analysis System data to provide a more complete picture of death and serious injury.
*** Awaiting update to Road to Zero indicators following release of new Speed Management Guide guidance on school speed limits

Co-benefits
Working performance indicators

Note: Blue text is Road to Zero indicator. Black text are additional indicators that may need to be refined and data sources established.

Benefit (links to AT objectives and business cases)	**Output indicator**	**Lead performance indicator**	**Benefits (lag) indicator**
Climate change (links climate change strategic spotlight)	• Climate change and health research quantifies potential benefits • Safety indicators	• Perceived safety of walking and cycling (by rural, urban, urban centres, & around schools) • Reduced vehicle kilometres travelled or increase in safe active mode use	• Reduced greenhouse gas emissions by xx%
Equity (links to supporting Māori wellbeing outcomes business objective)	• Equity data analysis completed on who is over-represented in road harm including Māori road safety outcomes	• Consultation document includes voices of impacted communities • Feedback report includes equity weightings by population demographics and road harm	• Improved equitable transport safety outcomes for Māori and all road users
Health (links to walking and cycling programme business cases)	• Safety indicators • Climate change and health research quantifies potential benefits	• Increase safe active mode use • Increase in active mode use to school	• Public health benefits through transport mode shifts • Reduced traffic noise by xx%
Operational (links to optimisation business case)	• Safety indicators	• Safety indicators	• Increased journey time reliability
Leading change (links to Whirinaki, building trust, mana and confidence strategic spotlight)	• Customer benefits research • Delivering a partnership based communications and engagement approach with communities • Tāmaki Makaurau Transport Safety Governance Group collective communications and engagement plan	• % of the general public who understand the risk associated with driving speed • % of the general public who agree that they are likely to get caught when driving over the posted speed limit • % of the general public who agree that safety cameras are an important intervention to reduce the number of road deaths	• Community understanding and support of speed management

Draft working principles

DRAFT: With further engagement needed

These principles are intended to remain consistent across the interim and 10-year plan.

1. Safety is the first priority in speed management.
2. Speed management work supports climate change, health, equity, and operational co-benefits.
3. Speed limits are supported by infrastructure planning, design and operation, effective deterrence, and community engagement.
4. Speed management considers the functions of roads and streets* - movement, place, strategic modes - and how many people travel outside vehicles.
5. Lower ends of speed limit ranges are used unless safety infrastructure allows otherwise.
6. Engineering treatments focus on places with high risk, operating speed, active mode or co-benefit priority.
7. We work in partnership in governance, design, delivery, and monitoring.
8. We continuously monitor all changes and respond agilely with further treatments when needed.

*AT's Future Connect and Roads and Streets Framework tools to be used.

Draft working priorities

DRAFT: With further engagement needed

These priorities guide location selection in the interim speed management plan:

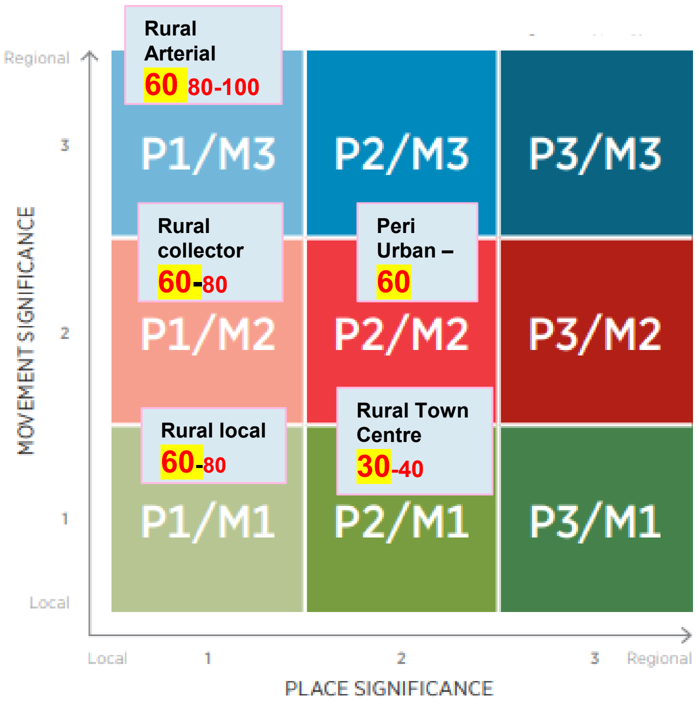
- Areas around schools, town centres, homes, transport hubs, marae and community destinations.
- High risk rural and urban roads.
- Places where speed calming engineering or safe infrastructure is being funded by other parties.
- Places where there is community demand for safe speeds.
- Places where safe speeds complement other infrastructure investment.

Draft speed limits ranges

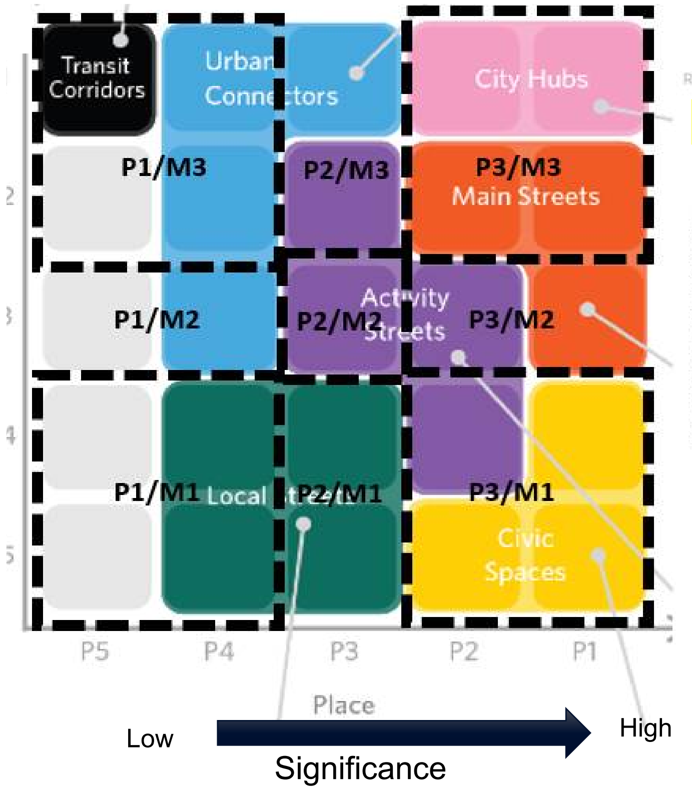
The new speed management guide expected to have speed limit ranges linked to Waka Kotahi One Network Framework (ONF). Work is in progress to link these with the AT Roads and Street Framework (RASF)

DRAFT: All speed limits ranges to be updated once new Speed Management Guide is released

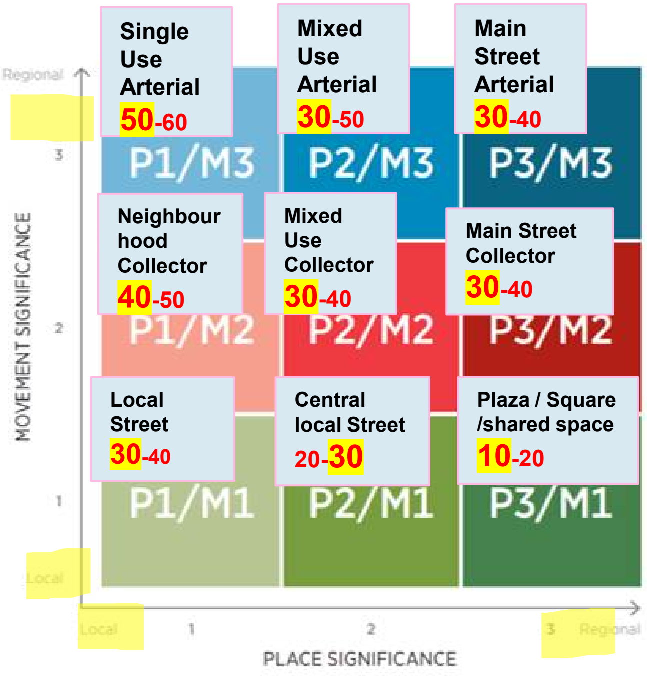
Rural speed limits on RASF



One Network Framework with RASF overlay



Urban speed limits on RASF



Notes:

- School speed limits to be 30km/hr, except for schools on high speed roads with full off road parking and very low active mode use which may be up to maximum of 60km/hr. Permanent speed limits for schools preferred, with variable speed limits used when permanent speed limits not suitable.
- Higher numbers in ranges may only be for when specific safety infrastructure criteria is met, such as protected cycle lanes, raised pedestrian crossings or no active mode access.

Interim speed management plan 2023-26
High level communications and engagement approach

1. Discovery
October-December 2021

Governance input into draft principles

2. Co-create
January-May 2022

Governance input into preferred option

3. Socialise
Jun -July 2022

Governance approval and preparation to consult Aug-Oct

4. Consult and review
Nov 2022-March 2023

1. Discovery

- Memo to elected members and iwi chairs with early information and inviting interest
- Refresh Safe Speeds narrative linking climate change and transport vision
- Early engagement with Kainga Ora and Panuku

Understand interest and develop narrative

2. Co-create

- Workshops with Mana Whenua operational tables and interested Local Boards
- Wider partner and stakeholder Workshops following Local Board and Mana Whenua workshops
- Work with Te Ara Haepapa to engage with mataawaka communities

Co-create principles and options

3. Socialise

- Socialise preferred option with Elected Members and Mana Whenua
- Wider partner and stakeholder Workshops following Local Board and Mana Whenua workshops
- Leading change narrative talks for leaders by The Workshop
- Deliberative approach to ensure voices of impacted communities are heard

Socialise preferred option

4. Consult and review

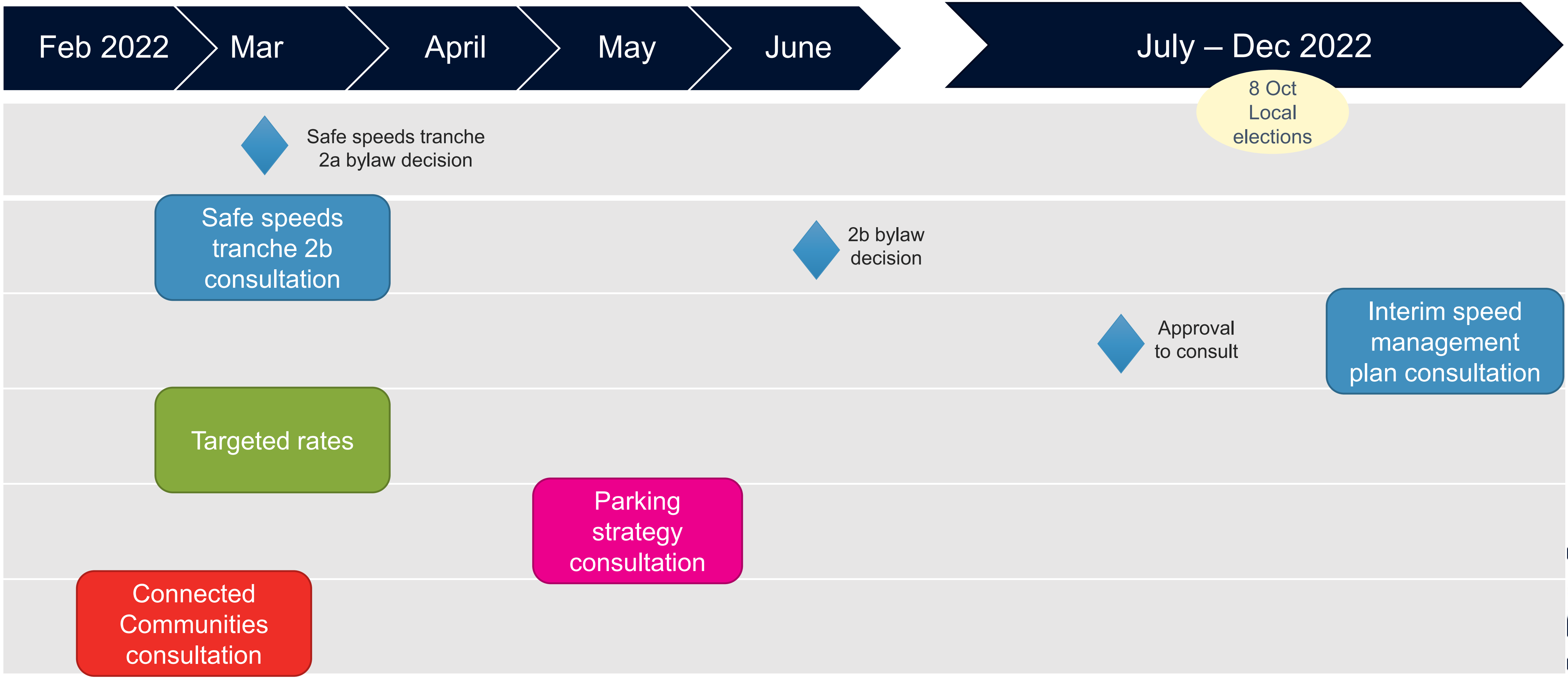
- Briefing to incoming elected members
- Public consultation Nov/Dec 2022
- Feedback report including equity weightings by population demographics and road harm
- Socialise changes following consultation feedback
- Seek AT ELT/Board and WK director approvals May/June 2023

Public consultation and edits

This approach to be further developed into a communications and engagement plan

Draft consultation timing context

This timeline shows a number of potential local government consultations that may be high-profile as context for the proposal.



Equity research

This research will be used to identify key groups over-represented in road harm who will be prioritised in deliberative engagement

Age

- **Children** under the age of 15 make up **6% of DSIs**, but don't drive or make many of their travel choices
- **Young adults** (15 to 29 years old) make up **23% of Auckland's population**, but make up **37% of DSIs**
- **Young adults are 2 times more likely** to be injured in a motor vehicle compared to adults 30+ years old
- People **older than 65** are almost **two times more likely** to be killed or seriously injured while walking compared to people younger than 65

Ethnicity

- **Māori** make up make up **12% of Auckland's population**, but make up **19% of serious injuries** requiring overnight hospital admission
- **Māori children** (0 to 14 years) are **7 times more likely** be killed or seriously injured on Auckland roads than NZ European children
- **Pacific children** (0 to 14 years) are **3 times more likely** be killed or seriously injured on Auckland roads than NZ European children

Mode

- **Cycling** makes up **0.6% of distance** and **1.2%** of hours travelled in Auckland, but make up **6%** of deaths and overnight hospital admissions
- **Walking** makes up **1.2%** of distance and **10%** of hours travelled in Auckland, but make up **15%** deaths and overnight hospital admissions

- Populations based on 2018 Census usually resident population
- DSIs as recorded in the Waka Kotahi Crash Analysis System in the 5-year period 2016 to 2020
- Overnight hospital admission data based on Ministry of Health data from the 5-year period 2016 to 2020

Attachment 2

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22 November 2021 (Version 2.3)

Estimated Road User Death and Serious Injury Reductions from Speed Management and Infrastructure Programmes

Executive Summary

This analysis looks to quantify the reduction in serious road trauma, or deaths and serious injuries (DSI) particularly relating to Active Road Users (ARU), or people walking and cycling, that could be achieved across Tāmaki Makaurau. Several variables were considered: speed limits, operating speeds, safe and appropriate speeds (SaAS) and safe cycling infrastructure. The hypotheses considered potential safety outcomes if speeds were aligned with recommended safe and appropriate speeds (SaAS) and safe cycling infrastructure facilities were provided where required, particularly along urban arterials.

Two Waka Kotahi NZ Transport Agency resources, MegaMaps and the Crash Analysis System (CAS), were used to create the scenarios considered in the analysis.

MegaMaps contains information for all New Zealand roads, including existing speed limits, operating speeds, safe and appropriate speeds, and likely future operating speed changes, together with the expected DSI savings from any speed limit change. The tool uses international research and models to calculate the operating speed changes and DSI reductions. However, it is believed MegaMaps algorithms may underestimate the potential benefits to active road users in lower speed urban environments. Also, MegaMaps does not quantify the potential benefits if operating speeds were "forced" to align with the SaAS.

To investigate this scenario alternative analysis approaches and research findings were used. Two scenarios were considered. These are -

Scenario One- assumes the expected operating speed changes result from speed limit changes only
Scenario Two - assumes operating speeds are "forced" to align with the SaAS.

To assess the benefits from providing safe cycling infrastructure facilities, two scenarios were again considered.

Scenario One - assumes the currently proposed cycling infrastructure programme
Scenario Two - assumes an un-constrained cycling infrastructure programme improving facilities over 1000km of recognised high-risk arterials.

The Crash Analysis System (CAS) records the numbers of deaths and serious injuries on New Zealand roads. This system is known to significantly underestimate the true numbers of injuries, particularly for pedestrian and cyclists. As such, scaling up factors, detailed in the body of the text below, based upon recent analysis from Auckland Transport (AT), have been applied.

The analysis and scenarios are as follows -

Analysis Scenario One

Assumptions:

- expected operating speed changes from the widespread application of SaAS, and
- 200km of safe cycling facilities

This scenario would result in a reduction of 40 CAS recorded ARU DSI's per annum. This equals 25% of the average 143 ARU DSI's per annum and 94 (16%) of all road users DSI. When scaled up to account for under-reporting, these estimates increase to 92 ARU DSI per annum and 219 all road user DSI's.

However, the speed management saving estimates in this scenario assume speed limit changes alone with little or no supporting infrastructure or enhanced enforcement.

Analysis Scenario Two

Assumptions:

- operating speeds are "forced" to align with the safe and appropriate speeds
- 1000km of safe cycling facilities

This scenario estimates DSI reductions would increase to 120 CAS recorded ARU DSI per annum (84% of CAS recorded ARU DSI) and 234 (41%) all road user DSI per annum. When scaled up to account for under reporting these estimates increase to 276 ARU DSI per annum and 544 all road user DSI per annum.

However, this scenario would require significant, and probably unrealistic, speed management and enforcement efforts to reduce operating speeds to safe and appropriate levels.

In summary, these results indicate that speed management measures in Auckland can be expected to:

- address a much larger proportion of ARU trauma than road trauma for motorised traffic, and
- provide several times more safety benefits for pedestrians and cyclists than for general traffic.

Both are important findings. Providing a safer road environment in Auckland for active road users will provide benefits and help realise other transport and well-being objectives.

1.0 Background

Auckland Transport (AT) has recently asked –

"What number, or proportion, of people walking and cycling DSI's could be avoided if the Auckland road network had safe and appropriate speeds everywhere, and a completed cycle network?".

also, it *was* suggested that -

"*This question should be treated hypothetically, estimating the potential DSI reductions if operating speeds across the network actually aligned with safe and appropriate speeds and there was a safe walking and cycling network where required. Furthermore, the DSI reduction estimates should not just be limited to pedestrians and cyclists but consider all road users*."

The hypothetical scenario is quite different to the estimates that have been made to date on the effects of the speed management programme. These studies used international research to estimate the speed reductions that are likely to be achieved with the lowering of speed limits, typically ranging between 2-5km/h for a 10km/h speed limit change. Lowering operating speeds to align with the SaAS, or the internationally accepted safe system survivability speeds, would require significant additional enforcement and transformational engineering efforts. For the purposes of investigating the questions for this report, we have estimated both an expected outcome from lowering speed limits and a hypothetical outcome that assumes complete implementation and compliance for the above scenarios. This will give a potential range of DSI reductions.

To estimate the reduction in DSI's, we firstly need to understand where the trauma is occurring. This was considered in terms of the speed limits, and types of roads, and the proportion of these locations likely to be addressed by the speed and infrastructure programmes.

Table 1 and Figures 1 and 2 below identify the numbers ARU (shown as Ped / cycle in the tables below) DSI's by speed limit over the last 10 years (2011-2020) on Tāmaki Makaurau roads, and the proportion that these are of all DSI's.

Table 1: Deaths and serious injuries by speed limit (2011-20)

		Speed limit									
		Null	**≤30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**Total**
Ped / cycle	**Fatal**	1	5	1	78	4	2	7	0	8	106
	Serious	0	56	7	1145	38	14	32	0	30	1322
	DSI	**1**	**61**	**8**	**1223**	**42**	**16**	**39**	**0**	**38**	**1428**
All road users	**DSI**	5	102	15	3500	294	152	495	1	1189	5753
% ped / cycle of all road users	**DSI**		**60%**	**53%**	**35%**	**14%**	**11%**	**8%**	**0%**	**3%**	**25%**
Pedestrian	**DSI**	0	56	7	832	35	8	26	0	26	990
Cycle	**DSI**	1	5	1	391	7	8	13	0	12	438

Figure 1: Pedestrian/cyclist DSI by speed limit (2011-20)

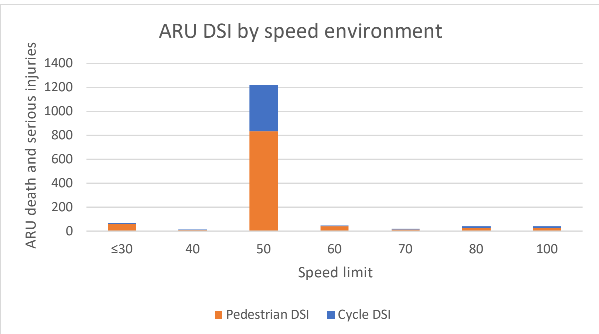
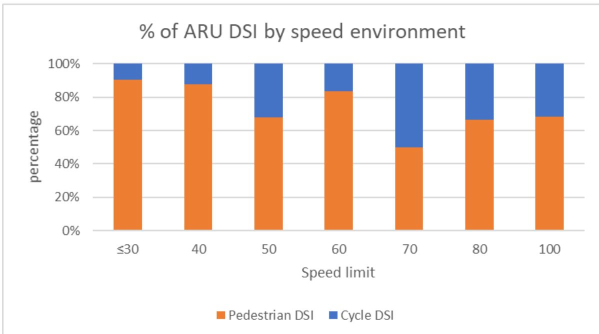


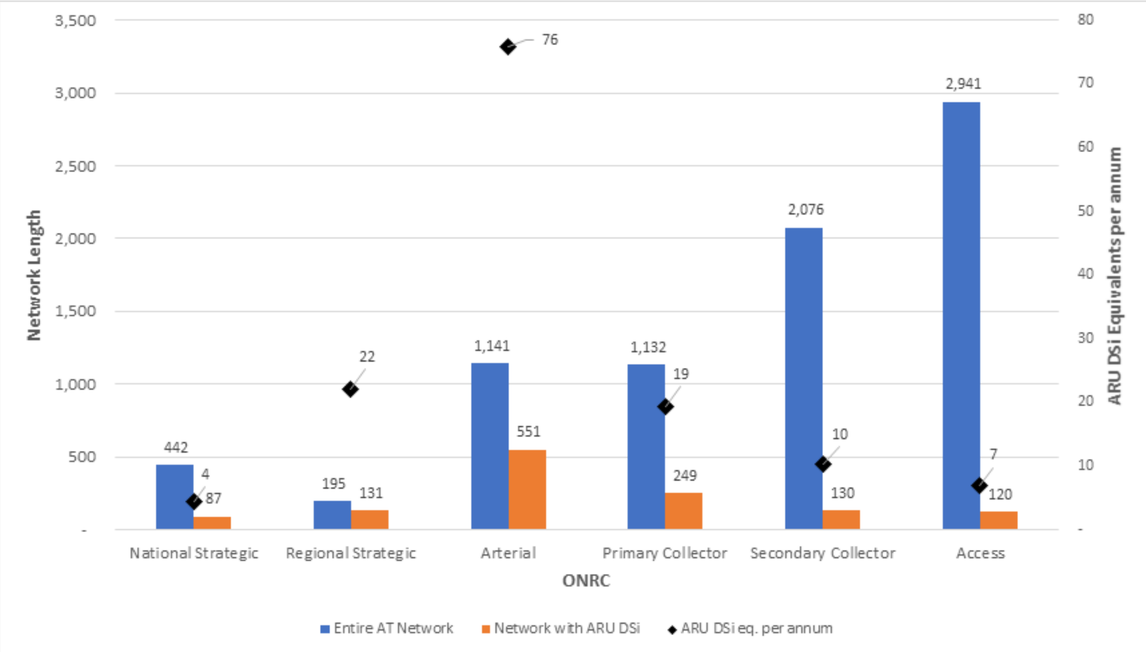
Figure 2: Pedestrian/cyclist DSI split by speed limit (2010-20)



This data shows there have been an average of 143 ARU DSI's per annum over the last 10 years (2011-2020) (44 cyclists and 99 pedestrians), making up 25% of all DSI's. The vast majority of these DSI's (86%) have occurred on urban 50km/h roads making up 35% of all DSI's on these roads. It is worth noting that active road user DSI's still occur on roads with speed limits below 50km/h, demonstrating that these road users are still vulnerable to serious trauma in low-speed environments. This is particularly the case for those crashes involving the elderly or children and/or those crashes involving vehicles with a large mass (oversize vehicles, trucks, etc.). Conversely, people inside motor vehicles are well protected at lower speeds with relatively low numbers of serious injuries.

Figure 3 below, derived from MegaMaps, shows where on the road network the ARU trauma occurs and at what numbers. It suggests that the majority of risk is on the arterial road network followed by the primary collector network.

Figure 3: Length of Network with DSI's involving pedestrians or cyclists (ARU) by ONRC (One Network Road Classification)[1].



(Source; Abley using MegaMaps III, 2015-19 CAS data)

The casualty numbers reported above have been derived from CAS. However, it needs to be recognised that ARU casualties are significantly under recorded in CAS. In addition to data from CAS, Auckland Transport is working to better understand the true extent of road trauma for ARU's, by reviewing Ministry of Health (MoH) hospitalisation and Accident Compensation Corporation (ACC) data. Initial analysis from March 2020 indicated that there were 8.5 pedestrian and 6.5 cyclist hospitalisations for every serious injury CAS recorded. We note that some of the accidents included in the hospitalisation and ACC data would not have occurred on the road carriageway, but are from such incidents as trips, slips and falls on footpaths etc.

A recent refinement of this review has suggested the following scaling factors are valid for use to factor up the CAS reported serious injury numbers to a more realistic level -

- 7.87 for pedestrians (5.43 for pedestrian only incidents and 2.44 for incidents involving another vehicle)
- 6.26 for cyclists (4.32 for cyclist only incidents and 1.94 involving another party)
- 2.82 for motorcyclists
- 9.19 other transport mobility devices.
- 2.2 for motorised traffic

(Source Koorey, G).

[1] The One Network Road Classification (ONRC) is a classification system, which divides New Zealand's roads into six categories based on how busy they are, whether they connect to important destinations, or are the only route available. For more information visit: https://www.nzta.govt.nz/roads-and-rail/road-efficiency-group/projects/onrc

2.0 Proposed interventions

2.1 Speed management

MegaMaps provides information on the existing speed limits, operating speeds, the level of road trauma and what are deemed to be the safe and appropriate speeds (SaAS) for every road in New Zealand including Tāmaki Makaurau. From this information MegaMaps estimates the potential DSI reductions for individual road links should the speed limits be lowered to align with the SaAS, as per the 2016 Speed Management Guide. However, the analysis we are presenting was calculated assuming an operating speed reduction of between 2-5km/h for a 10km/h speed limit change (see Section 1.0 above) as opposed to being lowered to the SaAS.

An analysis of AT's network suggests that approximately 80% of existing speed limits do not align with the SaAS, noting that the recent 2020 speed limit changes in Tāmaki Makaurau may not have been captured. Auckland Transport is systematically progressing its speed management programme, with Tranche 1 speed limit reductions implemented in mid-late 2020. Consultation for Tranche 2a speed limit reductions was completed in November 2021 with implementation, subject to AT Board approval, due in mid-2022. However, based on the analysis above, it is clear that the greatest reductions to ARU DSI would come from speed reviews in the urban 50km/h zones and particularly along urban arterial roads and intersections.

A review of the 2017 Speed Management Rule and 2016 Speed Management Guide are under way, which will change both the process for setting speed limits and the basis for calculating SaAS. This will potentially be a move from a One Network Road Classification (ONRC) to a risk-based approach based on the One Network Framework (ONF)[2] principles based approach. This change may come into effect in mid-2022. However, for the purposes of this exercise, we have calculated using safe and appropriate speeds based upon this potential ONF principles-based approach. The recent and proposed AT speed limit changes align well with the proposed principles-based speed management framework.

2.2 Pedestrian and Cycling infrastructure programmes

The AT Safety Programme Business Case preferred programme, targeting an overall 60% DSI reduction, allocated $35M to Vulnerable Road User (VRU) safety and Transport Demand Management (TDM). Only 2% of the overall $604M programme is targeted to ARU safety, which includes raised platforms and separated infrastructure and town centre transformation. However, advice received suggests that 200km of new and upgraded safe cycle facilities are proposed across Tāmaki Makaurau by 2031, with 125Km of new safe cycle facilities being generated by AT. These are being funded from a range of funding sources, as opposed to just from the Road Safety Programme budget. Regardless, this is a funding constrained programme. To answer the hypothetical DSI savings question, we need to assume that funding would be unconstrained and that a more hypothetical programme would involve providing safe walking and cycling facilities where most required - most likely to be across the arterial and collector road networks.

[2] The One Network Framework (ONF) is a new national road classification system. It will be used to determine the function of our roads and streets and inform decision making. This means roads and streets will become destinations for people, as well as transport corridors. For more information visit: About the One Network Framework | Waka Kotahi NZ Transport Agency (nzta.govt.nz)

3.0 Estimating DSI reductions

The timeframe available has not allowed for either a detailed analysis of the proposed speed and infrastructure programmes and their likely benefits, or a research type project looking at what would be required to answer the hypothetical questions.

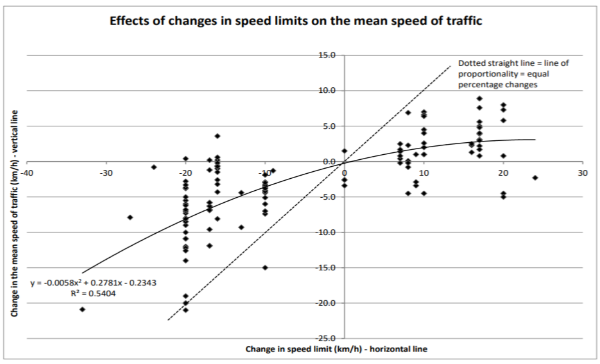
Two methodologies have been adopted for this high-level speed management exercise. The first is to extract the DSI reductions from the MegaMaps tool and the second is a very simplified sense check based upon speed change and the percentage reduction in crash likelihood and severity for both the speed and infrastructure programmes. These are outlined below.

3.1 MegaMaps analysis

As outlined in 2.1 above, potential DSI savings from speed management activities is incorporated into MegaMaps. The MegaMaps analysis has been undertaken with the guidance of a technical advisory group. The exercise was to estimate the overall DSI reductions and potential ARU DSI reductions should the speed limits on all roads in Tāmaki Makaurau be aligned with the safe and appropriate speed. The technical note covering this analysis is attached to this report.

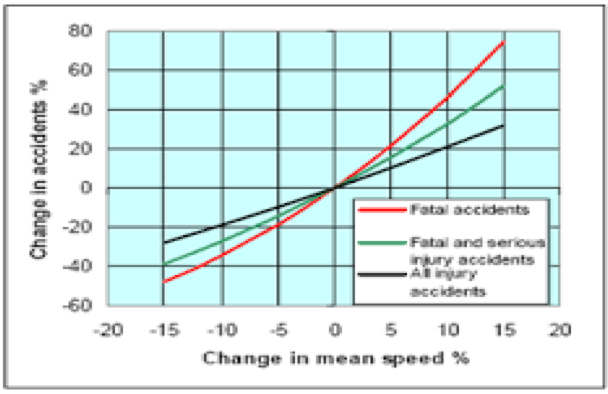
As outlined above, in MegaMaps the operating speed changes associated with speed limit changes have been derived from international research as portrayed in Elvik (2012) and DSI reductions from what is commonly referred to as Nilsson's Curves. These are shown as Figures 4 and 5 below.

Figure 4: Effect of Speed Limit changes (Elvik 2012)



Source: Elvik, R. "Speed limits, enforcement and health consequences." Annual Review of Public health, 2012, 33, 225-238.

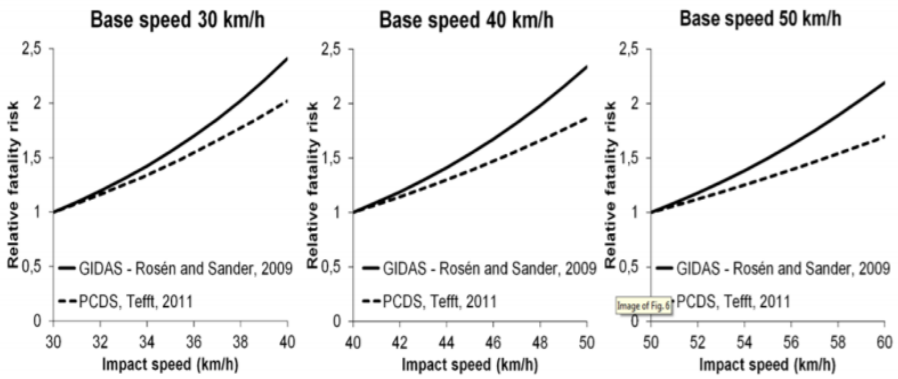
Figure 5: Nilsson's Curves (2004)



Nilsson's power model work, which did not include many urban roads, has been updated several times, most recently by Elvik, Cameron and others in 2009. This update produced separated model exponents for urban roads (3.0 for fatalities and 2 for serious injuries) and rural roads (4.6 for fatalities and 3.5 for serious injuries). However, the DSI reductions derived from these are for all road users and not specifically for active road users such as people walking and cycling, who are far more prone to serious trauma than vehicle occupants.

An example of the increased vulnerability of pedestrians to speed can be seen in work undertaken by Kroyer et al in 2014 and shown in Figure 6 below. It shows, for example, that if impact speed increases from 30 to 40 km/h the risk of fatal injury is about doubled and that the death risk is about 4-5 times higher in collisions between a car and a pedestrian at 50 km/h compared to the same type of collisions at 30 km/h.

Figure 6: Pedestrian fatality risk and impact speed



Source: Kröyer, Jonsson and Varhelyi (2014)

As such the DSI reductions in MegaMaps are likely to underestimate specific ARU DSI reductions associated with speed limit changes. Hence our research tested a range of different assumptions to calculate the potential DSI reductions. These range from speed limit changes on roads with existing ARU crashes only and "all road user reduction" factors, through to treating the entire network and specific ARU reduction factors.

The results of the MegaMaps analysis indicates that aligning speed limits with the SaAS would reduce all DSI's by 66 or approximately 8.6% of all DSI. This is a relatively low estimated DSI reduction, given that aligning all speed limits to the SaAS across the rest of the New Zealand road network, would result in a 15.7% reduction in DSI. The reasons for the relatively low DSI reduction estimate in Tāmaki Makaurau have not been investigated but it may be because existing operating speeds are relatively low due to congestion etc, and/or the model is underestimating the ARU DSI reductions, which are potentially greater in Tāmaki Makaurau than elsewhere in New Zealand.

In view of this, a sensitivity analysis was conducted, using different assumptions, and this suggested that the ARU DSI savings could have a range, from a conservative estimate of 12 ARU DSI per annum to a relatively optimistic estimate of 44 per annum. The most likely outcome, based upon this analysis, is estimated to be around 30 DSI per annum, a reduction of around 21% of all ARU DSI. Increasing the estimated ARU DSI savings from 12 to 30 would increase the overall DSI from 66 to 84, resulting in an overall reduction of 15%, more in line with the national modelled outcomes. These estimated reductions form the basis for Scenario One, above, where the speed management estimated savings are based on speed limit changes alone, with little or no infrastructure changes or increased enforcement.

Further analysis was conducted for Scenario Two, above, where operating speeds were "forced" to align with the SaAS. The MegaMaps modelling suggests that the overall DSI savings would be doubled from a 66 DSI reduction to 139 DSI reduction and the ARU DSI reductions could range from between 25 and 111, with a likely saving of around 70 DSI pa. Adopting the 70 ARU DSI reduction, the overall DSI reduction increases from 139 to 184 DSI per annum. The estimated reductions in this scenario could be considered as very optimistic.

3.2 Simplified Sense Check

As outlined in Section 1.0, the majority (128 of 143 DSI per annum or 90%) of ARU DSI occur on the urban 50 / 60 / 70km/h network. Assuming that the speed limits will be lowered across 80% of the network where these DSI occur, we would be targeting 102 ARU DSI per annum.

Information supplied by AT suggests that the travel speeds across the arterial roads in Tāmaki Makaurau averages slightly less than 40km/h during interpeak periods dropping to closer to 30km/h during peak periods. The one-network speed averages mid-40 km/h during in the interpeak periods, dropping to 40km/h during peak periods. For the purposes of this sense check, we assume an average urban operating speed of 40km/h. Based upon Kroyer (2014) curves, as shown in Figure 6, reducing the operating speeds from 40 to 30km/h would result in at least a 50% reduction in pedestrian DSI. Applying this to both cyclists and pedestrians, these assumptions would produce an estimated a saving of 51 ARU DSI pa.

An alternative approach would consider the change in fatality and serious injury risk with a change in crash speed. Traditionally the Safe System approach has referenced the Wramborg (2005) fatality risk curves as shown in Figure 7 below. More recently Jurewicz (2016) reworked these for fatality and severe injuries based on the Maximum Abbreviated Injury Scale (MAIS 3+)[3] as shown in Figure 8.

Figure 7: Wramborg (2005) fatality risk curves

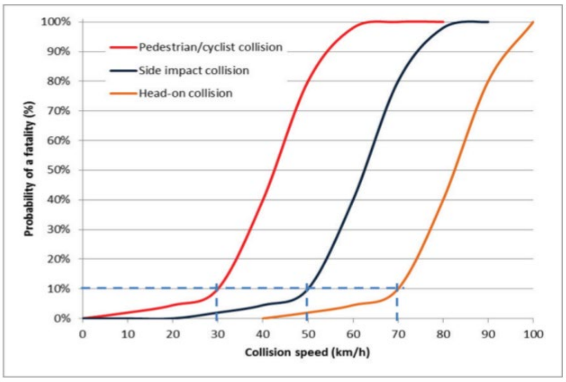


Fig. 1. Wramborg's model for fatality probability vs. vehicle collision speeds. Source: based on Wramborg (2005).

Figure 8: Jurewicz (2016) Fatality and severe injury curves

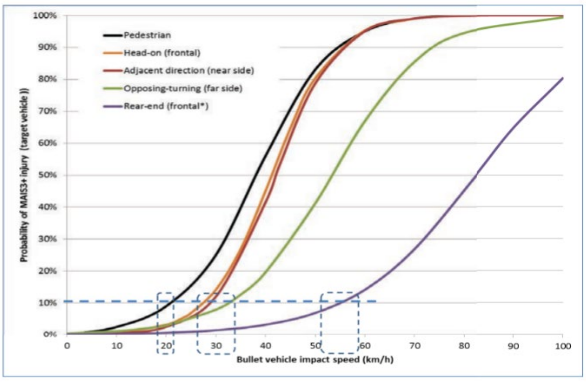


Fig. 4. Proposed model of severe injury probability vs. bullet vehicle impact speeds in different crash types.

Based on Figure 8, a 10 km/h impact speed reduction is likely to reduce the likelihood of deaths and severe injury (MAIS 3+) by around 50% from a 60% likelihood to a 10% likelihood. If we adopted this value for DSI reductions, the estimated saving would be 51 ARU DSI.

However, whilst this estimates the change in severity of the outcome of a crash, it does not take account of the reduction in crashes that will occur with lower operating speeds. For this exercise we assume a further 25% reduction, increasing the estimated saving of approximately 75 DSI per annum. This broad sense check estimate aligns reasonably well with the mid-value range of 70 DSI from the MegaMaps analysis discussed in 3.1 above.

3.3 Infrastructure Improvement DSI reductions.

Figure 3 above shows how 80% of the ARU recorded DSI have occurred on less than 1000km of the regional strategic / arterial / primary collector road network, with an average ARU DSI of around 0.13 DSI/km/pa.

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[3] Maximum Abbreviated Injury Scale (MAIS 3+) - a globally accepted and widely used trauma scale used by medical professionals. The severity score is an ordinal scale of 1 to 6 (1 indicating a minor injury and 6 being maximal). A casualty that sustains an injury with a score of 3 or higher on the AIS is classified as clinically seriously injured (MAIS3+). For more information visit: [Identifying MAIS 3+ injury severity collisions in UK police collision records - PubMed (nih.gov)]

There are huge ranges in estimates on the effectiveness of infrastructure improvements such as segregated cycle lanes, raised pedestrian crossings and intersection improvements etc. However, for the purposes of this exercise, we assume an average 40% reduction in ARU DSI's occurring from infrastructure improvements.

We can assume the programmed 200km of cyclist infrastructure improvements would also include safer crossing points, which will also benefit other active road users. Over the next decade, these cycling/active road user infrastructure improvements would target an average of 26 DSI per annum resulting in a saving of 10 ARU DSI per annum. Hypothetically, should the entire sections of the arterial network where the ARU crashes have been occurring (900-1000km) be treated with safe facilities for active road users, the DSI savings would be in the order of 50 ARU DSI per annum.

Recent research has suggested that the installation of safe walking and cycling facilities improves the safety of all road user groups. However, for the purposes of this exercise we have only included the DSI reductions to the active road user groups.

3.4 Double counting and upscaling to account for under-reporting

It needs to be acknowledged that there could be some double counting of DSI reductions between the speed management and infrastructure programmes. However, given the relatively low reductions estimated in the speed management programme, the reasonably conservative DSI reduction assumed for the infrastructure programme, including ignoring the potential benefits to all road user groups, we have chosen to ignore any potential double counting, in this exercise.

Furthermore, there is the issue of the under-reporting of crashes in CAS and the need to scale these up to better estimate the real reduction in trauma. This upscaling has been incorporated in the table in the Summary Section 5.0 below. We note that a large number of the pedestrian serious injuries in the MoH system are from trips, slips and falls on footpaths etc. These injuries are not considered as addressed in this exercise as we believe them to be outside the scope of the question and we are not aware of the scale of maintenance type programmes to address these accidents.

4.0 <u>Other vulnerable road users</u>.

The above sections have focussed on Active Road Users – people walking and cycling. However, it was suggested that this exercise should also consider other vulnerable road users, mainly motorcyclists and other mobility devices.

4.1 Motorcyclists

Motorcyclists typically make up around 20% of all DSI in Tāmaki Makaurau or around 120 DSI per annum. They are split between rural (typically loss of control crashes) and urban (typically intersection / driveway conflict crashes). Primarily, motorcycle safety programmes are focussed on the safe road use pillar, targeting both the riders (ride safe), and other vehicle drivers (look twice) plus improving the safety equipment (the motorcycle / ABS braking, and rider / passenger personal protection systems). However, whilst not separately quantified, it is expected that the speed management programme will improve motorcyclist safety, at least to the extent of all road users, but potentially even greater given that motorcyclists are vulnerable in a crash. Hence the estimates for motorcyclist DSI reduction from the speed management programme could range from between 13 DSI (20% of the MegaMaps estimated 66 DSI) per annum based upon the MegaMaps methodology and 28 DSI per annum (20% of 139), assuming speeds could be reduced to align with the SaAS.

Infrastructure improvements can also improve motorcycle safety, particularly safe system intersection improvements in the urban environment and road surfacing improvements in the rural environment. However, savings from these have not been considered in this exercise.

4.2 Other mobility devices

At present DSI's involving other mobility devices, such as scooters, are not captured within the CAS system unless they involve another motor-vehicle. The March 2020 Via Strada report on the Safety of People Travelling Outside of Vehicles, identified only approx. 2-4 per annum within the CAS system, but in the order of 40 hospitalisations per annum. As the numbers are presently relatively small, and many of the hospitalisations may result from incidents on pathways etc, similar to pedestrian slips, trips and falls, these have not been considered in this exercise.

5.0 Summary

Table 2 below summarises the findings from the analysis outlined above.

Table 2; Estimates of DSI reductions per annum

	Road User Group	**Scenario 1 (Speed limit changes)**	**Scenario 2 (Speed limits plus very intensive infrastructure and enforcement)**
Assumptions		Typical operating speed reductions from speed limit changes without additional infrastructure and enforcement. Planned safe cycling/ARU infrastructure (200km)	Very intensive infrastructure and enforcement ensures operating speeds fully match posted speed limits. Safe cycling/ARU infrastructure across arterial network (1000km)
Base DSI's (CAS)	All	575 (2011-20 Table 1)	575
	Pedestrian and Cyclists	143 (2011-20 Table 1)	143
	Motorcyclists	120	120
Upscaled DSI's *	All	2047	2047
	Pedestrian and Cyclists	1054	1054
	Motorcyclists	338	338
Speed Management Reductions (based on CAS)	All	84 (15%)	184 (32%)
	Pedestrian and Cyclists	30 (21%)	70 (49%)
	Motorcyclists	13 (11%)	28 (23%)
Safe cycling/ARU infrastructure reductions (CAS)	All	NA	NA
	Pedestrian and Cyclists	10	50
	Motorcyclists	NA	NA
Total Reductions (Based on CAS)	All	94 (16%)	234 (41%)
	Pedestrian and Cyclists	40 (28%)	120 (84%)
	Motorcyclists	13 (11%)	28 (23%)
Upscaled * for under reporting using Ministry of Health data research	All	219 (11%)	544 (26%)
	Motor vehicle (excluding Pedestrian/cyclist/motorcyclist)	90 (14%)	189 (29%)
	Pedestrian and Cyclists	92 (9%)	276 (26%)
	Motorcyclists	37 (11%)	79 (23%)

*Upscaling factors used.

1) For base DSI, Peds/cyclists; assumed a weighted average of 69%*7.87 and 31%*6.26. Motorcyclists; 2.82. For All DSI, we have subtracted the VRU DSI and upscaled the remainder by 2.2
2) For reductions, Ped/cyclists; assumed a weighted average of 69%*2.44 and 31%*1.94. Motorcyclists: 2.82 This assumes that only for peds/cyclists only conflicts involving another vehicle will be addressed. For All DSI, we have subtracted the VRU DSI and upscaled the remainder by 2.2

For Scenario One, the estimated ARU DSI savings per annum from changing speed limits to align with the safe and appropriate speeds, is 30 DSI (based on CAS data). Installing safe cycling infrastructure provides an additional 10 DSI savings making a total of 40 DSI. When upscaled to account for the underreporting in CAS data this equates to potentially 92 ARU DSI saved per year. The total upscaled reductions for all road users from the speed management and safe cycling facilities would amount to 219 DSI per annum. However, as discussed earlier, the speed management savings are typically based upon speed limit changes alone, with little or no supporting infrastructure changes or enhanced enforcement. Operating speed changes would typically be in the range of 2-4km/h per 10km/h change in speed limit.

For Scenario Two, where operating speeds are “forced” to align to the speed limit, the reductions increase to 120 DSI per annum for pedestrian and cyclists (based on CAS data) and 276 DSI per annum when adjusted for under reporting. This equates to approximately 26% of the average annual ARU DSI in Tāmaki Makaurau. The upscaled DSI savings for all road users is estimated to be 544 or 26% of all DSI per annum. Over a 5 year period this would equate to an upscaled total saving of 2720 DSI’s of which 1380 are pedestrians and cyclists. However, DSI reductions in this scenario could be considered as very optimistic.

These results indicate that speed management measures in Auckland can be expected to:

- address a much larger proportion of ARU road trauma than road trauma for motorised traffic, and
- provide several times more safety benefits for active road users than for general traffic.

Both are important findings. Providing a safer road environment in Auckland for ARU will provide benefits and help realise other transport and well-being objectives. Specifically, by creating a safer network for walking and cycling, we remove one of the key barriers to travel by these modes. As such, we can expect to see increased rates of travel by these modes, meaning reduced reliance on private car travel, fewer emissions, and a healthier population. Conversely however, an increase in active road use will increase exposure and hence whilst the rate of ARU DSI will be lower, the total number of DSI for these groups may increase.

Glossary

ARU	Active Road Users - people walking and cycling
AT	Auckland Transport
CAS	Crash Analysis System
DSI	Deaths and serious injuries
MAIS	Maximum Abbreviated Injury Scale - a globally accepted and widely used trauma scale used by medical professionals.
MoH	Ministry of Health
ONF	One Network Framework
ONRC	One Network Road Classification

SaAS Safe and appropriate speeds

TDM Transport Demand Management

VRU Vulnerable Road User – people not inside a vehicle using the road or footpath.

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Attachment 3

Speed management communications approach
21 October 2021

Teresa Burnett & Ping Sim

Auckland Transport
An Auckland Council Organisation

Background

- The changing legislation presents opportunities
- Move to area based communications
- Share a vision of what neighbourhoods could be like
- We have a wealth of local information and experience to build on

The communications strategy

Start with a vision of how our streets can be safer and calmer

Illustrate the steps needed to get there, starting with safer speeds

Focus on the whole street environment, not just car lanes

Pre-prepare counter narratives to the opposition, using facts and evidence

Focus attention on people who are currently ambivalent

The shift needed

From

- A conversation about DSI
- Talking about road safety as separate from other issues
- Too much focus on the detractors.

To

- A conversation about better quality neighbourhoods
- Showing the trade offs and connections between modes
- Showing the link between climate action and road safety

Imagery will be key

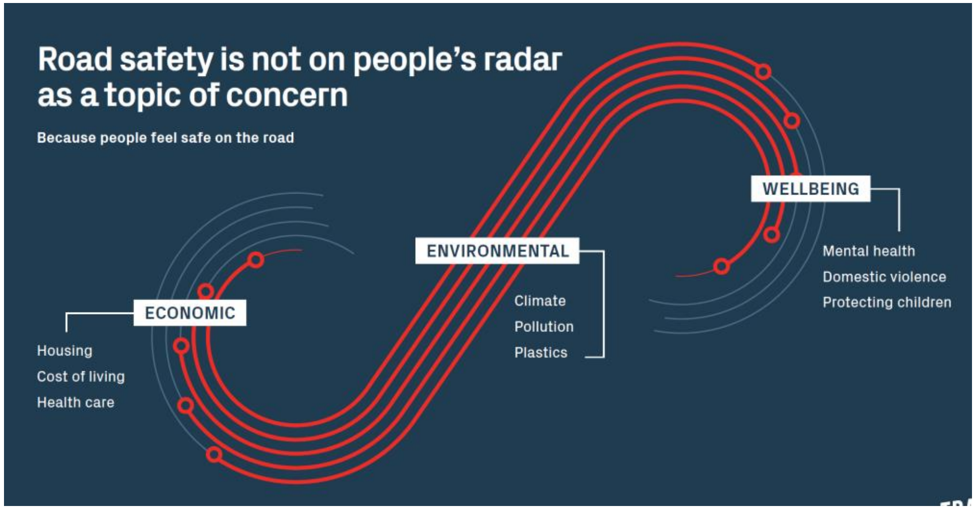
Objective #1

- Change the road safety conversation and position speed management as the catalyst for better quality streets and neighbourhoods. For example, it is not just about a new speed limit but also about whether our kids can walk and cycle to school and how liveable our streets are.

Why we know it can work

- As part of the first tranche of speed limit changes, survey results from residents and businesses in the town centres of Ōtāhuhu, Ōrewa, Mairangi Bay and Torbay show that 61% of respondents felt that the changes have made their local area safer for children to walk and cycle.
- 79% of respondents in Te Atatū South and Rosehill, Papakura said area wide speed calming made these residential areas safer.

Research, customer insights and testing



- Significant body of AT customer insights and international safety narrative research to build from
- Consistent with other cities, road safety is not on people's radar as as topic of concern in Auckland
- What works is linking safe speeds with issues people care about such as health, climate and children

Customer insights and testing:

We are in progress with focus groups to gain further insights and test content

Early insights:

- Customers assume current speed limits are safe and safety issues are only with speeding over those
- Near universal surprise at high DSI rates in Auckland, hidden issue, any DSI seen as a tragedy
- No intuitive relationship seen between safety and speed
- Making people aware of the significant impact of even small speed increases is most potent messaging explored so far

Examples of messaging

Safe speed limits have other flow-on effects that include quieter neighbourhoods, which is great for children and older people.

A safe road environment sets the scene for greater investment in public transport and active modes like walking and cycling.

Replacing short, local trips with active modes can help reduce carbon emissions

Setting safe and appropriate speed limits 'unlocks' Auckland's true potential. It allows Auckland to become a place where people want to live, where children can walk, cycle or scoot to school, sports practice or to the local dairy.

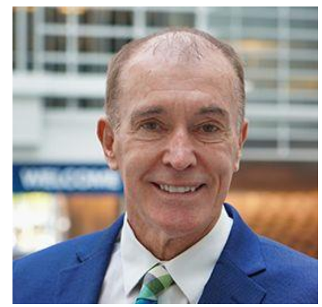
Leading change narratives talks

- Expert review of communications and engagement strategy
- Presentations to Board and ELT in 2022 on evidence of what works in leading change narratives on speed

Dr Jess Berenston-Shaw

Jess is a public narrative researcher and advisor, with a PhD in Health Psychology from Victoria University. Jess researches implements narrative strategies that engage, deepen people's thinking, and improve decision-making with regard to our big social and environmental challenges.

Dr Soames Job



Dr Soames Job is CEO and principal of Global Road Safety Solutions, based in Sydney. Previously he was Head of the Global Road Safety Facility, and Global Lead Road Safety with the World Bank.

Waka Kotahi and AT are partnering to explore working with Soames to support speed management work in NZ.