



# WHITING MOYNE P/L

## Strategic Road Safety Advisory Services

### 2021 REPORT on AUCKLAND 2018 ROAD SAFETY BUSINESS IMPROVEMENT REVIEW IMPLEMENTATION

**FINAL REPORT prepared for Auckland Transport**



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## 1.0 INTRODUCTION

In the first half of 2018 Eric Howard prepared a Business Improvement Review (BIR) of Road Safety in Auckland. The review identified 45 recommendations for Auckland Transport (AT) to pursue in order to improve road safety outcomes across the Auckland region.

In early 2021, AT engaged Eric to report on implementation progress on the 2018 Review recommendations, and specifically to:

- Validate the progress made against the intended actions of the 45 Road Safety BIR recommendations (which have been divided by AT into 74 actions for tracking) commenting on whether the recommendations were completed or required more focus, based on AT reporting of the status of actions taken;
- Identify areas of focus from this review and road safety data and trends which could help inform a Vision Zero Action Plan for 2022-2024; and
- Provide a presentation to AT Board and stakeholders on the deliverables performed.

The process followed for the review is outlined in the Methodology section of this Report.

Interviews were carried out with the AT Chair and Board Members, Chief Executive (CE), Executive Leadership Team (ELT) and senior officers plus representatives from Waka Kotahi NZ Transport Agency (Waka Kotahi), New Zealand Police (NZ Police) and the Ministry of Transport (MoT) plus a number of road safety consultants and road safety stakeholders.

AT provided a detailed spreadsheet of the 2018 BIR recommendations and these were assessed in detail with responses which were checked by AT staff. (See the completed spreadsheet in the Methodology section).

Relevant road safety data/performance for Auckland was analysed and compared with New Zealand (NZ) data, and further comparisons were made with Victoria (Australia) and Norway.

Good practice and relevant research/evidence in NZ and internationally appropriate to the developed recommendations was accessed and drawn upon, including case studies which are provided in the Appendices.

Material for the report was drawn from the AT detailed spreadsheet of the 2018 BIR recommendations and from interview discussion materials, the data from various sources and the research and good practice/evidence-based outcome material available for NZ and elsewhere.

Priority 1 recommendations with relevant commentary are listed in Chapter 5, followed by the top 10 overall recommendations drawn from that group, and based on importance and urgency. The top 10 recommendations and the balance of the Priority 1 recommendations are shown in Appendix 16. The Priority 2 recommendations are separately listed later in Chapter 5 after Priority 1 recommendations.

## 2.0 AUCKLAND'S ROAD SAFETY PERFORMANCE

The road safety situation at AT is very different to the pre-2018 circumstances. A road safety focus has been established with clear organisational commitment from the Board and CE level, a new Directorate for Safety at ELT level has been established and staffed, and many tasks previously not receiving attention but central to improving road safety performance are now being carried out. These are substantial achievements for the Auckland Community. While much has been done however, much remains to be achieved as an immediate priority. This is certainly the case for building public acceptance of the “no trading off of safety” message so central to Vision Zero and so challenging for many motorised road users. Particular immediate and practical safety challenges are the provision of supports to change road user behaviour, especially with respect to speeding, drink driving and drug driving.

An inability to enforce drink driving through adequate levels of breath testing of drivers and to deploy mobile camera technology on an adequate scale, both at levels that would approach good international practice, have heavily limited the potential gains available for the Auckland community. AT continues to roll out a commendable infrastructure safety programme, continues to deliver improved safety benefits following a substantial speed limits review and reduction programme based on crash risk, and to advocate (with limited success) for timely regulatory and policy reform to central government authorities. More support from NZ Police and central government is needed to meaningfully tackle these issues if further reductions in death and serious injuries (DSI) are to be realised.

A detailed assessment of the 2018 BIR recommendations (see Chapter 7) reveals that AT has been focused and fully committed to delivering on all recommendations adopted in 2018. Of 75 actions related to AT responsibilities, 28 have been substantially or completely implemented, 28 have achieved satisfactory progress and action continues, 18 are underway with unsatisfactory progress, and one has not yet progressed from 2018.

Unfortunately, the situation in relation to recommendations reliant upon national government agencies in Wellington does not paint as positive a picture. Of 45 actions related to central government departments/agencies, five actions have been substantially implemented and 12 others have achieved satisfactory progress. While another 21 are underway, their progress is unsatisfactory. A further seven actions have not progressed from 2018.

The actions which central government agencies has not yet delivered are often recommended enforcement, regulatory or policy changes to introduce good practice which are not progressing and in most cases affect all of NZ. Unfortunately good practice drink driving testing efforts by NZ Police have not met appropriate, agreed and funded levels in Auckland for some years now and this has led to a disappointing 28% to 30% involvement of alcohol above legal limits in fatal crashes in Auckland (higher than the national alcohol related crash figure).

To establish relative road safety performance for NZ and for Auckland with international achievement the following comparisons have been compiled.

- (a) NZ (2020) DSI comparative performance with Norway (2019) and Victoria, Australia (2020); and Auckland (2020) comparative performance with Melbourne, Victoria (2020)

	New Zealand 2020 <sup>^</sup>	Norway 2019 <sup>#</sup>	Victoria 2020 <sup>*</sup>	Auckland 2020 <sup>^</sup>	Melbourne 2020 <sup>*</sup>
Fatalities / 100,000 population	6.08	2.0	3.25	2.15	1.65

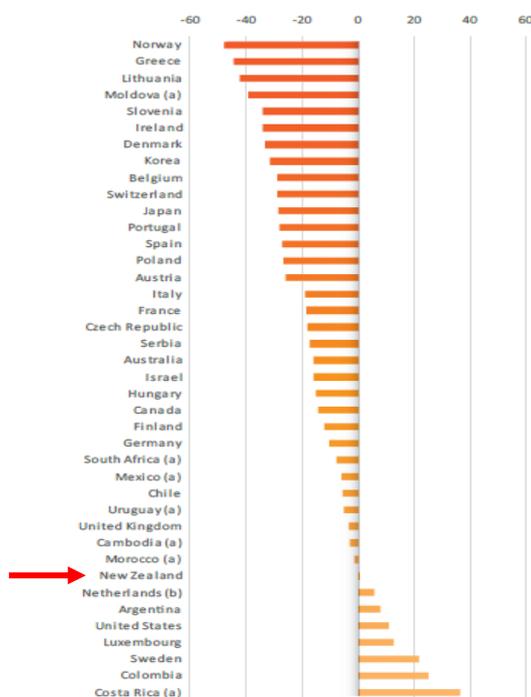
<sup>^</sup>NZ Stats, CAS; <sup>#</sup>IRTASD ITF/ OECD 2019; <sup>\*</sup>TAC, ABS

(b) New Zealand (2017 - 2020) mean annual fatalities comparative performance with Norway (2017 - 2019) and Victoria, Australia (2017 -2020); and Auckland (2017 -2020), mean annual fatalities comparative performance with Melbourne, Victoria (2018 - 2020).

	2017			2018			2019			2020		
	Fats	Pop	F/P									
NZ			7.9			7.5			6.9			6.08
Norway			2.0			2.0			2.0			2.0
Victoria	259	6.38	4.06	213	6.52	3.26	266	6.66	3.99	211	6.68	3.33
Australia			5.0			4.5			4.6			4.6
Auckland	64	1.6	3.9	54	1.65	3.26	40	1.68	2.38	37	1.72	2.15
Melbourne				104	4.96	2.1	120	5.08	2.36	85	5.16	1.65

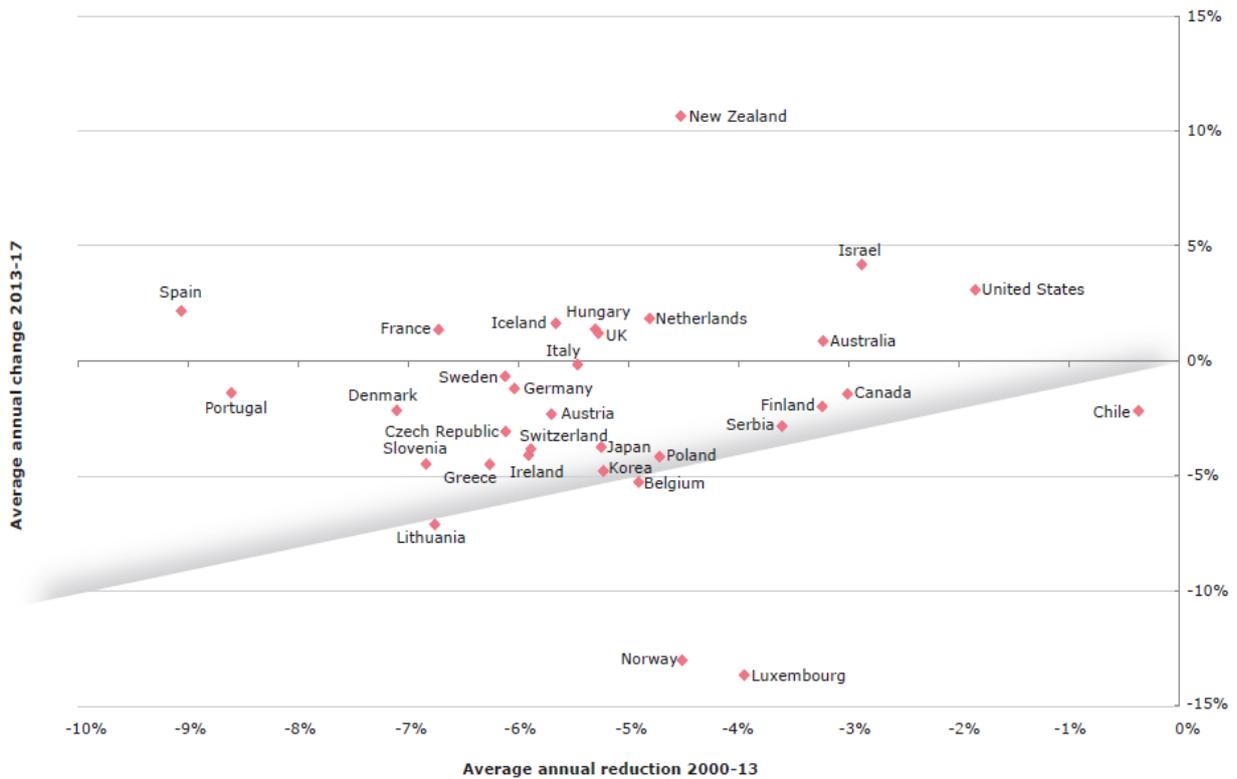
	New Zealand 2017-2020 Mean rate	Norway 2017-2019 <sup>#</sup> Mean rate	Victoria 2017-2020 Mean rate	Auckland 2017-2020 <sup>^</sup> Mean rate	Melbourne 2018-2020 Mean rate
Fatalities / 100,000 population	7.10	2.0	3.66	2.92	2.14

Figure 1. Percentage change in the number of road deaths<sup>1</sup>, 2010 - 2018



<sup>1</sup> Road Safety Annual Report 2020, OECD/ITF 2020  
Whiting Moyne 2021

Figure 2. Percentage change in the number of road deaths, 2000 – 2013 vs 2013 - 2017<sup>2</sup>



The substantially aberrant road safety performance of New Zealand for the period from 2013 to 2017 compared to most other ITF/OECD countries can be seen in the graphic immediately above (Figure 2) and particularly in the percentage change in number of road deaths, 2010 to 2018 (Figure 1, above).

The international comparisons shown above are uncomfortable reading for those New Zealanders interested in knowing how the relative risk of being killed while using the NZ road network has changed since 2010, and how that performance compares to other IRTAD (OECD/ ITF) countries.

Aucklanders would understandably be very concerned with road safety performance across NZ over the last 10 years. The efforts of central government have not been adequate to achieve reductions in DSI that most other developed countries have delivered. This situation has made the task of improving road safety outcomes much more difficult for Auckland, with enforcement, policy and regulatory decisions being the province of central government. NZ has traditionally led on many substantial global initiatives, across a range of fields, including Covid-19, climate change, corporate transparency and much more. However, **road safety across New Zealand has not received adequate attention and represents a lost opportunity over the past 10 or so years.**

<sup>2</sup> Road Safety Annual Report, ITF-OECD 2019

The Ministry of Transport (MoT) website<sup>3</sup> spells out the difficulties with the previous Safer Journeys Road Safety Strategy in New Zealand in candid terms:

*“Our previous road safety strategy was Safer Journeys, which had made some progress but was not implemented as intended. Although it was based on a sound approach and compelling evidence, it did not have sufficient buy-in, investment, leadership and accountability to achieve a significant reduction in deaths and injuries.”*

If NZ was to deliver a rate of fatalities to match that of Victoria, Australia in 2020, (3.5 fatalities per 100,000 population, a state with a similar population to NZ) then 145 less New Zealanders would have perished on NZ roads last year.

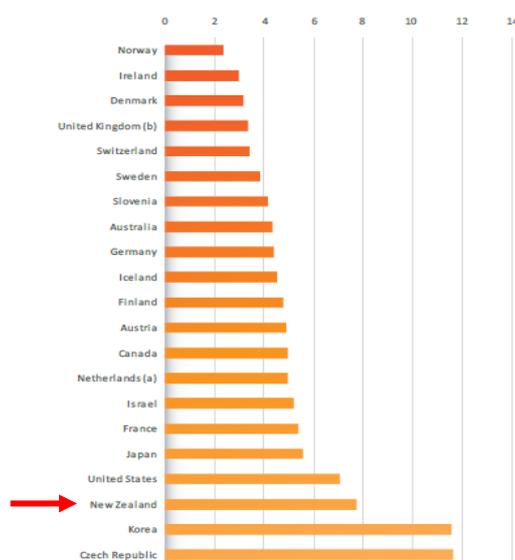
Further, if NZ had delivered a rate of fatalities to match Norway’s in 2019, (2.0 fatalities per 100,000 population, a country with a similar population to NZ) then 209 less New Zealanders would have perished on NZ roads.

If mean DSI comparative performance over the 2017 to 2020 period is taken into account, then compared to Victoria, and based on 2020 populations, (5,112,300 for NZ),  $3.66 \times 51.123 = 187$  persons would have died on NZ roads, a saving in 2020 of  $311 - 187 = 124$  lives a year.

The achievement of Norway’s level of performance from 2017 to 2019 would have resulted in a saving of  $311 - 51,123 \times 2.0 = 311 - 102 = 209$  lives a year.

These figures suggest many lives lost could have been avoided in the past 10 years. Importantly the loss of between some 1240 and 2090 lives over the 10 year period ahead to 2030 could be avoided if a greater effort to match good international practice was to be made by central government, with support from local government agencies and their communities.

Figure 3. Road fatalities per billion vehicle-kilometres, 2018<sup>4</sup>

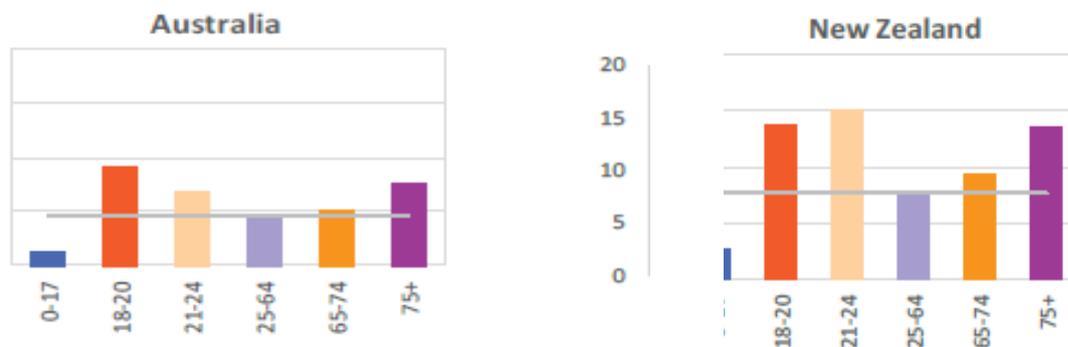


<sup>3</sup> Road to Zero | Ministry of Transport: <https://www.transport.govt.nz/area-of-interest/safety/road-to-zero/>

<sup>4</sup> Road Safety Annual Report 2020, OECD/ITF 2020

## MORTALITY RATE BY AGE GROUP

Figure 4. Road deaths per 100,000 inhabitants in a given age group, 2018\*

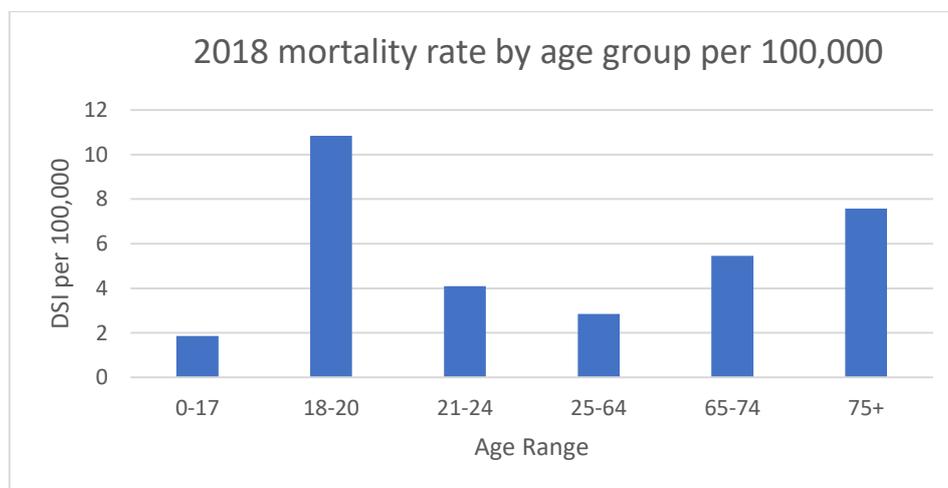


\*The grey line shows the average fatality rate per population for each country. Note the high rates in NZ compared to the average for the 21-24 year and 75+ year age groups. Note that the 18-20 year age group is also at a high level in absolute terms.

The relatively higher rate of fatalities for the over 75 year age group (shown above) for NZ may reflect a greater demographic of frailer elderly, but also potentially poorer safety quality cars operating on poorer safety quality roads with inappropriately high speed limits. The differences with Australia are noticeable.

The relatively higher 18-20 year and 21-24 year age group fatality rates than in Australia may reflect undeveloped opportunities from strengthening graduated licensing system (GLS) settings, a lower solo licensing age, and shortcomings in deterrence of speeding and drink and drug driving due to inadequate penalties and limited enforcement. There may be other factors as well. A permitted blood alcohol concentration (BAC) limit of 0.05 (ie 0.05 g of alcohol per 100 ml of blood) for most 20 and 21 year-olds would not be assisting reduced DSI. Actual data for Auckland is shown below.

Figure 5. Auckland road deaths per 100,000 inhabitants in a given age group, 2018



Fatality rate by age cohort from road crashes, Auckland, 2018 (Auckland Transport)

The relatively high fatality rate for 18 to 20 year olds in Auckland in 2018 is a concerning situation. A review of the GLS for NZ is being carried out at national level. AT should support the purpose of this review to find ways to strengthen the GLS to reduce the fatality rate for this group.

The rate for the 75+ age group is also a major concern and insights into the nature of road user category for these fatalities are required. Are they pedestrians or vehicle occupants or a mix? This examination by AT should be a priority.

Auckland and New Zealand: % reductions in overall road crash fatalities and serious injuries and % reductions in DSI related to alcohol

	Auckland Region					New Zealand				
	2017	2019	2020*	% change 2017 v 2019	% change 2017 v 2020	2017	2019	2020*	% change 2017 v 2019	% change 2017 v 2020
Fatalities	64	40	37	-37.5	-42.2	378	352	319	-6.9	-15.6
Serious injuries	768	567	489	-26.2	-36.3	2862	2510	2175	-12.3	-24
Fatalities related to alcohol	23	12	1 <sup>^</sup>	-47.8	<sup>^</sup>	75	87	63	+16	<sup>^</sup>
Serious injuries related to alcohol	160	92	62 <sup>^</sup>	-42.5	<sup>^</sup>	424	347	234 <sup>^</sup>	-18.2	<sup>^</sup>

<sup>^</sup> awaiting final coronial figures

*COMMENT: If we had the same number of homicides annually in New Zealand as deaths from road crashes ... there would be an uproar. A road death can affect any one of us.*

Fatalities by road user group, Auckland 2014 to 2020 and % share in 2020

Road user type	2014	2015	2016	2017	2018	2019	2020	2020 (% of overall fatalities)
Vehicle driver	17	22	23	27	23	19	11	29.7
Vehicle passenger	5	14	7	16	8	5	5	13.5
Pedestrian	8	7	6	9	13	5	10	27.0
Motorcyclist	5	7	11	10	8	7	8	21.6
Cyclist	2	2	0	2	2	4	3	8.1
<b>TOTAL</b>	37	53	47	64	54	40	37	

Key points from the CAS data<sup>5</sup> reflected in the table above include:

<sup>5</sup> CAS is the Waka Kotahi crash system which is New Zealand's primary tool for capturing information on where, when and how road crashes occur. This data comes from traffic crash reports completed by New Zealand Police. CAS covers crashes on all New Zealand roadways or places where the public has legal access with a motor vehicle.

## VULNERABLE ROAD USERS:

- 57% of all fatalities were people travelling outside vehicles (pedestrians 27%; cyclists 8.1%; motorcyclists 21.6%).
- *Although it is difficult to get a clear trend from 2020 data due to Covid-19 lockdowns and incomplete finalising of reporting, there does not appear to have been any notable improvements to the relative safety of Vulnerable Transport Users on foot, bike and motorcycle since 2017, while there has been some improvement to the DSI for people inside motor vehicles. The count data from CAS also significantly underplays the true extent of serious harm to transport users outside motor vehicles, as identified by Ministry of Health hospital data.<sup>6</sup>*

## 2020 vs 2019 ROAD SAFETY KEY FACTS

- There was a 16% increase in DSI for 16-24 year old drivers on restricted or learner licenses.
- There was an 12% increase in DSI where speeding was a factor.

## CHANGES IN ROAD CRASH SITUATION FROM 2017 TO 2020

### Auckland DSI data by road user category

Road user type	2017	2018	2019	2020
Vehicle driver	297	221	226	188
Vehicle passenger	149	115	99	83
Motorcycle	154	119	121	103
Moped	15	18	22	3
Heavy vehicle	25	6	15	6
Pedestrian	134	116	77	96
Cyclist	56	52	42	43
Other	2	2	5	4
	832	649	607	526

## SUSPECTED DRINK DRIVING INVOLVEMENT IN ROAD FATALITIES, BEFORE FINAL CONFIRMATIONS WERE KNOWN (As is the case now for 2020)

Drink driving – Suspected % involvement in fatalities	2017	2018	2019	2020
Suspected drink driving involvement in road deaths (No.)	32	19	19	17
Overall road deaths	64	54	40	37
% suspected drink driving involvement in road deaths	50%	35.2%	47.5%	45.9%

<sup>6</sup> ViaStrada VRU Study, 2021  
Whiting Moyne 2021

Drink driving - Involvement in fatalities	Years				
	2015	2016	2017	2018	2019
Drink driving involved road deaths (No.)	15	17	23	6	12
Overall road deaths (No.)	52	47	64	54	40
% of all road crash deaths	29%	36%	36%	11%	30%

However, the best available guidance is from confirmed drink driving impairment among fatalities.

i.e. Over these 5 years, 73 fatalities of 257 deaths involved drink driving (28.4%). (NZ Police)

## DRINK DRIVING IN 2019

- 30% of fatalities in 2019 (12 of 40, or 30%) involved illegal BAC levels.
- The 2020 data is not yet complete – awaiting confirmation by the coroner and police as to illegal alcohol involvement in fatal crashes.
- This was a 31% (+29 DSI) increase in the number of DSI where alcohol was reported as a contributory factor (from 75 DSI in 2018 to 104 DSI in 2019). The majority of these occurred in the Auckland City Police District and Counties-Manukau Police District.
- **28.4% of road crash fatalities from 2015 to 2019 inclusive, involved drink driving.**

## SPEEDING INAPPROPRIATE SPEED

- Inappropriate speed was a suspected factor in 51% of fatalities in 2020.
- High proportion of total DSI recorded with alcohol and speed as a contributing factor in the crash.

## WAKA KOTAHI SURVEY OUTCOMES FOR AUCKLAND RELEVANT TO DETERRENCE OF UNSAFE BEHAVIOURS (Public Attitudes to Road Safety Survey, October 2020)

- Only 30% of Auckland drivers had been stopped at an alcohol checkpoint in the past 12 months (completed in March 2020). This is a concerning reduction over time from a national high of 55% in 2013 and the lowest since 1995.
- 44% of New Zealanders believe the chance of getting caught speeding is small (up from 24% in 2016).

## 2021 FATALITIES YEAR TO DATE TO END MARCH 2021

- **For the 2021 year-to-date (YTD) to April, fatalities are tracking at almost double the level at this time last year, and at the same level as in 2017.** This is a concerning trend in early 2021 after the 2020 reductions, which would have reflected in part the impacts of Covid-19 on travel across Auckland.

**Road deaths by year: April 2021, 12 months Year to Date**

Sum of road death count	2016	2017	2018	2019	2020	2021	Grand Total
Drivers	9	8	8	9	3	4	41
Motorcyclist	2	1	4	3	2	4	16
Passenger	3	6	2	2		6	19
People on bikes				1	1	2	4
People on foot		2	4	2	1	3	12
Grand Total	14	17	18	17	7	19	92

The road safety result achieved for Auckland (and NZ) from 2017 to 2020 is acknowledged as highly commendable, however, there are remaining gaps in the linkage of Safe System approaches to broader sustainable mobility priorities, and to ensure delivery of benefits to the community to meet demands for improved active mobility such as walking and cycling. There are also coordination/consistency challenges within AT in ensuring accountability for Sustainable Mobility/Vision Zero policy development in planning and delivery of programmes. These are discussed later in this report.

A diagram depicting the Safe system elements and interactions which are to be applied to reduce DSI plus the Vision Zero Goal and Principles are also shown in Appendix 14.

A substantial challenge for AT is to not only maintain the DSI savings achieved but to use improved stakeholder engagement and responses to improve comprehensive service delivery. AT also needs to strengthen internal processes and its commitment to safety policy, and its delivery both within AT and by its road safety partners (especially at national level) to further improve performance in coming years.

These are not insignificant challenges requiring higher level management skills and commitments across ELT (and next level officers in particular) while also challenging the AT Board to continue to seek necessary change and improvement. All staff and board members need to be committed to the change necessary and to act accordingly.

### 3.0 KEY ACHIEVEMENT AREAS

*It is important to acknowledge that a great deal of good work has been carried out.*

AT has achieved highly positive results for its community in reducing DSI following the review carried out by the AT Board and organisation in early 2018 (when the concerning DSI results for the 2017 year were becoming apparent). AT has established its commitment to pursue a strategy and actions to substantially improve outcomes from that time.

This significant achievement should not be underappreciated. It has required an organisation-wide rethink and reset, and reflects much credit on the AT Board, CE, ELT and all staff. Fundamental change is never straightforward at the time it is being introduced. Much remains to be accomplished drawing satisfaction and confidence from the efforts and achievements of the last three years. While recognising what has been achieved, it is timely to turn attention to next steps - the overall purpose of this review. These future actions/directions have been included in the recommendations.

**Figure 6. Road safety DSI outcome performance since 2014 for Auckland including ATAP and Vision Zero Strategy targets from 2018. Presented by AT to Planning Committee of Auckland Council, March 2021.**



Economic and social activity including travel in 2020 was impacted by Covid-19 which is highly likely to have suppressed DSI. Experience in the first months of 2021 indicate an unwelcome jump in DSI is occurring now, replicating levels last experienced in 2017. Major challenges remain in the short, medium and long-term future. However, AT has established its road safety credentials and built capacities with a well-reasoned strategy and action plan in place, and now looks to build further on the initial capability established.

AT has reduced certain speed limits, delivered numerous infrastructure safety treatments, and made efforts to inform its community about the challenges faced and its role in contributing to a Safe System among many road safety initiatives. Further efforts in these areas are in progress, but national government support through road safety policy and regulatory reform will be a critical component in the immediate short-term and medium-term journey to better performance.

What are some of the positive changes achieved which have underpinned better road safety performance in Auckland?

A Vision Zero Strategy and Action Plan for Tāmaki Makaurau<sup>7</sup> was endorsed by the AT Board in September 2019. A Tāmaki Makaurau (TM) Road Safety Governance Group and a Leadership Group were established in 2018. The TM Governance Group is made up of AT, Auckland Council, NZ Police, Waka Kotahi, MoT, ACC, and Auckland Regional Health Services. The partners committed to communicating the Vision Zero goal across their organisations, including AT, which accepted responsibility for playing a lead role in communicating these key road safety messages to the Auckland Community. Successful advocacy to the Auckland community is critically important and AT, Auckland Council, Regional Traffic Police, and other partners need to further develop a coordinated and carefully planned programme to maximise community understanding.

Internally and externally focused Vision Zero narratives and communication approaches have been developed with Vision Zero principles and language being used across all communications and marketing activities. The One by One campaign (which is ACC-funded) focuses on Vision Zero principles, including the Safe System approach to Safety.

The Tāmaki Makaurau Vision Zero Strategy has a long term target of zero DSI by 2050, with an interim targets of a 20% reduction by 2021 (from the 2016-2018 annual average) and 65% reduction by 2030 (from a 2016-2018 annual average baseline).

A 26% reduction to 526 DSI was achieved to the end of 2020. Maintaining gains to meet the 2021 target remains a challenge as does pursuing the path to 251 DSI (a 65% reduction) by 2030.

This target adoption represents good practice and it is a quality achievement by AT. Delivering on the target will be challenging, requiring all the support from road user behaviour change (through more intensive enforcement), safer travel speeds, a substantial safer infrastructure programme, safer vehicles, quality road safety management and improved post-crash care.

The national Road to Zero Action Plan proposes a 40% DSI reduction to 2030 based on 2018 levels, which compares with a 65% reduction target from the 2016-18 average baseline of 716 DSI adopted for Auckland.

*See Graphic depiction of targets in Appendix 6.*

The Auckland Regional Land Transport Plan (RLTP) in preparation, proposes a 67% DSI reduction target by 2031 (base year 2016 – 2018 average annual DSI). AT's Road Safety Programme Business Case (PBC) has sense checked the 67% reduction and intermediate targets identified and these are set in AT's Road Safety PBC.

The new AT Safety team has now been firmly established, with a clear focus on building safety capacity and awareness within the team, across AT and with TM partners. The Workplace Safety function has also been included within the Safety Team 's responsibilities and there are many synergies in policy and improved safety awareness that can flow from that consolidation. The recommended Safe System Manager role is part of the Safety Team structure, where its responsibilities are being addressed with

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<sup>7</sup> Vision Zero for Tāmaki Makaurau, A Transport Safety strategy and Action Plan to 2030, Tāmaki Makaurau Road Safety Governance Group 2019.  
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a number of positions carrying out the ongoing challenge of embedding Safe System/Vision Zero principles.

To further improve understanding of Vision Zero, assist its embedding in the organisation, and to better understand the role as safety leaders, continuous training opportunities on safety leadership are offered to AT's Executive Leadership Team (ELT) and AT Board. AT ELT and Board members completed Vision Zero workshops in mid-2019 before the release of the Vision Zero Strategy. Ongoing training and updates are provided on a needs basis as new leaders join to build safety capability.

A Vision Zero Learning Strategy has been developed to continuously deliver learning initiatives across AT, which includes a Vision Zero e-learning module that can be shared externally.

A Vision Zero workshop was also delivered to the Planning Committee in March 2021 to gain political support in lifting Tāmaki Makaurau's road safety performance and improving safety visibility. Ongoing work will continue to deliver training and briefings to leaders to strengthen Safe System knowledge.

The Road Safety (now called Transport Safety) Governance Group and Leadership Group was established in 2018. The Transport Safety Investment Portfolio Steering Group (IPSG) has been established, with key members from the safety, service delivery (road safety engineering and performance), customer experience (community transport) and metro services teams. The Transport Safety IPSG provides governance for the Road Safety capital programme. AT advise that there are plans to enable greater oversight and governance of other safety benefits beyond the Road Safety Programme to deliver more assured safety benefits and outcomes from across the organisation. The Safety Team are working to enable this viability at an enterprise level which will encourage greater inputs to ensure all projects that are delivered are within safety standards and quality.

A Safety Enterprise Portfolio Steering Group (EPSG) is to be established to focus on those internal activities working to embed safety through AT's internal systems and enhance their coordination efforts.

DSI updates are reported on the AT website to the public (monthly DSI updates) and formally circulated to AT Board and ELT through the Transport Indicators Statement of Intent (SOI) report, Monthly Operating Report and Monthly Business Report. Local Board reports provide DSI updates and the public are able to view DSI updates on the Vision Zero Public Map (which is updated quarterly). Weekly DSI updates (Auckland Transport Operations Centre -ATOC data) are circulated to AT's road safety partners in the Tāmaki Makaurau Transport Safety Governance Group. The Safety EGM reports key road crash DSI or Health and Safety incidents (i.e. any notifiable incidents)<sup>8</sup> directly to the AT Board.

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<sup>8</sup> A notifiable event is any of the following events that arise from work: a death, a notifiable illness or injury or a notifiable incident that the EGM and the Safety team believe should be brought to the attention of the Board.

Only serious events are intended to be notified. These trigger requirements to preserve the site, notify the regulator and keep records. The notifiable incident, illness, injury or death must arise out of the conduct of the business or undertaking. It could be due to the condition of the work site, the way the work activity is organised, or the way equipment or substances are used. Notifiable events may occur inside or outside the actual work site. Deaths, injuries or illness that are unrelated to work are not notifiable events.

A number of the recommendations AT provided in its 2019 submission to MoT during the consultation period for the national road safety strategy (now the adopted Road to Zero Strategy) were accepted, but many remain unaddressed. The National Road to Zero strategy was launched in December 2019 with a Vision Zero approach. Vision Zero is a substantially different approach to safety on the road network and its embrace nationally is an excellent result for Auckland and for all of New Zealand.

The challenge remains to adequately convey the meaning of this fundamental shift in the approach being taken to road safety in New Zealand to the community and all stakeholders.

Measures adopted in the Road to Zero strategy are progressing and alignment with Auckland's TM Vision Zero Strategy will continue as necessary to receive attention.

The AT Road Safety Programme Business Case (PBC) building upon the 2019 Vision Zero Strategy, was finalised with interim 10-year and 30-year DSI targets as well as a target of zero DSI by 2050.

Specific measures achieved or started, include:

- Guidance for safe driving approved by the AT Board and CE. AT staff were advised not to use their phones in vehicles.
- Finalising a monitoring and evaluation framework for AT's road infrastructure safety programme (in progress).
- AT supported mandating ABS for motorcycles in submission to Road to Zero Strategy and it is pleasing that this was agreed to, with Waka Kotahi making motorcycle ABS braking mandatory from 2020.
- Implementation of Drug and Impaired driving deterrence and enforcement was included in the Road to Zero Strategy. It is a worthy initiative by the national government/MoT which was supported by AT, and it responds to a substantial impaired road use issue which is leading to progressive increases each year in DSI. AT/TM partners will work with Police to support implementation in Auckland when the enforcement is ready for rollout. Implementation of saliva testing for drugs is now planned to begin in 2022. It will be vitally important that drug enforcement resources are not reallocated from police drink driving resources. Additional Road Policing resources are required.
- AT is working with NZ Police and Health to establish best practice for the conduct of blood sampling of hospitalised road crash drivers, riders and pedestrians. This will support evidence gathering for NZ Police purposes, but will also provide a more accurate picture of levels of alcohol and drugs impairment contributing to serious road crashes.
- 12 new dual function red light and speed safety cameras were installed on the Auckland network in 2019. Waka Kotahi and NZ Police are developing a trial for point-to-point safety cameras, and ongoing conversations are seeking to agree a tactical approach for operation of speed enforcement in Auckland. A memorandum of understanding between AT and NZ Police for the continued roll out of dual function red light/speed cameras has been agreed.
- For on the ground implementation of the adopted of the Vision Zero Strategy, all TM partners are expected to play their agreed part. Discussion by AT with NZ Police at regional level recommended (as an immediate priority) that resolution of issues around significantly lower levels of inputs being provided for drink driving deterrence and speeding deterrence (than

agreed in the annual traffic policing agreement adopted with Waka Kotahi for the Auckland region) should be achieved. However, this remains unresolved.

- The Road to Zero Strategy provides for a 25% increase in funding for infrastructure safety treatments nationally - a major step up for the role of infrastructure safety in reducing DSI.
- Direct AT funding of more than the recommended \$15m has been allocated for infrastructure safety work annually.
- The Safe System Assessment Framework (SSAF) has been adapted for use at AT, where principles have been embedded into AT's design and maintenance activities. It has now been adopted in the national Road to Zero Strategy as an option. SSAF training has been rolled out and is part of the Vision Zero Learning Strategy for continuous learning. A key piece of work includes safety considerations within AT's Enterprise Project Management Framework, which will require projects to undertake an SSAF. Extension to all five project stages is now being considered. Waka Kotahi is now leading on the SSAF application and both Waka Kotahi and AT are using the SSAF approach.
- AT sought legislation to apply demerit points for all camera generated speed offences as an early priority. (There is no demerit point allocation for camera offences in NZ at present). MoT is currently conducting a penalties review and demerit points may be included. AT needs to advocate strongly to MoT now for this to happen. The overall demerit point framework requires review to achieve its role as an active contributor to deterrence and changing behaviours.
- AT is continuing to improve the visibility of AT's CRM data and use, especially in identifying and recording public transport related injury that does not include a vehicle. AT has developed a dashboard that records injury cases on footpaths in the first instance.
- AT has also commissioned a Vulnerable Road User (VRU) deep dive report which identifies the size, nature and causes of the highly vulnerable road user DSI rate and under-reporting of pedestrian-related injury data. Work will continue from this deep dive report to explore solutions for AT's response to the findings.
- AT has been committed to improving safety for the Māori community with the established of the Te Ara Haepapa programme. Te Ara Haepapa is an innovative, courageous, unique and ground-breaking initiative which challenges the norms in traditional road safety practices. This is achieved by re-designing practices to reflect the culture, priorities and needs of specific communities. It is a programme grounded in the framework of Te Reo Māori me ōna Tikanga (Māori Language and Culture). Led by Māori to engage and work collaboratively with Māori, to achieve positive outcomes for Māori. Te Ara Haepapa is an initiative designed to address the high and disproportionate number of DSI per head of population for Māori in Tāmaki Makaurau Aotearoa NZ.

### **Safety Integration**

One of AT's core values is *Tiakitanga, Safe with Us* which means AT will ensure people's safety when they use their network and services. To bring this value to life, the Safety Team wants to embed safety across the organisation, where safety is key in everyone's role, that the safety basics are done right and together all AT staff and contractors can implement safety improvements within every decision and action that is taken. The focus will be on communication, engagement, learning and leadership to build capability in AT's people, processes and systems so over time, all staff will have the capability and tools to do the safe thing. This is essentially a change plan that is part of the Safety Team's way of working in keeping safety a priority.

## 4.0 FOUR STRATEGIC ENABLERS FOR AT

### TOOLS TO LIFT AUCKLAND'S ROAD SAFETY PERFORMANCE

#### **Embed Safe System and Sustainable Mobility:**

Fully embrace Safe System and sustainable mobility and work to genuinely embed these approaches in a comprehensive and coordinated manner in all that AT does for the Auckland community.

AT's promotes its purpose as *easy journeys, enabling people and communities to connect*. To enable easy journeys, it is important that AT's services, operations and projects are designed, delivered and operated safely. Safety should be part of the organisation's DNA and the Safety Team is seeking to build capability internally with its staff to enable them to champion safety to ensure everyone gets home safe and well every day.

#### **Partner:**

Invest in partnerships to deliver challenging outcomes:

- (i) Within AT
- (ii) Local Auckland partners: Local Boards, Council, Citizens, Tāmaki Makaurau partnership, other stakeholders (iii) National partners: Waka Kotahi, NZ Police, MoT, Government Ministers and national stakeholders.

#### **Advocate:**

Strengthen and utilise advocacy of opportunity for improved road safety outcomes. Leadership, strategic thinking, persistence, linkages to broad transport, amenity and environmental themes.

#### **Monitor performance:**

Monitor road safety performance in Auckland on a regular basis, report to the community and implement responses to emerging trends or issues. Accept accountability for the success of the overall sustainable mobility challenge and its key components for which various parts of AT carry responsibility.

## 5.0 RECOMMENDATIONS

The following recommendations are grouped according to key focus areas:

### Lead AT to meet current and future road safety and related challenges

With Board and CE leadership, AT needs to fully embrace and apply Safe System and Sustainable Mobility. Effective monitoring, benchmarking and reporting on performance is vital.

### Build AT and partner capability to deliver outcomes

AT needs to substantially ramp up investment in partnership activities and training to ensure sector capability. Clear positions on key policy and regulatory matters, coordinated policy development and 360° advocacy are critically important.

### Deliver critical outcomes - Fresh initiatives

Detailed recommendations to substantially improve deterrence of drink driving and speeding and to support increased drug driving deterrence from 2022 are outlined. Improved pedestrian and other vulnerable road user safety and accelerating the lower speed limits programme are further fresh initiatives.

### Pursue regulatory and policy reform nationally

Pursuing significant regulatory reform and policy reform at national level is recommended covering road safety fines, penalties, vehicle standards, a zero BAC limit for heavy vehicle and public transport drivers, alcohol treatment programmes, review and extension of the interlock program, an upgraded GLS and developing a further source of safety funding.

### Deliver critical outcomes - Strengthen existing programmes

Opportunities to deliver critical outcomes through strengthening existing programmes including bus operations, safety in maintenance and renewals, more comprehensive safety program management, safe fleet practices, utilising combined workplace health and safety and road safety approaches to reduce DSI, building awareness harm from low level speeding, safety benefits and traffic signal operations are covered.

## PRIORITY 1 RECOMMENDATIONS

### 5.1 LEAD AT TO MEET FUTURE ROAD SAFETY RELATED CHALLENGES

With Board and CE leadership, AT needs to fully embrace and apply Safe System and Sustainable Mobility. Effective monitoring, benchmarking and reporting on performance is vital.

Recommendation	Comment
<p><b>1. With Board and CE leadership, AT to continue to work to genuinely embed the Vision Zero and Safe System principles in all they do to</b> achieve a 65% reduction in fatalities by 2030 and zero fatalities by 2050 for their community.</p> <p>1.1 Gaps remain between Vision Zero theory and practical application in operations as well as in strategic project development. Focus on not acting in ways that inadvertently increase DSI across the network while on the other hand pursuing measures to reduce DSI.</p> <p>1.2 Support staff in key strategic programme development activity areas to develop a deeper understanding of Vision Zero concepts and principles, including kinetic energy management in the transport system, and apply that thinking to potential project development from the concept/project initiation stage, rather than requiring a reset when the Vision Zero fundamentals have not been given early consideration.</p> <p>1.3 To support proposals to be compliant with Vision Zero, subject all AT projects to the Safe System Assessment Framework (SSAF) evaluation at all gateway stages including the initiation stage.</p> <p>1.4 Recognise risks flowing from the loss of knowledge through substantial turnover of active/effective AT officers and Board members. Develop organisational knowledge resilience plans to cope with this ongoing change. Examine ways to address these risks effectively. Sustain and refresh overall organisational, partnership and community awareness.</p>	<p>This is a critical role for P&amp;I and represents a challenge for Safety and P&amp;I to work together to establish a strengthened capability, for safety consideration and inclusion in all programmes but especially for larger transformational transport project proposals at concept stage.</p> <p>This will require systems and guidance to support effective operation by the project engineers in Service Delivery and in Integrated Networks.</p> <p>Continue to build guidance and tools and train staff and contractors in applying Vision Zero in their activities.</p>
<p><b>2. Promote understanding and further progressive implementation of Sustainable Mobility and Movement and Place</b> thinking in conversations, policy development and programme implementation within AT Active Travel and other programmes, with Local Boards, Auckland Council and the Auckland community as well as with Waka Kotahi and MoT interactions.</p> <p>Note: AT use different language to describe their sustainability commitments which include active travel programme objectives plus commitments to safety, universal access, efficiency and green mobility</p> <p>2.1 AT to progressively ensure that investment programmes reflect commitment to these four sustainable mobility elements (safety, universal access, efficiency and green mobility) plus movement and place</p>	<p>Contributors to the safety Programme Business Case (PBC) and components of the Regional Land Transport Plan (RLTP) need to provide support to the AT Planning and Investment function in assembling business cases for these programmes, to include the full available benefits (in safety, sustainable mobility and amenity) of potential road safety focused projects/ programmes in order to ensure the most beneficial safety projects are funded.</p>

<p>principles which support healthier community outcomes from active transport and deliver improved amenity.</p>	
<p><b>3. Develop a meaningful intermediate road safety indicators programme</b> (establish, monitor and report on) and make it an agent for assisting responses to the actual experience it will reflect.</p> <p>3.1 Prepare as a priority an action plan for internal use by the road safety partners detailing agreed annual outputs.</p> <p>3.2 Operate an annual results conference where the status of road safety development over the last year is to be presented and discussed. Issue a report showing the status of intermediate indicator targets and progress towards interim targets.</p> <p>3.3 Monitor Auckland’s comparative road safety performance with other good international practice international cities. ELT need to maintain good awareness about what needs to be done to improve performance and to reach best practice outcomes.</p>	<p>(See indicative listings in Key Focus Area No. 3 and further in Appendix 12, Intermediate road safety performance indicators from Norway’s 2019 – 2021 road safety action plan.)</p> <p>To include partners (Waka Kotahi, MoT, NZ Police, Auckland Health and Accident Compensation Commission (ACC).</p>
<p><b>4. Develop and deploy 360° advocacy</b> to progress the rollout of measures for delivering on Vision Zero through progressively providing a safe system.</p> <p>4.1 Vision Zero/Safe System to a much broader level of public awareness and move towards greater community understanding of what it requires. Outline shifts in long accepted thinking about the nature of road crash injury risks required, to support necessary change in outcomes to be delivered.</p> <p>4.2 AT advocacy needs to become more robust and multi-layered at the national level.</p>	<p>MoT to be engaged in discussions to advise AT why certain issues have not been addressed at this stage and what can be done to close this disconnect in future action plans.</p>

## 5.2 BUILD AT AND PARTNER CAPABILITY TO DELIVER OUTCOMES

AT needs to substantially ramp up investment in partnership activities and training to ensure sector capability. Clear positions on key policy and regulatory matters, coordinated policy development and 360° advocacy are critically important.

Recommendation	Comment
<p><b>5. AT to substantially ramp up investment in/resourcing of capabilities for informed road safety partnership activities</b> with local Auckland partners-Local Boards, Council, Citizens, Tāmaki Makaurau partnership, plus other stakeholders and national partners: Waka Kotahi, NZ Police, MoT, Ministers, and national stakeholders to deliver improved safety policy and regulatory outcomes. The substantive policy and regulatory reform opportunities at national level require much of AT to resource a knowledgeable road safety policy and regulation capability in order to lobby effectively for beneficial change through interactions with national and regional partner organisations.</p>	<p>(i) Attend to the resourcing of this quite substantial workload on an ongoing planned basis. Major potential DSI reductions are available.</p> <p>(ii) P&amp;I and Safety to share the responsibility to identify required resourcing and deliver change.</p>

<p><b>6. Strengthen coordination for AT road safety policy development and awareness of policy development priorities</b> and progress at national level across AT, and improve information sharing re internal AT actions and about AT partnership representation efforts with all AT road safety contributors.</p>	<p>This preparedness to work to successfully enhance coordination of programmes within AT is critically important.</p>
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### 5.3 DELIVER CRITICAL OUTCOMES - FRESH INITIATIVES

Detailed recommendations to substantially improve deterrence of drink driving and speeding and support increased drug driving deterrence are outlined. Improved pedestrian and other vulnerable road user safety and accelerating the lower speed limits programme are further fresh initiatives.

Recommendation	Comment
<p><b>7. Substantially improve deterrence of drink driving</b> Obtain Central Government support to enable regional traffic police to improve the intensity and tactical conduct of drink driving enforcement to good international practice levels as scheduled in the current Waka Kotahi/NZ Police agreement and deliver at least 840,000 breath tests annually in order to reduce drink driving related fatality levels crashes from 30% of all road crash deaths in 2019 to some 14% in 2022 and beyond.</p>	<p>Work with NZ Road Policing Executive and establish regular discussions at Commissioner level including Waka Kotahi to urgently resolve this fatality reductions barrier.</p>
<p><b>8. Substantially improve deterrence of speeding</b> 8.1 To adequately deter low and high level speeding expand the covert mobile camera programme as planned (currently from some 1400 hours a month – i.e. 16,800 hours annually) to a level set out in Road to Zero of 100,000 hours for New Zealand, an assumed level of some 30% of 100,000 hours = 30,000 hours annually or 2500 hours a month for Auckland in 2021. 8.2 AT to continue to expand its fleet of fixed speed/red light camera installations at higher risk intersections across Auckland and continue to work with Waka Kotahi/NZ Police to encourage further moves towards good international practice operational intensity of mobile covert camera operation for Auckland of some 5000 hours a month in the medium term (3 to 4 years). 8.3 AT to request central government to introduce point-to-point speed camera systems in NZ to reduce non-compliance with speed limits, with early pilots in Auckland.</p>	<p>A policy to issue infringement notices to speeders travelling at 7% or more over the relevant speed limit, would optimise deterrence of illegal speeding and dramatically and substantially reduce Auckland fatalities annually.</p>

<p><b>9. Deliver improved pedestrian (and other VRU) safety across the arterial and other roads in the network – safer pedestrians</b></p> <p>Leadership is required by AT to improve the scope and extent of delivery of safety improvement programmes for vulnerable road users, especially pedestrians and cyclists. Early action to improve programme planning and delivery is needed alongside further concurrent policy work for the medium term.</p> <p>9.1 Introduce permanent 30km/hr speed limits on non-arterial roads/ streets in the vicinity of schools and for locations on arterial roads, utilise time based electronic signage to apply on all lengths and to operate around school access and departure times, where a permanent 30km/hr time based limit would not be considered advisable.</p> <p>9.2 Introduce permanent 30km/hr limits on non-arterial roads for Marae. For locations on arterial roads, utilise variable electronic signage on relevant road lengths, manually operated by agreement around active marae operation, where a permanent 30km/hr limit would not be considered advisable.</p> <p>9.3 Introduce a permanent 30km/hr limit with platforms and other infrastructure safety measures to assist speed compliance for busy pedestrian areas on arterial road lengths, including town/ village centres and bus stop locations.</p> <p>9.4 Develop measures to address the extent of hospital recorded injuries from slips, trips and falls unrelated to motor vehicles, but occurring on Auckland’s streets and footpaths.</p> <p>9.5 Obtain national endorsement of a prioritised funded safe walking programme for pedestrians which reflects arterial road crash risks and responds to pedestrian non- motorised injuries (not vehicle related) and which reflect the recommendations above and implement it.</p>	<p>These active travel modes are critical to Auckland’s safe and sustainable mobility agenda and in supporting Auckland to move to a lower carbon footprint for transport with more public transport options and less need to use private vehicles.</p> <p>Slips, trips, falls injuries are well in excess of motor vehicle involved injury.</p> <p>See outputs of Abley study and of ViaStrada VRU study.</p>
<p><b>10. Deliver improved pedestrian (and other VRU) safety across the arterial and other roads in the network – safer cycling</b></p> <p>In recognising that cycling is higher risk where vehicle speeds are higher, review speed limits to seek a 30km/hr limit for on-road cycle path lengths (with paint only markings or no markings) on urban arterial roads. Where this is difficult to achieve, off-road cycle paths or another safe alternative solution involving at least some physical separation barrier between cyclists and higher speed motor vehicles need to be developed and provided.</p>	

<p><b>11. Lower travel speeds across higher risk sections of the Auckland network.</b> Accelerate the lower speed limits programme for Auckland on the basis of risk to capture the very substantial further DSI reduction benefits available. Stronger, bolder and more ambitious direction from the Board/ ELT on speed limits should include:</p> <p>11.1 Introducing 30km/hr limits for all residential streets as soon as possible.</p> <p>11.2 Beyond and in addition to the detailed risk assessment approach, review with Waka Kotahi the current speed limits on the network in order to reduce likely fatal outcomes from head on, intersection, run off-road and pedestrian crashes as quickly as possible.</p> <p>11.3 Seek acceptable change in the current national by-law process which is considered unnecessarily cumbersome and mitigates against sensible ready change. The development of a streamlined process is underway at national level. Accelerate the overall lower speed limits review programme on the basis of risk for Auckland, assuming the revised and reportedly simpler speed limit setting process is adopted by government later in 2021. If it is not a simplification permitting <u>a two to three year full Auckland implementation</u>, then an approach to Ministers seeking removal of barriers to policy level change to treat Auckland in total with appropriate difference to enable an early review and speed limit changes would be necessary.</p>	<p>The draft new bylaw approach has now been published (late April 2021) and it is presently being assessed by AT. AT to seek a three-year maximum programme window for review/ adjustment of all Auckland roads and streets limits.</p> <p>Recommended speed limits for rural non-arterial roads are 40km/hr for poor quality surfaces and curving alignments and 60km/hr for other roads.</p>
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#### 5.4 PURSUE REGULATORY AND POLICY REFORM NATIONALLY

Pursuing significant regulatory reform and policy reform at national level is recommended covering road safety fines, penalties, vehicle standards, treatment programmes and use of funds.

Recommendation	Comment
<p><b>12. Pursue significant road safety regulatory reform at national level</b></p> <p>12.1 Seek to participate in regulatory reform team at national level.</p> <p>12.2 Seek higher fines for speeding especially fines for low-level speeding (10km/hr above the limit) and stronger license sanctions for speeding say 25km/hr over the limit and a review of the demerit point system structuring and authorising of the allocation of demerit points for all speed camera detected offences.</p> <p>12.3 Seek increased fines and demerit points for commercial vehicle drivers – including 50% higher speed penalties for heavy vehicle drivers than for the drivers of light vehicles and review drink driving penalties to more accurately reflect risk.</p>	
<p><b>13. Advocate for and advise on policy reform at national level</b></p> <p>13.1 AT should seek the opportunity to meet with the National Road Safety Committee (NRSC) twice each year to advocate the case for reform. Sensible good international practice measures are not being implemented and many NZ lives annually are being unnecessarily lost. Seek a high-level meeting twice a year between AT and NRSC to share information at high level, provide comment on policy priorities and to build partnership.</p>	<p>Partners include national department/ agencies and relevant Ministers. Seek early action to implement the policy/regulatory proposals.</p> <p><u>Policy reform priorities to be sought by AT</u></p>

<p>13.2 AT to provide resource and commitment to prepare adequately for this opportunity which should be embraced for the potential benefits it offers.</p> <p>13.3 AT to ensure a road safety regulatory and policies <u>priority listing</u> is adopted by Tāmaki Makaurau (TM), AT and Auckland Council and is communicated to the Auckland Community and the NRSC members.</p> <p>13.4 Train/brief/coach Board members, ELT members, Councillors, senior staff and TM representatives on the substantive cases to be made and encourage their advocacy of the benefits of adoption of these policies to the Auckland Community and the NRSC members.</p> <p>13.5 AT Policy and Regulatory Lead to also meet regularly with MoT on an advisory basis to progress AT Road safety policy agenda.</p> <p>See <u>Policy reform priorities</u> to be sought by AT - at this stage - as listed in adjacent commentary column. See also Priority 2 Recommendations at end of this Priority 1 Recommendations section.</p>	<ul style="list-style-type: none"> <li>• Improved vehicle safety performance standards for new and used vehicles entering NZ.</li> <li>• Introduction of a zero BAC limit for commercial drivers and for all repeat drink driving offenders</li> <li>• Removal of capacity for courts to award a work-related licence for a drink driving offender.</li> <li>• Extending the requirement for alcohol interlock conditions to more drink driving offenders. Review the current arrangements to improve take-up of mandated interlock requirements, which is understood to be running at less than 30% of court awarded interlock requirements.</li> <li>• Strengthening of the graduated licensing system for novice drivers through the review of GLS (which it is understood is currently in progress by MoT).</li> <li>• MoT to examine forming a road safety fund from the net increase in camera fine receipts. This was requested in AT’s submission to MoT as part of the R2Z development as “<i>Safety camera income to be used as a fund for regional road safety.</i>”</li> </ul>
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### 5.5 DELIVER CRITICAL OUTCOMES – STRENGTHEN EXISTING PROGRAMMES

Opportunities to deliver critical outcomes through strengthening existing programmes including bus operations, safety in maintenance and renewals, safe fleet practices, building awareness of harm from low level speeding, safety benefits and traffic signal operations are covered.

Recommendation	Comments
<p><b>14 Review Metro bus operations to proactively improve safety performance</b> (i.e. reporting on crashes, number of speeding and red light running infringements incurred each month by AT bus drivers).</p> <p>14.1 Upgrade the safety of existing pedestrian access facilities to bus stops to lessen DSI risk, noting the Viastrada finding that 10% of pedestrian injuries occur near bus stops.</p> <p>14.2 Drive change to safer operation of buses including for those cyclists and motorcyclists using bus lanes.</p> <p>14.3 Ensure bus drivers are not impaired and observe speed limits and red lights. AT to progressively introduce contract deduction provisions in contract renewals for speeding and red light offences.</p>	<p>Make Metro bus operations a part of the safety solution rather than letting it become a part of the problem.</p> <p>Require selected random breath testing (for alcohol) and random saliva testing (for selected drugs) results of drivers in the bus fleets by operators and reporting of any impairing</p>

	<p>noncompliance with zero blood alcohol content (BAC)<sup>9</sup> or presence of impairing drugs in accordance with required approaches to testing intensity and frequency prepared by AT as an operating specification within contracts.</p>
<p><b>15 Expand modelling of safe driving and vehicle practices to all AT and Auckland Council activity and propose adoption to all government authorities and businesses in Auckland,</b> encouraging emulation of the approved practices.</p> <p>15.1 Require all contractors/ suppliers providing transport related services to AT and Auckland Council, including public bus transport services, to apply Safe System principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and include a summary of their efforts in AT's reporting of safety performance in annual reports.</p> <p>15.2 Encourage all these suppliers of transport services to AT (and all similar transport service provider organisations in Auckland) to apply Safe System principles to their entire value chain providing services to organisations other than AT, again including internal practices throughout their procurement, production and distribution process, and to include details in their annual reporting.</p>	<p>Produce guidance materials and conduct an event to launch this encouragement initiative for organisations in Auckland in mid 2022</p>
<p><b>16 Expand safer urban infrastructure treatment programmes in association with safer speed limits introductions to continue to lower DSI</b></p> <p>16.1 Include increased low-cost infrastructure safety provision within maintenance and renewals programme. Build business case development expertise here and across all road safety activity areas to strengthen the likelihood of identifying further funding opportunities for higher return investments.</p> <p>16.2 Carry out AT wide discussions to build safety into the streets and roads maintenance programme activity.</p> <p>16.3 Press for increased urban road safety treatments in the Safer Network Programme (Waka Kotahi's Road to Zero programme) which is heavily focused on rural improvements.</p>	
<p><b>17 Upgrade project management arrangements for the AT road safety capex programme</b> (additional to the Safe Speeds [speed management] programme). Appoint a project manager position within Integrated Networks, liaising with Service Delivery and Safety, to address timely delivery, ensure good alignment of delivered projects with programme objectives, uplift recognition of the capex programme as a substantial road safety activity rather than a collection of projects, increase the transparency of the programme to all internal and external stakeholders and enable an increased common understanding to be developed of the roles and responsibilities of all involved in the governance and delivery of the programme.</p>	<p>Meeting these process and resource challenges will assist programme delivery and support awareness that Vision Zero adoption requires significant change in awareness of the key role to be played by safety programmes.</p>

<sup>9</sup> A BAC of 0.10% is equivalent to 0.10 g of alcohol for every 100 ml of blood.  
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Recommendation	Comments
<p><b>18 Ensure Health and Safety responsibilities cover transport network operating risks.</b></p> <p>As a Person Conducting a Business or Undertaking (PCBU) and with a primary duty of care responsibilities, AT's intention to develop a Safety Strategy in 2021 that covers risks that have traditionally been categorised as either health &amp; safety or transport safety risks, based on a range of advice, is supported as necessary and important. Risks upon which advice should be obtained would include:</p> <p>18.1 Any risks to other persons (e.g. the public) that arise from the work of AT's business or undertaking - to eliminate or minimise risks that arise from its transport work such as the provision of a road transport network.</p> <p>18.2 AT's responsibility for customers (as part of a shared responsibility with the bus companies) for the first and last leg of their bus related journey which may involve active travel to and from bus stops and PT stations.</p> <p>18.3 Heavy vehicles and commercial vehicles are places of work and are subject to the Health and Safety at Work Act (HSWA) as identified in Road to Zero as a key focus area. There is a further opportunity to apply the provisions of the HSWA to improve safety requirements for vehicles which are a place of work, (e.g. side under protection for heavy vehicles and speed control).</p> <p>The AT safety strategy should consider covering contractors and sub-contractors who work for AT. As a major client, there is the opportunity to require safe technology in the vehicle fleet of organisations seeking to work for AT. AT's health and safety pre-qualification requirements for suppliers is another tool which can be used to further improve safety outcomes. This specific issue receives some (limited driving and vehicle safety) attention in Recommendation 15. Risks to be assessed and responded to include:</p> <p>18.4 Managing risks related to construction on the road network, including temporary traffic management related risks.</p> <p>18.5 Long term/chronic harm (air pollution, diseases of inactivity, mental health, climate change, environment) as well as acute harm (death from a crash) that may arise as a result of AT activities. As part of the development of a safety strategy for AT and identifying its span of responsibilities as a PCBU, AT should seek to any identify longer term/chronic harm that may arise from its transport work.</p>	

## PRIORITY 2 RECOMMENDATIONS

To avoid overloading the Report with too many recommendations of equal weight which could impair focused consideration, a series of Priority 2 recommendations have been identified. The following Priority 2 recommendations are lower priority for immediate action compared to the Priority 1 recommendations listed above.

- 19 Promote awareness of the harms (increased DSI) associated with widespread low level speeding.
- 20 Review traffic signal phasing and use guidelines.  
Review traffic signal phasing and use guidelines to improve the safety of road users, especially pedestrians, but including motorcyclists, cyclists and vehicle occupants
- 21 Substantially improve deterrence of seat belt non-wearing.  
There is substantial scope for seat belt wearing rates improvement through targeted enforcement which would lower fatalities.
- 22 Trial camera based detection of mobile phone use in a pilot area.  
Suggested area would be part of Auckland to deter these illegal behaviours.
- 23 Support the increased deterrence of drug driving from 2022.
- 24 Ensure that TM develop and arrange delivery of training programmes for all TM partners on evidence-based intervention development and implementation good practice.
- 25 Motorcycling safety: Ensure an ongoing focused programme for motorcycle safety with evaluation of learning and a practically focused R and D programme is in place.
- 26 Upskilling relevant AT contractors in SSAF and Vision Zero, as a part of AT's client responsibilities, needs attention.
- 27 AT should seek to be the leader in cascading information to the rest of the various industries in which it operates. Project managers and engineers have reportedly found these demands to be substantial and have suggested some support for their own upskilling and to improve their effectiveness in this area would assist.
- 28 Encourage separation of drinking and driving through campaigns and corporate policies supported by national government agencies.
- 29 Note that Policy changes such as the speeding up of EV transition are likely to bring road safety benefits, as an increased number of these vehicles on our roads would have a higher safety (ANCAP) rating; In the case of a crash the likelihood of DSI would reduce.
- 30 Encourage NRSC to explore with DoH case management approaches successfully applied in international jurisdictions for those drivers displaying addictive behaviours with alcohol and continuing to drive, with a view to introducing a pilot project.
- 31 Work with ACC to develop and operate specific case management treatment programmes for repeat alcohol offenders and for certain drug offenders.

## TOP 10 RECOMMENDATIONS (BY HIGHEST IMPORTANCE AND URGENCY)

The highest priority individual recommendations in terms of importance and urgency, in order are:

Order of priority	Recommendation summary	Recommendation Number in Chapter4
1.	Substantially improve deterrence of drink driving	7.
2.	Substantially improve deterrence of speeding	8.
3.	Pursue significant road safety regulatory reform at national level	12.
4.	Deliver improved pedestrian (and other VRU) safety across the arterial and other roads in the network	9.
5.	Advocate for and advise on policy reform at national level	13.
6.	Lower travel speeds across higher risk sections of the Auckland network	11.
7.	Expand safer urban infrastructure treatment programmes in association with safer speed limits introductions to continue to lower DSI	16.
8.	AT to substantially ramp up investment in/resourcing of capabilities for informed road safety partnership activities with local Auckland partners, plus other stakeholders and national partners	5.
9.	With Board and CE leadership, AT to continue to work to genuinely embed the Vision Zero and Safe System principles in all they do to achieve a 65% reduction in fatalities by 2030 and zero fatalities by 2050 for their community	1.
10.	Ensure Health and Safety responsibilities cover transport network operating risks	18.

Subsequent Priority 1 Recommendations are listed in priority order of importance and urgency in Appendix 16. These constitute the balance of Priority 1 recommendations.

## 6.0 KEY AREAS OF FOCUS

In considering key focus areas, the experience of well-performing jurisdictions is most relevant.

- NZ experienced a fatality rate in 2020 of 6.08 per 100,000 population.
- Norway experienced a fatality rate of 2.0 in 2019, and the fatality rate in Victoria in 2020 was 3.25.

### Comparative case study – Norway

*In 2018, Norway recorded 108 road fatalities – an increase of two fatalities on the figure recorded in 2017. With a mortality rate of 2.0 per 100 000 persons, Norway is the best performing country amongst IRTAD members for this indicator.*

Traffic crashes represent a significant cost for Norwegian society<sup>10</sup>, estimated in 2016 at around EUR 1.65 billion (excluding property damage costs), representing 0.5% of GDP. Costs are calculated on a willingness-to-pay approach.

The behaviour of road users is an important determinant of a country's road safety performance. In 2017, **excessive and inappropriate speed** was one of the main causes of road crashes.

The legal maximum blood alcohol content (BAC) is 0.2 g/l. The number of drivers impaired due to **alcohol** seems to be fairly stable or slightly reduced. In 2018, 15% of fatal crashes were due to the use of alcohol, whereas 19% were due to drugs or the combination of alcohol and drugs.

In Norway, the law stipulates that **mobile phones** must be correctly attached to the instrument panel in the vehicle, as close as possible to the driver. Hands-free devices can be used. In 2018, 12 fatal crashes listed distraction as a contributing factor, two fewer than in 2017. Two of the fatal crashes were due to the use of mobile phones.

In-depth studies show that **fatigue and sleepiness** were the cause of 13% of all fatal crashes in Norway in 2018. Some of these crashes are also associated with illness or the consumption of alcohol or drugs. An analysis of crashes in 2018 estimates that 33% of car occupants killed were not wearing a seat belt or did not wear the belts properly.

There are several **factors of influence on Norway's road safety performance** as captured by the above indicators. In 2014, the Norwegian Institute of Transport Research investigated what could explain the decline in number of traffic fatalities and serious injuries between 2000 and 2012 (Hoye et al., 2014). The decline observed during this period was larger than in any other period of the same duration since 1970. The study indicated that the two most important contributing factors were increasing market penetration of various safety features on cars and the tendency, seen most clearly after 2006, for the mean speed of

<sup>10</sup> Road Safety Annual Report 2019, IRTAD Road Safety Data, Norway, ITF/OECD

traffic to go down. Other factors that have contributed include a change in the age distribution of riders of large motorcycles (mean age has increased), a decline in the number of young drivers involved in crashes, a decline in the number of crashes involving young moped riders, the construction of motorways and other roads with median barriers and the increased use of speed cameras.

More recently since 2012, the continued decrease in mean speed contributes to the sustained decline in the number of road deaths.

## PRIORITY 1

### *LEAD AT TO MEET FUTURE ROAD SAFETY RELATED CHALLENGES*

#### 6.1. CONTINUE TO BUILD AT'S CURRENT AND FUTURE ROAD SAFETY RESPONSE

The Stockholm Declaration of February 2020, from the 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals, contains many seminal road safety directions which should receive attention by UN member States for the next decade of action 2021 to 2030. Relevant excerpts from the Declaration have been selected and are provided for key recommendation areas.

2. *Reaffirm* our commitment to the full implementation of the 2030 Agenda, recognizing the synergies between the SDG policy areas, as well as the need to work in an integrated manner for mutual benefits;

3. *Call* upon Member States to contribute to reducing road traffic deaths by at least 50% from 2020 to 2030 in line with the United Nations High-Level Political Forum on Sustainable Development's pledge to continue action on the road safety related SDG targets, including 3.6 after 2020, and to set targets to reduce fatalities and serious injuries, in line with this commitment, for all groups of road users and especially vulnerable road users such as pedestrians, cyclists and motorcyclists and users of public transport;

7. *Ensure* political commitment and responsibility at the highest level and establish regional, national and sub-national strategies and action plans for road safety and contributions from different governmental agencies as well as multi-sectoral partnerships to deliver the scale of efforts required at regional, national and sub-national levels to achieve SDG targets, and that these strategies and efforts are transparent and public;

*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals: See Appendix 8*

Fully embracing **Safe System** and working to genuinely embed the Vision Zero approach in all the transport-related activity that AT provide for their community for the immediate future and the long-term to ensure a reduction of 65% in fatalities is achieved by 2030, and zero fatalities are achieved for their community by 2050, need to remain a priority for the organisation.

The frameworks now established within AT to support further development and application of a Safe System approach are commendable, representing a creditable improvement in understanding and application since 2017.

However, broader and deeper understanding of what a Safe System/Vision Zero goal requires in modifying a number of elements in AT operations, acting to achieve these changes and accepting

nominated accountability, individually and organisationally for crucial programme (and component) outcomes, are necessary enablers for AT.

Leadership and persistence by the AT Board, Chief Executive and ELT, based on evidence-based strategic guidance, and building upon what AT has achieved to date, is critical in delivering this Vision Zero objective.

There is much yet to be done to inform the Auckland Community about what Vision Zero means - that it is a fundamentally different way of approaching crash risk on the network. Vision Zero is a recasting of the approach to road crash reduction. The continued journey to zero fatalities requires recognition that road users make mistakes and there is an essential need to provide a forgiving road environment to reduce DSI when those errors occur. It also recognises that many past decisions about operating conditions for the transport system which we have traditionally accepted, have involved safety being squeezed out or traded off.

Vision Zero challenges us to review and adjust these operating conditions over time and this is a demanding set of tasks, requiring conversations and innovation to find acceptable ways to find safer options. Tools and treatments exist to provide that forgiving environment but we all need to create awareness of the new safety reality and shift our thinking to deliver safe outcomes.

Internal and external Vision Zero narratives and communications approaches have been developed. Vision Zero principles and language are being used across all communications and marketing. Advocacy to the Auckland community is critically important and AT, Auckland Council, Regional Traffic Police, and other partners need to continue an ongoing coordinated and planned programme to maximise earlier understanding

*COMMENT: Common approach is to integrate safety across everything we do, but then it becomes second nature and there is an assumption that it is integrated. We need to make sure it really is integrated. If we look at Finance as an example, it is also integrated into all aspects of the organisation but we still have a finance committee because it is an essential part of the business. We need a safety committee so safety doesn't get lost.*

Support for ensuring the Safe System/Vision Zero approach continues to be fully embraced throughout AT (noting the commendable frameworks already in place) will be essential.

AT has experienced a substantial turnover of Board members and key senior and middle-level staff since the 2017 BIR. The impact of loss of knowledge through substantial and regular changes of personnel in AT, as well as in other agencies at national and regional level, can be a brake on promoting and achieving ongoing progress. Continuing to maintain a Safe System based approach to outcomes, and to promote this to all road safety partners and the Auckland community, remains a substantial undertaking reliant on capability and commitment. New refreshed specific communication programmes, for example, will be required. These are not trivial undertakings and need to be recognised as a resourcing challenge. A series of positions in AT, not just the Safety Team but other departments, also needs to be encouraged to be involved in these safety related activities. AT should actively find ways to prevent this turnover of individuals becoming a major barrier to the momentum of change achieved.

A re-established AT Board Safety Committee is an excellent AT Board response to the challenges ahead and their need to be informed, aware, and active in advocacy and support of the expanding and deepening safety and safety related agendas.

Other necessary initiatives would include:

- Expanding the Vision Zero learning strategy to support the refreshed AT safety change journey and achieve business plan safety objectives.
- Responding to the relatively high turnover of key people. The reasons for this are not clear to the reviewer but the turnover is noticeable. It may impact upon AT's capacities to deliver intended change.
- Developing a safety strategic guide to assure safety in project life cycle processes.
- Inclusion of Vision Zero guidance and impacts in the Roads and Streets Framework and in the Urban Roads and Streets Design Guide.
- Building capability and increasing training on the application of SSAF and the Vision Zero approach.
- Upskilling many of AT's contractors in SSAF and Vision Zero, as a part of AT's client responsibilities. AT should seek to be the leader in cascading information to the rest of the various industries in which it operates. Project managers and engineers have reportedly found these demands to be substantial and have suggested some support for their upskilling and improved effectiveness in this area would assist.
- Actively extending the knowledge transfer task to all AT people who can influence road safety outcomes remains challenging, but is likely to be highly effective. Many competent people have moved on from responsibilities in the road safety and related space. Fresh people need to be encouraged and supported to learn the fundamentals, and overall organisational, partnership and community awareness refreshed.

*COMMENT: There should be a long-term focus rather than always focusing on the latest worry. That is why prioritisation is important, so we all have a clear understanding on what needs to be done.*

- Strengthening road safety management functions within AT.
  - Strengthening portfolio governance through the Transport Safety Investment Portfolio Steering Group (IPSG).
  - Better informing the P&I function in assembling the Regional Land Transport Plan (RLTP) and safety component of the Programme Business Case (PBC), about the full available benefits (in safety, sustainable mobility and amenity) of potential road safety focused projects/programmes and the importance of reflecting the Vision Zero principles around energy management of vehicle movement, in all AT projects, not just explicit safety projects. This requires developed understanding of the Safe System/Vision Zero principles by those working at strategic project development levels, especially within P&I.
  - Building capability to deliver Vision Zero: Many Vision Zero approaches are not yet reflected in day-to-day activity. For example, the safety of road users (especially pedestrians and cyclists) should be confirmed as the control on traffic signal phasing rather than the control being built around a mobility focus. Gaps remain between Vision Zero theory and practical application in operations as in strategic project development. It is

essential to focus on not acting in a way that inadvertently increases DSI across the network while pursuing measures to reduce DSI.

- Recognising risks flowing from the loss of knowledge through substantial turnover of active effective AT people and board members. Develop organisational knowledge resilience plans to cope with this ongoing change.

*COMMENT: AT not harnessing the opportunity for wider messaging. Messaging is focused to the media and to people already part of the safety conversation. AT should do more of the hearts and minds conversations to connect with people who are the everyday user.*

*COMMENT: There is a lot of talk about DSI but when the team did an exercise with the end user and what they felt was unsafe, they didn't relate it to crash statistics. Funding is centred around DSI numbers but doesn't pick up near misses, especially around schools.*

Contributors to the Safety PBC (and components of the RLTP) need to provide support to the AT P&I function in assembling the RLTP and Safety PBC, to include the full available benefits (in safety, sustainable mobility and amenity) of potential road safety focused projects/programmes in order to ensure the most beneficial safety projects are funded.

Safety programme developers are therefore to be encouraged to integrate their activities more closely with P&I to ensure the full benefits of the safety programme are included in P&I's project evaluation/prioritisation in the RLTP and annual business planning processes.

- Concerns were expressed that the full potential benefits of some possible elements of the safety programme were not being brought to account in the assessment of benefits of programmes, and that these potential programme elements were then not proceeding. This needs to be addressed by the EGM Safety with the P&I Directorate and the matter resolved.
- There was also concern that decisions about the infrastructure safety budget and priorities needs to be capable of broader inputs/discussion.

Road Safety Programme Business Case preferred programme 2018-2028	Component	Preferred investment** (21/22-27/28)	Output
<p><b>Estimated to reduce annual deaths and serious injuries on Auckland's roads by 63%, preventing more than 1,760 deaths and serious injuries over 10 years.</b></p>	Speed management	\$193M	1,900 km
	High risk intersections	\$120M	60 intersections
	High risk corridors	\$68M	Transforms 34 km
	Vulnerable road user and TDM	\$35M	Targeted pedestrian, cyclist and motorcyclist infrastructure
	Enforcement	\$45M	Additional road policing and safety cameras
	Education	\$22M	Additional co-ordinated education and awareness campaigns
	Policy	\$8.5M	Co-ordinated policy and regulatory interventions with partners
	Other supporting costs	\$113M	Includes land acquisition, design/engineering fees, monitoring, maintenance

For an outline of the AT Road Safety Programme Development context see Appendix 13.

## 6.2 ADOPT SUSTAINABLE MOBILITY AND MOVEMENT AND PLACE THINKING

### Understanding and continuing to adopt the objectives of Sustainable Mobility and Movement and Place thinking within AT's policy development and programme implementation activities

*Address* the connections between road safety, mental and physical health, development, education, equity, gender equality, sustainable cities, environment and climate change, as well as the social determinants of safety and the interdependence between the different SDGs, recalling that the SDGs and targets are integrated and indivisible.

*Include* road safety and a safe system approach as an integral element of land use, street design, transport system planning and governance, especially for vulnerable road users and in urban areas, by strengthening institutional capacity with regard to road safety laws and law enforcement, vehicle safety, infrastructure improvements, public transport, post-crash care, and data;

*Speed up* the shift toward safer, cleaner, more energy efficient and affordable modes of transport and promote higher levels of physical activity such as walking and cycling as well as integrating these modes with the use of public transport to achieve sustainability;

*(Part)* noting that efforts to reduce speed in general will have a beneficial impact on air quality and climate change as well as being vital to reduce road traffic deaths and injuries;

*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals: See Appendix 8*

The Sustainable Mobility change agenda and the Movement and Place approach are contemporary internationally accepted challenges for a road safety authority to address. AT is addressing the four objectives of safety, universal access, efficiency and green mobility within its road safety programmes and broader transport agenda and is giving powerful effect to movement and place with its infrastructure safety and speed limits review processes. It will require ELT to continue to embrace and promote these two policy development concepts within its programme implementation activities, including AT's active travel agenda, within AT, with Local Boards, Auckland Council and the Auckland community, as well as with Waka Kotahi and MoT.

*COMMENT: How can safety remain of importance? Climate change is the issue getting public attention. Concern that AT clings on to disasters and works in crisis mode. Something will come up and it will funnel resources to the new issue. Sustainable mobility, where improved access, safety, green mobility, plus amenity and health outcomes are all objectives are important. Look at the issue holistically and ensure road safety fits within these lenses.*

AT has major challenges that it will continue to face as it grapples with defining future transport investment and operating programmes which will produce sustainable (efficient, universally accessible, safe, and green) mobility for all Aucklanders. Ensuring the concepts of sustainable mobility and movement and place approaches as they relate to transport operations and abutting land use activities are widely understood within AT and are discussed broadly with local boards and Auckland Council in policy development and programme implementation activities needs to be an AT priority.

### The Connection between a Safe System and Sustainable Mobility and Health<sup>11</sup>

A well-designed Safe System can yield benefits beyond saving lives from traffic crashes. It can help address other issues common to cities all over the world, reducing carbon dioxide emissions and positively affecting air quality, physical activity, and quality of life. A Safe System approach to land use can affect trip length and mode; good road design and infrastructure generate safe motorised vehicle speeds and provide for walking, cycling, and mass public transport. Reducing vehicle travel and speeds to improve safety also reduces other negative externalities generated by unconstrained use of private motor vehicles.

Safety and the environment converge when it comes to land use. Cities in the United States with higher urban densities and street connectivity have some of the lowest fatality rates per capita. Compact New York City is one of the safest cities in the country in terms of traffic collisions; sprawling Orlando is on the opposite end of the spectrum (Ewing et al. 2008). Implementing safer, more compact patterns elsewhere in the United States could prevent the release of 79 million metric tons of carbon dioxide a year by 2030 (Ewing et al. 2008).

Efforts to reduce carbon emissions from transport also create a safer environment, particularly for cyclists and pedestrians (Lefevre et al. 2016).

Reducing the Vehicle-Kilometres of Travel (VKT) as recommended by the International Energy Agency as part of a move from a 4° global climate change scenario to a 2° scenario would also reduce traffic deaths by an estimated 200,000 a year (Hidalgo and Duduta 2014) (Figure 2.3). In London, congestion charging to reduce vehicles and emissions in the city centre resulted in a 31% reduction in traffic crashes and a 16% drop in carbon dioxide equivalent emissions between 2003 and 2006 (Lefevre et al. 2016). Within a year of the implementation of a bus rapid transit system in Ahmadabad, India, greenhouse gases along the corridors were reduced by 35%; by the second-year fatalities related to traffic crashes were reduced by 66%(Lefevre et al. 2016).

Reduced speeds in urban areas can also reduce emissions. Road designs that limit speed and allow for smoother driving, without the need to intensely accelerate and decelerate, can reduce carbon dioxide emissions by about 30% (Hyden and Varhelyi 2000, Billingsley 2014). Replacing signalized intersections with roundabouts in Sweden resulted in a net decrease of fuel consumption and emissions and reduced collision risk by 40% (Hyden and Varhelyi 2000).

Reductions in travel speed not only save lives, they can also deliver economic returns and reduce greenhouse gas emissions, fossil fuel use, and the harmful effects of noise pollution (Sakashita and Job 2016).

Shifts to more cycling—which safe conditions can foster—could lower transport carbon dioxide emissions by 10% by 2050 worldwide (Mason et al. 2015). Moving toward a road system based on clean energy public transport and nonmotorized modes could reduce public transport emissions by 40% by 2050 (Replogle and Fulton 2014).

The benefits of reducing VKT and improving public transport and vehicle standards through a Safe System approach also extend to other serious global health issues, such as air pollution and physical inactivity.

<sup>11</sup> SUSTAINABLE & SAFE, A Vision and Guidance for Zero Road Deaths, World Resources Institute, GRSF and Embarq 2018  
Whiting Moyné 2021

Demonstrating empathetic consultation as far as is possible before turning to decision mode, and deriving outcomes which reflect all inputs and policy positions, will be critical to future community acceptance of the choices AT finally makes on projects and programmes on behalf of its community.

The SUM4All<sup>12</sup> approach adopted by the World Bank is a recommended model to be further pursued by AT in continuing to build comprehensive business cases involving safety and in developing further transport related policy across the organisation. SUM4ALL seeks universal access to mobility for all, efficiency in the transport of goods and people, safety (no loss of life or serious injuries) in the use of the transport networks and green mobility solutions to support achievement of climate change mitigation, reduced transport emissions options and overall noise pollution reductions. AT is progressively pursuing these objectives within its service planning and delivery.

Investment programmes should reflect AT's commitment to these four sustainable mobility elements as well as movement and place principles which support healthier outcomes for the community from walking and cycling and provide the benefits of improved amenity from safer spaces, with readily accessible transport.

The greater the awareness of councillors and Council with current performance and trends and with barriers facing AT in achieving sustainable, safe mobility improvements, the better prepared they will be to support greater community messaging to build awareness, and to seek to ensure central government is aware of available opportunities that may not to this point have received adequate investment.

*COMMENT: Need to form better channels to engage councillors and local boards. Internally, we have stepped up reporting to the AT Board, and this needs to be done more extensively for councillors. To do this, we need to build our internal capabilities to have better conversations. This needs to become a bread and butter activity for our people.*

### 6.3 DEVELOP A MEANINGFUL INTERMEDIATE ROAD SAFETY INDICATORS PROGRAMME

17. *Emphasize* the importance of monitoring and reporting progress towards the achievement of our common goals and, as appropriate, the Voluntary Global Road Safety Performance Targets agreed by Member States, and call upon the World Health Organization to continue to collect, publish and disseminate data through the series of Global Status Reports on Road Safety, leveraging as appropriate existing efforts ....

*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals: See Appendix 8*

Establishing a small but vital real data monitoring programme (including key police data) for certain intermediate outcome indicators, supporting their active measurement and reporting to ELT and the AT Board to inform awareness of road safety performance well before annual fatality numbers are known, would enable early corrective action to be taken. Monitor and report on these indicators. Prepare as a priority an action plan for internal use by the road safety partners detailing agreed targeted outputs related to:

<sup>12</sup> [sum4all\\_overviewfromwords2action\\_020821\\_web.pdf](#) WORLD BANK, 2019

- Speed – The number of monthly covert mobile camera hours to be deployed and actual hours achieved
- Percentage of non-compliant vehicles (offenders travelling above enforced limit) passing cameras
- Mobile covert speed camera infringements issued each month
- Police issued speed infringements issued each month
- Mean speeds two monthly at 50 sites across network
- Percentage annual Random Breath Testing (RBT) target achieved by month
- Alcohol - The number of monthly general deterrence PBTs (by booze bus and mobile car operations) and monthly specific deterrence PBT's by mobile car operations to be deployed in high alcohol hours, and actual numbers achieved with numbers/rates of offences to total tests by high alcohol hours
- Cumulative percentage of annual safe infrastructure programme delivered monthly
- Cumulative percentage of annual (and number of) speed management location treatments implemented each month
- Seat belt wearing rates reported from Police enforcement/ surveys each 6 months
- Percentage of YTD pedestrian fatalities compared to previous YTD, (also cyclist fatalities and motorcycle fatalities)
- Number of alcohol involved fatalities year to date compared to the previous year
- Number of regulatory reform committee meetings attended in Wellington to seek
  - penalties increases for speeding and red light running; and
  - adoption of a demerit point regime and structure for mobile covert and fixed speed and red light camera offences; beginning with a process to agree and adopt a TM position and negotiating changes with MoT
- Number of policy reform meetings with MoT attended in Wellington to secure agreed priorities
- AT, Regional Police, Regional Waka Kotahi to all prepare an internal action plan to support their TM regional vision zero strategy and report monthly to SLT, quarterly to ELT, the AT Board and Auckland Council.

*Appendix 12 Note:* Intermediate road safety indicators adopted by the Norwegian Government in their 2019-2021 National Road Safety Action Plan are listed for the period 2019-2021. The nature, range and precision of matters being measured and reported as a basis for action indicates what a leading jurisdiction is doing to demonstrate its commitment to improving road safety performance and reducing fatality and serious injury risks for its road users.

(See Recommendation 3. Operate an annual results conference to include partners (Waka Kotahi, MoT, NZ Police, Auckland Health and ACC) where the status of road safety development over the last year is to be presented and discussed. Issue a Report to the community showing the status of intermediate indicator targets and progress towards interim targets).

#### MONITOR AUCKLAND'S COMPARATIVE ROAD SAFETY PERFORMANCE WITH OTHER CITIES INTERNATIONALLY

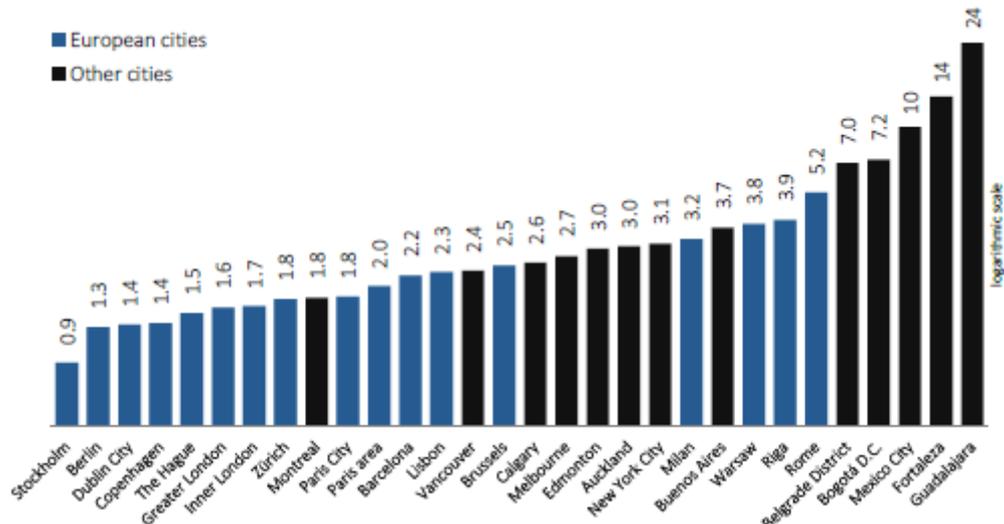
Knowing how Auckland is performing in road safety terms compared to other cities (Melbourne has been nominated as a comparison city focus in 2018) and good road safety performance is a means to

sharpen awareness and inform ELT about where Auckland’s performance is sitting and what the gap is to best practice. This will in turn drive demand for interventions to improve further.

Fatality rates per population comparisons for Auckland and other cities from 2011 to 2015

Reference: Safer City Streets: Global Benchmarking For Urban Road Safety © OECD/ITF 2018

Figure 7. Fatalities per 100,000 resident population, 2011 - 2015



Fatality rates per 100,000 population in 2020 were 2.15 for Auckland and 1.65 for Melbourne. (Priority 2 Recommendation)

### 6.4 DEVELOP AND DEPLOY 360° ADVOCACY

**Develop and deploy 360° advocacy to progress the rollout of measures for delivering on Vision Zero through progressively providing a Safe System, based on enhanced understanding by partners, other stakeholders and the community.**

It is time now to take Safe System/Vision Zero to a much broader level of public awareness and move towards greater community understanding of what it requires – certainly in terms of shifts in long accepted thinking, to support the necessary change in outcomes to be delivered.

Advocacy to the Auckland community is critically important and AT, Auckland Council, Regional Traffic Police, and other partners need a coordinated planned programme to maximise earlier understanding.

While a number of AT recommendations to the national level were not included in the Road to Zero Strategy, it should be noted that submissions to a nationwide consultation process for a new strategy are rarely sufficient advocacy to win substantive change. This is especially the case when an organisation making submissions is effectively commencing its own road safety journey in earnest, is still establishing its stance on many road safety related issues and is developing necessary staffing resources and knowledge.

AT advocacy needs to become more robust and multi-layered at the national level and MoT need to be engaged in discussions to advise AT why certain issues have not been addressed at this stage, and what can be done to close this disconnect in future action plans.

More intensive one-to-one discussions with an outcome focus are usually required over time to support issues advocacy. It will be important for future successful road safety outcomes sought by AT that all

advocacy and advisory activity directed to the national level seeking changes to the current national strategy, and/or inclusion in the next strategy, are thoughtfully assembled now in order to improve the likelihood of adoption and the delivery of greater road safety benefits.

Developing partnerships through obtaining a seat at the table with national decision-making, for the opportunity to provide high-level input through a regular exchange of ideas is crucial to influencing and informing the national agenda.

*COMMENT: Need meeting between CE, AT Board and MoT/National Road Safety Council (NRSC) - sit down and discuss issues and barriers and what can be done to solve those.*

*COMMENT: Advocacy is challenging: Hard to get people to advocate back in their day jobs.*

## **BUILD AT AND PARTNER CAPABILITY TO DELIVER OUTCOMES**

### **6.5 BUILD AT AND PARTNER CAPABILITY TO DELIVER OUTCOMES**

Partnerships are the lifeblood for delivery of road safety improvements.

*Ensure political commitment and responsibility at the highest level and establish regional, national and sub-national strategies and action plans for road safety and contributions from different governmental agencies as well as multi-sectoral partnerships to deliver the scale of efforts required at regional, national and sub-national levels to achieve SDG targets, and that these strategies and efforts are transparent and public.*  
*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals: See Appendix 8*

Partnerships are essential for delivery of road safety improvements across any local authority area, in this case across Auckland.

**AT should substantially ramp up their investment in/ resourcing of their road safety partnership activities and capabilities:**

- within AT
- with local Auckland partners:
  - Local boards,
  - Council,
  - Citizens,
  - Tāmaki Makaurau partnership,
- other local and regional stakeholders and
- with national partners including Waka Kotahi, but with specific attention given to NZ Police, MoT, Ministers and other key national level stakeholders.

Auckland Council is a member of the Tāmaki Makaurau Road Safety Governance Group (TM). This key partnership has fundamental responsibility for day-to-day implementation of Vision Zero in the region. AT, as convener of TM, has an obligation to encourage informed partnership and public advocacy by the partners if improved road safety performance is to be delivered.

Partnership activities in general need to be vigorously supported and progressed with all road safety partners, seeking their ongoing support and commitment for improved road safety outcomes and progressively extending community awareness of the Safe System approach and its incremental implementation.

*COMMENT: There is no real organisational push to date to work with our key partners.*

While some policy changes have been agreed by MoT and Waka Kotahi is generally supportive of AT's road safety programme, representation and advocacy efforts with partners in Wellington have to date often struggled to deliver identified policy and regulatory change at the scale and in the timeframes sought.

AT and Auckland Council need to achieve effective partnership support not only from Waka Kotahi, MoT, and NZ Police, but from other organisations including ACC, Department of Justice and the Department of Health (DoH). It also requires support from regional partners including the key national agencies listed above. Local Boards, and the local community including key non-Government Organisations (NGO's) active in the safety space are also critical partnerships which need to be adequately resourced, with good information sharing occurring.

*COMMENT: Are issues raised/ conversations held in the TM meetings involving MoT pitched at the right level? Is this the most productive means of engagement with MoT?*

Partnership activity at national level will require clear prioritisation by AT of its regulatory and policy priorities to kick off serious conversations, and the resourcing of relevant capability to influence at that level, especially the MoT and the NRSC. It is likely that more separate conversations about regulatory and policy change priorities will need to be held on a one-to-one basis with MoT, while other more generally-focused discussions will be appropriate within the TM meetings framework.

*COMMENT: Organising the TM governance group to have a real purpose with agreement on targeted outcomes, inputs and timeframes is a critical challenge. Senior representation was not always in attendance at these meetings to support decision-making. It was easy to share information but hard to get decisions.*

A number of AT people acknowledged that the existing Waka Kotahi interactions are regular, multilayered and substantial both ways and that an effective partnership is in place which does require continued ongoing interaction.

Partnership challenges at a regional level (Tāmaki Makaurau) have been substantial particularly with NZ Police. The deterrence challenges associated with police delivery of agreed enforcement inputs falling well short of agreed targets have proven difficult to resolve.

As noted earlier, many matters relevant to regulatory and policy reforms sought would more productively be pursued outside the TM forums, usually with MoT, while other matters could more usefully be discussed there with a view to reaching resolution.

*COMMENT: Create a culture where our partners, such as Waka Kotahi, are considered internal relationships, as Waka Kotahi does provide the majority of the funding for projects.*

There is a need for a preparedness to work to successfully enhance coordination of programmes within AT. Strengthened information flows to the AT Board, Auckland City, Local Board members, TM partners and more seeking their engagement in delivering strong advocacy towards the broader road safety performance improvement objective are also necessary.

## 6.6 STRENGTHEN COORDINATION AROUND ROAD SAFETY POLICY DEVELOPMENT AND AWARENESS OF NATIONAL POLICY DEVELOPMENT PRIORITIES AND PROGRESS

Improve information sharing re internal AT actions and about AT partnership representation efforts with all road safety contributors. This preparedness to work to successfully enhance coordination of programmes within AT is critically important.

Development and delivery on a partnership basis of an ongoing training programme for all TM partners of evidence based intervention development and implementation good practice is necessary. This has been addressed as a Priority 2 recommendations, number 24.

### **DELIVER CRITICAL OUTCOMES - FRESH INITIATIVES**

Non-delivery of agreed enforcement outputs (intensity) for speed and drink driving is a major issue for DSI in Auckland for AT. Continued efforts through the Tāmaki Makaurau partnership are critical to Auckland road safety outcomes, and the efforts of Traffic Police (with the much reduced effective availability of traffic police resourcing that is made available to Road Policing Managers) are acknowledged as good quality and fully deserving of recognition and further support. Unfortunately, the overall level of enforcement resourcing is inadequate, falling far short of screening/testing levels contained within the national agreement between Waka Kotahi and NZ Police for the Auckland region - more so than for any other NZ region. This has to be addressed urgently.

*COMMENT: Road to Zero is good practice. Police need to stop acting independently but part of the bigger picture. In a perfect world, if they were an arm of Waka Kotahi, if they are not meeting their targets, the funding will be taken to put into higher-order controls. What needs to happen, is working under one contract and sharing resources.*

### **BOX 1: THE ROLES OF GENERAL DETERRENCE VS. SPECIFIC DETERRENCE**

Any understanding of the role of legislation and enforcement, particularly relevant to key areas of focus in Ch. 6.7 and Ch. 6.8 (and relevant recommendations 7 and 8 in Ch 5.3), in influencing road user behaviour, requires a deep appreciation of the role and power of deterrence theory.

Traffic law enforcement influences driving behaviour to increase compliance with road rules and reduce risky road use.

**Deterrence theory is the driving force for enforcement programs** targeting several high-risk behaviours including drink and drug driving, speeding, mobile phone use and seatbelt non-use. It holds that individuals will avoid offending if they **fear the consequences and perceive they will be caught, the severity of the sanction and how quickly it is applied after the behaviour is exhibited.**

Two major processes can be followed here and they are usually complementary: general deterrence and specific deterrence.

**General deterrence** can be defined as the impact of the threat of legal punishment on the public at large. It results from the perception of the public that traffic laws are enforced and that there is a risk of detection and punishment when traffic laws are violated. General deterrence is structured around those who are not currently offending and occurs when an individual refrains from engaging in an offending behaviour due to belief that there is a good chance they will be caught.

- This is generally achieved as a result of understanding or observing others being punished for the offending behaviour.
- Enforcement methods can include a highly visible police presence, and the use of a mixture of overt and covert operations.
- Individual knowledge or understanding of potential apprehension and penalties can also be reinforced through media campaigns or community engagement<sup>1</sup>.

**Specific deterrence** can be seen as the impact of the actual legal punishment on those who are apprehended. It results from actual experiences with detection, prosecution, and punishment of offenders.

Specific deterrence can be understood as the process whereby an individual apprehended and punished for a criminal act refrains from further offending for fear of incurring further or more severe punishment.

- E.g., in the application of legal sanctions for a drink driving offence, there are a number of purposes of an enforcement approach, including punishment and reform through to loss of license, fining or incarceration.
- These measures can also be applied across a broad spectrum of risky behaviours such as using mobile phones, not wearing a seat belt, and speeding. There is a growing body of evidence demonstrating that sanctions have the capacity to reduce the likelihood of re-offending among a range of motoring groups and for a range of driving-related offences.

The adoption of **the general deterrence model that anyone could be caught 'anywhere, anytime' is critical for drivers to adopt safe road behaviours.** Social pressure, cultural and social norms, stigma, peer and social sanctions may also produce positive changes in driver behaviour, augmented by traditional legal sanctions to form an overall system of deterrence.

Overall, research has found the implementation of deterrence-based approaches can create lasting behaviour, attitudinal and cultural change, in regard to high-risk driving behaviours.

#### **GAINING COMPLIANCE WITH DRINK DRIVING LAWS (EFFECTIVE DETERRENCE)**

For example, underpinned by deterrence theory, Australia's RBT strategy is credited as the primary reason why Australia's reduction in alcohol related crashes over the years is good practice.

General deterrence is achieved by random breath tests with use of a fleet of very visible booze buses (mobile billboards and testing stations) operating at high alcohol times and on busy roads - with satellite cars to intercept those attempting to bypass the booze bus, and which confirm to motorists who are pulled over or go past the testing sites that if they drink and drive there is a high chance they will be tested and detected. This is preventative action, supported by extensive publicity which discourages the public from drinking and driving and is usually credited with achieving more than 50% of the reduction in drink driving levels.

Specific deterrence refers to police going to local drinking premises and intercepting known drinkers as they leave after drinking. This is effective for alcoholics or high level drinkers, but suggests that case management programmes – usually by Health - are needed to address addictive behaviours.

#### **GAINING COMPLIANCE WITH SPEED LIMITS (EFFECTIVE DETERRENCE)**

Effective deterrence requires drivers to perceive that there is a strong likelihood of being detected (anywhere, anytime), there will be a rapid receipt of infringement notices/court charges, and there will be a penalty that is unpleasantly severe for the recipient. Key elements for effective deterrence of speeding include:

1. **Enforcement technique**
  - The technology used (a substantial covert mobile camera programme is most effective)
  - The enforced speed level (no more than 5 to 7 km/h above the speed limit)
2. **Intensity of enforcement – usually hours of mobile camera deployment**
3. **Penalty regime**
  - Fines
  - Demerit points
  - Licence suspension
4. **Wide spread public campaigns to inform the community of the reasons for the enforcement approach and to promote deterrence**

Mobile covert camera operation is good global practice and should be implemented as a deterrence priority in New Zealand if the objective is to reduce DSI as a priority. The Minister needs to be made aware that a major DSI reduction opportunity will be sidelined if MCC's are not used extensively in urban areas (along with some SLR and point to point camera technology)

Increased penalties are an important part of the severity of penalty issue especially the punishment avoidance NZ has promoted in recent years with nominal fines for speeds up to 10 km/h over the limit.

Taking the fines to a serious monetary penalty level would be useful. However, experience shows that introducing demerit points for camera offences will bring strong deterrence benefits and be more socially equitable. AT has been liaising with MoT seeking regulatory reform (with a seat at the reform team table being agreed in principle) including a review of demerit points for camera offences. AT was given to understand MoT were still open to reviewing these matters. WK and AT should pursue this issue.

## **6.7 SUBSTANTIALLY IMPROVE DETERRENCE OF DRINK DRIVING**

Bringing deterrence of drink driving (and from 2022- drug impaired driving) up to good international practice levels, to reduce drink driving involvement in fatal crashes from 30% in 2019 to some 14%<sup>13</sup>, is a key recommended area of focus. (See Box 1 above).

<sup>13</sup> Effectiveness of Drink Driving Countermeasures: National Policy Framework, Austroads 2020  
Whiting Moyne 2021

AT should request central government to deliver necessary change to support Regional Police to achieve reductions in drink driving related DSI in Auckland. AT has initiated discussions with the NZ Police at Commissioner level, and with Waka Kotahi involvement, ways to break through the less than appropriate drink drive testing effort in recent years to move from some 50% to achieve 100% of total approved and nominated tests annually, which have been funded by Waka Kotahi for Auckland. International research clearly indicates that a number of lives are being lost in Auckland each year as a result of this impasse.

Good deterrence practice for drink driving is around one test per licensed driver/rider in a jurisdiction. The Auckland region contains in excess of one million drivers and riders. This would suggest a testing level of some one million per annum should be funded and delivered, split between general deterrence (mostly) and specific deterrence. The targeted annual testing level for Auckland is much less than one million tests. It sits at around 800,000 tests, which is a reasonable practice level. However, available data shows a noticeable decrease in roadside breath testing by Police since 2013/2014 with little improvement from some 50% of reasonable practice testing levels (some 400,000 tests) being achieved. The reasonable practice levels of testing planned for and funded over the last two years have not been able to be deployed on the ground on the Auckland road network.

#### Proportion of driving related road fatalities across Australian States/ Territories

	NSW	Vic*	QLD	SA	WA	TAS	NT	ACT**
% of fatalities alcohol related	14%		22%	14%	26%	18%	28%	19%
Number of deaths	53		166	41	139	18	35	6

*Note: This percentage represents a three year average, from 2015-2017 and excludes intoxicated pedestrian fatalities.*

*\*Victoria was unable to provide accurate data about the percentage of drink driving related deaths.*

*\*\*ACT data only includes drivers and riders fatally injured with a BAC over the legal limit – it does not include other persons killed by a drink driver*

#### Administration of drink driving enforcement across Australia

Enforcement	NSW	Vic	QLD	SA	WA	TAS	NT	ACT
No. of RBTs in 2017	4.9 Million	4.1 Million	3 Million	591,939	2,062,000	505,445	197,742	85,000
Positive tests in 2017	18,166	11,000	17,000	5137	11,976	2,187	2,719	945
RBT per year per licences on issue**	0.80	0.85*	0.70	0.48	0.91	1.16	1.07	0.26
Rate of detection	1 in 269 tests	1 in 354 tests	1 in 176 tests	1 in 115 tests	1 in 172 tests	1 in 231 tests	1 in 72 tests	1 in 89 tests

*\*Victoria's rate is an estimate as the exact number of licensed drivers was not available.*

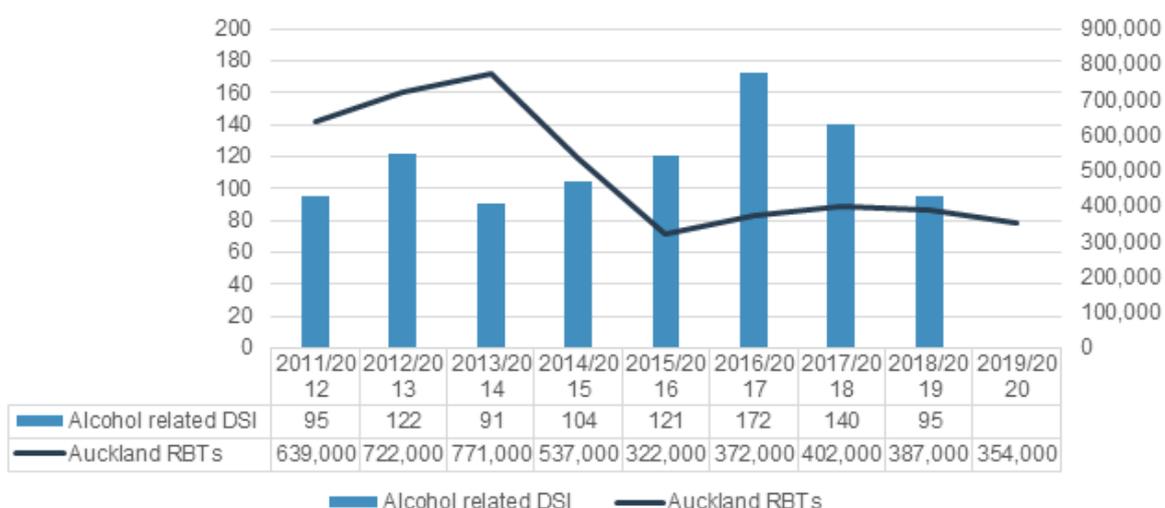
*\*\* The basis for RBT's per licence on issue in 2017 (and also per car driver licence) is set out in Appendix B for each jurisdiction*

Comparative breath testing enforcement effort by jurisdiction

	New Zealand 2019/20	Australia 2019 (Sum of all states)	Auckland 2019/20	New Zealand 2020/2021	Auckland 2020/2021
<i>Planned RBT's</i>	2,000,000		592,800	3,000,000	883,000
<i>Actual RBT's</i>	1,615,000 est.	15,456,397	375,000		
<i>Population</i>	5,040,900	25,522,169	1,680,500		
<i>Planned tests per person</i>	0.40		0.35		
<i>Actual tests per person</i>	0.32	0.60	0.22		

In 2019, alcohol was involved in 24% of fatalities across NZ and 30% in Auckland. This poorer relative performance in Auckland is not inconsistent with the relatively low testing rates compared to NZ overall and compared to the Australian States (See Figure above). This performance in relation to testing effort has persisted for more than six years for Auckland and needs to be addressed as a matter of priority.

Figure 8. Auckland Alcohol Related DSI vs RBTs



For 2020, the agreed number of RBT's to be conducted in the Auckland region was some 750,000. Actual performance was some 50% of this level. This continues a practice experienced now for some years of an inability to deliver agreed RBT levels in the Auckland region. Alcohol involved fatalities in TM were some 30% of all road crash fatalities in 2019. This is substantially higher than the levels experienced in other good practice Australasian jurisdictions (15% to 18%) and higher than for NZ generally (24%). A discussion about an agreed alcohol enforcement programme across a year with specific numbers of high visibility (booze bus plus high visibility signage for car-based operations) RBT operations to be carried out each week, supporting car-based enforcement operations for specific deterrence also to be carried out each week with numbers of officers to be deployed, and implementation with substantial real-time monitoring of outputs, is necessary.

For the period 2017 to 2019, drink driving was involved in 26% of all fatalities in Auckland. The comparative figure for all of NZ is 21.8%. This reflects the lower proportion of planned tests being

delivered in the Auckland region compared to the higher proportion of actual tests to planned tests delivered in most other regions in NZ.

Discussion with Waka Kotahi and NZ Police is required:

- To confirm the national testing target agreed between Waka Kotahi and NZ Police and its allocation to police districts including the Auckland region, and that Waka Kotahi and NZ Police agree that the planned targets are achievable within the funding allocated.
- To understand the reasons 'why' this activity is not being resourced as planned/targets are not being met and to have these addressed it is useful to consider the following:
  - The ready deployment of designated road policing staff across the three Auckland police districts away from road policing duties to general policing duties requires review. If general policing in the Auckland region is overstretched and reliant upon a continuous diversion of road policing resources, then discussions with government to address this are required, not the large-scale diversion of traffic policing resources to general policing over a year. This issue needs urgent resolution as it can be directly linked to increased road crash fatalities on Auckland's roads.
  - More lives are lost on the road network than other violence in NZ, but while the day-to-day pressures of violent criminal activity require timely responses, this is serving to crowd out the availability of necessary and planned, and funded resources, which are essential to prevent increases in road deaths and to further reduce those fatalities. The immediate urgent is prevailing over the medium-term highly important protection of life and a reduction of annual fatalities.
- Detailed weekly tasking of booze bus sessions, mobile car-based general deterrence testing, and mobile car-based specific deterrence testing would assist monitoring of test volumes and timings (preferably all at high alcohol times) shared with the TM partner. This monitoring and reporting would enable any shortfalls to be quickly addressed.

## Summary

Agreed Traffic Police inputs need to be delivering agreed enforcement outputs, not maintaining existing unsatisfactory practice. To this stage no improvement in road policing inputs in the Auckland region for drink driving and speed compliance have been delivered by NZ Police since early 2018. Discussion is urgently required by AT with Regional Police Command (with Waka Kotahi's involvement) and with Police HQ in Wellington to ensure Waka Kotahi funded resourcing of Traffic Police activities, with agreed specific outcomes annually at substantially higher levels of enforcement to achieve deterrence, is delivered.

Letters from AT and the Council have kicked off this need for discussion and the need to urgently seek a potential resolution. **Discussion about detailed operating activities** (e.g. the number of booze bus operations per week by hours of operation, by number of police officers for each operation over a year by high alcohol times, and so on and for speed enforcement - including mobile camera hours expansion), **is necessary to ensure road policing is a mainstream activity and not a subsidiary add-on to the general policing task. This is the most resolvable challenge and opportunity facing Auckland road safety performance today.**

Major commitments are required at national and regional levels to achieve and sustain agreed enforcement of drink driving based on the tasking and funding agreed with Waka Kotahi and AT. More effective police deployment arrangements to enable this resourcing to be applied is the issue to be resolved, and for the TM partnership to work with NZ Police to plan and monitor enforcement tasking applying across the three police districts in TM. *A reduction of some 12% (some five fatalities) annually is achievable with enforcement of drink driving at agreed reasonable practice levels.*

The intent must be to achieve agreed police testing levels with an acceptable general/specific deterrence mix, not maintain existing unsatisfactory levels!

NZ Police should be supported by Waka Kotahi and AT in seeking government support if general policing resources are shown to not be adequate for the general policing task in Auckland. Currently the price paid for extensively redeploying road police to general duties and compromising planned enforcement is additional drink driving and speeding-related fatalities on Auckland's roads each year - in the order of more than four to five lives.

Available data shows a noticeable decrease in roadside breath testing levels by NZ Police since 2013/2014, with little improvement from some 50% of good practice testing levels achieved. The good practice levels of testing planned for and funded over the last two years have not been able to be deployed on the Auckland road network. This is proving a difficult issue to resolve but it is critical that it is addressed. The objective is for in excess of 800,000 breath tests for alcohol to be administered on the Auckland road network annually.

Opportunities for AT to pursue:

- Work with NZ Police, MoT and Waka Kotahi to ensure adequate additional dedicated road policing staff (to agreed drink driving enforcement resources) are made available in 2022 to carry out specific drug use deterrence enforcement, in particular with a minor component of general deterrence.
- To assist delivery of some 16,000 RB Tests per week in Auckland, it is suggested that AT and the TM partners develop detailed weekly tasking of booze bus sessions, mobile car-based general deterrence testing, and mobile car-based specific deterrence testing to assist (almost) real-time monitoring of testing volumes and timings weekly (preferably all at high alcohol times) shared with the TM partners – who would be expected to ensure supportive campaigns matching weekly enforcement programme activity, are running concurrently in various media. This monitoring and reporting would enable any shortfalls to be quickly addressed. AT should support NZ Police to obtain some New Zealand experienced persons with research knowledge to prepare a standard operating procedure and a tasking plan with Police, and offer some information sessions about deterrence strategy and tactics to the TM partners.

## 6.8 SUBSTANTIALLY IMPROVE DETERRENCE OF SPEEDING

11. *Focus on speed management, including the strengthening of law enforcement to prevent speeding and mandate a maximum road travel speed of 30 km/hr in areas where vulnerable road users and vehicles mix in a frequent and planned manner, except where strong evidence exists that higher speeds are safe, noting that efforts to reduce speed in general will have a beneficial impact on air quality and*

climate change as well as being vital to reduce road traffic deaths and injuries;  
*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals: See Appendix 8*

Speeding was a suspected factor (from police crash reports) in 51% of road deaths in Auckland in 2020. DSI Crashes for which speeding was a factor increased by 11% from 2019 to 2020.

A selection of speed data from measured actual speeds on the Auckland road network is provided in Appendix 5. It indicates that while speeds reduced in most instances after a lower limit was installed they are not yet approaching the level of the new limits. In many cases where infrastructure measures to improve limit compliance would be helpful, it is unlikely that early investment can be provided. In these circumstances, enhanced speed enforcement through police actions and a substantially expanded mobile covert camera programme to improve compliance is a vitally important tool to reduce speeds to legal levels and substantially impact upon fatal and serious injury crashes across the network. Note that a 2% reduction in mean speed can reduce fatalities by up to some 10% of all fatalities on any road length - a remarkable evidence-based outcome.

For deterrence of speeding (See Box 1 above) it is essential that AT work with Waka Kotahi and NZ Police to ensure the expanded covert mobile camera programme proceeds as planned in Auckland (currently some 1400 hours a month – i.e. 16,800 hours annually, and a planned increase set out in Road to Zero to an estimated [on a population basis] 30% of 100,000 hours = 30,000 hours annually or 2500 hours a month in 2021).

By comparison, with good practice speed enforcement Victoria is moving to 192,000 hours annually – i.e. to 16,000 hours a month (from 9000 hours a month) during 2021 while New South Wales is moving to 240,000 hours annually – i.e. to 20,000 hours a month (from 7000 hours a month) this year as well.

The Victorian case study within Appendix 1.3.1, outlines the reductions in fatalities achieved over the 2001 to 2004 period by introducing of a substantial mobile covert speed camera programme across metropolitan Melbourne. Effective covert deployment of cameras in open road rural areas is difficult to achieve compared to urban areas. Reductions of fatalities exceeding 33% were achieved in Melbourne over that period with pedestrians and motorcyclists being two of the major beneficiary groups of road users who experienced major reductions in fatality numbers.

It is critically important that advocacy to government for covert mobile camera expansion, new point-to-point camera technology installations (these perhaps initially as pilot projects) and expanded fixed speed/red light camera installation at intersections results in these facilities being rolled out at least as rapidly as currently planned for 2021, and (it is to be hoped) with further augmentation in the 2023 to 2026 period. For supporting material about the effectiveness of speed enforcement by NZ Police and the additional contribution to deterrence which covert mobile cameras can deliver compared to other camera methods, see Appendices 1.3.2, 1.3.3 and 1.3.4.

- Waka Kotahi (and AT) need to demonstrate their commitment to being good practice regulators (in partnership with the Police), operating in a firm and fair way to protect the community from DSI.

- Waka Kotahi needs to lead in working towards achieving social licence for system wide interventions including the role of enforcement, especially speed enforcement.
- A reluctance (and potential failure) to implement mobile covert camera operation in urban areas and delaying demerits because the public might oppose this – is **completely misaligned** with a good practice firm and fair regulatory approach.
- Waka Kotahi surely has an obligation to the NZ community to use the regulatory tools (engagement, education, enforcement at a high level) in a balanced and proportionate way in order to have the best impact to reduce DSI especially given the high rates being experienced in NZ.
- Some years ago, it is understood Waka Kotahi moved its regulation of the heavy transport industry to a self-regulating/compliance type mode. This proved unsuccessful, and now Waka Kotahi have employed a large number of enforcement staff to achieve the desired regulation.
- Effective deterrence requires robust regulation and vibrant enforcement in this case to deliver substantial benefits in savings of lives and serious injuries. If urban speed compliance can deliver say a 3km/hr reduction in mean speeds then a 30% annual reduction in urban area fatalities across NZ can be delivered through the mobile covert camera roll out, saving 52 lives a year from this initiative alone. It a big potential win for NZ.
- This is an important and urgent issue for Waka Kotahi. If Waka Kotahi does not step up to address this crash risk, who will act in the interests of New Zealanders using the road network?
- In order for AT and Waka Kotahi to lift road safety performance it is necessary that they continue to educate and lift engagement with the community and improve levels of deterrence (as set out in Waka Kotahi’s regulatory strategy and as proposed in the Road to Zero Action Plan).

Monitoring, detection and enforcement programs are key to increasing compliance with speed limits. Deterrence theory is the driving force for enforcement programs, including those which target speed. General deterrence as set out in Box 1, holds that **individuals will avoid offending if they fear the consequences and perceive they will be caught, the severity of the sanction and how quickly it is applied after the behaviour is exhibited**. Deterrence is also specific through infringements issued to speeding drivers. Once sanctions are personally experienced people are less likely to re-offend and they will tell many others, which boosts general deterrence effects.

While less visible approaches were typically associated with poorer rates of **driver** acceptance (e.g. perceived as ‘sneaky’ and ‘unfair’) participants reported that such approaches would likely encourage long-term and network-wide impacts on their own **speeding** behaviour, as a function of the increased unpredictability of operations and increased direct (specific **deterrence**) and vicarious (**general deterrence**) effects. Publicity to alert drivers to the operation in general terms across the network of mobile covert cameras will be an important part of the strategy.



## WAKA KOTAHĪ AS A FORCEFUL BUT FAIR ADVOCATE FOR ITS COMMUNITY ON BEHALF OF GOVERNMENT

*“We must never forget the impact a weak regulator can have. We know all too well that if we don’t get it right, people can be injured or killed. After 2018 the regulatory functions underpinning the safety of the land transport system were found to be ineffective. This was our catalyst for change.”* (Waka Kotahi Regulatory Strategy 2020-25).

- Effective deterrence requires robust regulation, vibrant enforcement and thoughtful public information campaigns, in this case to deliver substantial benefits in savings of lives and serious injuries. If urban speed compliance can deliver say a 3km/hr reduction in mean speeds then a 30% annual reduction in urban area fatalities across NZ can be delivered through the mobile covert camera roll out, saving 52 lives a year from this initiative alone. It a big potential prize for NZ.
- This is an important and urgent issue for Waka Kotahi. **If Waka Kotahi does not step up to address this crash risk and the associated opportunities, who will act in the interests of safety of New Zealanders using the road network?**
- In order to lift New Zealand’s performance, Waka Kotahi and AT must continue to educate and increase engagement with the community and improve deterrence (as set out in Waka Kotahi’s *Regulatory Strategy* and as proposed in the *Road to Zero*).

The road safety benefits achievable through rollout of intensive covert mobile camera operation<sup>14</sup>, anywhere, anytime, are substantial and are likely to be the most effective tool in reducing DSI across Auckland in the next three to 10 years. Hours of operation should be further increased beyond planned short term levels to  $16000 \times 1.5/5 = 5000$  hours per month as soon as possible. This highly effective intervention programme would transform DSI in Auckland. While there may be areas in the rest of NZ that may be ambivalent about this, Auckland should deploy these highly effective cameras to save many lives each year. The demonstrable savings in fatalities achieved will be a powerful antidote to those who complain about paying fines for their illegal behaviour.

There is no doubt that more mobile covert camera hours, tougher penalties, a demerit points system for camera offences, tougher license suspension thresholds for speeders - say 25km/hr over the limit and a tolerance on issuing offences which would enable tickets to be issued when speeds were 7% or more over the relevant speed limit - would contribute to optimising deterrence of illegal speeding and dramatically and substantially reduce Auckland fatalities annually. The TM partnership should continue to work with NZ Police and Waka Kotahi to support these low tolerances on mobile covert and fixed

<sup>14</sup> See Victoria case study in Appendix 1.3.1 and an outline of the MUARC Traffic Enforcement Model (TERAM) outputs summarising benefits which forms the basis of recent advice in Victoria - in Appendix 3

camera enforcement to achieve travel speeds which comply with speed limits, now and through the transition to Waka Kotahi operation.

- Establish timing for the transfer of responsibility/transition arrangements to support increased mobile camera hours for NZ (100,000 hours annually in 2020/2021 as outlined in the Road to Zero Action Plan) - which would be a 2500 hours monthly programme for Auckland - and the timing proposed for the expanded rollout timetable. Insist that Auckland receive its fair share of mobile covert cameras and work with Waka Kotahi and Police to avoid expanded hours being unnecessarily delayed due to issues associated with the proposed transfer.

Results from relevant surveys provided the following information:

- More than a third of those responding said vehicles travel too fast on their streets, and a quarter thought it wasn't safe to cycle – Brake NZ.
- Three in four New Zealanders understand that enforcing the speed limit helps lower the road toll and 2 in 3 think using speed cameras specifically will help lower DSI – The Public Attitudes to Road Safety Report from Waka Kotahi.

These are useful pieces of information and indicate that AT and Waka Kotahi awareness programmes have been cutting through. However, there appears to be limited awareness (within the balance of the NZ community including MoT) of the *serious harm effects (in total) experienced across NZ from widespread low level speeding* compared to the relatively few drivers who practice high risk speeding. To win support for a robust speed enforcement programme, (i.e., the opportunities that exist to manage these harms to reduce DSI), the public need to be informed about this established reality through a public campaign setting out the sensitivity of DSI to small increases in travel (and impact) speeds. AT has done some good work here, but MoT and Waka Kotahi should be encouraged to provide more support.

Norway has substantially reduced fatality levels in recent years with two fatalities per 100,000 population being recorded in 2018. The continued small decreases in mean speed on Norwegian roads are regarded as a significant contributor to the sustained decline in the number of road deaths they have achieved in the past eight or more years.

The Road to Zero (R2Z) Action Plan indicates that mobile camera hours across New Zealand are to increase to 100,000 hours annually in 2021, (Focus Area 1, p.8). Auckland (TM Region) currently expects to receive about 950 hours monthly (11,400 hours annually) but Police advise some 1360 hours are actually being delivered monthly. From the proposed 100,000 hours to be delivered across NZ in 2021 it could be expected that some 30% of this amount could be delivered in Auckland. This would be an increase to 30,000 hours annually (or 2500 hours monthly) in Auckland. It is critical that these expanded hours are implemented, and that covert operation is applied in the roll out. This ramping up needs to be discussed with Police and Waka Kotahi. Necessary supporting measures will need to be put in place including temporary workarounds for expanded back office processing of infringements to ensure this benefit in reduced DSI can be achieved, as the transition of responsibility for operation of cameras to Waka Kotahi responsibility takes place over the next two to three years.

Comment: *Ensure adequate workaround back office infringement processing capacity is put in place within Police for the potential two to three year transition period necessary for any transfer of operational camera responsibility from Police to Waka Kotahi.*

It is critical that speed enforcement by police officers (which is additional to mobile camera deployment), remains a mainstream activity for police and is not regarded as a subsidiary add on to general policing tasks. Clear guidance from Police HQ will be necessary here to ensure good practice road policing of speed is strengthened.

AT should liaise with Waka Kotahi to establish timing for transfer of responsibility/transition arrangements from Police to Waka Kotahi, to support the increase in mobile covert camera hours for Auckland to 2500 per month.

Necessary supporting measures are likely to be needed which may include temporary workarounds for expanded back office processing of infringements to ensure this benefit in reduced DSI (from increased infringements issued as behaviour change is introduced) can be achieved as the transition of responsibility for operation of cameras to Waka Kotahi responsibility takes place as the hours of operation are expanded over the next year or so.

The current and expanded mobile covert camera programme is and will not be in essence about catching speeders, it is about changing widespread unsafe and illegal speeding behaviours for the long term. The TM partnership should continue to work with NZ Police and Waka Kotahi to support these low tolerances on mobile covert and fixed camera enforcement to achieve travel speeds which comply with speed limits, now, through and beyond the transition to Waka Kotahi operation.

Increased penalties for low level speeding and adoption of demerit point allocation for camera detected offences are also necessary to maximise the deterrent effect of the expanded camera programme. (See Recommendation 15.)

**See Commentary:** A policy to issue infringement notices to speeders travelling at 7% or more over the relevant speed limit, would optimise deterrence of illegal speeding and dramatically and substantially reduce Auckland fatalities annually.

## 6.9 IMPLEMENT A STEP CHANGE IN PEDESTRIAN AND OTHER VRU SAFETY- SAFER PEDESTRIANS

11. *Focus* on speed management, including the strengthening of law enforcement to prevent speeding and mandate a maximum road travel speed of 30km/hr in areas where vulnerable road users and vehicles mix in a frequent and planned manner, except where strong evidence exists that higher speeds are safe, noting that efforts to reduce speed in general will have a beneficial impact on air quality and climate change as well as being vital to reduce road traffic deaths and injuries;

*Stockholm Declaration, February 2020, 3<sup>rd</sup> Ministerial conference on road safety: Achieving Global Goals:*

*See Appendix 8*

**Implement a step change in pedestrian and other VRU safety** across the arterial and local roads in the network. Develop and introduce a pedestrian safety/ safer walking programme to improve safety for children accessing schools, for public transport access, and for higher pedestrian activity areas such as village centres on a broad scale rather than on a one off crash based set of individual initiatives over many years.

Job, S<sup>15</sup> addresses the underlying reasons for the failure to deliver safety for pedestrians internationally and identifies nine key factors which are described below.

1. The growing benefits of passive safety of vehicles are primarily helping vehicle occupants not pedestrians.
2. The benefits of autonomous braking systems rely on detection, and pedestrian detection may be less effective.
3. The growth of 4-Wheel Drive and Sports Utility Vehicles (4WD and SUVs) is harmful for pedestrian safety.
4. e-mobility is taking footpaths putting pedestrians at risk.
5. The extent of pedestrian death and injury is systemically under-estimated.
6. Victim blaming at its worst for pedestrians.
7. The focus on increased speed for economic improvement is misleading and costly especially to pedestrians.
8. The classic curves for Safe System speeds may over-estimate the safe speed for pedestrians.
9. Pedestrians are not fully considered as part of the road transport system.

Improvement in pedestrian safety<sup>16</sup> may be facilitated by bold advocacy for fundamental culture change as well as incremental change.

Six areas of opportunity for change to improve pedestrian safety are suggested to both address the barriers to action and improve safety.

First<sup>17</sup>, *managing speeds down is a vital safety intervention for pedestrians as well as all other road users.*

Speed managing infrastructure, such as speed humps, raised pedestrian crossings which deliver a twenty-fold increase in the chance of drivers yielding for pedestrians (Torres, et al., 2020), and well-designed roundabouts are the best systemic (and most sustainable) method for managing speeds in urban areas. The commonly accepted wisdom that 30km/hr is the right Safe System speed for pedestrians must be reconsidered based on more recent evidence. The narrative for lower speeds must include correcting the mistaken impression that these will increase congestion and will increase total travel costs, as well as advocacy for Safe System and demand for political accountability for road safety.

Second, *improved data are required to overcome the systematic (though not deliberate) biases in crash reporting and thus data collection.* Even if the deeper cultural and economic issues which may underlie under-reporting of pedestrian crashes in particular cannot be overcome, other interim solutions may improve the situation. For example, a dedicated field study in a specific area could determine the level of under-reporting (or the real ratio of pedestrian to other crashes) and this could be applied as a correction factor to estimate the real extent of pedestrian deaths, injuries, and costs.

Third, *strong advocacy and resistance to victim blaming is essential to generating appreciation of the need for safe infrastructure for pedestrians.* This may usefully include correcting impressions of pedestrian error as the cause of pedestrian crashes by and highlighting problems with police data

<sup>15</sup> Policies and Interventions to Provide Safety for Pedestrians and Overcome the Systematic Biases underlying these Failures, Frontiers in Sustainable Cities, Job, Soames F 2020

<sup>16</sup> Ibid

<sup>17</sup> Policies and Interventions to Provide Safety for Pedestrians and Overcome the Systematic Biases underlying these Failures, Frontiers in Sustainable Cities, Job, Soames F 2020

on pedestrian crashes, while noting that this is not an attack on police but a recognition of the challenges they face with pedestrian crashes. Advocacy for the Safe System approach is also valuable, including the promotion of a focus on the causes of injuries and how to avoid them, rather than a continuing often ineffective focus on causes of crashes per se. It is also important that advocacy for pedestrian safety and the roles of NGOs are not reduced to educating pedestrians to be safe, thus facilitating the victim blaming mentality. Instead, the strong promotion of Safe System principles for pedestrian safety is required. Many system design interventions exist to improve pedestrian safety, as identified earlier.

*Fourth, crash data may also be improved to address the systematic tendency to assign responsibility for a crash to the pedestrian.* Stronger allowance for the cause of a crash being recorded as unknown combined with appropriate training may assist to reduce this data bias, allowing for better informed (less mis-informed) advocacy and safety solutions.

*Fifth, provision of safe separate amenities for micro-mobility (e-scooters and e-bikes) rather forcing them to share roads with cars or footpaths with pedestrians will avoid the current trend to reduced amenity for pedestrians.*

*Sixth, stronger inclusion of pedestrians as acknowledged legitimate road users is required.* The old school roads-are-for-cars mentality must be overcome; pedestrian waiting time must be considered in road design and operation decisions such as signal phasing; and usable pedestrian facilities such as footpaths and safe convenient crossing facilities must be a required standard for roads where pedestrians are present. Strong advocacy for this culture changes by NGOs is vital.

With these changes we will move more effectively to address pedestrian safety and thus reap more of the ancillary sustainability benefits of walking and mass transit, including reducing obesity, greenhouse gasses, air pollution, noise pollution, fossil fuel use, and improved inclusion.

To deliver improved pedestrian safety across the arterial and other roads in the network requires a mix of treatments but will essentially rely on lower (enforced) speed limits and pedestrian raised profile crossings and/or raised profiles to slow traffic in advance of higher pedestrian use areas or intersection crossing locations or in the vicinity of bus stops.

Support for a shared cost fast-tracked Safe Walking Programme for pedestrians should be sought from the national level for implementation of a programme of treatments which reflect the arterial road crash risks faced by pedestrians (outputs of Abley<sup>18</sup> study, See Appendix 9) and the pedestrian non-motorised injuries that are not picked up in CAS (See ViaStrada VRU study). It would include a generally applied treatment for all schools, Marae and at higher crash risk lengths for pedestrians.

There are 181.2 km of road prioritised as HIGH (risk for pedestrians), accounting for 2.3% of the Auckland road network and 134 (23.1%) FS pedestrian crashes between 2013 and 2017. ABLEY Note

There are 457.5km of road prioritised as MODERATE (risk for pedestrians), accounting for 5.7% of the Auckland road network and 136 (23.4%) FS pedestrian crashes between 2013 and 2017. ABLEY Note

*Note: other more minor roads deliver in total some 50% of arterial roads DSI.*

Abley comment in their *Note* that these lengths (181.2km of high risk and 457.5km of moderate risk for pedestrian crashes, a total of 639km) warrant early intervention as soon as possible with lowered speed

<sup>18</sup> Pedestrian crossing facility prioritisation: pedestrian crash analysis for Auckland, Technical Note, Abley 2018  
Whiting Moyné 2021

limits and progressive support being provided through an ongoing programme for installation of relevant pedestrian safety infrastructure. *More than 21% of all fatalities in Auckland in the years 2018-2020 were pedestrians.*

This is fully supported by this Review with these arterial road lengths warranting early action.

- 44% of fatalities (excluding motorcyclists) in 2020 were pedestrians and cyclists
- 31.7% of serious injuries (excluding motorcyclists) in 2020 were pedestrians and cyclists
- Motorcyclists were 21% of all fatalities in 2020 and cyclists were 8% of all fatalities in 2020.
- Non motor vehicle injuries are heavily under-reported in crash data system. Injuries due to slips, trips and stumbles are rarely recorded in CAS but are reported through the hospital system through the Ministry of Health.

- **Schools and Marae** are community focal points and have a high social benefit associated with implementing local speed limit changes. For schools, electronic signage is currently used around some schools as a sensible way to target time based high-risk locations. While they are effective, they are expensive. They do provide flexibility for the community and the community could be given the authority to advise on when it is best to have them operating (e.g. Marae can choose a lower speed only during a gathering).

COMMENT: *Speed zones around schools are inconsistent. There is no Auckland wide speed recommendation for school zones. When we have new developments in greenfields, AT can post a 100km/hr speed limit outside that school.*

- Some school locations have permanent lower speeds, some have variable speed signs (electronic signs) and some have no interventions apart from signage that says, 'slow down.' The option of fixed time-based lower speed limit signage on school days is also available.

There is an urgent need to do what can be done as soon as possible. School speed zones should be a priority. A programme to reduce speed limits to 30km/hr. permanently on non-arterial roads/urban streets in the vicinity of schools should proceed as soon as possible. On arterial roads, utilise time based electronic signage to apply on all lengths operating around school access and departure times, where a permanent 30km/hr time based limit would not be considered advisable.

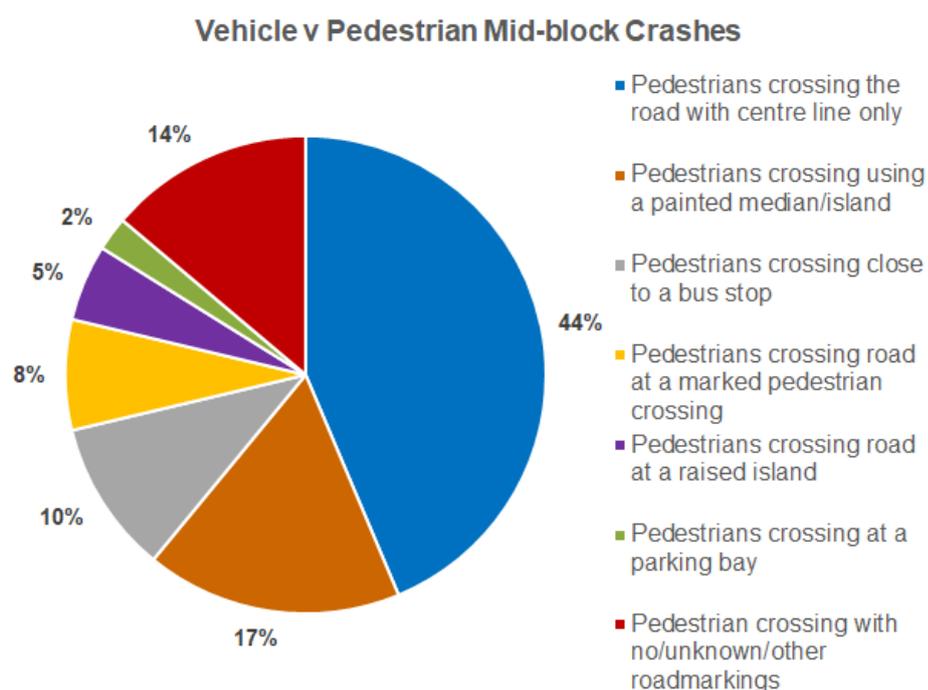
Information should be provided to all families in a toolkit about getting children to school safely. Follow up when feasible with improved parking for 'kiss and drop' and a range of infrastructure safety measures to support lower speed limits.

Permanent 30km/hr limits should apply on non-arterial roads for Maraes. For those located on arterial roads, utilise variable electronic signage on relevant road lengths, manually operated by agreement around active marae operations, where a permanent 30km/hr limit would not be considered advisable.

For busy pedestrian areas on arterial road lengths, including town centres and bus stops, introduce a permanent 30km/hr limit with platforms and other infrastructure safety measures to assist speed compliance.

The figure below indicates the materiality of pedestrian crash risks. Suitable low cost broadly applied treatments plus lowered speeds would reduce DSI in these environments. Each category of environment would probably require its own treatments but a number of options exist to reduce crash risk, ranging from mid-road refuges and kerb outstands for pedestrians, raised pavement profile crossings, improved lighting and signage and more. Those pedestrian crashes occurring near bus stops are a particular challenge for AT to consider, understand and address.

Figure 9. Pedestrian DSI crashes at midblock locations: 2016 – 2019<sup>19</sup>

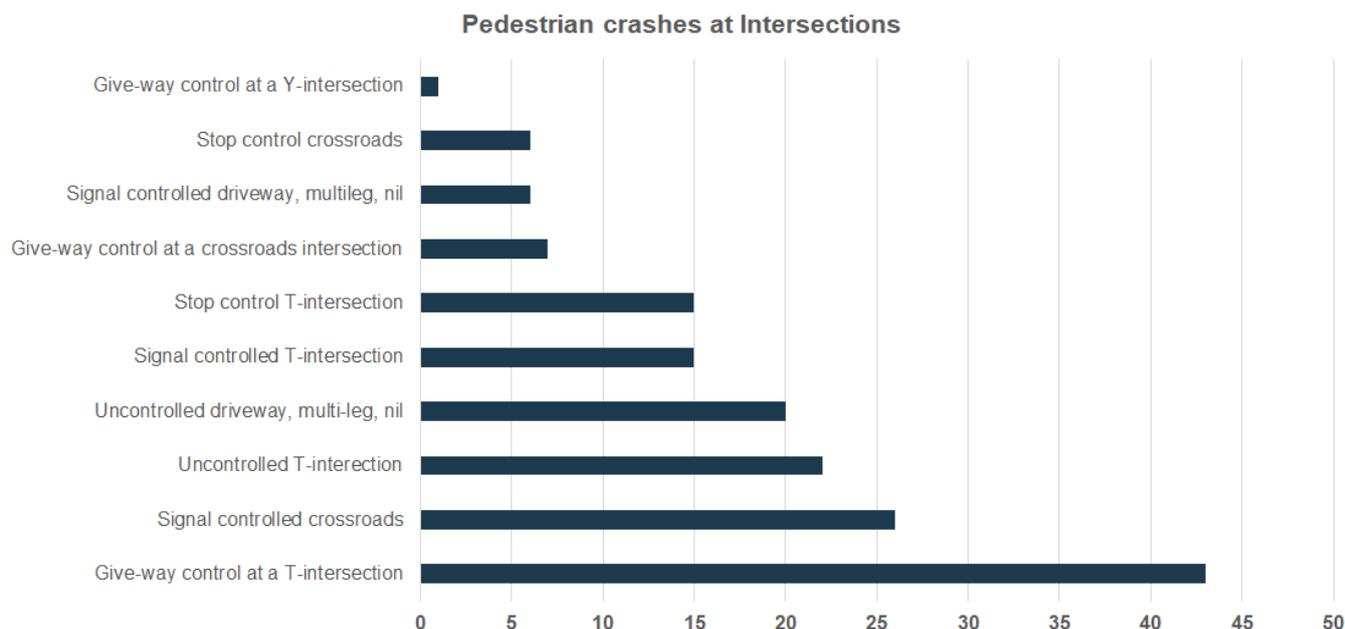


Pedestrian crashes with motor vehicles are evenly split between intersections and mid-block locations.<sup>20</sup>

<sup>19</sup> *Safety of Vulnerable Transport Users outside of Motor Vehicles*, Summary for AT, March 2021, VIASTRADA

<sup>20</sup> *ibid*

Figure 10. Pedestrian DSI crashes 2016-2019 data



Intersections of all types and mid-block locations on 50km/hr limited roads are the major source of pedestrian crashes. (Note that other more minor roads are the location for some 50% of the level of DSI on arterial roads.)

Both intersection and mid-block locations are problematic for walking, and with a wide range of different factors contributing to the serious harm events<sup>21</sup>.

Interestingly, speed is not often cited as a common factor in walking crashes, which suggests a systematic bias in reporting.

Key factors:

#### Mid-block

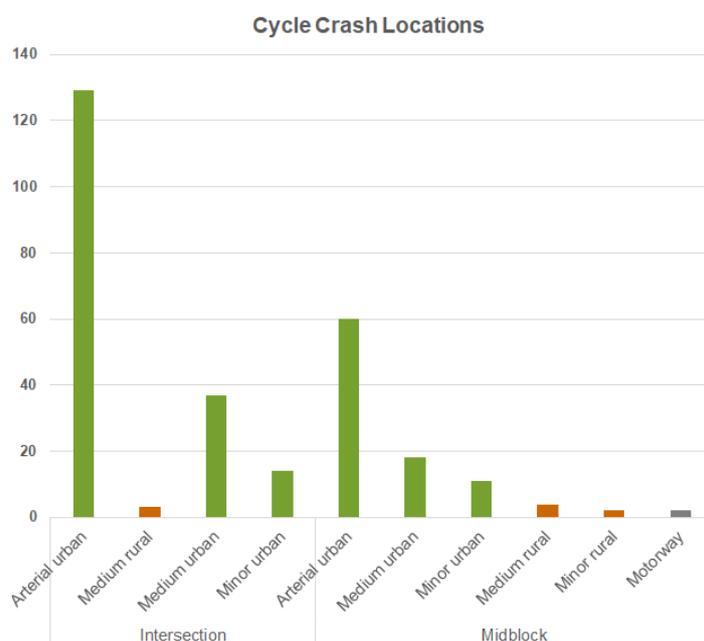
- Children running into the road (some at schools, driveways)
- Pedestrians crossing between moving and stationary traffic
- Waiting on centre lines and medians to cross being hit by turning or overtaking vehicles
- Walking to/from buses/trains
- Intoxicated pedestrians walking out into the road
- Impatient drivers at pedestrian crossings
- Poor street lighting and visibility between parked vehicles

#### Intersections

- Pedestrians crossing on green man and being hit on crossing
  - Driver turned on red arrow
  - Driver didn't see pedestrian
  - Pedestrian still crossing when green vehicle arrow has lit
- Pedestrians crossing against red signal
- Children running into the road
- Pedestrians running at crossings
- Crossing between waiting vehicles close to signals or just away from the lights and being hit by vehicles exiting the intersection

<sup>21</sup> Safety of Vulnerable Transport Users outside of Motor Vehicles, Summary for AT, March 2021, VIASTRADA Whiting Moyné 2021

Figure 11. Cycle DSI Crash Locations: Auckland 2016 -2019 data



Cyclist crashes are more likely to occur at intersections than at midblock locations<sup>22</sup>.

For overall fatal and serious injury crashes, Urban Arterial roads are a major problem for vulnerable road users. Speed limit reviews and focused covert mobile camera enforcement will reduce pedestrian fatality risk and also cyclist fatality risk. One result from the speed enforcement ramp up in Melbourne in the early 2000's was a substantial reduction in urban motorcycle fatalities. It could be an important contribution to reducing motorcycle fatalities in Auckland.

Weaknesses for pedestrians include the need for suitable speed limits, safe crossing points, and safe facilities along these corridors.

<sup>22</sup> Safety of Vulnerable Transport Users outside of Motor Vehicles, Summary for AT, March 2021, VIASTRADA Whiting Moyne 2021

Figure 12. All VRU’s DSI At Intersections: Auckland 2016 -2019 data

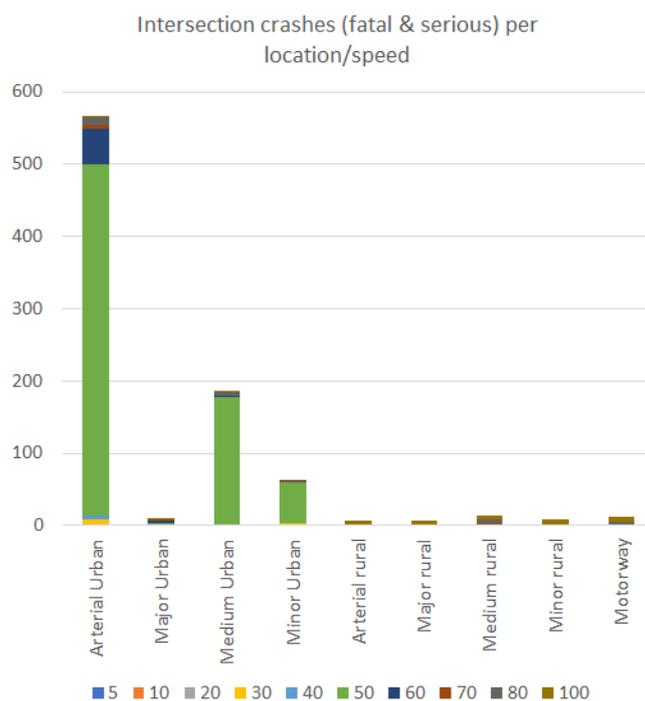
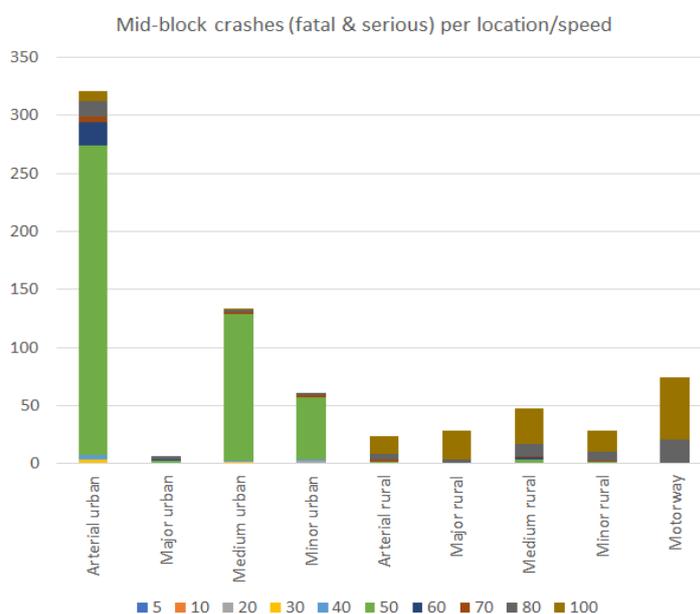


Figure 13. All VRU’s DSI at Mid-block locations: Auckland 2016 -2019 data



It is noted from the ViaStrada study that:

- 59% of Auckland’s urban roads have an inappropriately high speed limit\*
- 82% of Auckland’s rural roads have an inappropriately high speed limit\*

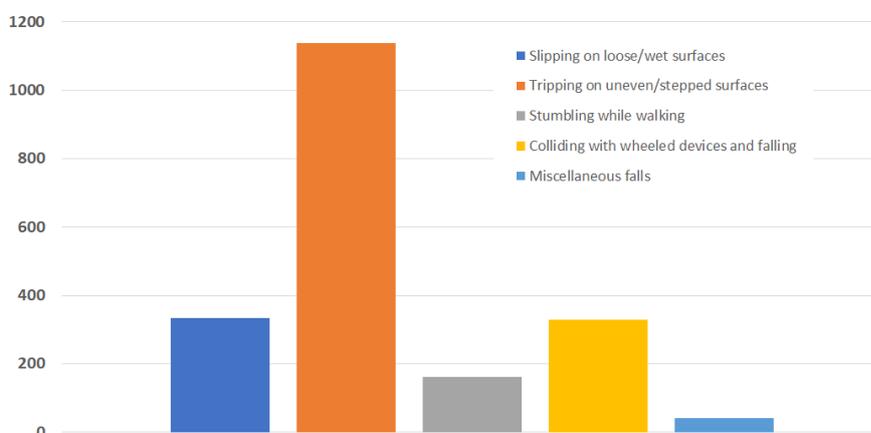
\*AT Report to Planning Committee of Council, AT presentation of March 2021 and Viastrada study of VRU safety in Auckland 2021

It is noted from the ViaStrada<sup>23</sup> study of MoH data that the extent of slips, trips and falls unrelated to motor vehicles but occurring on Auckland’s streets and footpaths, is well in excess of motor vehicle involved injury. Measures to address this issue need to be developed as a priority by AT.

**Excerpts from the ViaStrada study of VRU safety in Auckland:**

- 2,457 serious crashes recorded in the Crash Analysis System (CAS) compared to 9,370 serious hospital admissions captured by the Ministry of Health (MoH) data system. People injured in vehicles were 34% of all hospital recorded injuries, but for pedestrians, cyclists and motorcyclists, more injuries were incurred without involvement in a collision with a motorised vehicle than in vehicle involved collisions.
- Current social cost of serious/fatal casualties outside of motor vehicles in Auckland: **\$790 million+ / year, a very substantial cost to the New Zealand (and Auckland) economy.**
- Likely to see more growth in the numbers of people walking, cycling, and using transport devices resulting in more casualties?
- Ways forward:
  - Measure **health** performance rather than safety performance
  - Focus on **workplace safety** obligations by AT and other orgs
  - Improve **quality/maintenance** of walking routes.
- Invest in safety along/across **urban arterial** routes.

**Figure 14. Pedestrian only crashes (mainly slips and falls on roads and paths) are a major problem in Auckland<sup>24</sup>.**



2016 – 2019 data Pedestrian only crashes. Non motor vehicle involved crash injuries. Hospital serious injury data, additional to CAS records from Police.

**Slips and falls have a disproportionately higher incidence among older pedestrians, > 60 years**

AT is assembling a draft Walking Programme Business Case which is being currently workshopped with key stakeholders. It is intended that it be submitted for AT final review in June 2021. The final business case will be submitted to Waka Kotahi by the end of June. This is a highly Important programme for Auckland requiring a quality business case and robust, ongoing advocacy.

<sup>23</sup> Safety of Vulnerable Transport Users outside of Motor Vehicles, Summary for AT, March 2021, VIASTRADA

<sup>24</sup> Safety of Vulnerable Transport Users outside of Motor Vehicles, Summary for AT, March 2021, VIASTRADA

COMMENT: *There are limited walking and cycling programmes being implemented and leadership for these programmes is not readily evident. Accountabilities for the policy development, programme development and delivery components of these activities are not clearly embraced or widely understood. AT need to deliver more robustly on these programmes.*

## 6.10 IMPLEMENT A STEP CHANGE IN PEDESTRIAN AND OTHER VRU SAFETY- SAFER CYCLING

Steps need to be taken urgently to implement significant cycling and walking measures as a priority given concerns expressed throughout the review. If the community is expecting a range of initiatives in these areas, then early action to improve programme planning and delivery is needed alongside further concurrent policy work for the medium term. These active travel modes are critical to Auckland's sustainable mobility agenda and in supporting Auckland to move to a lower carbon footprint for transport with more public transport options and less need to use private vehicles. Definite leadership is needed at AT to substantially progress cycling and walking modes of safe mobility. It is understood that AT are refreshing their programme business case for cycling and as noted above a draft Walking Programme Business Case is being developed.

Cycling is higher risk where vehicle speeds are higher. It is recommended that for on-road cycle path lengths on urban arterial road environments, AT review speed limits to seek a 30km/hr limit. Where this is difficult to achieve, off-road cycle paths or another safe alternative solution need to be developed and provided.

- Support TM in the early introduction of substantially enhanced hours of mobile covert camera enforcement as planned in Road to Zero, plus increased penalties for low level speeding and demerit point allocation for camera offences plus a low enforcement tolerance above relevant limits, to substantially reduce fatalities in Auckland. A major beneficiary of generally lower speed limits/ speed calming plus tougher enforcement of speed will be all vulnerable road users, including cyclists but also motorcyclists, based on fatality reduction experience in Melbourne, Australia in the early 2000's.
- Information should be provided to all families in a toolkit about getting children to school safely. Follow up when feasible with improved parking for 'kiss and drop' and a range of infrastructure safety measures to support lower speed limits.

### 6.10 A Motorcycle safety (See priority 2 recommendations - No 25)

While CAS data show motorcycle crashes with other vehicles as still being the dominant crash issue, hospital data actually suggests that motorcycle-only crashes are a slightly bigger issue<sup>25</sup>. A key factor here is speed, especially for motorcycle-only crashes in rural areas. This is not just relating to travelling in excess of speed limit but also taking the corner too quickly, above any recommended advisory speed<sup>26</sup>.

Reducing speed limits across Auckland as planned in the short and medium term and seeking good compliance with speed limits with an expanded mobile covert camera programme ("speed limit compliance anywhere, anytime") will reduce motorcycle speeding which would therefore reduce DSI.

<sup>25</sup> *Safety of Vulnerable Transport Users outside of Motor Vehicles, Summary for AT, March 2021, VIASTRADA*

<sup>26</sup> *ibid*

- Utilise the Waka Kotahi *Safer Journeys for Motorcycling on New Zealand Roads Guide*, 2017, drawing upon consultation with the motorcycling community to continue to develop and deliver infrastructure safety programmes that improve motorcycling safety outcomes.
- AT to record and report on motorcycle safety treatments. Ensure an ongoing focused motorcycle safety programme is in place with evaluation of learning and a practically focused R and D programme in place

COMMENT: *Vulnerable Road Users and speeds*

*Enforcement on speed is low when there is a common assumption/knowledge that you won't get caught if driving above 10km/hr more than the posted speed limit.*

*Need to do something about advocating change up to Central Government*

*The Melbourne example in enforcement of speed which was a major factor in a 30% drop in DSI in metropolitan Melbourne will resonate with the Board.*

### 6.11 LOWER TRAVEL SPEEDS ACROSS HIGHER RISK SECTIONS OF NETWORK – SPEED LIMITS

Deliver DSI reductions through lower travel speeds across network – through lower speed limits by continuing to seek change in the current by law process which is considered unnecessarily cumbersome and mitigates against sensible ready change. MoT is currently preparing a revised approach and intend that this will be applicable from the end of 2021.

Tranche 1 speed limit changes were introduced by AT in 2020. Tranche 2 speed limit proposals are on foot within AT at present, with much development and preparatory work underway. It is intended that some 1040km or 13% of all roads and streets, including some 41% of all school speed zones, will be reviewed by AT. The development and consultation on the new regional speed management plan process developed by Waka Kotahi/ MoT, will require each local authority including AT to develop their own speed management plans for implementation within the next two year period. It is intended that this new approach will substantially simplify the unacceptably complex regulatory speed limit review process. This could be considered the potential Tranche 3 programme. In this programme AT should seek to move to a 30km/hr default speed limit (unless signed otherwise) for urban local streets, with arterials given lower limits than at present (with supporting infrastructure treatments) in higher risk locations for pedestrians (including schools, town centres, special locations and higher pedestrian movement locations). Adopt an 80km/hr default limit for rural arterial roads and 40 km/h to 60 km/h for local rural roads. Ensure all schools have lower limits by the completion of this (hopefully streamlined) Tranche 3 programme.

If the process is not streamlined by central government it will potentially take a decade or more to lower higher risk limits, on a street section by street section basis. This would be a victory for mind-numbing detailed arithmetic analysis over sensible broader-based policy recommendations for change. It may be appropriate for long lengths of rural roads, but it is not appropriate for the hundreds of roads and streets making up the major urban concentration of Auckland.

One of the hoped for effects of the revised speed by law process is to support this higher-level assessment (regional speed management plans) approach. The proposed approach was released for consultation in late April. If this does not deliver improved arrangements which would permit Auckland speed limits to be reviewed in the next three years, then direct approaches to government ministers seeking a policy level change will be necessary.

#### ***Impacts of pursuing a lower speed limits programme:***

*"I LEARNED THAT IF YOU LOWER THE SPEED BY 10% ANYWHERE ON THE SPECTRUM – SO IF YOU GO FROM 110km/hr TO 100km/hr, OR 80km/hr TO 70km/hr, YOU DOUBLE YOUR CHANCES OF WALKING AWAY FROM A CRASH."* Nic Johannsen, Waka Kotahi, in AA Directions.co.nz Winter 2019

Appendix 1.1.1 (Courtesy Dr. Fergus Tate, WSP New Zealand) shows the reductions in numbers of DSI achieved in three case study locations/lengths of roads in New Zealand (36%, 60 %, and 18%) when speed limits were lowered, by comparing crashes in the five-year period before the changes and the five year period after the reduced limits were introduced.

The average speed on Norwegian roads<sup>27</sup> with an 80 km/hr speed limit has decreased by about 1km/hr during the last five years. It is thought that this in part explains the sustained decrease in road casualties in recent years. Norway had a rate of death per 100,000 population of 2.0 in 2019 and is the best performing country within IRTAD (globally) for this indicator.

### Norway - Passenger car speed limits

#### Passenger car speed limits by road type, 2019

	General speed limit	Comments
Urban roads	50 km/h	Residential streets often limited to 30 km/h
Rural roads	80 km/h	
Motorways	90,100,110 km/h	

Lowering travel speeds to safe levels in Auckland requires lower speed limits to be implemented in a shorter time frame than is currently possible under the existing national by law. Improved compliance with limits is necessary – and this can be effectively achieved through:

- (1) covert mobile camera expansion beyond the currently planned expansion ( i.e. a further second phase expansion),
- (2) (ii) point-to-point camera installations, and
- (3) (iii) expanded fixed speed/red light cameras at intersections.

Accelerating the lower speed limits programme on the basis of risk is recommended. Tranche 1, which is the first basket of lowering limits on high-risk roads in Auckland, has reduced speed limits on around 10% of Auckland’s urban and rural roads. It is intended that Tranche 2, (which is in planning) will be delivered over two stages to smooth out the workload, which will also make it easier for the community to digest. It will treat approximately 1,022km of roads. This is 13% of the entire network of over 7,300km.

The challenge is to continue to review and prioritise a pipeline of speed management changes. The massive handbrake on more rapid rollout is the work required to meet the legal process and comply with the requirement of the prescriptive bylaw. There is a huge amount of detailed work involved in demonstrating that AT is setting the speed limit at a safe and appropriate limit for the function, design, safety and use of that section of road. This is intended to change with a new regional speed limit planning and setting process scheduled by MoT to come into effect in October 2021. It is critical that this change does in fact streamline the process for changing limits and does not simply substitute one cumbersome process for another. Current arrangements are a major impediment to introducing change at a pace that will save many more DSI more quickly. Auckland should not be forced to retain a

<sup>27</sup> Road Safety Annual Report 2019, IRTAD Road Safety Data, Norway, ITF/OECD  
Whiting Moyne 2021

similar situation to the current process where review and adjustment (due to the volume of work and detailed consultation) could require AT to take 10 to 15 years to carry out speed limits reviews across Auckland. That would be an absurdity.

Opportunities: The direction could be stronger, bolder and more ambitious, such as introducing 30km/hr limits for all residential streets. Direction to act will need to come from the Board/ELT. Accelerating the lower speed limits programme on the basis of risk for Auckland (as supported above) is recommended assuming the revised and reportedly simpler speed limit setting process is adopted by government later in 2021. If it is not a simplification which will enable a two to three year full Auckland implementation, then an approach to government ministers seeking removal of barriers, to a policy level change to treat Auckland in total with appropriate difference in treatment, would be necessary.

Challenges: Lowering limits is supported by the community but obtaining consent to associated physical infrastructure works to slow down vehicles is more problematic. There has been push back on losing parking spaces and taking away the freedom to ride (e.g. in Mission Bay/St Heliers).

While physical works are often required to ensure the travel speeds are reduced to safe and appropriate levels, AT has been risk-averse in taking quicker steps to change the posted speed limits, as they feel the need to fully comply with the current legal process required by the national level. A substantial mobile covert camera programme expansion as is planned (and could be further expanded) would rapidly bring improved compliance with new limits even in the absence of infrastructure measures<sup>28</sup>.

While business cases are required before the bylaw process is carried out and this gives confidence in the options chosen, it is acknowledged that the cost-benefit analysis for lower speed limits at schools and maraes delivers high community benefit but low DSI savings. This is a relatively low cost public policy opportunity and should be handled in that way, as recommended in the vulnerable road user/pedestrian safety measures in the recommendations.

Any approach that preserves time delay offsets against safety benefits of a project is not consistent with Vision Zero principles and should be the subject of urgent discussion with Waka Kotahi. Continuing to offset safety benefits against the meaningless negative time benefits of lots of small time delays for motorists should be discontinued.

The recently applicable approach serves to compare apples with oranges and if still adhered to by Waka Kotahi, it needs to be changed.

It is often simpler to change speed limits on most rural roads as they are usually self-explaining roads. These are areas where the road conditions already cause drivers to travel at a slower speed – such as gravel roads and winding roads. By contrast, urban areas often, but not always, may need physical works, such as speed platforms to help drivers choose a safe speed.

***Recommended general approach regarding speed limits in Auckland:***

Focusing on pedestrian safety in particular on arterial roads with higher abutting pedestrian volumes, and on residential roads in locations with higher pedestrian numbers, where infrastructure safety levels do not support the current speed limits is a critical AT contribution to reduced DSI. The speed limit

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<sup>28</sup> See Victoria case study in Annex 4  
Whiting Moyne 2021

reduction proposals on streets abutting schools, maraes and town centres plus arterial roads in higher pedestrian areas are detailed in the recommendations.

A one-off change to 30km/hr limits on residential streets should proceed as soon as agreement with Waka Kotahi can be established. Comprehensive effective automated speed enforcement can be highly effective in raising compliance with enforced speeds.

#### **Support for speed limit changes to date:**

Aucklanders<sup>29</sup> have strongly supported the speed limit changes to date:

- 61% support for the 2020 speed changes
- 86% support the need for speed limit changes near schools and kindergartens
- 72% support speed changes in local town centres and shopping streets
- 71% support speed changes on rural roads with high crash rates
- 69% support speed changes in urban areas with high numbers of pedestrians, cyclists and motorcyclists, and
- 79% support area wide speed calming as it makes residential areas safer.

#### **COMMENT: Use appropriately lowered speed limits to bring safe roads to Auckland**

**If you could change one thing, what will it be?** Simplification of the bylaw process. This will make the biggest practical difference.

**Is it possible to do the work quicker?** The massive handbrake is the legal process and doing the bylaw. There is a huge amount of work assessing what is safe and appropriate. Some potential gains through the current Residential/Land Speed Management Plan development process required by Waka Kotahi.

**Opportunities:** The direction could be more ambitious, such as an agreed default approach of 30km/hr for all residential or town centres. A macro-level view as to what can be done faster could help speed up the process.

As noted earlier, AT and stakeholders are required (by MoT/Waka Kotahi) to develop a regional Speed Management Plan to align with the 2021 - 2031 RLTP, in an endeavour to simplify the existing complex speed limits review process. The 'Educate and Inform' campaign prepared to accompany this component of the proposed RLTP is human-centred and localised for speed management communications. It focuses on shared values of respect for local communities, because 'everyone deserves to get home safely'.

As noted above and repeated here, given its significant extra workload for AT for little added benefit, **the current speed management by-law process needs urgently to be simplified: A new process for setting of speed limits including out of cycle changes under the proposed speed management plan approach, needs to be delivered by government.**

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<sup>29</sup> Sources: Customer feedback to Speed Limit Changes Market Insights and Voice of Customer, July 2020. Attitudes towards speed limits on Auckland roads, Kantar, July 2019. Auckland Transport Road Safety Perceptions Survey Research Report, Gravitass, 2020

A draft of the proposed approach has been provided to AT in late April 2021 and it will be reviewed to determine whether it assists more rapid introduction of agreed change (over, two to three years) than the current unwieldy system. If not then an approach to ministers should be pursued to seek change.

Review with Waka Kotahi current speed limits on the arterial road network where there are not significant pedestrian activity to reduce likely fatal outcomes from head on, intersection, and run off road crashes.

## *PURSUE REGULATORY AND POLICY REFORM NATIONALLY*

### 6.12 PURSUE REGULATORY REFORM OPPORTUNITIES

Seek higher penalties (fines and demerit points) for speed, impairment, restraint and distraction offences.

Seek demerit points allocation for all safety camera generated offences.

From the draft Auckland Regional Land Transport Plan, responses of public feedback<sup>30</sup> were collated by Viewpoints NZ on behalf of AT. The following responses are highly relevant to the action sought by AT from central government on regulatory reform.

1. More than 80% of respondents indicated that safety was very important or moderately important to them.
2. In response to questions<sup>31</sup> about *how important do you think the following policy changes are to deliver an effective and efficient transport system?*:
  - 78% of respondents indicated that a demerit points scheme was very important or moderately important to them
  - 62% of respondents indicated that increased fines for unsafe driving were very important (59%) or moderately important (3%) to them.

These recent responses support the directions for regulatory reform AT is seeking from the government to improve in particular the safety of all road users, through improved deterrence of speeding behaviours which deliver high crash risks for all users on the network.

Further information on the critical role of deterrence in reducing fatal and serious injury crashes is contained in Box 1 located immediately before Ch. 6.7 *Substantially improve deterrence of drink driving*.

**Higher penalties:** MoT are developing a *“framework for reviewing ...fines across the transport sector”* and when complete will apply them to priority areas. This may be a lengthy process. The current level of fines (\$30) for speeding zero-10km/hr above the posted level serves to trivialise the offence of lower level speeding, a behaviour which in aggregate is a source of serious harm to New Zealanders. Not having a bus ticket incurs a fine of \$150 in Auckland. The contrast between the life threatening risks of one behaviour compared to the other and the different applicable penalty levels is stark. Social equity issues for those incurring fines need to be considered and as necessary addressed in innovative ways, but loss of life and incurring serious injury is also a social equity issue, with outcomes usually highly

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<sup>30</sup> May 2021 – Condensed Public Feedback Report on the Auckland Regional Land Transport Plan (*Independently prepared by Viewpoints NZ*)

<sup>31</sup> *ibid*

serious in nature. A relative increase in heavy vehicle driver fines compared to those for light vehicle drivers are not currently identified for review in R2Z and this should be encouraged.

**(i) Fines, License sanctions:**

- Speeding Fines

Speeding fines currently increase progressively from \$30 for speeds less than 10km/hr over the limit, to a maximum fine of \$630 for speeds up to 50km/hr over the limit.

At more than 40km/hr above the speed limit offenders could incur a 28-day licence suspension.

At more than 50km/hr over the limit offenders could be charged with careless, dangerous or reckless driving.

How far over the speed limit	Infringement fine
10km/hr or less	\$30
11-15km/hr	\$80
16-20km/hr	\$120
21-25km/hr	\$170
26-30km/hr	\$230
31-35km/hr	\$300
36-40km/hr	\$400
41-45km/hr	\$510
46-50km/hr	\$630
<i>The information on this page is a general guide only. It is not the source of the law and should not be used in place of authoritative legal documents.</i>	

**(ii) Demerit points for camera offences:**

In addition to a fine, demerit points are currently incurred for non speed-camera involved offences (ie police generated offences only).

Allocation of demerit points for all speed and red light camera offences and a review of the demerit point structure/ settings are important mechanisms to deter speeding behaviours and reduce DSI in Auckland and NZ.

*Comment: Lack of visibility on what is happening is a concern as sometimes, it is not inherently obvious. For example, there was lots of concern that demerit points were not considered in the penalties review and in the R2Z action plan. However, the review put a space in the action plan to have a programme to have these discussions.*

**NEW ZEALAND:**

Demerit points for speed related offences (excluding speed camera offences)

General description of offence	Demerit points
Exceeding the speed limit fixed by not more than 10 km/hr	10
Exceeding the speed limit by more than 10 km/hr but not more than 20 km/hr	20
Exceeding the speed limit by more than 20 km/hr but not more than 30 km/hr	35
Exceeding the speed limit by more than 30 km/hr but not more than 35 km/hr	40
Exceeding the speed limit by more than 35 km/hr	50
Using, in a motor vehicle, equipment that interferes with operation of speed measuring device	25
Possessing, in a motor vehicle, equipment that is designed to interfere with operation of speed measuring device	25
Exceed speed for stopping distance	20

Exceed speed for stopping distance on road not marked in lanes	20
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*Good practice:* See Appendix 10 for some examples of the benefits in crash reduction terms of demerit point systems. An example from an evaluation in a Veneto Region, Italy<sup>32</sup> study of effects of demerit points on road traffic deaths and serious injuries, established a benefit of an 18% reduction in fatalities and a 19% reduction in injuries.

**The penalties for full licence holders caught speeding are:**

**Victoria:**

Exceeding the speed limit	Penalty (as at 1 July 2020)	Demerit points	Automatic licence suspension
< 10 km/hr	\$207	1	
10 –24 km/hr	\$330	3	
25 –29 km/hr	\$454		3 months
30 –34 km/hr	\$537		3 months
35 –39 km/hr	\$620		6 months
40 –44 km/hr	\$702		6 months
>45 km/hr	\$826		12 months
20 - 24 km/hr (110 km/hr zone)	\$330		3 months

**New Zealand:**

How far over the speed limit	Infringement fine
10km/hr or less	\$30
11-15km/hr	\$80
16-20km/hr	\$120
21-25km/hr	\$170
26-30km/hr	\$230
31-35km/hr	\$300
36-40km/hr	\$400
41-45km/hr	\$510
46-50km/hr	\$630

**New Zealand Speeding Fines**

- As shown in the table above, Speeding fines increase progressively from \$30 for speeds less than 10 km/hr over the limit, to a maximum fine of \$630 for speeds up to 50km/hr over the limit.
- At more than 40 km/hr above the speed limit you could also get a 28-day licence suspension.
- At more than 50 km/hr over the limit you could be charged with careless, dangerous or reckless driving.
- No demerit points are incurred for camera detected offences

**(iii) Increased fines and demerit points for commercial vehicle drivers** - 50% higher speed penalties for heavy vehicle drivers should be applied compared to drivers of light vehicles given the greater risks associated with a heavy vehicle crash outcome/than for general driving public

<sup>32</sup> Evidence-based policy on road safety: the effect of the demerit points system on seat belt use and health outcomes. Zambon F<sup>1</sup>, Fedeli U et al, Journal of Epidemiology and Community Health, 01 Oct 2007, 61(10):877-881

**Penalties for speeding offences - heavy vehicles**

The penalties for full licence holders caught speeding in a heavy vehicle are:

**Victoria**

**(Note, in New Zealand (fines are the same as for light vehicles)**

Exceeding the speed limit	Penalty (as at 1 July 2020)	Demerit points	Automatic licence suspension
By less than 10 km/hr	\$289	1	
10 km/hr–14 km/hr	\$454	3	
15 km/hr–24 km/hr	\$661	3	
25 km/hr–29 km/hr	\$909		3 months
30 km/hr–34 km/hr	\$1,157		3 months
35 km/hr–39 km/hr	\$1,404		6 months
40 km/hr–44 km/hr	\$1,652		6 months

**Victoria: What is a heavy vehicle?**

Heavy vehicle speeding penalties apply to: a vehicle with a maximum loaded weight (GVM) exceeding 4.5 tonnes, a vehicle including any trailers being towed with a maximum loaded weight (GCM) exceeding 14.5 tonnes, a bus with more than 12 seats.

A separate demerit point schedule applies to heavy vehicles compared to light vehicles in Victoria

**Victoria: Red light camera offences**

Failing to obey traffic lights, both red light and red light arrow, incurs a penalty of \$413 and three demerit points.

**New Zealand demerit point allocations for heavy vehicles**

Person produces logbook with 1–5 omissions	10
Person produces logbook with 6–10 omissions	20
Person produces logbook with 11 or more omissions	30
Person fails to produce logbook	35
Requirement to produce approved alternative record to an enforcement officer on demand	35
Vehicle recovery service vehicles (requirement to complete and retain tow authorities)	35
Requirement on driver or contractor working within an alternative fatigue management scheme to keep records	35
Taxi driver must not accept hire in specified area unless taxi is fitted with an in-vehicle security camera system that is operating	20
Taxi driver must not accept hire in specified area unless taxi is fitted with an in-vehicle security camera system that has an unobscured view of the interior	20
Person produces logbook with 1–5 omissions	10

**(iv) Review the adequacy of the current drink driving penalty regime to contribute to adequate deterrence and reflect relative crash risk**

AT could contribute to more rapid and widespread policy change in road safety at national level, including a review of drink driving penalties, by participating in the national regulatory team in MoT. Seek this involvement which if achieved will demand quite a deal of regulatory policy preparation, input and leadership from AT.

MoT do not appear to be vigorously pursuing some highly effective regulatory reform opportunities which most OECD countries are utilising. While limited changes to the regulatory framework are being examined at national level in the current Road to Zero Action Plan, these are proceeding quite slowly, making substantial performance gains for Auckland more difficult.

AT should participate in the regulatory reform team at the national level. This will require AT to clearly identify its regulatory reform priorities.

This will require broad increased awareness across AT of current issues, regular reporting back to senior officers in road safety related activity areas, knowledge transfer within the organisation and more. AT's highest priority regulatory reform issues will need to be identified, and pursued.

More broadly, the opportunities to Influence the MoT, Waka Kotahi, NZ Police and other key national decision makers (utilising the AT Board, CE, Auckland Council [Mayor and Councillors] other senior AT staff and regional national agency leaders) to bring about desired policy and regulatory changes at national level needs to be further embraced.

### 6.13 ADVOCATE FOR AND ADVISE ON POLICY REFORM AT NATIONAL LEVEL

**AT should be given the opportunity to meet with the NRSC twice each year to advocate the case for reform.** Sensible good international practice measures are not being implemented and many NZ lives annually are being unnecessarily lost.

AT to write to MoT and ask for these meetings to be agreed and established and held every six months.

**(a) Ensure a Road Safety Regulatory and Policies Priority Listing** is adopted by TM, AT and Auckland Council, and is communicated to the Auckland Community and the national road safety committee members.

**(b) AT should develop agreed positions on key policy and regulatory priority issues in writing** and train/brief/coach the AT Board members, ELT members, Councillors and senior staff on the substantive cases to be made and encourage their advocacy of the benefits of adoption of these policies by partners, including national department/ agency partners and relevant Ministers, and seek early action to implement them. It is essential for AT's credibility that the priority changes to regulation or policy at national level to be pursued are well understood by all spokespeople for the organisation, strengthening the focus of message delivery.

*COMMENT: Visited AT about two to three times in the development of Road to Zero (R2Z). In conversations, AT didn't have a strong position on potential policy change priorities, but rather six or seven different manager's positions. An AT agenda that could more clearly articulate priorities would support positive discussions and prioritisation.*

**(c) Press MoT to improve vehicle safety performance standards** for new and used vehicles entering NZ, in accordance with Item 12 from the 2020 Stockholm UN Road Safety Ministerial Conference declaration . More than half of all vehicles entering NZ annually are second hand, and there is little done to encourage safer vehicle features (including electronic stability control, ESC) and improved crashworthiness for those imports. Without action, this will remain an ongoing brake on New Zealand's road safety performance into the future.

The performance of the light commercial vehicle fleet should also be examined to identify means to improve the crashworthiness of this vehicle market segment as these vehicles traditionally lag behind light passenger vehicles in crashworthiness and safety feature availability. 12. Ensure that all vehicles produced and sold for every market by 2030 are equipped with appropriate levels of safety performance, and that incentives for use of vehicles with enhanced safety performance are provided where possible;

Stockholm UN Ministerial Conference 2020, Appendix 8

**(d)** Press NRSC to **support introduction of a zero BAC limit for commercial drivers and** for all repeat drink driving offenders.

**(e)** Request government/ MoT to **remove the capacity for courts to award a work-related licence** for a drink driving offender.

**(f)** NRSC to **explore with DoH case management approaches successfully applied in international jurisdictions for those drivers displaying addictive behaviours** with alcohol and continuing to drive, with a view to introducing a pilot project. **Work with ACC to develop and operate specific case management treatment programmes for repeat alcohol offenders and for certain drug offenders.**

**(g)** Request NRSC to extend the requirement for alcohol interlock conditions to more drink driving offenders. Review the current arrangements to improve on the take-up of mandated interlock requirements, which is understood to be running at less than 30% of court-awarded interlock requirements.

**(h)** Seek to strengthen the graduated licensing system for novice drivers through the review of GLS which it is understood is currently in progress by MoT. In 2020 there was a 16% increase in DSI for 16-24 year old drivers on restricted or learner licenses. It is concerning that in 2018, the only year for which the breakdown by age cohort for fatalities is readily available for Auckland, the 18-20 year age group were heavily over-represented (10.8) in fatalities per 100,000 population. [See figure of fatality rate by age cohort from road crashes, Auckland, 2018 (AT).]

The rate for this age group is higher for all of NZ. A strengthened GLS (some added provisions such as mandatory logbook supervised hours, solo license after 18 years, a zero BAC limit until 22 and more based on evidence of what is working, and what has not been introduced as yet) could certainly assist.

For older road users over 75 years old, efforts to understand the composition of the components of those fatalities for Auckland should be made (i.e. what proportion of fatalities were pedestrians and more). It is noted that the Auckland fatality rate for the over 75 year old per population is substantially below that for all of NZ.

**(i)** **Forming a road safety fund from the net increase in camera fine receipts.**

AT requested this in their submission to MoT as part of the R2Z development as "Safety camera income to be used as a fund for regional road safety." While this was not followed up in conversations with MoT since that time it is still recommended as an important opportunity to assemble funds from illegal behaviours such as speeding and to direct those amounts to road safety measures to improve

performance, but importantly to lower the risk of all New Zealanders being killed or seriously injured on the road network. The expanded speed camera programme to be introduced across NZ from 2021 will result in further fines being collected from some motorists not following the law, until that behaviour changes. Waka Kotahi and MoT should develop this proposal and the intended basis for the allocation of the funds raised for improving regional road safety outcomes.

In other jurisdictions this funding supports further enforcement efforts by Police, additional infrastructure safety programmes including walking, cycling and motorcycle safety improvements, additional public campaigns supporting enforcement, additional vehicle safety publicity programmes, and more. It needs to be allocated for expenditures that are clearly additional to existing programmes to gain and hold ongoing public support. AT should pursue discussions with Waka Kotahi and MoT to advance the establishment of this fund, drawn from the net proceeds from fines from infringements from the expanded camera programme and to be applied for regional road safety investment across NZ.

**Summary: Specific recommended policy reform priorities at this stage are included in the commentary column adjacent to the priority one recommendation 13. They include:**

- Improved vehicle safety performance standards for new and used vehicles entering NZ in accordance with Item 12 from the 2020 Stockholm UN Road Safety Ministerial Conference declaration. More than half of all vehicles entering NZ annually are second hand and there is little done to encourage safer vehicle features (including electronic stability control, ESC) and improved crashworthiness for those imports. Without action, this will remain an ongoing brake on New Zealand’s road safety performance into the future. The performance of the light commercial vehicle fleet should also be examined.
- Press NRSC to support introduction of a zero BAC limit for commercial drivers and for all repeat drink driving offenders.
- Request government/MoT to remove the capacity for courts to award a work-related licence for a drink driving offender.
- Request NRSC to extend the requirement for alcohol interlock conditions to more drink driving offenders. Review the current arrangements to improve on the take-up of mandated interlock requirements, which is understood to be running at less than 30% of court awarded interlock requirements.
- Advocate strengthening of the graduated licensing system for novice drivers through the review of GLS which it is understood is currently in progress by MoT.
- Strengthening of the GLS for novice drivers through the GLS Review (which it is understood is currently in progress by MoT).
- Request MoT to examine forming a road safety fund from the net increase in camera fine receipts. This was requested in AT’s submission to MoT as part of the R2Z development as “Safety camera income to be used as a fund for regional road safety.” Pursue discussions with Waka Kotahi and MoT to advance this fund for regional road safety application across NZ.

*Further policy priorities to the above, are set out within the Priority 2 recommendations (recommendations Nos. 19 to 30) which follow the Priority 1 recommendations and are also addressed in the Key Focus Areas.*

## *DELIVERING CRITICAL OUTCOMES – STRENGTHEN EXISTING PROGRAMMES*

### 6.14 REVIEW METRO BUS OPERATIONS

- Review Metro Bus Operations to proactively improve safety performance (i.e. contract providers to report on crashes, number of speeding tickets and number of red light running infringements incurred each month by AT bus drivers).
- Make Metro bus operations a key part of the vision zero safety solution. Safe access to bus stops for pedestrians is a critical issue for metro buses. Upgrade the safety of existing pedestrian access facilities to bus stops to lessen DSI risk. The Viastrada study identified 10% Drive change to safer operation of buses including for those cyclists and motorcyclists using bus lanes. Ensure bus drivers are not impaired and observe speed limits and red lights.
- AT to progressively introduce contract deduction provisions in contract renewals for speeding and red light offences. Require selected random breath testing (for alcohol) and random saliva testing (for selected drugs) results of drivers in the bus fleets by operators and reporting of any impairing noncompliance with zero BAC or presence of impairing drugs in accordance with required approaches to testing intensity and frequency prepared by AT as an operating specification within contracts.
- Drive change to safer operation of buses including for those cyclists and motorcyclists using bus lanes. Ensure, through an adequate testing and reporting regime, that bus drivers are not impaired and observe speed limits and red lights. AT to progressively introduce contract deduction provisions in contract renewals for speeding and red light offences. Require selected random breath testing (for alcohol) and random saliva testing (for selected drugs) results of drivers in the bus fleets by operators and reporting of any impairing noncompliance with zero BAC or presence of impairing drugs in accordance with required approaches to testing intensity and frequency prepared by AT as an operating specification within contracts.

This should be an amber light for AT. In addition to pedestrian crossings being installed at new locations AT should place a high priority on targeting existing higher risk pedestrian crossing/access locations (based on risk elements such as passenger numbers accessing stop, past crashes, bus volumes, bus speeds) through an annual programme. This retrofitting programme would target upgrading of existing crossing locations to provide much safer access to buses through pedestrian platforms being provided as crossings, good advance signage provided for motorists, lighting installed to improve safety at night, and median refuges and kerb outstands being provided at crossing locations as much as possible. It is not only pedestrians accessing buses who require protection but all those seeking to cross roads on bus routes.

### 6.15 EXPAND MODELLING OF SAFE DRIVING AND VEHICLE PRACTICES to all AT and Auckland Council activity, and propose adoption to all government authorities and businesses in Auckland, encouraging emulation of the approved practices.

\* Require all contractors/suppliers providing transport-related services to AT and Auckland Council, including public bus transport services, to apply Safe System principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and include a summary of their efforts in AT's reporting of safety performance in annual reports.

\* Encourage all contractors/ suppliers providing other transport related services to AT and Auckland Council and to other clients, to provide safe and sustainable transport services, and to include reporting of safety performance in their sustainability reports. Produce guidance materials and conduct an event to launch this initiative in 2022.

*14. Call upon businesses and industries of all sizes and sectors to contribute to the attainment of the road safety related SDGs by applying safe system principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and to include reporting of safety performance in their sustainability reports;*

*15. Call upon public organisations at all levels to procure safe and sustainable transport services and vehicles and encourage the private sector to follow this example, including the purchase of safe and sustainable vehicle fleets;*

Stockholm UN Ministerial Conference 2020, Appendix 8

## 6.16 EXPAND SAFER URBAN INFRASTRUCTURE IN ASSOCIATION WITH SAFER SPEED LIMITS TO LOWER ANNUAL DSI

The safer Network Programme (Waka Kotahi's Road to Zero – R2Z - Action Plan) is heavily focused on rural improvements. There is a need to work with Waka Kotahi to progress more innovative and successful treatments for urban areas.

AT should assess any shortcomings in its expenditure of existing annual infrastructure safety allocations and focus on improving delivery of the road safety programme annually.

The AT road infrastructure safety expenditure budget over the current three-year cycle is some \$63 million. It is expected that other programmes will build safety into their own programme, e.g. asset maintenance.

Include increased low cost infrastructure safety within maintenance and renewals programme. Build business case development expertise here and across all road safety activity areas to strengthen the likelihood of identifying further funding opportunities for higher return investments. Greater commitment required to incorporating lower cost infrastructure safety treatments in the streets and roads maintenance and renewal programmes (and contracts).

*COMMENT: Ensure safety is embedded into projects in the front end rather than fixing weaknesses down the line. Safety should be the bread and butter for the organisation. Prioritise and fund safety in a better way. Need greater thought on how to categorise projects with safety benefits. Not only tell the story on getting safety benefits from a project but how to weigh, value and identify those safety benefits.*

The broader context for road safety programme development by AT is set out in Appendix 13.

Through these mechanisms, activities identified in the RLTP are considered the agreed activities to be funded by Waka Kotahi and AT. Individual programmes and projects are then implemented.

## 6.17 UPGRADE PROJECT MANAGEMENT ARRANGEMENTS FOR THE AT ROAD SAFETY CAPEX PROGRAMME

- Upgrade project management arrangements for the AT road safety capex programme (additional to the Safe Speeds [speed management] programme). Appoint a project manager position within Integrated Networks, liaising with Service Delivery and Safety, to address timely delivery, ensure good alignment of delivered projects with programme objectives, uplift recognition of the capex programme as a substantial road safety activity rather than a collection of projects, increase the transparency of the programme to all internal and external stakeholders and enable an increased common understanding to be developed of the roles and responsibilities of all involved in the governance and delivery of the programme. Meeting these process and resource challenges will assist programme delivery and support awareness that Vision Zero adoption requires significant change in awareness of the key role to be played by safety programmes.

It is understood that the delivery of the Road Safety capital expenditure programme since the development of the Road Safety PBC has been inconsistent so far. The Road Safety PBC covered the 10-year period from July 2018 to June 2027. The PBC reviewed and adopted an existing three-year road safety infrastructure investment programme for 2018 to 2021 that was already being delivered, so the PBC options that were developed and evaluated covered the subsequent seven years of the programme.

The three-year programme expenditure was forecast in July 2018 to be a total of \$213.5 million over three years, over six sub-programmes (high risk urban roads & intersections, high risk rural roads & intersections, minor improvements, Safer Communities, red light cameras and speed management).

It is understood that the road safety programme has consistently been underspent and underdelivered, even accounting for a significantly lower 2020/2021 budget due to financial constraints under Covid-19. Delivery has been affected by under-resourcing and turnover in the road safety engineering space, under-estimation of the time and effort required to deliver speed management (particularly in consultation) in Auckland and an identified (in the Auckland Council CCO Review) fractured and drawn out process to deliver small projects. The Road Safety PBC “changed the game” in governance and ownership of the road safety capex programme internally in AT but recognition of the significance of this change on the process of delivering road safety capex projects has, it is understood, been slow in coming and is continuing to be worked through. There has been a subsequent inability for AT to make a fundamental shift in approach, to uplift the road safety capex space to a truly three to 10-year programme view, as opposed to only a pipeline of projects determined year on year.

A Small Works sprint was undertaken early in 2021 which identified innovations to address several of the issues identified above and a cross-functional group led by Network Management has begun work on a bold plan to implement these innovations and make the case for significant process and resource change. This work will require committed support and back-up from all AT leadership to ensure that the business does not revert to an overly cautious approach, which has proven to not support or enable programme delivery.

The reviewer was advised that an unfortunate consequence of this difficulty in lifting the perception and understanding of the significance of the road safety capex as a recognised substantial programme,

is that it is being viewed from time-to-time as a fund for the “safety component” of other projects – a view not helped by knowledge of the underspends.

In 2020 a Programme Manager Role was established in Integrated Networks for the Safe Speeds (speed management) programme. Staff advise that this role has led to an uplift in the programme view of Safe Speeds, a marked increase in transparency of the Safe Speeds programme to all internal and external stakeholders and an increased common understanding of the roles and responsibilities of all involved in the governance and delivery of the programme.

In these circumstances there would appear to be a strong case for a similar role being established for the rest of the road safety capex programme delivery, especially if the lessons of the delivery of the past three year programme are to be learnt. This role could also sit within Integrated Networks, with a “dotted line of responsibility to” (liaison with) both Service Delivery and Safety.

## 6.18 PROMOTE AWARENESS AND ACTION ON THE HEALTH AND SAFETY CONNECTIONS WITH ROAD SAFETY

The primary legislation governing health and safety at work in NZ is the Health and Safety at Work Act 2015 (HSWA). This is similar to Australian work health and safety law, but with changes to reflect the differences between the NZ and Australian working environments.

Under the HSWA, AT is a Person Conducting a Business or Undertaking (PCBU) and has primary duty of care responsibilities. These are explained in the Worksafe guide on the HSWA as:

### Primary duty of care (section 36 of HSWA)

A PCBU must ensure, so far as is reasonably practicable, the health and safety of workers, and that other people are not put at risk by its work. This is called the ‘primary duty of care’.

This means ensuring, so far as is reasonably practicable:

- *the health and safety of workers* who work for the PCBU (e.g. employees or contractors, including their subcontractors or workers) while they are at work in the business or undertaking
- *the health and safety of workers whose work activities are influenced or directed by the PCBU while the workers are carrying out the work* (e.g. a franchise company whose franchise requirements influence or direct the workers of the franchisee)
- *that other persons are not put at risk by the work of the business or undertaking* (e.g. a visitor to the workplace, or members of the public who could be affected by a work activity).

All these categories affect AT in its operations and the final point is of relevance to road safety outcomes ‘that other persons (e.g. member of the public/customers) are not to be put at risk by the work of the business or undertaking.’ The Act uses the term ‘as far as is reasonably practicable’. So far as is reasonably practicable is defined as follows in the box below.

*Many duties under HSWA apply ‘so far as is reasonably practicable’. It’s an important concept that involves doing what is reasonably able to be done to ensure people’s health and safety under the given circumstances. Something is ‘practicable’ if it is possible or capable of being done. ‘Reasonably’ doesn’t mean doing everything humanly possible to manage a risk. It means doing what other businesses would reasonably do in the same situation.*

*What every business needs to understand is:*

- (1) *what its work-related health and safety risks are – particularly those that have the potential to cause workers and others serious injury or illness*
- (2) *the likelihood of those risks occurring*
- (3) *the degree of harm that could result from those risks*
- (4) *the options to eliminate the risks*
- (5) *the options to minimise the risks (where they can't be eliminated)*
- (6) *the associated costs.*

*Consideration of cost should only take precedence over safety when it is grossly disproportionate to the risk.*

HSWA Website: [Health and safety at work – quick reference guide | WorkSafe](https://www.worksafe.govt.nz/managing-health-and-safety/getting-started/health-and-safety-at-work-quick-reference-guide/#)<sup>33</sup>

To date, AT's health and safety work has mostly focused on addressing risks related to the construction of AT projects and risks for public transport customers at AT stations/terminals or while on board AT public transport services.

The AT safety team has been requested by the CE to develop a broader Safety Strategy in 2021 that covers risks that have traditionally been categorised as either health and safety or transport safety risks. The connections in AT between health and safety and road safety relate to AT's services (e.g. bus services), assets (e.g. footpaths), projects (e.g. new busway design and build), maintenance and customer work, including business customers (trucking companies using AT's roads) and retail customers (travels on our bus).

There are a number of significant opportunities for improving road safety outcomes by fully considering the requirements of the HSWA:

1. AT needs to fully identify its span of responsibility as a PCBU under the HSWA, including any risks to other persons (e.g. the public) that arise from the work or its business or undertaking. This task would clearly identify the extent of its responsibility, including any overlapping duties and upstream duties, to eliminate or minimise risks that arise from its transport work such as the provision of a road transport network.
2. For public transport customers, the above work would clarify AT's responsibility for customers in the first and last leg of their journey which may involve active travel to and from bus stops and public transport stations. Bus services are run by companies that contract to AT, and AT and the companies have overlapping duties of care for bus customer safety.
3. For heavy vehicles and commercial vehicles these are a place of work and subject to HSWA. This is identified in Road to Zero as a key focus area. There is further opportunity to work under the HSWA to improve safety requirements for vehicles which are a place of work, (e.g. side under protection for heavy vehicles and speed control).
4. Contractors and subcontractors: The AT safety strategy should consider covering contractors and sub-contractors who work for AT. As a major client, there is the opportunity to require safe technology in the vehicle fleet of organisations seeking to work for AT. AT's health and safety pre-qualification requirements for suppliers is another tool to improve safety outcomes.
5. This specific issue receives some attention in Recommendation 15.

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<sup>33</sup> <https://www.worksafe.govt.nz/managing-health-and-safety/getting-started/health-and-safety-at-work-quick-reference-guide/#>

6. Managing risks related to construction on the road network, including temporary traffic management related risks is another connection with health and safety and road safety outcomes.
7. Health and safety also cover long term/chronic harm (air pollution, diseases of inactivity, mental health, climate change, environment) as well as acute harm (death from a crash). As part of the development of a safety strategy for AT and identifying its span of responsibilities as a PCBU, AT should seek to identify any longer term/chronic harm that may arise from its transport work.

Reference:

<https://www.worksafe.govt.nz/managing-health-and-safety/getting-started/introduction-hswa-special-guide/>

Recommendation 18 seeks to address these matters.

## PRIORITY 2

### Priority 2 Key Areas of Focus: Issues to be addressed as Priority 2 Recommendations

A number of areas of lower (second priority) status issues relate to the following matters with **relevant recommendations listed after the Priority 1 recommendations in Ch. 4.**

**Note that some action areas (e.g. recommended priority policy initiatives) are listed as commentary against Recommendation 13.**

**Other actions recommended in the commentary column are also to be noted.**

#### Priority 2 recommendations are:

19. Promote awareness of the harms (increased DSI) associated with widespread low level speeding.

There appears to be limited awareness (within the balance of the NZ community including MoT) of the serious harm effects (in total) experienced across NZ from widespread low level speeding compared to the relatively few drivers who practice high risk speeding. To win support for a robust speed enforcement programme, (i.e., the opportunities that exist to manage these harms to reduce death and serious injury), the public (in NZ and especially in Auckland) need to be informed about this established reality through a public campaign setting out the sensitivity of DSI to small increases in travel (and impact) speeds. AT has done some good work here, but MoT should provide more support. As noted earlier in this report, results of recent surveys of Aucklanders provided the following information:

More than a third of those responding said vehicles travel too fast on their streets, and a quarter thought it wasn't safe to cycle – *Brake NZ*.

Three in four New Zealanders understand that enforcing the speed limit helps lower the road toll and two in three think using speed cameras specifically will help lower DSI" – *The Public Attitudes to Road Safety Report from Waka Kotahi*.

These are useful responses and indicate that AT's awareness programmes have been cutting through.

20. Review traffic signal phasing and use guidelines.

Review traffic signal phasing and use guidelines to improve the safety of road users, especially pedestrians, but including motorcyclists, cyclists and vehicle occupants.

21. Substantially improve deterrence of seat belt non-wearing.

There is substantial scope for seat belt wearing rates improvement which would lower fatalities. In 28% of fatalities in 2020 in Auckland, seat belts were not fitted to vehicle occupants. This requires attention by NZ Police and enforcement of belt wearing at each opportunity, for example during:

- (i) random breath testing for alcohol,
- (ii) saliva testing for drug use,
- (iii) speed interceptions and roadside license checks, which can more effectively be pursued with (i) to (iii).

22. Trial camera-based detection of mobile phone use in a pilot area – Suggested area would be part of Auckland - to deter these illegal behaviours

23. Support increased deterrence of drug driving.

From 2022 the presence of methamphetamine and ecstasy and THC in New Zealand road users will become evident as drug testing rolls out from 2022. It will be substantial (Impairing substances detected in road crash fatalities in Victoria in 2020 were as follows: 18% alcohol, 22% methamphetamine, 15% THC [active component of cannabis], with various combinations.) Support the increased deterrence of Drug driving from 2022. Support police in securing resourcing for additional dedicated road policing staff who will need to be made available to carry out specific drug use deterrence enforcement in particular including a relatively minor component of general deterrence activity.

24. Ensure that TM develop and arrange delivery of training programmes for all TM partners on evidence based intervention development and implementation good practice.

25. Ensure an ongoing focused programme for motorcycle safety with evaluation of learning and a practically focused R and D programme is in place.

26. Encourage NRSC to explore, with DoH case management, approaches successfully applied in international jurisdictions for those drivers displaying addictive behaviours with alcohol and continuing to drive, with a view to introducing a pilot project. Work with ACC to develop and operate specific case management treatment programmes for repeat alcohol offenders and for certain drug offenders

27. Upskilling many of AT's contractors in SSAF and Vision Zero, as a part of AT's client responsibilities, needs attention. AT should seek to be the leader in cascading information to the rest of the various industries in which it operates. Project managers and engineers have reportedly found these demands to be substantial and have suggested some support for their own upskilling and to improve their effectiveness in this area would assist.

28. Encourage separation of drinking and driving through campaigns and corporate policies supported by national government agencies.

29. Note that Policy changes such as the speeding up of EV transition are likely to bring road safety benefits, as an increased number of these vehicles on our roads would have a higher safety (ANCAP) rating - in the case of a crash the likelihood of DSI would reduce.

30. Encourage NRSC to explore with DoH case management approaches successfully applied in international jurisdictions for those drivers displaying addictive behaviours with alcohol and continuing to drive, with a view to introducing a pilot project. to be discussed.

31. Work with ACC to develop and operate specific case management treatment. programmes for repeat alcohol offenders and for certain drug offenders.

## 7.0 2018 BIR RECOMMENDATIONS IMPLEMENTATION FINDINGS

### 2018 BIR Recommendations, AT Comment on Status and Review Response

AT column is Auckland Transport progress; C column is central government departments/ agencies progress.

Status of action: **A is completed**, **B is satisfactory progress**, **C is underway but unsatisfactory progress**, **D is not underway**.

	Management comments and actions to date	Review comments	AT	C
<b>Synopsis of recommendations - AT Governance</b>				
<b>1.Strengthen Institutional Management Capacity</b>				
1.1 Strengthen the management functions in place in AT to build capability to effectively implement road safety activity.	New safety function was established in late 2018 with the appointment of a Safety Executive General Manager. The safety function is responsible to lift AT's safety performance and integrate safety across the organisation and culture, building capability to effectively deliver projects with safety at their core. The structure of the Safety Team is intended to provide greater focus on strengthening the management and alignment of road safety activities.	Action underway. Monitor to ensure completion of establishment and maintenance and identify gaps in linkages across programme and policy development and delivery activity. Ensure safety policy holder is monitoring planning and investment outputs for safety and delivery timeliness and extent.	B	-
1.2 Develop a sharpened results' focus for road safety management activities which apply a Safe System framework to drive development and delivery of selected interventions, which will produce improved road safety results.	The Transport Safety Investment Portfolio Steering Group (IPSG) governs the Road Safety Programme Business Case investment activities to ensure effective delivery of safety outcomes. Safety has been embedded into AT's Enterprise Project Management Framework which will require projects to comply with the Safe System Assessment Framework (SSAF). Ongoing training of Safe System assessments will be delivered through the Vision Zero Learning Strategy. To further ensure safety remains a priority and embedded within the organisation's culture, there will be a greater focus on our internal communication, engagement, learning and leadership to build capability in our people, processes and systems.	There are many moving parts here and the safety Integration task will remain challenging in ensuring safety is implemented adequately to deliver improved safety results. Delivering integrated processes for Programme Business case development and ensuring effective delivery of planned AT safety outcomes will be demanding. It will warrant priority efforts to bring AT's road safety related activities together, within a sustainable mobility context and to ensure active road safety modes are receiving adequate attention. Clear accountabilities are necessary in such an environment. Breaking down any separate silos of activity and reflecting community inputs and good practice policies to deliver reduced DSI and more sustainable mobility is the task.	B	-
<b>2.Safe System with Vision Zero goal adopted and supported</b>				

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2.1 Endorse within AT and with Auckland Roadsafe the Safe System and Vision Zero goal.	Developed a Vision Zero Strategy and Action Plan for Tāmaki Makaurau. This was endorsed by the AT board in September 2019.	Good progress. Maintain focus.	A	-
2.2 Adopt a long-term target of zero DSI for Auckland, with interim stretch targets, in a new Roadsafe Auckland Road Safety Strategy.	Tāmaki Makaurau Vision Zero Strategy has a long-term target of zero DSI by 2050, with interim targets of 20% reduction by 2021 (from the 2016-2018 annual average) and 65% reduction by 2030 (from a 2016-2018 annual average baseline).	26% reduction to 526 DSI achieved to end 2020. Challenge to maintain gains to meet 2021 target and pursue path to 251 DSI (65% reduction) by 2030.	A	-
2.3 Appoint a Safe System Implementation Manager, to assist Safe System thinking to become an integral part of the organisation's work and advocacy at regional and national levels, to build institutional road safety management capacity and to support a new AT Road Safety Task Force.	A Safety function has been established, <b>that reports directly to AT's Chief Executive and through an operating model refresh, the Safety function reflects a partnership model</b> to collectively work across the organisation and partner agencies to reach our Vision Zero targets.	A good achievement. Critical that the multiple responsibilities across the organisation and those of partners receive sufficient attention to ensure accountability and necessary adjustment takes place. Continued improvement needs to be achieved.	A	-
2.4 Task Force to deliver Safe System briefing/training with the Board, ELT, next 100 senior staff at AT, 50 regional partner staff then contractors and consultants.	Continuous training opportunities on safety leadership are offered to AT's ELT and AT Board. AT ELT and Board completed Vision Zero workshops mid 2019 prior the establishment of the Vision Zero Strategy. Ongoing training and updates will be provided on a needs basis as new leaders join to build safety capability. A Vision Zero Learning Strategy has been developed to continuously deliver learning initiatives across AT, which includes a Vision Zero e-learning module that can be shared externally. A Vision Zero workshop was also delivered to the Planning Committee in March 2021 to gain political support in lifting Tāmaki Makaurau's road safety performance and improving safety visibility. Ongoing work will continue to deliver training and briefings to leaders to strengthen Safe System knowledge.	Provision of relevant briefing/ training to contractors/Consultants/City of Auckland Councillors and staff/TM partnership members/ Auckland Community required into the future. Experience in other transport related organisations is that change to fully reflect the depth of a Vision Zero value set is a demanding process, taking a number of years to be fully appreciated across a large organisation such as AT. Continued reinforcement and encouragement to staff to reflect on application of the principles is usually necessary.	A	-
<b>3. Support the new AT road safety approach</b>				
3.1 Establish and resource the AT Road Safety Task Force including three ELT members reporting to the CE to drive Safe System organisational change.	<b>The Road Safety Tāmaki Makaurau Governance Group has endorsed the Vision Zero Strategy and Action Plan. The Governance Group oversees the Vision Zero Strategy and meets monthly to align road safety actions and share information. A review of the governance framework will be</b>	On track. Emphasise need for Accountability and Leadership for advocacy by TM partners including TM Police, plus MoT and Waka Kotahi.	A	-

	undertaken in 2021 to ensure effective use of the group to drive outcomes. The Transport Safety Investment Portfolio Steering Group (IPSG) has also been established. The IPSG governs the Road Safety Programme Business Case investment programme to ensure effective delivery of safety outcomes and benefits, while also looking to have oversight of safety benefits from other AT programmes from across the organisation.			
3.2 Finalise the AT Road Safety Strategy and Action Plan.	Tāmaki Makaurau Vision Zero Strategy completed and approved on 3rd September 2019.	Excellent effort, now for effective implementation by all partners with a number of key unresolved issues.	A	A
<b>4. Deepen partnership with Auckland Council</b>				
4.1 Commit to working closely with AC to strengthen alignment with the direct road safety priority activities AT identifies and share knowledge about Safe System/Vision Zero and institutional management strengthening.	Auckland Council is a member of the Tāmaki Makaurau Road Safety Governance Group and is a key partner in the implementation of Vision Zero.	Encourage informed partnership and advocacy publicly. Recent Council Planning Committee road safety briefing by AT an excellent activity.	A	-
<b>5. Improve road safety visibility</b>				
5.1 Compile and circulate DSI updates each weekday to AT Board, AT ELT, Minister for Road Safety, Heads of regional partners and central government partner agencies.	Weekly Deaths and Serious Injuries (DSI) updates are circulated weekly to our road safety partners, Tāmaki Makaurau Road Safety Governance Group and Executive General Manager Safety will report any notifiable incidents to AT board and ELT directly. DSI updates are reported on the AT website to the public (monthly DSI updates) and the public has access to the Vision Zero Public Map which is updated quarterly.	Good progress. Recommend provision of regular relevant data for Ministers (Police, Transport) and Local Boards.	A	-
<b>Synopsis of recommendations – AT Programs</b>				
<b>6. Upgrade investment in current AT/Waka Kotahi infrastructure safety programme</b>				
6.1 Evaluate the AT road infrastructure safety programme and identify learnings as inputs for future programmes.	Monitoring and evaluation framework for road safety programme underway. Framework to be developed for benefits realisation. Ongoing piece of work.	Evaluation learnings to be used in improving development of future business case benefits.	C	-
6.2 Ensure greater consistency in applying design principles across AT and its design consultants.	AT design centre of excellence has been formed, and a Design Review Steering Group has been established, with a design technical panel to review designs going through the project stage gates.	Significant developments especially transport design manual update. Continue to extend and strengthen centre of excellence quality and reach.	B	-

	Vision Zero has been included in the Transport Design Manual (TDM) and the Safe System Assessment Framework included in AT's Project Management Framework.			
6.3 Work with the Central Government/Waka Kotahi to remove Waka Kotahi requirement for calculations of crash reduction benefits for proposed infrastructure safety treatments to be offset against the value of time costs due to delays.	New Waka Kotahi benefits framework and Economic Evaluation Manual has been released September 2020. Ongoing conversation on benefit calculations. Now absorbed into the work of the safety team.	Need to resolve benefit calculations issue with Waka Kotahi to avoid estimated travel time impacts being treated as an offsetting negative to estimated DSI benefits from proposed safety projects. Not an appropriate equivalence. Waka Kotahi needs to resolve any remnant elements of this lack of vision zero thinking in its estimated project benefits/ costs calculations for road safety projects. Understandable when comparing travel time options for transport efficiency projects. Not the situation for safety projects.	C	C
<b>7. Build low-cost safety into maintenance and renewals</b>				
7.1 Agree that infrastructure maintenance and renewals projects are to be required to include lower cost safety treatments as much as possible. <ul style="list-style-type: none"> <li>o Weight maintenance treatment selection more to safety outcomes.</li> <li>o Review maintenance contracts framework to elevate safety.</li> <li>o Embed safety outcomes in maintenance staff Performance Plans.</li> </ul>	Low cost safety improvements are routinely being carried out in conjunction with rehabilitation projects where funding is available. The new road maintenance contracts (which will be progressively implemented) have a strengthened performance framework with a higher weighting given to safety than previously. The five key result areas are customer, safety, access, sustainability and value for money. The resurfacing programme carries out SCRIM surveys periodically to identify sections of road with poor skid resistance which are then incorporated into the annual resurfacing programme.	Suggests this important matter is receiving attention but not fully resolved. Discussions needed to find agreed specific resolution. Safety to lead. The new basic treatments form maintenance should not be treating basic low cost safety provision as a "requiring additional funding" add on. Responsible roles identified.	C	-
7.2 Review maintenance contracts framework to elevate safety. Embed safety outcomes in maintenance staff Performance Plans.	A Performance Monitoring and Assurance team has been created which has a key objective of establishing KPI's at a contract by contract level to monitor and drive improvements and road safety is an area of intention to introduce specific KPI's to monitor safety performance at a contract area level to improve focus and compare performance of areas (and suppliers) relative to each other. Vision Zero workshops are also being rolled out to AT staff. The outcome of the workshops includes understanding the Vision Zero principles, the role each person has in delivering safe outcomes and identification of the links to safety to their own business/performance plans.	<b>See 7.1 above.</b> A statement of aspiration is fine but it is not an outcome. Little progress to date. A piece of work needing to be done as a priority with this recommendation. Some discussions with procurement but no direct progress with maintenance team to date.	C	-
<b>8. Improve motorcyclist safety</b>				
8.1 Ensure the AT maintenance and renewals programme delivers improved motorcycling	Continual work required to include motorcycle safety into AT's maintenance and renewals programme.	Give this suitable priority. Poor progress to date.	C	-

safety, as per the Waka Kotahi Safer Journeys for Motorcycling on New Zealand Roads Guide, 2017, drawing upon consultation with the motorcycling community.				
8.2 Treatments that cater specifically for motorcycle safety should be recorded and reported on by AT.	Motorcycle safety trial on Dominion Road underway (April 2020) to help improve visibility of motorcycles to turning vehicles. Trial supported and funded by AT and findings from this trial could enable future motorcycle treatments at other locations.	Ensure ongoing focused programme with evaluation of learning is in place. This user group are overrepresented in fatalities	B	-
8.3 Approach ACC who have indicated interest (it is understood) in investing in motorcycling safety infrastructure treatments in Auckland.	The Injury Prevention Partnering agreement between AT and ACC began on 31 July 2019 (actual signing date 21 August) and runs for 2 years until 30 June 2021. Funding is invested specifically towards key Road Safety Projects. ACC funding has been pulled from the Dominion Road motorcycle trial due to delayed delivery, however ongoing conversations with ACC will continue to further secure future motorcycle treatments.	Programme delay and withdrawn ACC funding noted. Ensure delivery of programme and continuation of research activity.	C	C
8.4 Support MoT's investigation in mandating ABS for motorcycles and request the Minister to mandate ABS for all new motorcycles imported into New Zealand as soon as possible.	The national Road to Zero Strategy has a key action area to support motorcycle safety and mandate anti-lock braking systems (ABS) starting in April 2020. The Minister has required all new model motorcycles entering the fleet to be fitted with ABS or a similar combined braking system (CBS) by 1 April 2020, and all existing-model new motorcycles and all used motorcycles entering the fleet to be fitted with ABS or CBS by 1 November 2021.	Excellent result.	A	A
<b>9. Phones off policy while driving</b>				
Adopt as preferred practice for AT staff that phones are to be turned off while driving as first step to later mandatory requirement. Promote to Auckland community as good practice.	AT's Chief Executive has issued a directive that mobile phones must be turned off while driving any AT fleet vehicle. In order to minimise driver distraction, people driving AT fleet vehicles must not use a hand-held or hands-free mobile phone whilst in the car and must pull over to a safe place and stop the engine prior to any use of their phone. This directive is effective as of November 2019.	Excellent. Monitoring of compliance would be advisable to encourage good outcomes	A	-
<b>10. Improve pedestrian safety</b>				
Pilot traffic calming around schools and in higher risk areas for pedestrians.	Safe Schools Programme is funded by ACC to go towards pedestrian crossings around schools and support active mode	Major challenge remains to implement reduced speed signage and supportive infrastructure around all schools as a priority. Other higher risk	B	C

	<p>uptake to get to school safely. AT has delivered 20 Safe School Streets projects.</p> <p>The Mass Action Pedestrian Improvement Programme (MAPI) was started in 2018. Under MAPI, many road safety features have been implemented including raised table zebra crossings. In 2018/19 AT has delivered 37 raised crossings, and since then AT has adopted the Safe System design with all new crossing being raised and now have over 55+ raised zebra crossings delivered under the programme.</p>	<p>pedestrian DSI crash areas should receive early speed limits reductions and supportive infrastructure if possible as part of second and third tranche speed management programme or earlier systematic agreed intervention. AT being delayed in implementing this by Government regulated process. AT needs to find a way forward to implement this as a safe road users' priority proactively.</p>		
Pilot pedestrian crossings for bus stops at higher risk locations and seek ongoing funding for an annual programme.	<p>Metro is part of the transport safety Investment Portfolio Steering Group (IPSG), to gain greater visibility and alignment of Metro operations and projects. There are multiple programmes across AT that install crossing facilities that help bus passengers cross the road more safely and are included for new bus stops. AT is also developing a visual map that provides greater visibility of pedestrian crossing facilities, enabling robust prioritisation of interventions to high risk locations.</p>	<p>New crossings for new stops is an excellent program. A substantial retrofitting programme in parallel should be a high priority for AT targeting existing higher risk pedestrian crossing/ access locations (based on risk elements such as passenger numbers accessing stop, past crashes, bus volumes, bus speeds) with an annual programme.</p>	B	-
			C	-
Seek to establish an AT safer walking programme.	<p>Walking Programme Business Case (PBC) is in development and currently workshopped with key stakeholders. The final Walking PBC will be submitted to Waka Kotahi mid 2021.</p>	<p>Note that the draft Walking PBC will be submitted for AT's review end May/beginning of June 2021. The final PBC will be submitted to Waka Kotahi mid/end June. This is an important programme for Auckland requiring a quality business case and strong advocacy.</p>	B	-
<b>Synopsis of recommendations – AT Partnerships - Governance</b>				
<b>11. With AC, influence central government and agencies, and support regional partnership activities</b>				
<p>11.1 That the Board of AT, with the support of the Mayor, influence national agency heads and Ministers to make priority policy changes, and support an effective regional partnership. Request central government: to adopt Vision Zero as the underpinning goal of Safer Journeys.</p>	<p>National Road to Zero strategy launched December 2019 with a Vision Zero approach.</p>	<p>Need to continue to articulate to the community and national partners the substantially different approach to understanding safety on the network as a consequence of Vision Zero, compared to traditional blame the user attitudes in road safety. Excellent result for Auckland and NZ.</p>	A	A
<p>11.2 Request central government to:</p> <ul style="list-style-type: none"> <li>Revise the Safer Journeys Action Plan to address the many gaps in New Zealand's road safety strategy;</li> </ul>	<p>AT provided submission to the national Road to Zero strategy. Recommendations taken on board, with the release of the national Road to Zero strategy in December 2019.</p>	<p>Many of the recommendations from AT to the R2Z strategy process were not adopted in the published action plan. Suggest AT advocacy skills need to be resourced and developed to achieve robust and multi-layered efforts. MoT need to be engaged in discussions for AT to better understand why certain issues have not been addressed at this stage and what can be done to close this disconnect in next action plan.</p>	B	C

<p>11.3 Request central government to: Set an intermediate target for reduction of DSI.</p>	<p>Auckland RLTP have a 60% DSI reduction in 10 years. (Base year 2017). AT's Road Safety Programme Business Case (PBC) has sense checked the 60% reduction and intermediate targets identified and set in the AT's Road Safety PBC.</p>	<p>Excellent target setting achievement. Will be challenging, requiring all the support from behavioural change, safer travel speeds, substantial safer infrastructure programme and safer vehicles that can be brought to bear. Road to Zero national action plan proposes a 40% DSI reduction to 2030 based on 2018 levels which compares with a 65% reduction target from 2018 adopted for Auckland.</p>	<p>A</p>	<p>B</p>
<p><b>12. Develop a fresh road safety narrative for Auckland</b></p>				
<p>12.1 Develop, with AC, a fresh road safety narrative and approach – built around Safe System and Vision Zero. Deliver this to the Auckland community in concert with the regional partnership.</p>	<p>Internal and external Vision Zero narrative and communication approach has been developed. Vision Zero principles and language used across all communications and marketing. One by One campaign (ACC-funded) focuses on Vision Zero principles, including System-wide approach to Safety.</p>	<p>Good development. Advocacy to the Auckland community is critically important and AT, Auckland Council, Regional Traffic Police, and other partners need a coordinated planned programme to maximise earlier understanding.</p>	<p>B</p>	<p>-</p>
<p><b>13. Adopt new governance and management arrangements for Auckland Roadsafe</b></p>				
<p>13.1 Support adoption of comprehensive fresh governance and management arrangements for the Auckland Roadsafe regional partnership based on the Draft Revised Auckland Road Safety Framework 2017 to 2023, December 13, 2017.</p>	<p>Tāmaki Makaurau Road Safety Governance Group and Leadership Group established and underway.</p>	<p>Excellent development. However, for on the ground implementation of adopted program, all TM partners should be expected to play their agreed part. Discussion by AT with Police at national level recommended to resolve issues around significantly lower levels of inputs being provided for drink driving deterrence and speeding deterrence than agreed in annual traffic policing agreement adopted with Waka Kotahi for the Auckland region. <b>Has to be resolved at Police HQ level with clearer guidance for District Commanders. This is a tragic multi-year failure to deliver agreed deterrence through agreed breath testing to reduce annual fatality levels down by some 14% of fatalities if agreed good practice is applied.</b> Supportive public campaigns need to be resourced and operated to support enhanced enforcement.</p>	<p>B</p>	<p>B C</p>
<p>13.2 Adjust and finalise the draft five-year Roadsafe Auckland Strategy to reflect Safe System and Vision Zero and include DSI targets.</p>	<p>Road safety Programme Business Case (PBC) and Vision Zero Strategy have been finalised which include interim, 10 year and 30 year DSI targets. Zero by 2050.</p>	<p>Good practice target adoption achievement.</p>	<p>A</p>	<p></p>
<p><b>14. Advocate strategy, policy, enforcement and national management priorities with central government</b></p>				
<p>14.1 With partners, approach central government to support the new strategy, including targets, and:</p> <ul style="list-style-type: none"> <li>Progress measures in the new strategy including Vision Zero/Safe system principles and targets</li> </ul>	<p>National Road to Zero strategy launched December 2019 with a Vision Zero approach. Measures for Road to Zero is progressing and will be aligned to Auckland's Strategy.</p>	<p>Vision Zero approach adopted in national action plan. A welcome outcome.</p>	<p>A</p>	<p>A</p>
<p>14.2 Request adequate funding to restore road policing enforcement and involvement in</p>	<p>This recommendation has been referred to National Road Policing Support for their consideration and response.</p>	<p>Intent must be to achieve agreed police inputs, not maintain existing unsatisfactory levels! To this stage no improvement in road policing inputs in</p>	<p>C</p>	<p>C</p>

<p>discussions between Police and Waka Kotahi about resourcing agreements</p> <ul style="list-style-type: none"> <li>• Outline new policy/legislation priorities</li> <li>• Request adequate funding to promote Vision Zero/enforcement programmes by public campaigns.</li> </ul>	<p><b>National Road Policing Support</b> advise they will discuss the recommendation with AT and Waka Kotahi, which funding agreement confirmed between Waka Kotahi/Police to maintain existing levels of road policing.</p>	<p>Auckland region for drink driving and speed compliance have been delivered by Police since early 2018. Discussion urgently required by AT with Police Command HQ (with Waka Kotahi’s involvement) to ensure Waka Kotahi funded resourcing of traffic police activities with agreed specific outcomes annually, at substantially higher levels of enforcement to achieve deterrence, is delivered. Discussion about detailed operating activities (e.g. number of booze bus operations per week by hours of operation by number of police officers for each operation over a year by high alcohol times, and so on – required to deliver more than 16000 breath tests a week in Auckland, This is not happening and the evidence of enforcement in many other countries is that a number of road users are losing their lives as a result. For speed enforcement (including mobile camera hours expansion) it is necessary to ensure road policing is a mainstream activity and not a subsidiary add on to the general policing task). Police to seek government support if general policing resources not adequate for the task in Auckland. Currently the price paid for extensively redeploying road police and compromising planned enforcement is additional drink-driving and speeding related fatalities on Auckland’s roads each year - in the order of some 9 to 11 lives. Biggest challenge and opportunity facing Auckland road safety performance today.</p>		
<p>14.3 Request adequate resourcing of the National Road Safety (NRS) Committee partnership.</p>	<p>AT requested MoT that it be included in the National Road Safety (NRS) Committee partnership.</p>	<p>NRSC not yet established. AT should be given the opportunity to meet with the NRSC twice each year to advocate the case for reform. Sensible good international practice measures are not being implemented and many New Zealand lives annually are being unnecessarily lost. AT to write to MoT and ask for these 6 monthly meetings.</p>	C	C
<p>14.4 Seek a much-improved priority for road safety in decisions made by WAKA KOTAHI and Police and MoT.</p>	<p>Tāmaki Makaurau Road Safety Groups (working, leadership and governance) are meeting regularly with all road safety partners. Police looking at how they are structured nationally where we could have some influence (i.e. Separated from other police units).</p>	<p>See response to 14.2 above. Non delivery of agreed enforcement outputs (intensity) for speed and drink driving is a major issue for DSI in Auckland for AT. MoT are not vigorously pursuing some highly effective regulatory reform opportunities which most OECD countries are utilising.</p>	B	C
<p><b>15. AT to request government to ensure MoT has adequate mandate and capacity to lead road safety nationally</b></p>				
<p>15.1 Encourage central government and relevant Ministers to support the MoT to ensure it has the mandate and the capacity to fulfil its key lead agency leadership role.</p>	<p>Continual partnership with MoT, with further effort required to advocate for greater policy and legislative action for transport safety.</p>	<p>Many AT recommendations not included in R2Z Action Plan. NRSC has not yet been established. Likely that MoT does not have resources to address available measures to save many NZ lives annually. Covid-19 may be a factor but this continues a pattern of delayed policy development opportunities and recommendations since 2017.</p>	C	C
<p><b>16. Develop and implement an Auckland speed management campaign</b></p>				

<p>16.1 Develop and implement a public campaign which sets out the sensitivity of DSI to small increases in travel (and impact) speeds and the opportunities that exist to manage these levels to reduce death and serious injury.</p>	<p><b>Speed Management Bylaw was approved in October 2019 and the first phase of speed management changes came into effect in July 2020. A communication plan for the Safe Speed programme has been developed and rolled out which includes educational elements on the risk of speeding and the reasons why speed intervention is essential in our Vision Zero journey in reducing death and serious injury on Auckland's transport network.</b></p> <p>Educate and Inform campaign is humanised and localised for Speed Management communications. It focuses on shared values of respect for local communities because everyone deserves to get home safely. It has an evidence based approach.</p>	<p>Waka Kotahi survey results of Aucklanders found that 3 in 4 New Zealanders understand that enforcing the speed limit helps lower the road toll and 2 in 3 think using speed cameras specifically will help lower DSIs" – Public Attitudes to Road Safety Report</p> <p>This is a useful piece of information and indicates that AT's awareness programs have been cutting through. However, there appears to be limited awareness (within the balance of the NZ community including MoT) of the serious harm effects (in total) experienced across NZ from widespread low level speeding compared to the relatively few drivers who practice high risk speeding. To win support for a robust speed enforcement program, (i.e. the opportunities that exist to manage these harms to reduce death and serious injury), the public need to be informed about this established reality through a public campaign setting out the sensitivity of DSI to small increases in travel (and impact) speeds. AT has done some good work here, but MoT need to provide more support.</p>	<b>B</b>	<b>D</b>
<p><b>17. Request central government to resource necessary speed compliance measures</b></p>				
<p>17.1 Seek agreement of central government to increase penalties for camera offences for all drivers and riders with further increases for heavy vehicle driver offenders to more adequately reflect crash injury risk.</p>	<p>Letter has been written from AT to the Ministry of Transport, advocating for penalties to be reviewed and increased, particularly for speed offences. AT has also provided a submission on the Road to Zero Strategy incorporating this request. This has been included as an action in the Road to Zero strategy. MoT is in the early stages of scoping the review of road safety penalties (a key action under Road to Zero). Increasing the penalties for speeding offences will be considered as part of the initial scoping of this review. Ongoing conversations with MoT will continue to seek to influence a positive safety outcome.</p>	<p>MoT developing a "framework for reviewing ....fines across the transport sector" and when complete will apply them to priority areas. It appears it may be a slow process. The current level of fines (\$30) for speeding 0-10 km/h above the posted level serves to trivialise the offence of lower level speeding, a behaviour which in aggregate is a source of serious harm to New Zealanders. Not having a bus ticket incurs a fine of \$150 in Auckland. The contrast between the life threatening impact of one behaviour compared to the other and the different penalty levels is stark. Social equity issues for those incurring fines need to be considered and as necessary addressed in innovative ways, but loss of life and incurring serious injury in road crashes is also a social equity issue, with outcomes usually far more serious in nature. Heavy vehicle fines relative increase not mentioned in R2Z.</p>	<b>B</b>	<b>B</b>
<p>17.2 Work with Police to support early introduction of lower tolerances on mobile covert and fixed camera enforcement across the whole year.</p>	<p>Waka Kotahi provides support through the police partnership programme (known officially within Police, Waka Kotahi and MoT as the Road Safety Partnership). Information flows from Waka Kotahi/NZ Police to the Tāmaki Makaurau Road Safety Governance Group.</p> <p>This recommendation was referred to the National Road Policing Support for their consideration and response and additional cameras agreed to in Road to Zero Strategy release in December 2019. Ongoing conversations and influence to continue from AT.</p>	<p>Continue to work with Police to support lower tolerances on the (current and proposed expansion of) mobile covert and fixed camera enforcement to achieve travel speeds which comply with speed limits, now and through the transition to Waka Kotahi operation.</p>	<b>C</b>	<b>C</b>

<p>17.3 Work with Police through Roadsafe to achieve central government funding support for expanded hours of deployment of existing mobile covert cameras and for early and substantial expansion of camera offence processing (back office capacity improvement).</p>	<p>Waka Kotahi will provide support through police partnership programme (known officially within Police, Waka Kotahi and MoT as the Road Safety Partnership). Information flows from Waka Kotahi to Tāmaki Makaurau Road Safety Governance Group. This recommendation was referred to the National Road Policing Support for their consideration and response. A National Automated Compliance and Intervention Management Programme has been developed as part of the Road Safety Partnership, now incorporated in the Police and Waka Kotahi BAU. This includes a road map for camera roll out and upgrade of back office capacity.</p>	<p>R2Z indicates that mobile camera hours across New Zealand are to increase to 100,000 hours annually in 2021, (Focus Area 1, p.8). Auckland (TM Region) has expected to receive 950 hours monthly (11,400 hours annually) through Police/ Waka Kotahi agreements. Police indicate that more than 13,000 hours annually are actually being achieved. This level should increase to an estimated, say, 30% of the new total NZ hours which would be 30,000 hours annually for Auckland. It is critical that these expanded hours are implemented, and that covert operation is the method applied in the rollout. This ramping up needs to be discussed with Police and Waka Kotahi and necessary supporting measures put in place including temporary workarounds for expanded back office processing of infringements to ensure this benefit in reduced DSI can be achieved as the transition of cameras to Waka Kotahi responsibility takes place over potentially the next 3 to 5 years. It will substantially reduce DSI in Auckland.</p>	<p>C</p>	<p>C</p>
<p><b>18. Request central government to reduce drink driving DSI</b></p>				
<p>18.1 Work with the Roadsafe partners and look to central government to assist and support Auckland Police to be given the resources to deliver 1.1 million Random Breath Tests in Auckland in 2018, with a good practice strategy for RBT enforcement in place.</p>	<p>The 2019-2021 Road Safety Partnership programme (Police, MOT, Waka Kotahi) provides funding to increase the number of RBTs to 3 million nationally by 2020/21. Quarterly updates on the Auckland contribution have been requested to be provided to the Tāmaki Makaurau Road Safety Governance Group. Further negotiations with Police are required to increase RBTs in Auckland.</p>	<p>For 2020, the agreed number of RBT's to be conducted in the Auckland region was some 800,000. Actual performance was some 50% of this level. This continues a practice experienced for some years of an inability to deliver agreed RBT levels in the Auckland region. Alcohol involved fatalities in TM (alcohol only involvement above legal levels) were in excess of some 30% of all road crash fatalities in 2019. This is approximately 1.6 to 2 times the levels of fatalities experienced in other good practice Australasian jurisdictions (15% to 17% ). A discussion about an agreed alcohol enforcement programme across a year with detailed agreed weekly proposed tasking – with specific numbers of high visibility (booze bus plus high visibility signage for car based operations) RBT operations each week and supporting car based enforcement operations for specific deterrence each week with numbers of officers to be deployed is necessary. Outputs can then be monitored weekly to detect and address any slippage.</p>	<p>C</p>	<p>C</p>
<p><b>19. Request central government to reduce drug impaired driving DSI</b></p>				
<p>19.1 Request central government to authorise the agreed collection of data on the presence of drugs and alcohol within hospitalised road crash patients to establish prevalence of drugs by type (and a more complete alcohol impairment record).</p>	<p>AT working with Police to source local evidence and best practice for this approach. Implementation on Drug and Impaired driving are included in Road to Zero Strategy.</p>	<p>A good Initiative by national government/MoT. Work with Police to support Auckland implementation when ready for rollout.</p>	<p>B</p>	<p>C</p>
<p><b>20. Enforce seat belt wearing</b></p>				

<p>20.1 Work with Police to encourage enforcement of correctly fixed seat belt wearing and child restraint fitting.</p>	<p>AT and Police already working closely on this at checkpoints and through campaigns. AT has a community transport programme - working with communities on child seat belts and restraint fitting.</p>	<p>Strengthen this partnership program. Estimated 28% of fatalities were not belted in 2020.</p>	<p>B</p>	<p>C</p>
<p><b>21. Deliver public campaigns to reinforce priorities</b></p>				
<p>21.1 Work with regional partners to deliver public campaigns which reflect enforcement priorities across the year and Vision Zero principles. These would continue in 2019 and 2020.</p>	<p>AT and Police already working closely together on Road Safety Campaigns. ACC are funding \$500K for 2019/20 - 2020/21 for an 'always on' safety campaign.</p>	<p>Agree detailed enforcement programs for drink driving and speed and match campaigns to key timings for those enforcement programmes.</p>	<p>B</p>	<p>B</p>
<p><b>22. Ensure speed limits on national roads in Auckland are not raised</b></p>				
<p>22.1 Ensure the Roadsafe Executive request WAKA KOTAHI to halt any move to increase speed limits on national roads in Auckland unless the safety case is clear and many concurrent offsetting speed reductions on less safe roads are proposed.</p>	<p>AT submitted on the national Road to Zero strategy recommending speed limits be set according to Safe System principles and consider the forces on the human body to tolerate crashes. Speed limit reviews are also being undertaken at Waka Kotahi as part of the Safer Networks Programme. Waka Kotahi Setting of Speed Limit Rule: This to streamline the bylaw process to potentially make it quicker for Road Controlling Authorities (RCA) to change speed limits.  <ul style="list-style-type: none"> <li>•In July 2020, as part of targeted engagement on the Tackling Unsafe Speeds programme, the Ministry of Transport provided local government (including AT) with a document outlining the proposed changes to the Setting of Speed Limits Rule. This document was intended to provide local government with early visibility of the direction of the proposed changes, and to enable local government to begin planning for implementation of the new speed management framework.</li> <li>•Cabinet approval to publicly consult on the new draft rule will likely be sought this year, where AT will be invited to prepare a submission once the public consulting begins and be part of in person targeted discussions. Expectation that the Rule will be finalised in September/October 2021.</li> <li>•Once rule is updated, Waka Kotahi will update their Speed Management Guide which will help RCA develop speed management approaches to address the risks and meet their needs.</li> </ul> </p>	<p>Prepare for the new by law regime in the expectation it will simplify the task of lowering speed limits and AT will be ready to proceed rapidly. Make representation to obtain a status update. It may well not deliver on that expectation so an alternative course of action in response to an unsatisfactory outcome later in 2021 is needed. AT should target a 3 year period ahead in which all planned speed limit reviews across the network in Auckland will be completed. If this does not appear a likely result of the new bylaw AT will need to seek alternative solutions from the government.</p>	<p>A</p>	<p>C</p>
<p><b>23. Request central government to review / consider alternative sources of infrastructure funding</b></p>				

<p>23.1 Seek resolution by central government of the major funding gap for the infrastructure safety programme carried out by AT through: Review of the National Land Transport Fund to better cater for New Zealand's substantial infrastructure needs and related infrastructure safety needs for new and (most of all) retrofitting of safety to the legacy (existing) network; and</p>	<p>Nationally road safety funding has been given a higher priority and an increased FAR rate to incentivise investment and Auckland is one of the four high benefit regions. AT is Road Safety Programme Business Case (PBC) has been developed to secure road safety funding for the next 10 years. AT Board has approved the PBC and has been endorsed by Waka Kotahi board in November 2019.</p>	<p>AT proposed a road safety fund (which would have a focus on additional infrastructure safety investment across New Zealand) to MoT in 2019, drawn from net fines from infringements. A proposed additional funding approach is required to meet the substantial infrastructure safety needs that exist across the network. Auckland could be a beneficiary of such a fund.</p>	<p>A</p>	<p>B</p>
<p>23.2 Establishment of a national road safety support fund, to which net income from camera fines (less operating costs of operating the cameras, advertising to improve compliance with the enforced limits and the upgrading and operation of the camera offence processing system) nationally would be allocated. Funding would then be allocated transparently to regions for the purposes of additional infrastructure safety investment on local roads, road safety promotion activities supporting enforcement and perhaps some additional enforcement activity as agreed regionally.</p>	<p><b>AT has submitted on the Road to Zero strategy and highlighted that funding processes need to be reviewed to expedite Vision Zero decision making and to ensure consistent decision making from leaders within approving agencies.</b></p>	<p>Submissions on a strategy are rarely sufficient advocacy to win substantive change. More intensive discussions with an outcome focus are usually required. Ramp up advocacy for changes sought in next national action plan. See 23.1 commentary.</p>	<p>C</p>	<p>D</p>
<p><b>24. Safety performance expectations and delivery</b></p>				
<p>24.1 Establish a road safety improvement performance requirement for all ELT members, senior managers.</p>	<p>Key safety objectives are outlined in AT's Business Plan 2021, where the Executive Leadership Team and senior managers are accountable to deliver. Safety objectives also contributes to 10% for all staff's Performance Development Plans.</p>	<p>Important that accountability criteria are established and applied.</p>	<p>A</p>	<p>-</p>
<p><b>25. Use appropriately lowered speed limits to bring safe roads to Auckland</b></p>				
<p>25.1 Pursue increased funding for the infrastructure safety works programme potentially to a level which will see the identified backlog (currently being specified but in the order of \$500m) for treatment of 300 high risk intersections and 1025km of high risk roads being upgraded within 15 years.</p>	<p>AT's Road Safety Programme Business Case (PBC) endorsed by Waka Kotahi in November 2019 and part of the RLTP funding round.</p>	<p>Useful for AT to progressively estimate the proportion of high risk intersections and number of kms of high risk roads which have been or will be treated over the 2018 -2028 period compared to the initial PBC submission.</p>	<p>A</p>	<p>B</p>
<p>25.2 Consider provision of direct AT funding of \$15m for infrastructure safety work annually (up from \$6.5m) from major projects.</p>	<p>Annual funding for first three years is well beyond \$15M.</p>	<p>Excellent commitment.</p>	<p>A</p>	<p>-</p>

<p>25.3 Seek funding from WAKA KOTAHI of \$22.5m (FAR of 75%) for this annual infrastructure safety programme.</p>	<p>Funding has been increased significantly for capex 2018 -2021. However, for FY2020/21 investment will be impacted by Covid-19.</p>	<p>Noted.</p>	<p>A</p>	<p>A</p>
<p>25.4 Negotiate for ACC to fund a pilot safer infrastructure programme in 2018, 2019 and 2020 of \$20m per year, based on development of a satisfactory programme business case which will deliver a cash return in serious injury crash reductions to ACC, supplemented if necessary by AT/WAKA KOTAHI funds up to \$10m per year.</p>	<p>ACC has provided \$5M as part of a funding agreement with AT for July 2019 - June 2021. This investment has been directed across a number of capex and opex projects. Opportunity to further align how projects are selected and areas of focus are being discussed (April 2021) to continue this investment into future years.</p>	<p>Work with ACC to maintain a commitment to continuous funding beyond this FY and identify and agree programme details.</p>	<p>B</p>	<p>C</p>
<p><b>26. Apply Safe System assessment framework as policy to AT infrastructure projects</b></p>				
<p>26.1 Implement Austroads Safe System Assessment Framework (ASSAF). Move to assess major new projects as soon as possible at the concept stage to maximise safety benefits at marginal cost increase. Resource the necessary training/knowledge transfer requirements.</p>	<p>The Safe System Assessment Framework (SSAF) has been adapted for use at AT and embedded into AT's Enterprise Project Management Framework. SSAF training will be rolled out to all AT staff as part of the Vision Zero Learning Strategy.</p>	<p>Apply SSAF at all project gateway stages including the initiation stage to ensure Vision Zero principles are applied and solutions considered in order that projects improve safety and do not in fact increase DSI levels. Sustainable mobility principles also need to be considered and applied for all projects.</p>	<p>B</p>	<p>-</p>
<p><b>27. Use appropriately lowered speed limits to bring safe roads to Auckland</b></p>				
<p>27.1 Review and introduce lower speed limits on:</p> <ul style="list-style-type: none"> <li>➤ High risk roads where infrastructure investment will not be available for 3 years (i.e. lower limits to 80 km/h on high risk rural arterial road lengths and to 40 km/h on high risk urban arterial road lengths – and to 50 km/h on current 60 km/h speed limited urban arterial roads).</li> <li>➤ In high pedestrian use areas (i.e. in the city centre, in town centres/strips shopping centres, to 30 km/h).</li> <li>• On all urban arterial roads with non-separated (i.e. no physical barriers or kerbs) cycle lanes to 40 km/h.</li> <li>• on approaches to all intersections lower limits to 50 km/h. Develop and</li> </ul>	<p>Bylaw change approved by AT Board on 22 October 2019. The Speed single stage business case has been completed and submitted to Waka Kotahi. Monitored and evaluated through AT's Safe Speed Programme.</p>	<p>Tranche 1 for speed management measures completed and Tranche 2, stage 1 in planning. Recommendations in 27.1 should be retained as rules of thumb for relevant higher risk locations/ areas, particularly pedestrian and cycling safety recommendations. Revised recommended limits are addressed in this review Report - with 30 km/h the recommended limit on arterial roads with unprotected (paint only or no paint) on road cycle paths. Continue to seek approval from Waka Kotahi for a streamlined speed changes approach (dispense with current by law requirement) and move to a Tranche scope which treats all roads as required by, say, 2025.</p>	<p>A</p>	<p>C</p>

<p>roll out a two -year comprehensive community information campaign utilising community leaders.</p>				
<p><b>28 Monitor safety of cyclist and motorcyclist use of bus lanes</b></p>				
<p>28.1 Monitor cyclist and motorcyclist use of bus lanes. If unsatisfactory, provide for cycling to more closely comply with Safe System operating requirements (note that separation in space or separation in time or reduced speed of bus travel may need to be examined).</p> <p>To achieve safer operation for motorcyclists, right hand turns for all vehicles on the bus route may need to be restricted to fully signal controlled intersections with allocated turning phases, with a 40 km/h speed limit in place at high risk lengths until these installations are in place.</p>	<p>A pilot programme is underway that focuses on motorcyclist safety, where engineering treatments are installed and evaluated on two sections of Dominion Road in Auckland, which is known to be a high risk road for motorcyclists. The Dominion Road trial is focused on one crash problem (vehicle and motorcycle crash). There will be a network investigation on further crash problems, including loss of control and lane changing chases once this trial is completed.</p>	<p>The recommended actions remain valid and should be considered within a programme to address higher risk turning locations.</p>	D	-
<p><b>29. Ensure buses operate safely</b></p>				
<p>29.1 Require buses under operating contracts to fully comply with road rules. Progressively fit alcohol interlocks to all buses.</p>	<p>There was a suggestion to trial interlocks on buses, but it has not progressed as retrofitting them onto the fleet would be an expensive exercise which AT would have to fund. There is a requirement for drug and alcohol policy under the Regional Partnering Agreement with operators. AT would prefer to see more of an emphasis on driver fatigue management which is currently being trialled.</p> <p>A trial was completed with 16 GoBus buses in July 2019 with promising results. This trial was continued at the expense of Go Bus to the end of 2020. AT recommended longer term implementation options and have submitted proposal for funding in the Long Term Plan (LTP), and have discussed with Waka Kotahi making this technology mandatory through urban bus regulations. Following an industry and public consultations on the amendments to the Waka Kotahi Requirements for Urban Buses (RUB) the new regulations include provision in new buses for installation of equipment to monitor driver fatigue and distraction. AT has commenced discussions with another bus operator to run another trial</p>	<p>AT have a responsibility as the client to ensure reasonable measures are in place and reported to AT by the bus contractors to avoid impaired driving which is any BAC level above 0.02% While this is below the current legal BAC level AT should insist on the 0.02% maximum BAC level being complied with. It is hoped that AT can successfully lobby the central government to reduce BAC legal limits to zero in the near future for commercial vehicle drivers.</p>	C	-

	<p>with co-funding from NZ insurer. This trial could assess if implementation of the driver fatigue and distraction detection system is possible with third-party (fleet insurers) funding reducing future cost to AT. However, due to delays in making progress impacted by COVID-19 disruptions and funding availability, AT are negotiating another trial with Go Bus at their Hibiscus Coast operations testing the newest technology in driver distraction and distraction detection.</p> <p>AT explored a boarder range of bus compliance with road rules including red light running and have developed and is trialling a platform and Business Intelligence (BI) tools to capture CRM data and enable sharing CCTV footage of buses at traffic intersections with bus operators to identify fleet and drivers involved in red light running in order to address issue through investigation and appropriate HR outcomes including re-training. This trial has been extended to include four intersections with investment in appropriate cameras made by AT's Business Technology team.</p>			
<p>29.2 Set maximum speeds on busways that reflect Safe System principles (30km/hr in high pedestrian activity areas, 40km/h on downtown arterials and 50km/hr elsewhere other than on 60 km/hr roads) and implement contract payment deductions for speeding offences.</p>	<p>Putting deductions on contracts for speeding (in addition to driver infringements) would require a revisit of contract T&amp;C's and a compromise on other points of the deduction/bonuses regime. It would also require access to telematics systems and/or notifications of speeding events from the telematics systems which are owned and monitored by bus operators or their third-party providers. Not impossible but will need to be realistic with timeframes and on the how this would be intended to be managed and assess potential impact on buses' run times and the associated increase in bus contract costs (under PTOM AT pays operators for every minute of in-service time).</p> <p>Therefore, AT's Safety function is keeping this conversation going with AT's Metro Services. Metro Services is now part of the Transport Safety Investment Portfolio Steering Group (IPSG).</p>	<p>This consideration of the potential contracts components issue is important. Vision Zero discussions are required with Metro.</p> <p>Trading off DSI risk to avoid an increase in bus travel times and contract costs is not consistent with Vision Zero principles. It is understood that bus services contracts come up for renewal in 2022. Sensible incentives to encourage compliance with speed limits and other road rules and laws will be important. The issue of maximum speeds on busways where cyclists and motorcyclists can use the bus lane also requires review. Commitment to include appropriate provisions in contracts as they come up for rollover/renewal is required. This is a critical safety case study under the control of AT. Metro services to be encouraged to appreciate and embrace the broader changed safety policies.</p>	C	-
<p>29.3 Review speed limits on busways shared by cyclists and on roads where a separated cycle lane with a physical delineator is not in place.</p>	<p>Safe Speed Programme underway, delivering tranche 1 and developing tranche 2 (2020). A piece of work will be undertaken after tranche 2 to determine the scale of the shared busway issue and will be included in the results in tranche 3 of the Safe Speed Programme. It should be noted that at present, the current (April 2020) road rule does not</p>	<p>Note proposed inclusion in Tranche 3 proposals. The issues of traffic at intersections turning into the path of oncoming buses or travelling in front of buses and stopping to turning into path of other traffic require review to identify Safe System compliant solutions.</p>	B	-

	allow for the setting of different speed limits on different lanes of a road.			
<b>30. Improve AT safe driving practices and contractor innovation</b>				
30.1 Actively monitor AT's own work-related driver offences, and actively promote safe travel and safer fleet vehicle use. Procurement arrangements be modified to seek suggested road safety improvement actions by contractors and allow for scoring of these submitted suggestions in the tender evaluation process to drive change in attitudes throughout AT, the contracting industry and the community.	AT's fleet vehicles are managed by Auckland Council but AT has its own Fleet Policy which is currently under review (April 2021). There is monitoring of AT's own work-related driver offences and infringements and work is being done to investigate better reporting methods and enhance action for poor driving behaviour. There is promotion of safe travel and safer fleet vehicle use, with safety stickers and messages placed on 150 fleet vehicles. Messages say "Safe Speeds. Everyone deserves to get home safely," and "This vehicle is not permitted to exceed the speed limit."	AT is reviewing its own fleet policy. Policy work related to safer driving requirements for AT staff and for AT contractors' drivers (all contractors drivers using work related vehicles on AT work) is necessary to improve driving safety behaviours.	B	-
<b>31. Research and development</b>				
31.1 Implement a research budget for road safety projects and evaluations and build on this as supportable projects are identified and commissioned.	Adhoc research projects are funded and resourced including a Micro mobility Risk Research, the Digital Billboard Research report and Vulnerable Road Users deep dive. The Micro mobility Risk Research is to undertake primary research into the safety of micro-mobility and identify treatments suitable for a network application to support decisions on accommodating and licensing micro-mobility. The Digital Billboard research report was completed and includes an International Literature Review and results of Crash Analysis at 15 Urban Intersections in Auckland. The Vulnerable Road Users deep dive provides a greater understanding of the vulnerable road user issues and its rise in deaths and serious injuries. AT is in the process of prioritising a series of deep dive research projects as part of the Safety function's work programme to drive decision making and advocacy for greater safety action.	Efforts to expand evidence gathering are noted. As part of necessary efforts by AT to substantially increase its Safe System/Vision Zero OH&S literacy, the introduction of this capacity is essential.	C	-
<b>32. Benchmark Auckland's road safety performance</b>				
32.1 Auckland determines to benchmark its future road safety performance in the Safer City Streets Network against Melbourne.	As of September 2020, 48 cities are members of the Safer City Streets network, where Auckland has joined and tracking against Melbourne.	Noted. Auckland performing reasonably well, but more to be done.	B	-
<b>33. Request central government to resource necessary speed compliance measures</b>				
33.1 Install 36 operational red-light cameras with a combined red light/speed function and	From 2018 to 2020, AT have installed 28 cameras across the network. This takes Auckland's red-light camera total to 38 in	Speed and red light camera installation progress is commendable. However, the expansion of mobile covert camera hours by Police in Auckland (to some	A	C

<p>implement extended covert mobile speed camera operation across Auckland (from 950 hours to some 2000 hours per month), including resourcing for necessary back office processing support.</p>	<p>Auckland. Seven more are expected to be installed to boost our enforcement efforts, where AT is currently in communication with NZ Police to get more commissioned. Speeding functions are available in these red light cameras and discussions are progressing (April 2021) to get the speed function activated as an additional layer to increase enforcement levels.</p>	<p>2500 hours per month from some 1400 hours a month currently) as part of the New Zealand wide planned mobile, covert camera hours upgrade in 2021 is very important to reducing DSI numbers into 2022.</p>		
<p>33.2 Introduce 50% higher speed penalties (fines) for heavy vehicle drivers.</p>	<p>The national Road to Zero Strategy has a key action to review its road safety penalties. The focus will be on reviewing road safety related financial penalties (scope yet to be determined as of April 2020), using the Effective Transport Financial Penalties – Policy Framework that the Ministry is finalising. This framework is designed to support better logic, rationale and consistency in setting transport-related financial penalty levels, and to better link penalty levels to the severity and likelihood of resulting harm. Providing higher speed-related penalties for heavy vehicle drivers (in recognition that heavy vehicles risk causing more damage in the event of a crash) will be considered as part of the initial scoping of the review of road safety penalties. AT will continue to advocate during this review for higher speed penalties and demerit points.</p>	<p>AT need to check with MoT that the review is progressing expeditiously and to make ongoing representations.</p>	C	C
<p>33.3 Seek legislation to apply demerit points for all camera generated speed offences as an early priority.</p>	<p>The national Road to Zero Strategy has a key action to review its road safety penalties. The review of the financial penalties and remedies programme will be undertaken by the Ministry to improve the alignment of infringement fees and fines and other financial penalties, such as impound fees, with the risks and costs associated. Enabling demerits to be applied/incurred for camera offences will be considered as part of the initial scoping of the review of road safety penalties. MoT will also determine what legislative requirements (if any) would be required to enable demerits to be applied to camera offences. AT will continue to advocate during this review for higher speed penalties and demerit points.</p>	<p>Continue conversation with MoT to press for demerit point application to speed camera offences. Critical potential contributor to Auckland reducing its DSI.</p>	B	D
<p><b>34. Request central government to reduce drink driving DSI in Auckland</b></p>				
<p>34.1 Request central government to:</p> <ul style="list-style-type: none"> <li>Introduce a zero BAC legislative limit for drivers of heavy vehicle and public</li> </ul>	<p>AT submitted on the national Road Safety Strategy to request a requirement of zero BAC levels for passengers service vehicle drivers and to reduce the capacity to award a work-related licence for a drink driving offender and as part of Waka</p>	<p>To be raised with MoT in lead up to new Action Plan preparation during 2022 for 2023 - 2025. Robust advocacy required.</p>	B	D

<p>transport vehicles (including buses and taxi).</p> <ul style="list-style-type: none"> <li>Remove the capacity for courts to award a work-related licence for a drink driving offender.</li> </ul>	<p>Kotahi's Limited Licence process to obtain a limited licence will be declined if you are serving a 28 day licence suspension for excess speed or if you are in you are indefinitely disqualified for repeat alcohol and/or drug driving offences.</p> <p>This is not an action in the current Road to Zero action plan. However, impairment from alcohol and drugs remains a significant contributing factor to deaths on our roads. MoT will consider the merits for including these proposals in the next Road to Zero action plan.</p>	<ul style="list-style-type: none"> <li>zero BAC legislative limit is strongly recommended for drivers of heavy vehicle and public transport vehicles (including buses and taxi).</li> <li>current capacity for courts to award a work-related licence for a drink driving offender is very extensive and it is strongly recommended that these provisions should be removed from the legislation if genuine deterrence of drink driving is sought with an end to community tolerance of drink drivers killing other road users.</li> </ul>	<p>B</p>	<p>D</p>
<p><b>35. Request central government to work with AT on improving vehicle safety levels</b></p>				
<p>35.1 Promote the life-saving benefits of newer safer vehicles especially for light commercial vehicles.</p>	<p>The national Road Safety Strategy has a key action area to increase understanding of vehicle safety. Waka Kotahi will be responsible for leading a programme of work to increase public understanding of vehicle safety in close collaboration with the wider vehicle sector. This has included a roll out of national advertising campaign that targets the parents of young drivers.</p> <p>The national Road Safety Strategy also has a key action area to strengthen commercial transport regulation to support employees to meet their legal obligation in ensuring their staff are healthy and safe while driving for work. This includes improving the safety profile of NZ's light vehicle fleet.</p>	<p>While safer new vehicles are being promoted by Waka Kotahi, limits on age or safety requirements for second hand vehicles entering New Zealand are not proposed. It is understood that some 2/3 of all vehicles imported annually are second hand. This is a current and long term risk with a likely long tail potential contribution to unsafe travel on the network that should be addressed now in some meaningful way. Whether safer light commercial vehicles are being promoted to the public is unclear. A major safety issue in Australia.</p>	<p>B</p>	<p>D</p>
<p>35.2 Restrict imported used cars to being less than seven years old at entry to New Zealand.</p>	<p>AT submitted on national road safety strategy to support raising the safety standards for vehicles entering the fleet and to get the ministry to promote newer safer vehicles, especially light commercial vehicles and restrict used cars over 7 years old, with consideration for equity of access. Minimum ANCAP rating for imported vehicles, including electric vehicles to also be considered.</p> <p>The national Road to Zero Strategy has a key action area to raise standards for vehicles entering NZ. The Ministry will investigate the warrant/certificate of fitness regime to ensure it remains fit-for-purpose for our future road safety requirements. Waka Kotahi will also work with vehicle industry to ensure that as many vehicles as possible will display a vehicle safety rating, and that these safety ratings are consistent, accurately applied and communicated to consumers. These actions in the Road to Zero Strategy will help</p>	<p>No specific safety regulation is proposed on new imported cars or for light commercial vehicles but Waka Kotahi are working with the industry to encourage improved safety standards (ANCAP levels and certain safety features) through safety rating display and goal of seeing a greater proportion of safer star rated cars by 2030. This may not be an adequate response by government to achieve the changes to vehicle safety features and the reduced DSI which would result by 2030.</p> <p>No age limitation on second hand vehicle imports is proposed in R2Z and this is unhelpful for an improved New Zealand road safety performance to 2030 and beyond.</p>	<p>A</p>	<p>D</p>

	<p>support a substantial increase in the overall safety of vehicles in NZ. Where by 2030, we want to see a greater proportion of safer 4 and 5 star safety rated vehicles with fewer than 20 percent of light vehicles having a safety rating of one or two stars.</p> <p>AT will continue to advocate for the restriction of imported used cars as there are no restrictions on age of imported cars proposed in the Road to Zero action plan.</p>			
<b>36. Improve trauma management and comprehensive data management</b>				
<p>36.1 Encourage ACC to support strengthening of the major trauma management systems in place in the New Zealand health system, using Auckland as a pilot, by guaranteeing funding certainty for a five-year period of introduction and evaluation.</p>	<p>The Injury Prevention Partnering agreement between AT and ACC is a funding arrangement between July 2019 - June 2021 to deliver \$5 million worth of specific road safety projects. This was the first time ACC has entered into a partnership agreement with AT of this scale. Opportunity to further align how projects are selected and areas of focus are being discussed (April 2021) to continue this investment into future years.</p> <p>Strengthening system leadership, support and coordination is a key action area in the national Road to Zero strategy, with plans to improve post-crash response by establishing a cross agency working group to better equip the transport and health system to manage major trauma.</p>	<p>High priority for AT to pursue joint projects with ACC to deliver evidence based fatal and serious injury reduction outcomes.</p>		B B
<p>36.2 Request the national government to authorize the agreed collection of data on the presence of drugs and alcohol within hospitalized road crash patients to establish prevalence of drugs by type (and a more complete alcohol impairment record).</p>	<p>Enhanced drug-driver testing is a key action in the Road to Zero Strategy. The Land Transport Drug Testing Amendment Bill signified commitment to keep road users safe from the problem of drug driving. The bill establishes a regulatory framework to enable a random roadside oral fluid testing regime and will allow Police to test drivers for the presence of impairing drugs. The Bill is in Select Committee (April 2021) and if passed will come into effect in the next 12 months.</p>	<p>Good outcome but resourcing police for the drug testing workload will require increased government funding.</p>		A B
<b>37. Ensure Waka Kotahi invest in infrastructure safety</b>				
<p>37.1 Encourage adequate safety investment by Waka Kotahi in national roads and seek adoption by Waka Kotahi of application of the Austroads Safe System Assessment Framework to maximise the safety benefits achieved in their works.</p>	<p>The Road to Zero Strategy includes a 25% increase in funding for safety infrastructure and has adopted the Safe System Assessment Framework (SSAF) as an option. The application of SSAF is used in AT projects and has been adopted to have a greater focus on vulnerable road users.</p>	<p>Good progress. This review recommends that SSAF be utilised in all gateway stages of the project cycle for all projects within AT, including the project initiation stage, to ensure Safe System/Vision Zero principles are considered and that increased DSI does not result from any project.</p>		A B
<b>38. Record public transport injuries</b>				

<p>38.1 Explore with Waka Kotahi the recording of public transport related injuries in Auckland.</p>	<p>AT is continuing to improve the visibility of CRM data and use, especially in identifying and recording public transport related injuries in circumstances that do not include a vehicle crash. AT has developed a dashboard that records injury cases on footpaths in the first instance. AT has also commissioned a vulnerable road users deep dive report which identifies the size, nature and causes of the highly vulnerable road user death and serious injury rate and under reporting of pedestrian related injury data. Work will continue from this report to explore solutions for AT's response to the findings.</p>	<p>Supported and important.</p>	<p>B</p>	<p>C</p>
<p><b>39. Request central government to reduce drink driving DSI in Auckland</b></p>				
<p>39.1 Support the introduction in 2018 of mandatory alcohol interlocks in the vehicles of repeat and serious first time drink driving offenders (after serving license suspension) for 12 or more months.</p>	<p>Ministry of Transport have mandated alcohol interlocks as of July 2018.</p>	<p>Encourage continued review as implementation experience expands. Appear to be issues of non-take up of interlock mandation by a large proportion of offenders. Needs a review to establish situation and move to address this.</p>	<p>B</p>	<p>B</p>
<p><b>40. Request central government to reduce drug impaired driving DSI in Auckland</b></p>				
<p>40.1 Seek agreement of national government to early introduction of police road side saliva testing for drugs.</p>	<p>Action to enhance drug driver testing is acknowledged in the National Road to Zero action plan. Policy options are currently being considered by Cabinet (2021), including roadside drug screening of drivers for drugs, potentially using oral fluid testing. Once agreed, legislation is likely to be introduced at the end of 2021, with a 12 month lead in period before any new oral fluid testing regime is implemented.</p>	<p>Implementation on the ground planned now for 2022. Vital that drug enforcement resources are not reallocated from drink driving resources. Additional Road Policing resources required.</p>	<p>A</p>	<p>B</p>
<p><b>41. Request central government to introduce legislation and technology for point-to-point speed compliance enforcement</b></p>				
<p>41.1 Work with Police and MoT to plan and roll out point to point speed camera technology on major rural arterials plus selected urban arterial lengths.</p>	<p>The Road Safety Tāmaki Makaurau Governance Group is continuing to advocate for Auckland's contribution in enforcement efforts. In the Road to Zero Action Plan, between 2020-2022, Police and Waka Kotahi will upgrade the infringement processing system and the existing stock of mobile safety cameras. It will also include a roll out of point to point cameras as part of their camera investment efforts to roll out approximately 100 additional cameras from mid 2021. In March 2021, AT has raised concerns to NZ Police and Waka Kotahi on the general deterrence levels in Auckland. A collaborative approach will be undertaken to ensure enforcement outcomes are reached.</p>	<p>Ensure adequate workaround back office infringement processing capacity is put in place within Police for the potential 2 to 3-year transition period necessary for any transfer of operational camera responsibility from Police to Waka Kotahi. Note also that new point to point technology introduction will be very effective but the most effective speed intervention in Australian jurisdictions are mobile covert (anywhere, anytime) cameras operating with sufficient hours, enforcement tolerance below 7%, fines - even for what some drivers consider low speeding levels (up to 10 km/h over the limit) – starting from \$150 not the current \$30 level in New Zealand and demerit points at an adequate deterrence level of say, some 1/12 of the 3 year limit for a speeding offense up to 10 km/h over and 3/12 of the 3 year limit for a speeding offense up to 20 km/h over and so on. Support these efforts with</p>	<p>A</p>	<p>C</p>

		license loss for three months if detected 25 km/h over the applicable limit. Higher demerits and fines to apply for commercial heavy vehicles speeding. Mobile covert camera operation expansion. Establish timing for transfer of responsibility, transition arrangements to support increased mobile camera hours for NZ (100,000 hours in 20/21 – Road to Zero) and new technology rollout timetable. Insist that Auckland receive its fair share of mobile cameras and that expanded hours are not delayed due to transfer proposed.		
<b>42. Request central government to examine use of camera technology to deter illegal phone use by drivers</b>				
42.1 Work with Police and MoT to implement camera technology to deter phone use by drivers and riders.	The Road to Zero Action Plan includes a plan to "effectively enforce changes to speed limits through a new approach to safety cameras." This is a move towards a high visibility approach to include a roll out of approximately 100 additional cameras.  The back-end camera implementation process is to be moved from NZ Police to Waka Kotahi. Waka Kotahi are investigating using camera enforcement for cell phone and seatbelt use which is part of their overall strategy for cameras.	Noted.	B	D
<b>43. Collect and compare comprehensive data from police, hospitals and ACC</b>				
43.1 The Roadsafe partnership needs to support the ongoing collection of crash data from ACC records and from Auckland hospitals.	AT have obtained hospitalisation data from MoT and ACC in 2020.	Good result.	A	B

Summary of 2018 BIR Actions/ Progress from table above	AT (75)		Government agencies (45)	
Substantially/completely implemented	28	37.6%	5	11.1%
Satisfactory progress with action continuing	28	37.6%	12	26.7%
Underway with unsatisfactory progress	18	24.4%	21	46.7%
Not advanced from 2018	1	1.4%	7	14.5%

## 8.0 METHODOLOGY

- a.** Validate the 2018 BIR. All the recommendations in the 2018 BIR have been reviewed (*See immediately above*); 2018 BIR Recommendations, AT Comment on Status and the Review Response.
- b.** Interviews conducted with Board Chair, Board members, CE and many other key people within AT and with Partner agencies at regional and national level.
- c.** Analysis of the crash and other data/performance for Auckland and comparisons with NZ data and further comparisons with Victoria, Norway and Australia.
- d.** Good practice and research/evidence in NZ and internationally which is relevant to the recommendations, including case studies in the Appendices.
- e.** Presentations and discussions on the draft Report Findings in Auckland and Wellington with partner agencies at Senior levels (WK and Police and MoT), with AT Board Committee and Members, ELT and Staff and Tāmaki Makaurau Governance and Leadership Groups.

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## 10.0 GLOSSARY

AT	Auckland Transport
ATAP	Auckland Transport Alignment Project
BAC	Blood Alcohol Levels
BIR	Business Improvement Review
DSI	Deaths and Serious Injuries
ELT	Executive Leadership Team
EGM	Executive General Manager
HSWA	Health and Safety Works Act
IPSG	Investment Portfolio Steering Group
ITF	International Transport Forum
PBC	Programme Business Case
R2Z	Road to Zero
RBT	Road Breath Tests
RLTP	Regional Land Transport Plan
SOI	Statement of Intent
TM	Tāmaki Makaurau
VRU	Vulnerable Road Users

## 11.0 APPENDICES

### APPENDIX 1: CASE STUDIES FOR IMPROVED PERFORMANCE.

#### 1.1 SPEED LIMIT REDUCTIONS

##### 1.1.1 LOWERING SPEED LIMITS - DSI REDUCTIONS, NZ

**NZ case studies: Dr. Fergus Tate, WSP NZ, presentation 2021 to NZ AA**



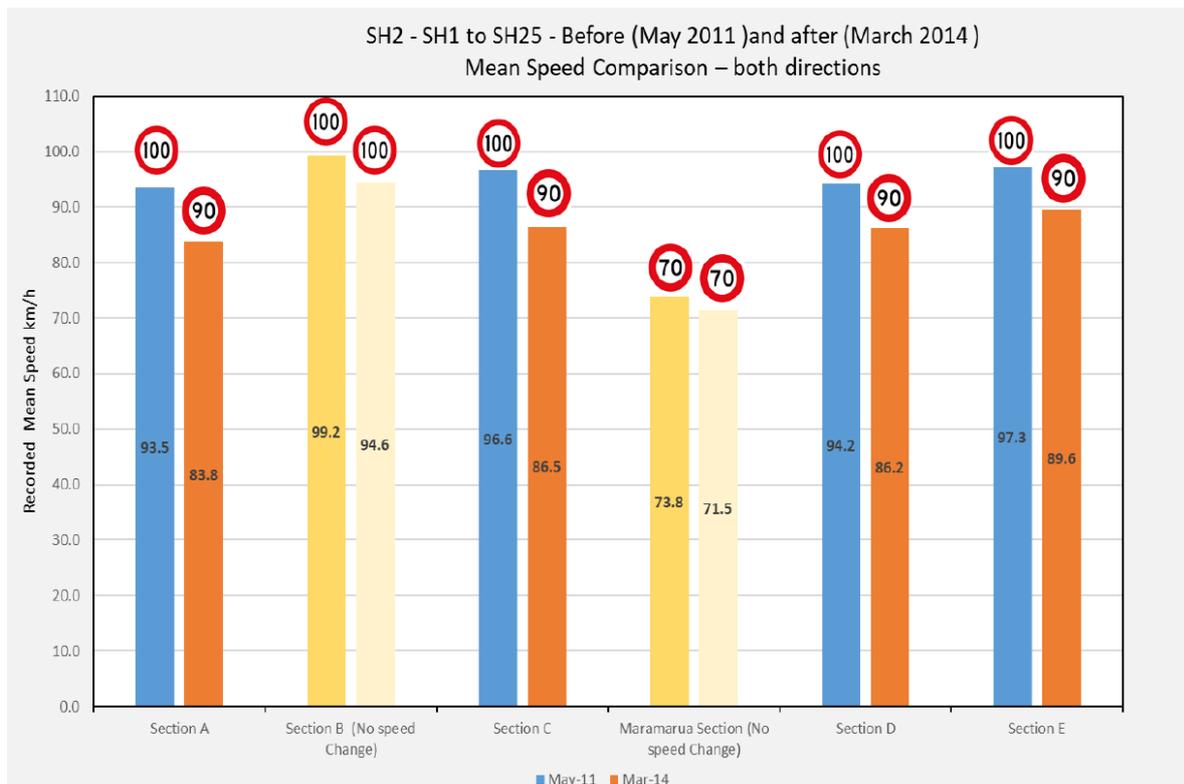
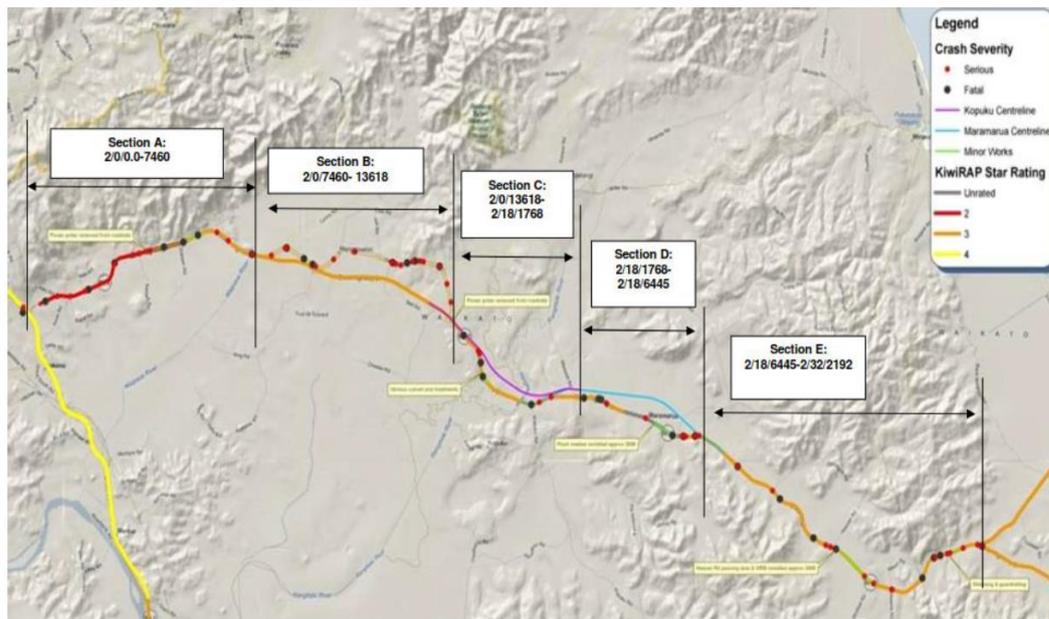
#### Approach

- (7) To understand the Road Safety Impacts of Speed Limit Reductions to the Safe and Appropriate Speed
- (8) Lots of international literature but happens in NZ?
- (9) Before and After – 5 years
  - o Other changes
  - o Limited monitoring
  - o Locating
- (10) Case comparison
- (11) 3 sites ...so far

#### Analysis

- Change in speed – where available
- Change in NUMBERS Before and After
  - o Injury crashes
  - o DSI
- Change in RATE per 100 million VK of travel
  - o Injury crashes
  - o DSI

## SH2 Maramarua

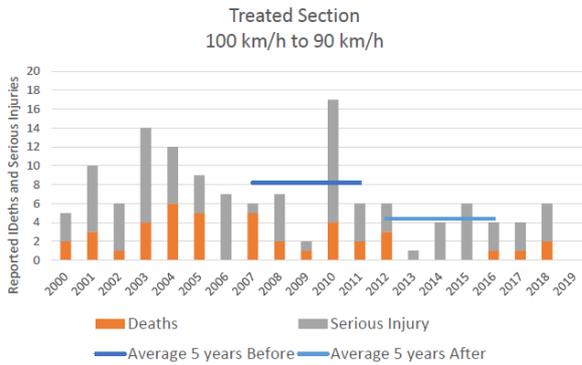


## Comparison Length SH25 to Paeroa

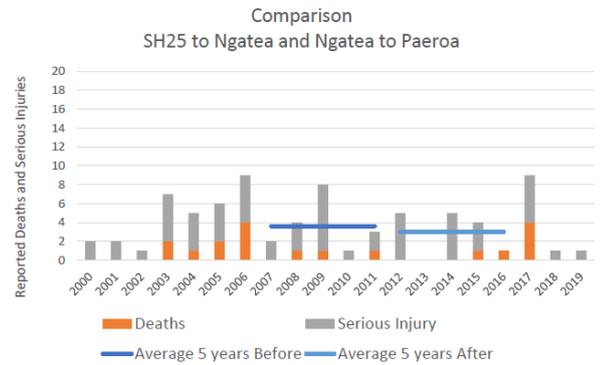


## SH2 Maramarua -DSIs

47% reduction

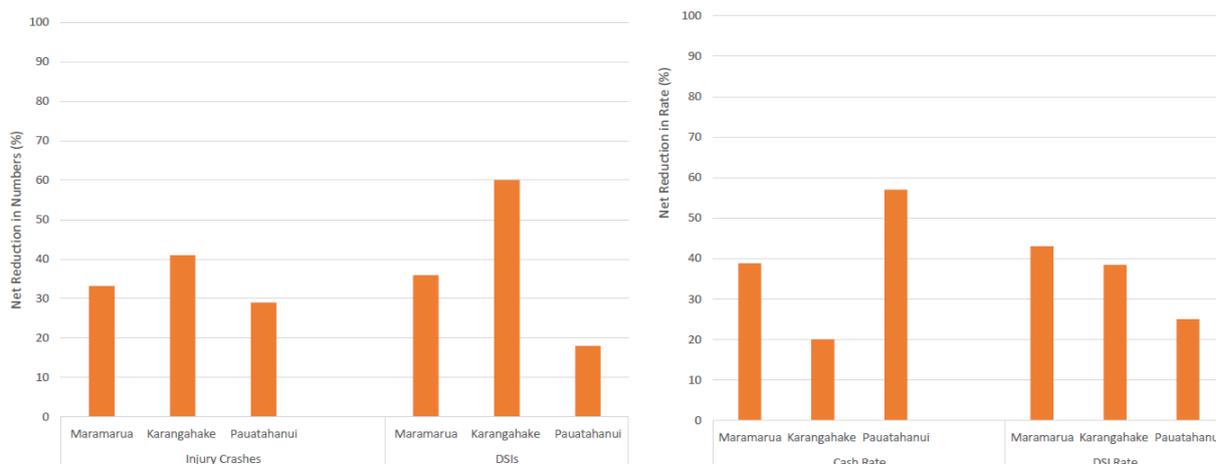


11% reduction



- Study of two other locations and control sections: Karangahake and Pauatahanui
- See summary of net reduction in DSI for the three study locations and for control lengths in the slide below

## Summary Net Reduction at Treated Sites



**All interventions have been successful in reducing road trauma**



**With benefits in line with or exceeding those found internationally**

### 1.1.2 LOWERING SPEED LIMITS - DSI REDUCTIONS, NZ, AUS, USA

**CASE STUDIES: SPEED LIMIT REDUCTIONS AND FATALITY REDUCTIONS: NEW ZEALAND, AUSTRALIA, AND US.**

#### NEW ZEALAND:

##### CASE STUDY: Reduced speed limit and safety outcomes, New Zealand

During the 1973 fuel crisis, the New Zealand government reduced rural speed limits from 55 mph (88 km/h) to 50 mph (80 km/h), leading to an 8-10 km/h reduction in average rural speeds. The drop in speed led to a significant drop in injuries, as compared with urban roads which were unaffected by the speed limit change (30). On main intercity roads the number of deaths dropped by 37%, serious injuries decreased by 24% and minor injuries decreased by 22%. The corresponding reductions for urban areas were 15%, 9% and 4%.

*The New Zealand open road speed limit, Frith B, Toomath JB, Accident Analysis and Prevention 1982, 14:209 - 218*

#### AUSTRALIA (STATE OF VICTORIA):

##### CASE STUDY: Changes in speed limits and crashes, Australia

In Australia, the speed limit on Melbourne's rural and outer freeway network was increased from 100 km/h to 110 km/h in 1987 and then changed back to 100 km/h in 1989. Compared to a control area where the speed limit remained the same, the injury crash rate per kilometre travelled increased by 24.6% when the speed limit increased, and decreased by 19.3% when the speed limit decreased.

*110 km/h speed limit: Evaluation of road safety effects, Sliogeris, J Melbourne, Report No. GR92-8, Vicroads, 1992*

USA:

**CASE STUDY: Raising and lowering the national speed limit, USA**

Between 1987 and 1988, 40 states in the USA raised the speed limit on interstate highways from 55 mph (88 km/h) to 65 mph (104 km/h). This resulted in an increase in average car speeds of about 3 mph (5 km/h). Over the same period there was an increase in deaths on these roads of between 20 and 25%

*Managing speed, Review of the practice for setting and enforcing speed limits, Transportation Research Board US, Special Report 254, National Academic Press, 1998*

1.1.3 LOWERING SPEED LIMITS - DSI REDUCTIONS OECD/ITF 2018  
SPEED AND CRASH RISK, © OECD/ITF (IRTAD) 2018

(1) Australia: Reduction of the speed limit in urban areas<sup>34</sup>

Between 1997 and 2003, all Australian jurisdictions (with the exception of the Northern Territory) lowered their urban default speed limit from 60 km/hr to 50 km/hr. The aim was to increase traffic safety.

The evaluation presented here mainly concerns results from New South Wales. The results showed that the mean speed decreased by 0.5 km/hr, while the total number of crashes decreased by 25.3% and the number of persons injured by 22.3%.

*Description and motivation of the measure*

Between 1997 and 2003, all Australian jurisdictions (with the exception of the Northern Territory, which retained a 60 km/hr default urban limit) lowered their urban default speed limit from 60 km/hr to 50 km/hr. The purpose of the change was to reduce the incidence and severity of road crashes, including those involving vulnerable road users (Horeau et al. 2006). The change mainly concerned residential streets, with higher speed limits retained on urban arterial roads.

*Description of the data*

Evaluations were undertaken in the five Australian jurisdictions affected by the change (Victoria, New South Wales, Western Australia, South Australia and Queensland). They were conducted independently of one another as each jurisdiction changed its limits at a different time.

All the studies used a quasi-experimental approach where the after speeds were compared with the before speeds at treatment sites and control sites. Although all five studies followed a similar approach, there are differences in the numbers of sites, the selection of control sites, and the treatment of crashes and injuries. Some studies were based on extensive trials of 50 km/hr zones, others were based on system-wide introduction of the 50 km/hr limits.

The sections below are mainly based on the results of the New South Wales evaluation (Roads and Traffic Authority (RTA), 2000). In this instance, the change in speed limit was

<sup>34</sup> Speed and Crash Risk, © OECD/ITF (IRTAD) 2018

undertaken on a trial basis with a number of local government areas reducing their default speed limits, while others remained unchanged. References for the other evaluations are listed in more detail in the bibliography.

- **Speed data**  
Speed survey data were collected in each of the 26 local government areas which participated in a trial of the 50 km/hr speed limit and 26 matched control local government areas. These data were collected before and after the speed limit was changed (RTA, 2000).
- **Crash data**  
The numbers of fatalities, injuries and crashes occurring on local streets were obtained for each of the treatment and control areas. Data were obtained for a three-year period before the introduction of the 50 km/hr speed limit and a 21 months after period.

*Confounding factors*

All the studies used a quasi-experimental approach where the after speeds were compared with the before speeds at treatment sites and control sites. For crashes, a before and after analysis with a treatment and a control group to account for confounding factors was performed.

*Results*

The table below summarises the impact of the lower urban speed limits in the five Australian jurisdictions.

**Table 3.4. Summary of speed & crash changes resulting from lower urban speed limits in Australia**

Jurisdiction	Source	Mean speed reduction	Casualty crash reduction	Fatal crash reduction
New South Wales	Roads and Traffic Authority (2000)	0.5km/hr 0.9%	22%	45%*
Victoria	Horeau et al. (2006)	23km/hr*	12%	21%*
Queensland	Haworth et al. (2001) Walsh and Smith (1999)	6 km/hr	N/A	18%
Western Australia	Horeau and Newstead (2004)	0.3 km/hr (Perth) 3.0 km/hr (regional centres)	21% (Perth) 16% (all crashes in regional centres)	N/A
South Australia	Kloeden et al. (2007)	3.8 km/hr 2.1 km/hr on unchanged arterials	23%	40%*

\* Result is not statistically significant.

The more detailed information below concerns the New South Wales Evaluation.

- *Speed*  
The aggregated speed survey data for the introduction of the 50 km/hr urban speed limit are presented in Table 3.5. Prior to the introduction of the 50 km/hr speed limit, the mean speed was 57.2km/hr, which reduced to 56.7 km/hr. The proportion of vehicles exceeding 60 km/hr reduced from 37.6% to 15.6%, and the proportion of vehicles travelling at more than 70 km/hr reduced from 9.6% to 2.6%.

**Table 3.5. Aggregated speed survey data for 50 km/hr speed limit introduction, New South Wales**

Time period	Mean speed km/hr	Proportion of vehicles exceeding 60 km/hr (%)			
		By 1-10 km/hr	By 11-20 km/hr	By 21-30 km/hr	By 31+ km/hr
Before	57.2	28.0	8.1	1.5	0.0
After	56.7	13.0	2.6	0.4	0.0

- *Road crashes and casualties*

Log-linear analysis was applied to the crash and injury data. The number of crashes (both non-injury and injury) was reduced by 25.3% (statistically significant), the number of injury crashes was reduced by 22.3% (statistically significant) and the number of fatalities by 44.5% (not significant).

**Table 3.6. Impact of the lower urban speed limit on speed and injury crashes New South Wales**

	Mean speed Before	Mean speed After	% change	Change in crashes	Change in injuries	Change in fatalities
Reduction of the speed limit from 60 km/hr to 50 km/hr	57.2 km/hr	56.7 km/hr	-0.9%	-25.3% statistically significant	-22.3% statistically significant	-44.5% Not statistically significant

#### *Other information*

The New South Wales case study of urban speed limit reductions in five Australian States is an example and not necessarily typical for all five states. In New South Wales, the reduced limit was implemented by signage in residential streets (non-arterial roads) and the other States reduced their general urban speed limit to 50 km/hr and in many cases signed their arterial roads at the former speed limit of 60 km/hr. The results refer to the initial trial period at 26 local government areas in NSW, and might not be typical of effects when the signage was expanded to all residential streets (as was the case for other states). It can also be noted that the reductions in the proportions of vehicles exceeding 60, 70 and 80 km/hr were all much more substantial than the reduction in the mean speed, suggesting that a different mechanism than a downward shift in the speed distribution was operating. This may be due to the atypical nature of the speed limit reduction in NSW and/or due to the likelihood that the signed residential streets were strongly enforced in the period. Gavin et al. (2011) presents comparisons of the effects on speeds and crashes associated with a 10 km/hr limit reduction on a major rural highway and with the implementation of fixed speed cameras in NSW. They consider the congruence of the measured crash reductions with that expected by weighting the before and after speed distributions by Kloeden et al's (2001, 2002) relative risk estimates.

Looking at severe crashes, the covert use of mobile speed cameras in Victoria, Australia, has been shown to be very effective in reducing injury crashes and fatal outcomes (Cameron and Delaney, 2008). Recent research has also shown that only 7% of injury crashes in Melbourne are now attributable to high-level speeding, compared with 24-34% in other Australian major cities where mobile cameras are operated less effectively (Cameron, 2015).

## (2) Norway: Introduction of environmental speed limits<sup>6</sup>

In 2004, an environmental lower speed limit was introduced on 3 main urban roads in the city of Oslo. The speed limit was decreased from 80 to 60 km/hr during the winter season in 2004-2007 between November and March. On the roads with a reduced speed limit, mean speeds decreased by 7.5%, from 76 km/hr to 71 km/hr. Injury crashes decreased by 28%. The measure was given up in 2011, after it had been found not to be legally founded.

### *Description and motivation of the measure*

In Norway, environmental speed limits to reduce air pollution were introduced in 2004 during the winter season. The speed limit was reduced from 80 km/hr to 60 km/hr on three major urban roads of the city of Oslo – totalling a length of 28 km. These roads were designed as freeways with 4 to 6 lanes and median barrier and passed by large residential areas. The reduced speed limit was in force from November 1 to March 31. The decision to reduce speed limit was taken by the Municipality of Oslo and was motivated by environmental reasons to reduce the spread of micro-particles torn off the road surface by studded tyres.

The reduced speed limit was challenged on legal grounds and given up in 2011. Legal experts concluded that the law did not permit the use of such speed limits. Work is going on to change the law to permit re-introduction of the speed limits.

### *Description of data*

- *Speed data*  
All three roads had permanent traffic counting stations that monitored speed continuously. It measured the mean speed of traffic, including all traffic during 24 hours every day.
- *Crash data*  
The number of crashes was recorded for three years before and three years after the introduction of the lower speed limit. Only injury crashes were recorded.

### *Confounding factors*

- *Speed*  
Speed data were not corrected for any confounding factors. One could argue that only speeds outside rush hours should be used, because the mean speed of traffic during rush hours is considerably below the speed limit on all roads. However, speed data applying only outside rush hours were not available.
- *Crashes*  
The study applied the empirical Bayes method and controlled for changes in traffic volume, seasonal variation in crash counts, long term trends in the total number of crashes and regression-to-the-mean. Regression-to-the-mean is the tendency for the number of accidents to go down if a randomly high number occurred, or to go up if a randomly low number occurred. Details of the method are given in Elvik (2013).

(3) **Sweden: Increase and decrease of speed limits in 2008 and 2009<sup>7</sup>**

The entire speed limit system of Sweden was reformed in 2008. A new set of limits, i.e., 80, 100, and 120 km/hr, was introduced on rural roads to complement the previous limits of 70, 90, and 110 km/hr.

As a consequence, the speed limit was reduced on many rural roads from 90 km/hr to 80 km/hr and increased on some motorways with high standards from 110 km/hr to 120 km/hr.

The motivation was to adapt speed limits to the safety classification of each road, but also a balance between environment and mobility needs.

On rural roads where the speed limit was reduced from 90 – 80 km/hr, the mean speed decreased by 3.1 km/hr, the number of fatalities decreased by 41% and the number of seriously injured did not change significantly. On motorways where the limit was increased, the mean speed increased by 3.4 km/hr, number of seriously injured increased by 15 seriously injured per year and no significant change was seen in the number of fatalities

*Description and motivation of the measure*

In 2008, the Swedish government decided to introduce a new set of limits. On rural roads, 80, 100, and 120 km/hr, were introduced to complement the previous limits of 70, 90, and 110 km/hr. The Swedish Transport Administration performed an in-depth review and took decisions on changed limits.

The long-term vision was that speed limits should be adapted to the safety classification of each road and be in line with the concept of Vision Zero. A total of approximately 20 500 km of roads, corresponding to 21% of the length of all state roads in Sweden, were assigned new speed limits. The main group of roads with new speed limits was rural two-lane roads, where the speed limit was reduced from 90 to 80 km/hr. This group accounted for more than 60% by length of the roads with changed speed limits. It was predominantly roads with a low safety standard and inadequate road shoulders that were selected for the introduction of reduced speed limits, while roads with a good traffic safety standard were selected for increased speed limits. In addition, roads important to local economic activity, transport, and commuting were assigned higher speed limits than were roads less important from a local economic point of view.

The motives behind the speed limit changes were based on a government commission in 2004 whereby the Swedish Road Administration (SRA) were to present a strategy for gradual adjustment of the speed limits in line with the concept of Vision Zero but also consider accessibility requirements, good environment, regional development and a gender equal transport system. SRA was also commissioned within the framework of this approach to propose a new speed limit system or changes in the current speed limit system that had the possibility within a balanced fulfilment of the transport policy goals to contribute to the interim road safety targets.

*Description of data*

- *Speed data*  
The effects on speed were mainly evaluated using a sample survey in which vehicle speed was measured at a random sample of road sites. Speed measurements concerned passenger cars, trucks without trailers and trucks with trailers. Speeds of all cars were included in the analyses (not only free speeds). Based on the sample survey, space-mean speed, 85th percentile speed and proportion of speed violations were estimated.

- **Crash data**  
The traffic safety evaluation was based on the empirical outcome in terms of crashes reported by the police (the Swedish crash data base STRADA).

*Confounding factors*

- *Policy context/enforcement activities/infrastructure measures*  
During the introduction of new speed limit systems and the study period there were no additional enforcement activities, nor any major changes in the infrastructure. In the evaluation, only roads that were not affected by other measures than the speed limit changes were considered.
- *Speed*  
To control for confounding factors, approximately 20 fixed sites on roads with unchanged speed limit were used as control sites for speed measurements.
- *Crashes*  
The method used is a before and after study with control group and corrections for changes in traffic volumes and the general road safety trend were made. Roads with new measures (i.e. speed cameras) introduced during the before or after period were excluded in the analyses.

*Results*

- *Speed*  
The speed limit changes for all vehicles are presented in Table 3.9. Speed changes for different vehicle types (cars, HGV's) are presented in Vadeby et al. (2014). On motorways, where the speed limit increased from 110 to 120 km/hr, the mean speeds increased by 3.4 km/hr. On rural roads where the speed limit decreased from 90 to 80 km/hr, the mean speed decreased by 3.1 km/hr. The changes are significantly different from zero. No significant change in mean speed was found on roads where the speed limits increased from 70 to 80 km/hr ( $0.2 \pm 1.9$ ).

**Table 3.9. Space-mean speed of all vehicles before and after the speed limit changes, 95% confidence intervals.**

Group	Space-mean speed, before (km/hr)	Space-mean speed, after (km/hr)	Change, before-after(km/hr)
2+1 roads, decrease from 110 to 100 km/hr	100.5	98.4	-2.1 ± 0.5
Rural roads, decrease from 110 to 100km/hr	98.4	96.7	-1.7 ± 0.7
Rural roads, decrease from 90 to 80 km/hr	87.7	84.7	-3.1 ± 0.9
Rural roads, decrease from 90 to 70 km/	82.6	79.4	-3.1 ± 1.1
Motorways, increase from 110 to 120 km/hr	111.9	115.3	3.4 ± 0.5
2+1 roads, increase from 90 to 100 km/hr	92.9	95.9	3.1 ± 0.5
Rural roads, increase from 70 to 80 km/hr	84.6	84.8	0.2 ± 1.9

\*Significant at 0.05 level

- *Road crashes and casualties*  
The empirical results show that in total about 17 lives per year, about 6 % of the previous

number of fatalities, have been saved on the road network with changed speed limits while no significant change was seen for the seriously injured (Table 3.10). Lives have been saved predominantly on rural roads where speed limits were reduced from 90 to 80 km/hr. On rural roads with speed limit reduced from 90 – 80 km/hr, the number of fatalities decreased by 41% and about 14 lives per year have been saved. No significant changes were seen for the seriously injured. On motorways with a speed limit increased to 120 km/hr, the number of seriously injured increased by about 15 per year, but the number of deaths does not yet show whether this number has changed because the number of fatalities in the after-period is so far just 6. This can be compared to the total number of fatalities and seriously injured per annum in Sweden, i.e., approximately 300 and 3 000, respectively.

**Table 3.10. Empirical change of fatalities and KSI (killed and seriously injured) per year based on crashes from STRADA.**

**Results corrected for confounding factors**

Group	Empirical change (%) Not corrected for confounding factors		Relative empirical change (%). Corrected for confounding factors. 95 % confidence intervals.		Empirical change number per year. Corrected for confounding factors.	
	KSI	Fatalities	KSI	Fatalities	KSI	Fatalities
2+1 roads, decrease from 110 to 100 km/hr (at grade separated)	-45	-71	-38 ± 27	-58 ± 71	-5.1	-0.6
2+1 roads, decrease from 110 to 100 km/hr	-65	-64	-60 ± 18	-48 ± 65	-12.2	-1.0
Rural roads, decrease from 110 to 100 km/hr	-24	-36	5 ± 28	-19 ± 64	1.3	-0.6
Rural roads, decrease from 90 to 80 km/hr	-33	-53	-7 ± 9	-41 ± 15	-12.6	-14.2
Rural roads, decrease from 90 to 70 km/hr	-13	-17	21 ± 41	2 ± 78	1.8	0.0
Motorways, increase from 110 to 120 km/hr	55	-57	128 ± 61	-20 ± 76	15.5	-0.3
2+1 roads, increase from 90 to 100 km/hr	-2	-40	12 ± 34	99 ± 276	2.7	0.4
Rural roads, increase from 70 to 80 km/hr	-29	-2	-4 ± 29	44 ± 137	-0.8	0.6

*Results*

The results are summarised in the table below. While the main tendency of the results makes sense, it is not clear that the entire reduction in the number of crashes was caused by the speed reduction. Other factors may also have contributed, in addition to those the study controlled for.

**Table 3.8. Effect of the reduced speed limit on speed, crashes and fatalities**

	Mean speed (km/hr)			Number of injury crashes			Change of injury crashes due to confounding factors (trends, policy context, etc.)	Net effect of speed measures after correction for confounding factors
	Before	After	% change	Before	After	% change		
Road 4	76.7	70.2	-8.5%	78	49	-37%	-19%	-22%
Ring 3	76.3	69.9	-8.4%	83	62	-25%	+6%	-29%
European road 18	76.0	72.9	-4.0%	22	16	-27%	+14%	-36%
All	76.3	70.6	-7.5%	183	127	-31%	-4%	-28%

*Other information*

Repeated speed measurements on one of the roads indicate that the effects of the measure declined over time, mainly because there was no enforcement. The police were opposed to the speed limits and in the end succeeded in having them repealed on legal grounds.

## 1.2 SPEED REDUCTIONS THROUGH INFRASTRUCTURE SAFETY MEASURES

### 1.2.1 INTERSECTION SPEED ZONES - NZ

# Intersection speed zones

SAFE SYSTEM CASE STUDY

## Intersection Speed Zones improve safety at rural intersections

Intersection Speed Zones are used to improve the safety at rural intersections along high-speed roads. They detect when a driver is approaching on a side road and activate an electronic Variable Speed Limit sign to temporarily show a lower speed limit on the main road.

The aim is to temporarily slow oncoming traffic down to 60 or 70km/h, making it easier and safer for people to pull into or out of a side road across a high-speed rural road. This takes the pressure off at intersections and makes the road safer for everyone by reducing the risk someone is killed or seriously injured if a crash happens.



#### How long does it take to create an Intersection Speed Zone?

It takes around six months to investigate and complete an Intersection Speed Zone, depending on procurement, access to power, and related intersection improvements.



#### How much do Intersection Speed Zones cost?

Intersection Speed Zones cost approximately \$200,000 for design and installation, which may be higher or lower depending on site characteristics. These costs don't include ongoing maintenance costs - which relate to use of the data network for communication with the sensors and signs, collection of speed data (where this is measured), and repair of damage occurring from crashes and system malfunctions.



#### How effective are Intersection Speed Zones?

We monitored Intersection Speed Zones across New Zealand, and our research found that they successfully reduced speed along main (priority) roads.

It showed that when signs are activated, modal (the most common) speeds were close to the variable speed limit displayed, whereas mean speeds were well above the posted variable speed limit!

#### Mean speed reduction range

Sign on vs sign off	3-10 km/h
Before signs were installed vs signs on	4-19 km/h



1.2.2 RAISED SAFETY PLATFORMS - NZ

# Raised safety platforms

SAFE SYSTEM CASE STUDY



### Raised safety platforms improve safety at intersections

Raised safety platforms are a treatment increasingly being used to improve safety through intersections and crossings by encouraging safer speeds.

Raised safety platforms make it physically uncomfortable to drive over the platform faster than the advisory speed. When used at intersections they can take the form of approach platforms just prior to the intersection, or the whole intersection can be raised.

### This is an innovative new safety treatment for New Zealand

Raised safety platforms were pioneered in the Netherlands and there have recently been successfully trialled in Victoria, Australia. New Zealand's first was recently installed at Thomas/Gordonton intersection in Hamilton.

Gordonton Road is a high-speed rural road on the fringes of a developing urban area in Hamilton, with a recently introduced 60km/h speed limit on the approach to the Thomas Road intersection. Approach platforms were installed, along with traffic signals, on the northern and southern approaches to this intersection in May 2019.

The aim was to ensure vehicle speeds through the intersection did not exceed 50km/h, to reduce the risk of harm from side-on crashes. The stop line is located before the approach platforms, which means vehicles stop further from the intersection than normal. More recent overseas examples have put the stop line on top of the approach platform.

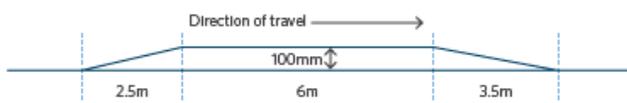


Figure 1: Profile of raised safety platforms used at Thomas/Gordonton intersection

### Raised safety platforms are part of the Safe System approach to road safety

The Safe System approach aims to create a forgiving environment and reduce harm when people make mistakes. Speed is the biggest determining factor to how much harm is caused in a crash.

Raised safety platforms are designed that if something happens vehicles speeds are slow enough that there is enough time for people to react to avoid a crash. If a crash does happen, the human body can withstand any impact forces.

The raised safety platforms at Gordonton/Thomas were designed to discourage speeds of over 50km/h, which is the upper speed at which people in vehicles involved in a side-on crash are likely to survive<sup>1</sup>.

In places with high numbers of people using active modes, raised safety platforms should be designed for 30km/h, which is more likely to be survivable for people walking and cycling.

They are substantially different to conventional speed humps as they have a much gentler ramp specifically designed to achieve the desired speed reduction.

[www.nzta.govt.nz/safety/safety-resources](http://www.nzta.govt.nz/safety/safety-resources)

1.2.3 RURAL ROUNDABOUTS - NZ

# Rural roundabouts

SAFE SYSTEM CASE STUDY

## Roundabouts are a great safety solution for rural intersections

Roundabouts have been used in New Zealand for many decades, historically they have mainly been used in urban environments. More recently, a number of rural roundabouts have been installed at high speed main road intersections in Waikato and Auckland to address serious crash concerns.

Recent analysis looking at the results of nine sites confirms just how effective they are.

This case study includes the analysis of these nine sites:

Site	Installed	Cost
SH1/5 intersection at Tirau	2014-15	\$4.7M
SH27/Paeroa-Tahuna Rd	2009-10	\$2.5M
SH3/37 Waitomo Rd	2015-16	\$3.3M
SH26/Ruakura Rd	2016-18	\$6.8M*
SH3/21 Airport Road, Hamilton	2016-19	\$3.9M
SH2/25 intersection, Mangatarata	2014-17	\$3.2M
SH26/27 intersection, Tatuani	2011-13	\$3.5M
Glenbrook/Kingseat Int. South-West Auckland	2013	
Whitford Park Rd/Sandstone Rd Int. South-East Akl	2014-15	

\*Part of a wider Waikato Expressway project



**How much do rural roundabouts usually cost?**

The Standard Safety Intervention Toolkit includes a cost range of \$2M-\$5M. Costs are heavily dependent on size, land, services and traffic management during construction.



**How effective are rural roundabouts?**

- Austrroads found roundabouts were effective in reducing fatal crashes by 63-100% and severe crashes by 37-90%.
- The Waka Kotahi NZ Transport Agency Standard Safety Intervention Toolkit says rural roundabouts have an assumed death and serious injury reduction of 60%.



### 1.3 EFFECTIVE SPEED COMPLIANCE THROUGH MOBILE CAMERA COVERT OPERATION

#### 1.3.1 SPEED COMPLIANCE THROUGH MOBILE CAMERA ENFORCEMENT - VICTORIA

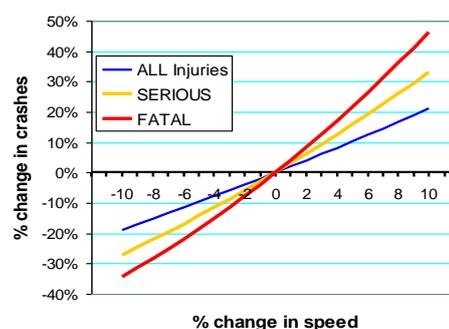
Case study on mobile speed camera enforcement by Police, Victoria 2002 to 2004  
(EFFECT OF SUSTAINED REDUCTION IN TRAVEL SPEEDS [THROUGH ENFORCEMENT] ON FATALITIES.)

Sustained decreases in travel speeds on any road will reduce DSI (casualty crashes). The effect is quite surprising to those who are unaware of the sensitivity of serious crash outcomes (DSI) to small changes in average (mean) speeds.

An example drawn from respected international research is shown below. For example, a 5% reduction in mean travel speed of the whole traffic stream on a length of road, anywhere, with a speed limit above 50 km/hr, would result in 20% reduction in fatalities, a 15% reduction in serious injuries and a 10% reduction in minor injuries.

### Speed change/ crash change Speed Risk/ Relationship

- Change in fatal crashes related to 4th power of relative change in speed
- Change in casualty crashes related to 3rd power of relative change in speed
- Change in all crashes related to 2nd power of relative change in speed



Based on Andersson and Nilsson, 1997

*Note* that for a sustained mean speed decrease of some 3% (i.e. 2 km/hr in a 60 km/hr zone for example), casualty crashes on that length of road would reduce by some 15%. This is a substantial benefit.

The currently enforced speeds in Auckland are at 10 km/hr above the relevant limit for all but a few weeks of the year. For those 4 to 8 weeks a year, speeds are enforced at 4 km/hr over the speed limit. There is opportunity therefore to achieve free speed reductions on average of some 3 km/hr (50% of 6 km/hr (allowing for the cohort of drivers currently driving well below 60 km/hr in a 50 km/hr zone and also the periods of congested travel when speeds are impacted by traffic queueing at intersections).

Small changes in speed result in relatively large changes in casualty crashes.

A small percentage drop in average speeds would be expected to lead to at least double that percentage drop in casualty crashes and a much higher reduction for fatal crashes.

Mobile covert camera operation is highly effective in reducing speeding.

For reasons that are not yet fully understood, mobile covert cameras are more effective in reducing fatalities than any other technology for speed enforcement.

**The Melbourne, Victoria experience with speed enforcement from 2001/ 2002**

In early 2001 a 50 km/hr urban default limit (from 60 km/hr) was introduced - but not on 60 km/hr arterial roads in urban areas where most traffic operated. In late 2001 – covert mobile camera operations commenced in metropolitan Melbourne (mobile camera effectiveness and practical operation is limited in fully rural settings where a parked car by the roadside, even unmarked, is an indicator that a camera may be present).

Late 2001/early 2002 onwards – police progressively introduced the 50% increase in mobile camera hours . In May 2002, Victoria Police introduced tougher enforcement of speeding (lower enforcement threshold from 10 km/hr to 5 km/hr). In late 2002 the government introduced tougher speeding penalties, higher fines, lower speed thresholds for increased demerit points:

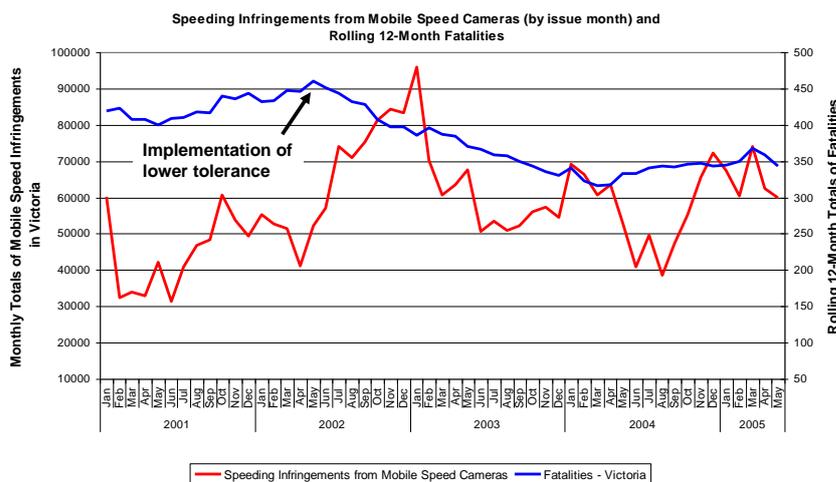
License loss occurs when 12 demerit points are incurred in a 3 year period. As an example, red light running is 3 demerit points and speeding at 10 to 24 km/hr over the speed limit is 3 demerit points.

0 – 10 km/hr over the limit is now \$198 and 1 demerit point, 10 - 24 km/hr over the limit is \$317 and 3 demerit points and 25 - 29 km/hr over the limit is \$436 and 4 demerit points with 1 months license suspension.

Comprehensive advertising campaigns were run on television, radio and in print media to warn of the tougher enforcement and explain the sensitivity of death and injury to small speed differences.

Here is what occurred.

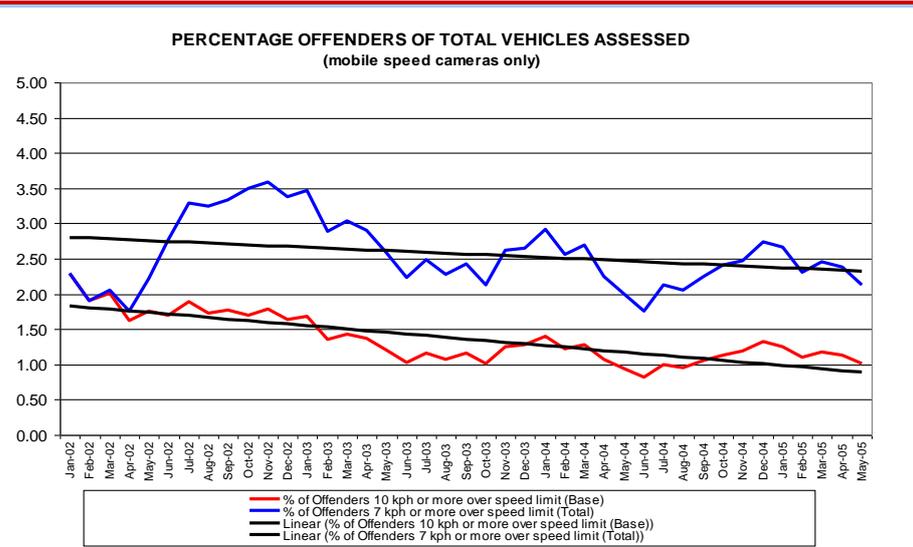
**Outcomes: Trends in fatalities and speeding infringements issued since 2001**



The red line graph is the number of camera infringements issued. The lower tolerance caused a surge in infringements from some 50,000 per month in May 2002 to 95,000 per month for December 2002 for a brief period.

There was a great deal of unhappiness expressed on talkback radio over that period, much of which was inaccurate and political leaders were under pressure. From the time the enforcement tolerance was lowered in May 2002, fatalities in Melbourne – the blue line graph above – started to collapse. They continued to fall through 2002, when they levelled out in 2004. Infringements also began to fall from January 2003 as behaviours changed and were back to around 50,000 per month from mid-2003.

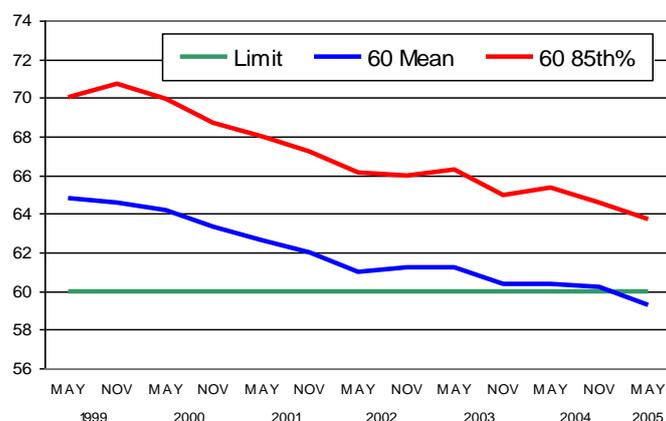
### Outcomes: Improved compliance



Police camera data shows the continuing improvement in compliance by drivers from May 2002 to May 2005 (for those measured at 7 km/hr or more over the limit and those measured at 10km/hr or more over the limit) as behaviours continued to shift. It can be seen that the group travelling at 10 km/hr or more over the limit fell from 2.00% of drivers to 1.00% . This seems a small reduction but in fact it is a halving in lower level excessive speed behaviour and is a very substantial benefit.

Mean speeds and 85<sup>th</sup> percentile speeds as measured on the 60 km/hr speed limited arterial network fell as shown on the following graph. The reduction from May 2002 to May 2005 seems small. It is in fact a 2km/hr reduction. For a 60km/hr limit, that is a 3.3% mean speed reduction.

**Outcomes:  
Change in free speeds for metropolitan Melbourne –  
60km/h zones**



The research tells us that for every 1% reduction in mean speeds, fatalities will fall by around 5%. A reduction in fatalities with the mean speed reductions achieved of some 15% to 20% could therefore be expected.

From 2001 to 2004 the actual number of fatalities in Melbourne reduced by 33% as shown below. There were the usual other lesser scale interventions but nothing was as established or as broad in its scale as the speed enforcement programme.

**Fatalities in Metropolitan Melbourne 2001 to 2004**

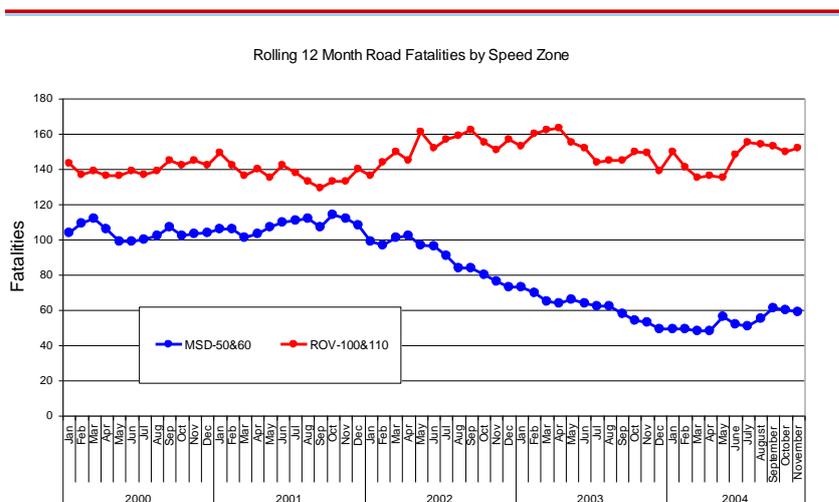
Road User	2004	2001	2004 V 2001 % Change
Drivers	68	86	-21%
Passengers	42	52	-19%
Pedestrians	36	66	-45%
Motorcyclists & Pillion	17	39	-56%
Cyclists	3	4	-25%
<b>Total</b>	<b>166</b>	<b>247</b>	<b>-33%</b>

**Victorian Road Crash Data System, VicRoads, 2004**

It remains a model today which simply requires jurisdictions to have the commitment to implement it to achieve large benefits. There are ways in which the introduction could have been done more gradually to perhaps moderate the public reaction, but it succeeded. Victoria Police deserve great credit for taking this step and holding firm throughout.

The impact of the speed enforcement by mobile covert cameras- essentially focused on metropolitan Melbourne given the safety challenges of an operator parking on a rural highway roadsides and the visibility issues around a roadside vehicle in a country area – and the contrast over the 2002 to 2004 period is shown in the contrast between rural fatality trends (Red, ROV) and metropolitan Melbourne (Blue, MSD) fatality trends shown in the graphic below.

## Fatalities by Speed Zone



The road user group that was the greatest beneficiary of the slightly lowered speeds was pedestrians with fatalities for that group falling across all Victorian urban areas by some 19% to 20% from 2001 to 2004.

**Note:** Prepared January 25, 2018 by Eric Howard, from data prepared in 2005 when General Manager Road Safety, VicRoads, Victoria.

### 1.3.2 FRITH ET AL THE RELATIVE EFFECTIVENESS OF A HIDDEN VS A VISIBLE SPEED CAMERA PROGRAMME, 2001 - NZ

Overtly operated mobile speed cameras have been used in New Zealand since late 1993. Their operation has been confined to specific sites (called 'speed camera areas') which are mainly road sections with a record of speed-related crashes. A trial of hidden speed cameras began in mid-1997 in 100 km/hr speed limit areas in one of New Zealand's four Police regions. The current paper reports the results of an evaluation of the first year of the trial. During that period, the hidden cameras and related publicity were found (compared with the generally highly visible speed camera enforcement in the rest of New Zealand) to be associated with net falls in speeds, crashes and casualties both in speed camera areas and on 100 km/hr speed limit roads generally. There were initial changes in public attitudes in response to the programme that later largely reverted to pre-trial levels. Compared with the localised effect of visible cameras on speeds and crashes mainly in speed camera areas, the hidden cameras had a more general effect on all roads. As further crash, speed and attitude data become available, the longer-term effects of the hidden camera programme will be evaluated.

### 1.3.3 FRITH W ET AL, HIDDEN CAMERAS TRIAL 2002 - NZ

As described in a previous paper [Accident Anal. Prev., 33 (2001) 277], the hidden camera programme was found to be associated with significant net falls in speeds, crashes and casualties both in 'speed camera areas' (specific signed sites to which camera operation is restricted) and on 100 km/hr speed limit roads generally. These changes in speeds, crashes and casualties were identified in the trial area in comparison with a control area where generally highly visible speed camera enforcement continued to be used (and was used in the trial area prior to the commencement of the trial).

There were initial changes in public attitudes associated with the trial that later largely reverted to pre-trial levels. Analysis of 2 years' data of the trial showed that falls in crash and casualty rates and speeds associated with the hidden camera programme were being sustained. It is not possible to separate out the effects of the concealment of the cameras from other aspects of the hidden speed camera programme, such as the four-fold increase in ticketing. This increase in speed camera tickets issued was an expected consequence of hiding the cameras and as such, an integral part of the hidden camera programme being evaluated.

#### 1.3.4 SPEED ENFORCEMENT IN WAIKATO - NZ

One district ruled them all when it came to speeding tickets in 2020

Kirsty Lawrence [kirsty.lawrence@stuff.co.nz](mailto:kirsty.lawrence@stuff.co.nz) Jan 11 2021



CHRISTEL YARDLEY/STUFF

*Waikato road policing manager Inspector Jeff Penno says if you're speeding in Waikato, expect a ticket.*

Waikato police issued thousands more speeding tickets than any other district in the country last year and don't expect them to ease up in 2021.

Data released by New Zealand Police showed that 61,800 officer-issued speeding tickets were issued as of December 14, 2020 in the Waikato region – up from 36,000 during 2019.

The next closest region in 2020 was Canterbury, with 32,167 officer-issued speeding tickets handed out during the nine months to September.

The Waikato region has cracked down on speeding in 2020 with a zero tolerance approach, targeting drivers going 1 to 10 kilometres over the speed limit.

And while road policing manager Inspector Jeff Penno knows some people will think it's trivial, he said a little bit of speed makes a massive difference when someone makes a mistake.

Penno said they targeted people going 1 to 10 kilometres over the speed limit because research showed by reducing the mean speed on the road it reduced the number of fatal crashes.

That little bit of speed makes a massive difference when someone makes a mistake. All the research shows this is the right thing to do. We have the total support of Waka Kotahi [NZ Transport Agency]. "They agree because they know the science backs it up."

With almost double the amount of speeding tickets issued by officers in 2020, Penno said they didn't have more staff this year, they just deployed them on an evidenced-based deployment plan.

"We know our risk roads and times. Speed on those roads is what we are targeting, and we will make no apology for that."

In May, Waikato police ran an operation targeting speeding, and they issued more tickets than they ever had over a monthly period, with more than 8,000 tickets issued.

The number of speeding tickets given to drivers in the region going up to 5kmh over the limit also soared in 2020.

In 2019, there were 30 officer-issued speeding tickets in that bracket, information released to *Stuff* under the Official Information Act shows.

But from January 1 until July 31 in 2020, there were 103. The next highest region was Counties Manukau, with 10.

There have been 41 deaths on Waikato roads in 2020, which was more than the 37 in 2019, and Penno said he hoped in 2021 to see the benefits of the speed crackdown.

<https://www.stuff.co.nz/motoring/123721241/one-district-ruled-them-all-when-it-came-to-speeding-tickets-in-2020>

## 1.4 EFFECTIVE SPEED COMPLIANCE THROUGH FIXED POINT TO POINT (SECTION CONTROL) SPEED CAMERAS

### 1.4.1 FRANCE: INTRODUCTION OF AUTOMATED SPEED CAMERAS (MOBILE AND FIXED) IN 2003

Automated speed cameras were introduced in France in 2003 following a decision by President Chirac in 2002 to make road safety one of the three major nation priorities during his mandate. Between 2003 and 2009, 1 661 fixed speed cameras were implemented supplemented by 932 mobile cameras.

Between 2002 and 2005 the mean speeds fell by 8.9 km/hr on secondary roads and by 7.7 km/hr on two or three lanes highways (two-way roads). Fatalities decreased by 25-35% in rural areas, 38% on urban motorways and 14% on urban roads.

#### Description and motivation of the measure

Fixed and mobile speed cameras were implemented progressively, with a first stage between November 2003 and March 2004 for the first hundred fixed units, followed by stagnation until the end of summer 2004. All fixed cameras were advertised by a sign about 1 kilometre upstream. From autumn 2004, the implementation accelerated. Then, the extension of the network of fixed speed cameras continued to reach 1 661 in 2009 supplemented by 932 mobile speed cameras. The first cameras were installed by central decision at points in the network with most traffic. Then, the locations were decided at the local level taking into account the characteristics of the infrastructure and levels of crash risk.

On 14 July 2002, President Chirac decided to make road safety one of the three major national priorities during his five years' mandate. The decision to adopt speed cameras was taken on 18 December 2002 by the Inter-ministerial Committee for Road Safety, with the announcement of the implementation of 1 000 radars by the end of 2005.

## **Description of data**

### *Speed data*

362 observation points (285 for daytime and 77 for night-time), representative of the French road network, were selected to measure speed. Measurements were conducted by 50 investigators based on a predefined distribution of days in the month and time slots. Measurements were conducted every four months at the same points and at the same day and time. Observations were distributed to spread evenly over four months, to cover all types of days and all time slots between 9:30 and 16:30 on daylight and between 22:00 and 2:00 at night. Speed measurements were made on six network categories: national roads in urban areas, national roads in rural areas, secondary roads in rural areas, 2x2 lanes national roads in rural areas, urban motorways, and interurban motorways.

### *Crash data*

Four studies were undertaken to evaluate the impact of the speed cameras on the number of fatalities and crashes. The first study (ONISR, 2006) was based on the analysis of annual statistics between 2002 and 2005. The second evaluation (Calvet, 2011) was based on the use of simple annual risk trend model. The third evaluation (Lassarre, 2009) was based on a model of annual fatalities depending on the number of vehicle-kilometres and a deterministic linear trend. The fourth evaluation (Carnis and Blais, 2013) estimated the effects through a time series model (an ARIMA intervention model) on monthly data of the ratio of the numbers of fatalities and non-fatal traffic injuries per 100 000 registered vehicles.

### *Confounding factors*

During the introduction of the speed camera programme, there was no additional enforcement activity or major change in the infrastructure. However, the programme was accompanied by a large communication campaign in the media and through the social network about the deployment and the effectiveness of the system.

### *Speed*

To compare the evolution on time before and after the implementation, trend and control were modelled for factors which could influence the measurements and the trend, such as weather conditions, and fuel price.

### *Crashes*

Different time-series models were applied to correct for change in traffic volumes and the general road safety trend.

## Results

- *Speed*

Table 3.13 shows the evolution in the mean speed of cars between 2000 and 2005 under daylight conditions and for four different road types. Between 2002 and 2005, the mean speed fell by 8.7 km/hr on secondary roads and 7.7 km/hr on highways (two-way roads) with two or three lanes.

**Table 3.13. Mean speed of cars (km/hr) under day light conditions by road network**

Year	Motorways	National rural roads Dual two lane roads	National rural roads, 1x1 two-way roads	Secondary rural roads
2000	127 km/hr	112 km/hr	89 km/hr	95 km/hr
2001	126 km/hr	112 km/hr	90 km/hr	93 km/hr
2002 <i>Introduction of automated speedcameras</i>	126 km/hr	112 km/hr	88 km/hr	93 km/hr
2003	124 km/hr	109 km/hr	85 km/hr	90 km/hr
2004	121 km/hr	104 km/hr	84 km/hr	88 km/hr
2005	119 km/hr	99 km/hr	81 km/hr	86 km/hr

- *Road crashes and casualties*

The results are summarized in Table 3.14.

**Table 3.14. Impact of the introduction of automatic speed cameras on mean speed and fatalities**

	Mean speed (km/hr)			Number of fatalities			Reduction of fatalities due to confounding factors	Net effect after correction for confounding factors
	Before	After	% change	Before	After	% change		
Rural motorways	126	119	-5.6%	351	224	-36.1%	-13%	-31.4%
National roads	88	81	-8.0%	1 914	1 142	-40.3%	-13%	-35.1%
Main rural roads	93	86	-7.5%	4 049	2 861	-29.3%	-13%	-25.5%
Urban motorways	112	109	-2.7%	176	100	-43.3%	-13%	-37.7%

### *Other information*

A more recent evaluation is found in Blais and Carnis, (2015) where they refined the results by looking at the effects by road user categories. Results for all types of road users can be found in Blais and Carnis, (2013 and 2015).

The same speed data as used in this study is also studied in Viallon and Laumon (2013) who provide trends over 2001 to 2010 in the distribution of speeds and the fraction of fatal crashes, but limited to the secondary road network. Viallon and Laumon (2013) showed that the French speed camera programme reduced the proportion of fatal crashes attributable to high-level speeding (>20 km/hr over

the limit) from 25% to 6% over the period 2001-2010 and increased the proportion attributable to low-level speeding from 7% to 13%.

#### 1.4.2 ITALY: IMPLEMENTATION OF SECTION CONTROL (SAFETY TUTOR)

Section control of speed was introduced on the Italian motorway network in December 2005. In 2014, it comprised a total of 320 camera sites which covered more than 2 900 km of the motorway network.

The evaluation conducted showed a clear decrease in the mean speed and also an impressive reduction in the speed variability. On the A56 urban motorway, mean speed of light vehicles decreased by 10 % and the number of crashes decreased by 32%.

#### Description and motivation of the measure

Automated section control of speed or point-to-point (P2P) speed enforcement is a relatively new approach to traffic law enforcement. Its technology allows automatic identification of vehicles whose average speed, over the controlled section, exceeds the speed limit and automatic processing of an offence report and of the related fine. It therefore encourages compliance over distances longer than those observed where spot enforcement technologies have been in place.

Section control of speed, known in Italy as Safety Tutor, was initially introduced on the Italian motorway network in December 2005. In 2014, it comprised 320 speed camera sites covering more than 2 900 km of the motorway network (about 40% of the Italian motorway network managed by Autostrade per l'Italia). In 2012, the implementation of the system was extended to three national expressways. Further installations of the system are planned also on regional and provincial highways. The evaluation presented in this report concerns the A56 urban motorway and the A1 motorway.

The programme was implemented to improve road safety. Speeding is a main contributing factor of most fatal crashes on the Italian motorway network. It is therefore important to improve speed compliance. The measure was decided upon by the motorway operator, Autostrade per l'Italia, following discussion with the traffic police and the consumer protection association.

#### Description of data

##### *Speed measurements*

Individual ATS (Average Travel Speeds) of vehicles on sections of the A56 motorway "Tangenziale di Napoli" were analysed before and after the system activation (on 9th February 2009). In total, there were more than 22 million observations and speed monitoring was carried out in four periods:

- Before\_2009: 12 days before the implementation of the P2P system (from 28th January to 8th February);
- After\_2009: 77 days after the implementation of the P2P system (from 18th February to 5th May);
- After\_2010: 21 days in 2010 (from 12th May to 1st June); and
- After\_2011: 23 days in 2011 (from 29th March to 20th April).

##### *Crash data*

On the A56, crash data covered 2006 to 2011, with a before period of 3.1 years and an after period of

2.9 years. Crash count for all treatment sites was 559 in the before period and 279 in the after period.

On the A1 Milan-Naples, the analysis period was 2001–2009, with a before period of 6.5 years and an after period of 2.5 years. Crash count for all treatment sites was 1 922 in the before period and 477 in the after period.

#### *Confounding factors*

Crash data were investigated by the before and after empirical Bayes (EB) methodology, which represents the state-of-the-art approach for safety evaluations. This methodology is rigorous and properly accounts for regression-to-the-mean (which may be relevant since sites for automatic speed control are selected also because of abnormal crash frequencies in the short term), accounts for other changes over time not due to the treatment being evaluated, overcomes the difficulties of using crash rates in normalizing for traffic volume differences between the before and after periods, and reduces the level of uncertainty in the estimates of the safety effect.

## **Results**

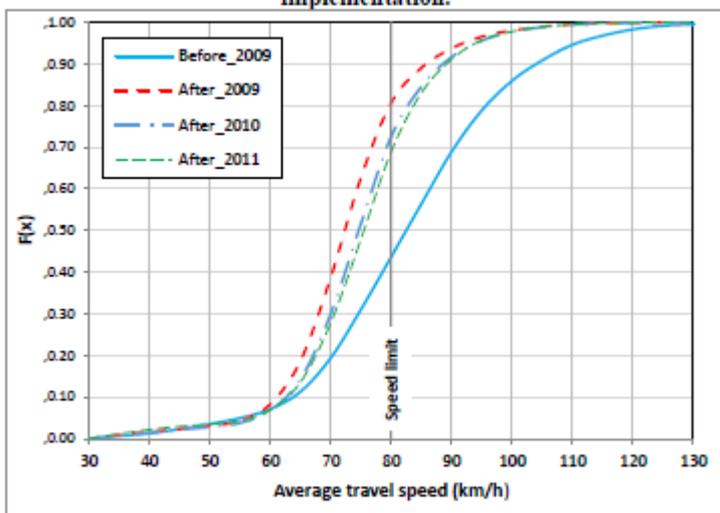
### *Speed*

On the A56 the average speed of light vehicles decreased from 83.4 to 75.2 km/hr, i.e., a 10% reduction. A greater reduction was observed for the 85th percentile of the speed distribution (V85) which decreased from 100.0 to 85.9 km/hr, i.e., a 14 % reduction. Speed reduction for heavy vehicles was lower than for light vehicles: the mean speed of heavy vehicles decreased only by 5% and the 85<sup>th</sup> percentile speed by 8%. Night-time speeds were higher than daytime speeds by about 3 km/hr but average speed reduction was greater in daytime than in night-time: 9.9% vs. 9.2%. It is worthwhile to observe that the system was more effective in reducing excessive speeding behaviour. Indeed, the speeding reduction was 45% for vehicles exceeding the speed limit and 84 % for vehicles exceeding the speed limit more than 20 km/hr (see also Figure 3.3).

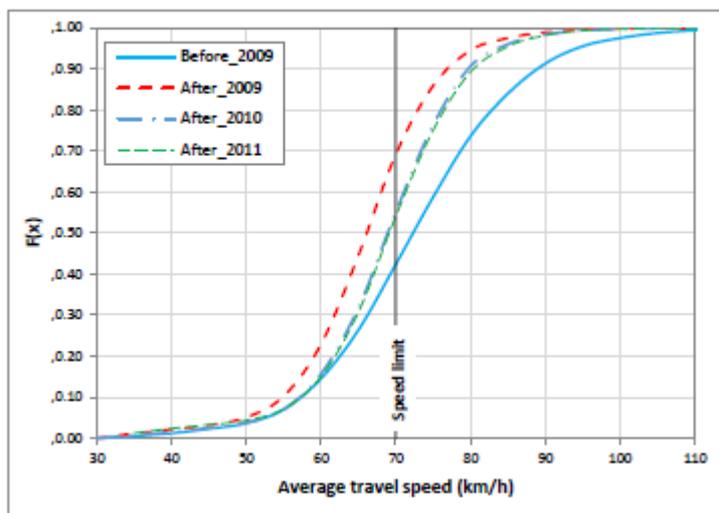
One of the most important effects of the system is an impressive reduction of the speed variability. The standard deviation of average speeds of light vehicles over the study sections decreased from 16.5 to km/hr (from 13.1 to 10.5 km/hr for heavy vehicles), i.e. a 26% reduction (20% for heavy vehicles). The greater reduction in standard deviation of speed (-31.2%) was observed in night-time.

**Figure 3.3. Speed distribution in the motorway A56 before and after the P2P implementation**

Figure 3.3. Speed distribution in the motorway A56 before and after the P2P implementation.



a) Light vehicles (weight ≤ 3.5 tons)



b) Heavy vehicles (weight > 3.5 tons)

*Crashes*

On the A56 urban motorway, the evaluation study estimated a crash reduction of 32.0%, with a lower 95% confidence limit of 22.3%.

On the A1 Milan-Naples motorway, the evaluation study estimated a crash reduction of 31.2%, with a lower 95% confidence limit of 24.3%. The greatest crash reductions were observed for severe crashes (-55.6%) and crashes on curves (-26.6%).

Table 3.16. Impact of Safety Tutor on speed and crashes

**Table 3.16. Impact of Safety Tutor on speed and crashes**

		Mean speed before (daytime)	Mean speed after (daytime)	Change in mean speed %	Reported crashes before (count)	Expected crashes (i)	Reported crashes (i)	Index of effectiveness (i)	Standard deviation (i)	Crash reduction		
										95% Confidence interval lower limit (%)	Estimate (%)	95% Confidence interval upper limit (%)
A56	urban	83.4 km/h	75.2 km/h	-10%	559	409	279	0.68	0.05	22.3	32.0	41.6
A1	Milan-Naples				1 922	692.96	477	0.69	0.04	24.3	31.2	38.1

**Other information**

On both the A56 and the A1 motorways the safety effectiveness of the system decreases over time. For the A56, crash reduction estimate was 37.3% in the first year after the activation of the system, while it was 29.9% in the second year and 27.9% in the third year. This declining effect was accompanied by a declining effect on speed, with reductions of 13.5%, 10.3% and 9.8% respectively in the first, second, and third year. On the A1, the crash reduction was 39.4% in the first semester after the system activation while it was 18.7% in the fifth semester.

1.4.3 AUSTRIA: INTRODUCTION OF SECTION CONTROL (2012)

The first section control (point-to-point speed enforcement) on Austrian motorways was installed in 2003 in the Kaisermühlen Tunnel near Vienna). Since then, several sections of the Austrian motorway network have been equipped with section control (both fixed and mobile units).

In 2012, the first implementation on the secondary road network took place on an interurban section of 4.5 km in length, with a 2+1 cross section without median barrier. The average number of injury crashes went down from 5/year to 1.55/year, the average speeds decreased by between 3.3 km/hr and 10.9 km/hr.

**Description and motivation of the measure**

In June 2012, section control was installed on the LB37 in Lower Austria on a road section of km. The LB37 is an interurban road with a 2+1 cross section without median barrier. The speed limit is 100 km/hr. The section control enforcement was implemented to improve road safety. The stretch of road had been identified as a high-risk section.

**Section Control LB37, “Gföhler Berg” (See Photo below)**



**Description of data**

*Speed data*

The road authority of the region of Lower Austria (Niederösterreich) carried out the speed assessment. Before data were collected the year before the implementation, in August and September 2011, at five points along the stretch of 4.5 km. Following the implementation (June 2012), the after measurements took place at the same five locations roughly one year after the before assessment, in August 2012. Speed was measured with 24-hour automatic traffic counts using portable traffic data collectors (magnetic traffic lane sensors mounted to the road surface).

*Crash data*

The crash analysis was done by KfV, based on disaggregated police data provided by the Austrian Bureau of Statistics. The analysis focused on the number of injury crashes, the number of road deaths, and the number of people injured and seriously injured. The analysis was done for the two following periods:

**Before: 1 June 2007 to 31 May 2012**

**After: from 1 June 2012 to 31 December 2014**

*Confounding factors*

A simple before and after study (speed and crashes) was conducted.

**Results**

- The average speeds were reduced at all five measurement points, by between 3.3km/hr and 10.9km/hr corresponding to speed reductions of between 3.1% and 10.7%.
- The counts of injury crashes per year decreased from 5 per year to 1.55/year, corresponding to a 69% reduction.
- The number of fatalities was reduced to zero, from a level of 0.6 per year.
- The number of people injured decreased by 37% and the number of people seriously injured decreased by 61%. However, since the study did not control for confounding factors, the results must be treated with caution.

Table 3.17. Impact of the implementation of section control on mean speed and fatalities

	Mean speed			Crash data			Reduction of fatalities due to confounding factors	Net effect of speed measures after correction for confounding factors
	Before	After	% change	Before	After	% change		
Site 1	101.5	90.6	-10.7					
Site 2	106.6	103.3	-3.1					
Site 3	100.0	90.4	-9.6					
Site 4	102.1	95.0	-7.0					
Site 5	86.4	82.1	-5.0					
			Number of injury crashes/year	5	1.6	-69	Not investigated	
			Fatalities/year	0.6	0	-		
			Severely Injured/year	3	1.2	-61		
			Injured /year	7.4	4.6	-37		

## 1.5 SPEED LIMIT REDUCTIONS

### 1.5 REDUCING DRINK DRIVING THROUGH CAREFULLY PLANNED ENFORCEMENT PROGRAMMES

#### 1.5.1 COMBINED PROGRAMME OF CAMERA ENFORCEMENT OF SPEED COMPLIANCE AND OF DRINK DRIVING ENFORCEMENT

*An Evaluation of a Supplementary Road Safety Package*, Guria J, Leung J, Land Transport Safety Authority, Wellington, New Zealand, 2003

#### **Abstract**

A Supplementary Road Safety Package (SRSP) was developed in New Zealand in 1995/1996 to supplement the compulsory breath test (CBT) and speed camera programmes introduced in 1993. A major feature of the package was the use of emotion and shock advertising campaigns not only to affect high risk driving attitudes and behaviours towards speeding and drink-driving but also to encourage the use of safety belts. Furthermore, the SRSP also emphasised targeting enforcement to these three areas. This package continued for 5 years. This paper estimates the effect of the package on road trauma. The analysis shows that the Package made substantial impact on road safety and saved over 285 lives over the 5-year period.

#### **Conclusions**

The results from the three sets of models are mostly consistent, suggesting strong validity of the final estimates.

Because of strong multicollinearity between variables, PC regressions were carried out to analyse the effectiveness of the SRSP and to help select the variables entering the OLS regressions.

As OLS estimators are still the best linear unbiased estimators, it is appropriate to estimate the overall savings in road trauma based on the OLS estimates once we have determined the variables to be retained in the analysis.

The estimated savings in road trauma obtained from the PC regressions are higher than those from the OLS regressions in most cases. The number of fatalities prevented is estimated to be between 285 and 516, over the 5-year period. A conservative range using only the OLS results would be between 285 and 360 (or an average of 333). Similarly, the estimate of reported serious injury prevented would be about 1700 over this period. However, no conclusion could be drawn regarding the individual effects from police enforcement and safety advertising because of the strong correlation and complementary effects of the two variables

## APPENDIX 2: TERMS OF REFERENCE

AT is seeking a written document that:

- Validates the progress made against the intended actions of the 45 Road Safety BIR recommendations (which have been divided by AT into 74 actions for tracking).
- Reviews progress made against the recommendations, asking if the recommendations are completed or require more focus. AT will provide the initial excel spreadsheet used for internal reporting of the statuses and activities taken.
- Identifies areas of focus from this review and road safety data and trends which could help inform a Vision Zero Action Plan for 2022-2024.
- Also, provide a presentation to AT Board and stakeholders on the deliverables performed.

APPENDIX 3: ENFORCEMENT PERFORMANCE OPPORTUNITIES, SPEED, DRINK DRIVING AND DRUG IMPAIRED DRIVING<sup>35</sup>

Research material prepared by Monash University Accident Research Centre

Showing estimated crashes saved by 50% increase in enforcement (for random breath testing for alcohol, oral fluid testing for drugs and various speed camera type expansions) and total social benefit for rural Victoria and for urban Victoria (i.e. Melbourne). (See highlighted cells. Italicised estimates derived from bold estimates by addition and interpolation).

TARGET ROAD ENVIRONMENT	Enforcement type	CRASHES SAVED (p.a.)					BENEFIT
		Fatal crashes	Hospital admission crashes	Total serious casualty crashes	Medical treatment crashes	Total casualty crashes	Total value of crash saving per year (\$m)
<b>RURAL VICTORIA</b>							
Freeway	Fixed speed camera	<i>0.16</i>	<i>1.02</i>	1.19	<i>0.08</i>	1.27	1.76
	P2P camera system	0.47	2.19	2.66	1.84	4.50	4.95
Divided Highway	Semi-covert MSC	1.00	2.32	3.32	<i>5.51</i>	8.83	9.90
	Overt MSC	<i>0.24</i>	<i>4.00</i>	<i>4.24</i>	<i>6.41</i>	10.65	4.19
Undivided Roads	Semi-covert MSC	31.04	<i>14.68</i>	<i>45.73</i>	<i>44.81</i>	90.53	270.99
	Overt MSC	<i>7.28</i>	<i>55.15</i>	<i>62.43</i>	<i>46.76</i>	109.20	87.05
	MMR	<i>2.67</i>	<i>20.24</i>	<i>22.91</i>	<i>17.16</i>	40.07	31.94
Town Streets	Bus RBT	1.03	<i>4.15</i>	5.18	<i>8.67</i>	13.85	11.18
	Bus RDT	1.19	<i>3.99</i>	5.18	NK	<i>5.18</i>	11.48
<b>All rural roads</b>	Car & Bus RBT	8.37	<i>6.18</i>	14.55	<i>12.98</i>	27.53	73.98
<b>URBAN (Melbourne)</b>							
Freeway	Fixed speed camera	<i>0.73</i>	<i>11.38</i>	<i>12.11</i>	<i>6.27</i>	<i>18.38</i>	<i>11.14</i>
Arterial	Covert MSC	38.91	<i>57.41</i>	<i>96.32</i>	<i>234.71</i>	<i>331.03</i>	<i>374.04</i>
Signalised Intersection	SRL camera	<i>0.48</i>	<i>18.91</i>	<i>19.39</i>	<i>52.23</i>	<i>71.62</i>	16.90
Street	HH laser/radar	<i>0.47</i>	<i>22.28</i>	<i>22.75</i>	<i>45.25</i>	<i>68.00</i>	<i>17.33</i>
<b>All urban roads</b>	Bus RBT	<i>7.65</i>	<i>25.89</i>	<i>33.54</i>	<i>51.31</i>	<i>84.85</i>	<i>79.63</i>
	Car RBT	<i>7.65</i>	<i>25.89</i>	<i>33.54</i>	<i>51.31</i>	<i>84.85</i>	<i>79.63</i>
	Car & Bus RDT	8.81	<i>24.73</i>	<i>33.54</i>	NK	<i>33.54</i>	<i>83.22</i>
<b>ALL VICTORIA</b>							
<b>All Victorian roads</b>	All AST (R & not R)	16.02	<i>32.06</i>	48.09	<i>64.29</i>	112.37	153.61
	All RDT (bus & car)	18.43	29.65	48.09	NK	<i>48.09</i>	165.87

The model has been developed for Victoria, including Melbourne as shown above and application elsewhere would require location specific calibration based on establishing relationships between inputs and crash outputs in those environments.

The outputs of this model (a reduction of 38 fatal crashes in Melbourne from deployment of mobile covert cameras, a reduction of some 15 fatal crashes from expanded random breath testing and a reduction of some 8 fatal crashes from expanded random drug testing - all annually recurring) are supportive of currently planned substantial expansions in speed camera enforcement and drug driving

<sup>35</sup> A Resource Allocation Model For Traffic Enforcement, Cameron M, Newstead S, & Diamantopolou K, Journal of the Australasian College of Road Safety, Volume 27, No. 2 - 2016

enforcement in a number of Australian States. The crash saving benefits are shown for each intervention in the right hand column.

<b>URBAN (Melbourne)</b>			<b>BCR</b>
Freeway	Fixed speed camera	0.73	<b>4.34</b>
Arterial	Covert MSC	38.91	<b>43.60</b>
Signalised Intersection	SRL camera	0.48	<b>3.08</b>
Street	HH laser/radar	0.47	<b>9.26</b>
<b>All urban roads</b>	Bus RBT	7.65	<b>8.01</b>
	Car RBT	7.65	<b>8.68</b>
	Car & Bus RDT	8.81	<b>56.01</b>

The substantially beneficial returns from covert mobile cameras and random drug testing can be seen in the table above.

## APPENDIX 4: ENFORCEMENT PERFORMANCE, DRINK DRIVING

# Compulsory breath testing (CBT)

### CBT targets:

- CBT targets for 2019-2020: the national target (desired activity level) was 2,000,000 (passive tests and breath screening tests). For TM, the target was 29.61% of the national target = 592,800 passive tests and breath screening tests.
- CBT targets for 2020-2021: the national target (desired activity level) is 3,000,000 (passive tests and breath screening tests). For TM, the target is 29.61% of the national target = 888,300 passive tests and breath screening tests

### CBT measurement:

- Data counts are recorded on individual hand-held Drager 7510 devices. Periodically, these devices are sent to PNHQ for calibration and the data counts are removed at this point. This can mean a time lag of up to 12 months for the data counts to be collected.
- There is currently a project underway at PNHQ to be able to collect data counts in real time; however, at this stage, it is unknown when this may become operational.

### Police approach to meeting the targets:

- Police continue to encourage all Constables to breath test every driver stopped on a road
- The three TM districts plan and carry out compulsory breath testing specific operations to prevent impaired driver and hold those who choose to break the law to account

### Covid 19 impact

A significant constricting factor in the 2020-2021 period was the CV19 pandemic. Under CV19 Alert Levels 4-2, random breath testing and CBT checkpoints were not approved by police for health and safety reasons.

Currently, the whole of NZ is under CV19 Alert Level 1. Under AL1, CBT operations remain constricted due to sanitising requirements: Drager devices must be sanitised and a delay of one minute between each driver.

### Are the targets being met?

No. Police did not meet the desired activity level in 2019-20 and are unlikely to meet it in the 2020-21 period.

### Police performance (CBT delivery)

The total number of BSTs (passive + screening) tests downloaded from Tamaki Makaurau 6510 and 7510 devices for 2019-2020 and 2020-2021 financial years are as follows:

- 2019-2020 FY = 354,100
- 2020-2021 FY = 71,406 (figures cover July – September 2020)

### Analysis of police performance

Comparing the desired activity level with what has been produced is useful.

- During the 2019-2020 financial year, police delivered 60% of the desired activity level in TM
- For the first three months of the 2020-2021 financial year, police have delivered 8% of the desired activity level in TM. If this trend continues for the remainder of the 2020-2021 FY, Police will deliver 32% of the desired activity

### Important note:

There are two different sets of figures police can supply due to the reporting limitations imposed by the annual calibration cycle of Drager devices. The figures police normally supply are based on the period a device was calibrated, as that is when the data is captured. These are still the best for estimating long term trends as they include both 6510 and 7510 devices. However they do not indicate exactly when a test was carried out as they could have been conducted at any time up to a year prior to calibration.

APPENDIX 5: INDICATIVE MIDBLOCK SPEEDS ON CERTAIN AUCKLAND ROADS AFTER SPEED LIMIT REDUCTIONS

What data is available	Speeds Pre-Speed Changes						Speeds Post Speed Changes					
	Date	Posted Speed Limit (km/hr.)	Direction 1		Direction 2		Posted Speed Limit (km/hr.)	Date	Direction 1		Direction 2	
			% Over the Posted	85% Percentile	% Over the Posted	85% Percentile			% Over the Posted	85% Percentile	% Over the Posted	85% Percentile
<b>Road Name</b>												
KAHIKATEA FLAT RD PINE - VALLEY RD to FROST RD (E1742980-N5944063)	Dec-19	100	12.3%	99.0	8.2%	97.1	80	Dec-20	73.3%	92.3	67.9%	89.6
KAHIKATEA FLAT RD - RAPSON RD to S HWAY 16 (E1734460-N5945677)	Dec-19	100	0.2%	72.4	0.1%	70.0	80	Dec-20	0.8%	65.7	3.4%	73.3
KAHIKATEA FLAT RD PINE - VALLEY RD to FROST RD (E1742980-N5944063)	Jan-20	100	11.9%	98.8	7.5%	96.8	80	Jan-21	69.5%	90.3	64.9%	89.0
KAHIKATEA FLAT RD - RAPSON RD to S HWAY 16 (E1734460-N5945677)	Jan-20	100	0.2%	72.4	0.1%	74.2	80	Jan-21	0.8%	67.0	3.3%	73.2
WHITFORD-MARAETAI RD - TRIG RD to TURANGA RD	Dec-18	80	6.9%	76.2	8.6%	77.2	80	Dec-20	18%	81.0	11%	78.9
	Dec-19	70	77.4%	81.8	76.5%	81.7	60	Feb-21	96.6%	78.7	89.7%	79.8
TAUPAKI RD - WIDTH CHANGE to NIXON RD	Dec-19	70	69.1%	81.8	56.5%	80.1	60	Dec-20	78.2%	74.8	85.8%	76.7
	Jan-20	70	73.3%	82.1	61.3%	80.6	60	Jan-21	75.2%	73.2	84.9%	75.8
<b>No Speed Changes</b>												
ALFRISTON-ARDMORE RD (MANUREWA) - ALFRISTON RD to CLEVEDON-TAKANINI RD	Jun-19	100	2.2%	90.3	1.6%	88.2	100	Feb-21	0.7%	87.6	0.9%	86.1
	Nov-19	100	1.0%	88.2	0.6%	85.5						
MURIWAI RD - FLETCHER RD to VALLEY RD	Mar-19	100	0.0%	74.0	0.4%	77.3	100	Nov-20	0.3%	75.1	0.9%	75.7
BTHELLS RD (WCC) - MCKAY PL to END SEALED RD	Dec-19	50	13%	47.45	5.9%	44.5	50	Dec-20	16%	49.0	9.0%	44.9
							50	Jan-21	9%	47.2	4.1%	40.8
MATAKANA RD - URBAN_RURAL to GOLF RD	Dec-18	80	52.7%	87.2	28.5%	81.0	80	Dec-20	52%	87.4	42.1%	85.6
	Nov-19	80	67.6%	90.78	59.2%	88.0	80	Jan-21	51%	87.4	42.1%	85.5
FAVONA RD - NORANA AVE to SAVILL DR	Jul-19	60	8.2%	57.7	13.8%	58.3	60	Oct-20	6%	56.8	13.5%	59.0
BALMORAL RD (MT EDEN) - MT EDEN RD to BANK ST	Jul-19	50	50.9%	56.3	33.3%	53.7	50	Oct-20	44%	55.2	15.8%	50.2

A sample of data gathered by AT on the 85<sup>th</sup> percentile mean speed – which 85% of the motorists drive on a given road unaffected by slower traffic or poor weather is shown in the table above. These are key roads from the spreadsheet and show the 85<sup>th</sup> percentile speed and the % of motorist travelling over the posted speed limit. Data available year on year and both before and after the speed limit changes were selected.

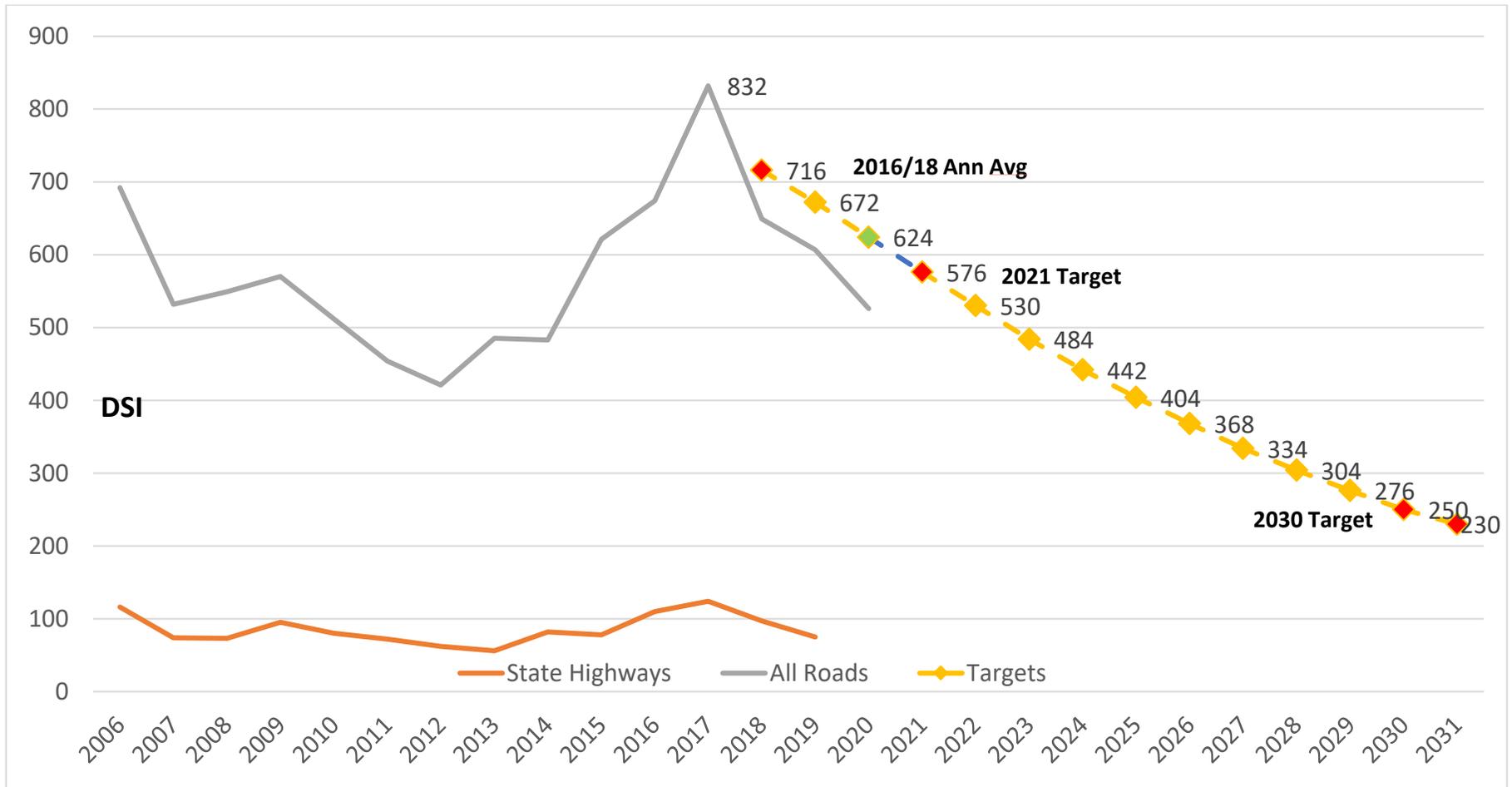
Key observations:

- On many of the self-explaining roads/winding roads (usually on rural 100km/hr roads), people are travelling at the safe and appropriate speed, lower than the standard posted speed limit, with hardly any travelling over the posted speed limit. Examples are on MURIWAI RD and parts of KAHIKATEA FLAT RD.
- On roads that are straight and wide (both urban and rural), more people will travel over the posted speed limit consistently. Examples on Matakana Road, rural and Balmoral, urban.
- With the speed limit changes that came into effect in June 2020, we have seen a reduction in the mean speed by some ~3 - 10km/hr at the location of the changes.
- When roads do not have additional engineering measures implemented to support the required post speed limit changes, despite a few km/hr. lower than the original mean speed being achieved, it has resulted in more people driving over the new speed limit. An example is on WHITFORD-MARAETAI RD, where in Feb 2021, over 95% of drivers were recorded driving over the new posted speed limit.
- For roads with no speed changes, the mean speed that people are driving at has been reasonably consistent year on year on, with only 2-3km/hr. differences. However, as the evidence internationally indicates, even this low shift in mean speeds would have a 10 - 24% effect on the number of fatalities on the length of road with the % determined by the original speed limit,(i.e. for a 50km/hr road – up to 24% reduction and for a 100km/hr road, from a 10% reduction).

Acknowledgement: Auckland Transport, 2021

APPENDIX 6: TARGET DSI FOR AUCKLAND

**Auckland 2030 DSI Target = 65% reduction over 10 years to 250 DSI from 2016/18 annual average baseline**



Based on Vision Zero for Tāmaki Makaurau Strategy and Action Plan to 2030.

Whiting Moyne 2021

## APPENDIX 7: BUS OPERATIONS OPPORTUNITIES

*NZ Herald, Amy Wiggins, Monday, 15 March 2021*

Nearly \$700,000 worth of fines have been handed out to speeding bus drivers in the past five years, including one who was clocked going 61km/hr over the limit. The Herald can reveal more than 10,500 tickets were issued to Auckland bus drivers and a further 553 fines, worth almost \$83,000, were issued to those who were caught running red lights. Fines range from \$30 to \$630 depending on how fast the driver was going - but those caught going more than 50km/hr over the limit resulted in a court summons for careless, dangerous or reckless driving. Two of the worst offenders were clocked in 2018 doing 111km/hr and 109km/hr in the 50km/hr zone on Great South Rd between Beatty St and Bairds Rd, Otahuhu. One bus driver received a \$510 fine after being caught going 43km/hr over the limit on the same stretch of road, while six drivers received \$400 fines for going 36-40km/hr over the limit in other parts of the city.

The figures have come as a surprise to the Public Transport Users Association and the union that represents a large number of drivers who work for NZ Bus. "There's absolutely no excuse for exceeding the speed limit and putting their passengers, themselves and other road users at risk," said Gary Froggatt, president of the Auckland Tramways Union.

## APPENDIX 8: STOCKHOLM DECLARATION- 3RD MINISTERIAL CONFERENCE ON ROAD SAFETY: ACHIEVING GLOBAL GOALS 2030

### Stockholm Declaration

#### Third Global Ministerial Conference on Road Safety: Achieving Global Goals 2030 Stockholm, 19–20 February 2020

We, Ministers and Heads of Delegations as well as representatives of international, regional and sub-regional governmental and nongovernmental organizations and the private sector gathered in Stockholm, Sweden, on 19 and 20 February 2020 for the Third Global Ministerial Conference on Road Safety;

*Acknowledge* the leadership of the Government of Sweden in preparing and hosting this Third Global Ministerial Conference on Road Safety;

*Commend* the Government of the Russian Federation for hosting the First Global Ministerial Conference on Road Safety in 2009, which culminated in the Moscow Declaration, and the Government of Brazil for hosting the Second Global High-level Conference on Road Safety in 2015, which culminated in the Brasilia Declaration;

*Acknowledge* the role of the Governments of the Russian Federation and the Sultanate of Oman in leading the process for adoption of related United Nations General Assembly resolutions;

*Recognize* the right of every individual to the enjoyment of the highest attainable standard of health;

*Reaffirm* the importance of intensifying international cooperation and multilateralism in achieving health-related Sustainable Development Goals, with particular focus on achieving global road safety targets;

*Welcome* United Nations General Assembly resolution 70/1 of 25 September 2015, entitled “Transforming our world: the 2030 Agenda for Sustainable Development”, and the Sustainable Development Goals (SDGs) as a framework to integrate road safety in other policy areas, especially policy areas relating to SDG targets for Climate Action, Gender Equality, Health and Well-Being, Quality Education, Reduced Inequalities, Sustainable Cities and Communities, Infrastructure and Responsible Consumption and Production for mutual benefits for all;

*Welcome* the adoption on 10 October 2019 of the United Nations High-level Political Forum on Sustainable Development’s political declaration and its pledge in September 2019, to make the coming decade one of **action and delivery**, and the continued commitment to maintain the integrity

of the 2030 Agenda, including by “ensuring ambitious and continuous action on the targets of the SDGs with a 2020 timeline<sup>1</sup>”, including target 3.6 of reducing road traffic fatalities and injuries by half;

*Welcome* the adoption of sub-national, national and regional road safety strategies, targets and action plans such as those already adopted by the Central Asia Regional Economic Cooperation (CAREC) and the European Union (EU) to meet the target to halve road deaths and serious injuries by 2030; and recognize the importance of regional initiatives to mobilize multi-sector road safety partnerships;

*Welcome* and encourage monitoring and reporting of progress towards the achievement of Road Safety goals, such as the Voluntary Global Road Safety Performance Targets agreed by United Nations Member States;

*Welcome* key achievements to date of the Decade of Action for Road Safety 2011–2020, including enhanced global coordination through the World Health Organization, the United Nations Regional Commissions and the United Nations Road Safety Collaboration, increased accession and implementation of the United Nations legal instruments on road safety, greater civil society engagement, production and dissemination of information resources on road traffic injury prevention including the WHO Global Status Reports on Road Safety, inclusion of road safety targets in the SDGs, the establishment of the United Nations Road Safety Fund by support of the United Nations Secretary-General, the appointment and efforts of the United Nations Secretary-General’s Special Envoy for Road Safety in effectively mobilizing sustained high-level commitment to road safety, the increased commitment of the World Bank and other MDBs to road safety, increased focus and resources for road safety by many governments and the private sector including through donations to the Global Road Safety Facility and the Global Road Safety Partnership;

*Acknowledge* the lessons learnt from the Decade of Action for Road Safety 2011–2020 such as the need to promote an integrated approach to road safety such as a Safe System approach and Vision Zero, pursue long-term and sustainable safety solutions, and strengthen national inter-sectoral collaboration including engagement with NGOs and civil society as well as businesses and industry which contribute to and influence the social and economic development of countries;

*Commend* the progress made but emphasize that **all countries** still face major challenges and whilst there are specific regional and local challenges there are also many proven measures that need to be intensified everywhere;

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<sup>1</sup> <https://undocs.org/en/A/HLPF/2019/I.1>

*Recognize* and work together to share experiences on adoption and enforcement of legislation on behavioural risks such as speeding, drinking and driving and failing to use seat-belts, child restraints and motorcycle helmets and implementation of proven measures to mitigate such risks, which could save hundreds of thousands of lives annually, but are still not being addressed in most countries;

*Express* great concern that road traffic crashes kill more than 1.35 million people every year, with over 90% of these casualties occurring in low- and middle-income countries, that these collisions are the leading cause of death for children and young adults aged 5–29 years, and that the projected up to 500 million road traffic deaths and injuries worldwide between 2020 and 2030 constitute a preventable epidemic and crisis that to avoid will require more significant political commitment, leadership and greater action at all levels in the next decade;

*Acknowledge* the significant impact of road traffic crashes on children and youth and emphasize the importance of taking into account their needs and those of other vulnerable populations including older people and persons with disabilities;

*Call attention to* the damaging impact of road crashes and related deaths and injuries on long-term national economic growth, the unequal progress across regions and income levels and express concern over the fact that no low-income countries have reduced the number of road traffic deaths between 2013 and 2016 which highlights clearly the link between development and road safety;

*Acknowledge* that the overwhelming majority of road traffic deaths and injuries are preventable and that they remain a major development and public health problem that has broad social and economic consequences which, if unaddressed, will affect progress towards the achievement of the SDGs;

*Recognize* the distinct and divergent challenges posed for road safety and sustainability in both urban and rural areas and note in particular the growing safety threat for vulnerable road users in cities;

*Stress* the centrality to effective, evidence-based policymaking of gathering quality data, including at the regional level, notably on deaths and serious injuries;

*Recognize* that advanced vehicle safety technologies are among the most effective of all automotive safety devices;

*Recognize* our **shared responsibility** between system designers and road users to move towards a world free from road traffic fatalities and serious injuries and that addressing road safety demands multi-stakeholder collaboration among the public and private sectors, academia, professional organizations, nongovernmental organizations and the media;

*Recognize that **SDG target 3.6 will not be met by 2020** and that significant progress can only be achieved through stronger national leadership, global cooperation, implementation of evidence-based strategies and engagement with all relevant actors including the private sector, as well as additional innovative approaches.*

**Reiterating our strong commitment to achieving global goals by 2030 and emphasizing our shared responsibility, we hereby resolve to;**

1. *Reaffirm* our commitment to the full implementation of the 2030 Agenda, recognizing the synergies between the SDG policy areas, as well as the need to work in an integrated manner for mutual benefits;
2. *Address* the connections between road safety, mental and physical health, development, education, equity, gender equality, sustainable cities, environment and climate change, as well as the social determinants of safety and the interdependence between the different SDGs, recalling that the SDGs and targets are integrated and indivisible;
3. *Call* upon Member States to contribute to reducing road traffic deaths by at least 50% from 2020 to 2030 in line with the United Nations High-Level Political Forum on Sustainable Development's pledge to continue action on the road safety related SDG targets, including 3.6 after 2020, and to set targets to reduce fatalities and serious injuries, in line with this commitment, for all groups of road users and especially vulnerable road users such as pedestrians, cyclists and motorcyclists and users of public transport;
4. *Call* upon Member States and the international community to address the unacceptable burden of road traffic injury on children and young people as a priority, increasing political commitment, by ensuring that the Global Strategy for Women's, Children's and Adolescents' Health delivers necessary action on road safety;
5. *Ensure* political commitment and responsibility at the highest level and establish regional, national and sub-national strategies and action plans for road safety and contributions from different governmental agencies as well as multi-sectoral partnerships to deliver the scale of efforts required at regional, national and sub-national levels to achieve SDG targets, and that these strategies and efforts are transparent and public;
6. *Encourage* Member States that have not yet done so to consider becoming contracting parties to the United Nations legal instruments on road safety as well as applying, implementing and promoting their provisions or safety regulations, and ensure that legislation and standards for road design and construction, vehicles, and road use are consistent with Safe System principles and are enforced;

7. *Include* road safety and a Safe System approach as an integral element of land use, street design, transport system planning and governance, especially for vulnerable road users and in urban areas, by strengthening institutional capacity with regard to road safety laws and law enforcement, vehicle safety, infrastructure improvements, public transport, post-crash care, and data;
8. *Speed up* the shift toward safer, cleaner, more energy efficient and affordable modes of transport and promote higher levels of physical activity such as walking and cycling as well as integrating these modes with the use of public transport to achieve sustainability;
9. *Encourage and incentivize* the development, application and deployment of existing and future technologies and other innovations to improve accessibility and all aspects of road safety from crash prevention to emergency response and trauma care, with special attention given to the safety needs of those road users who are the most vulnerable including pedestrians, cyclists, motorcyclists and users of public transport;
10. *Ensure* timely access to high quality emergency and long-term health care services for the injured and recognize that an effective post-crash response includes also mental, social and legal support for victims, survivors and families;
11. *Focus* on speed management, including the strengthening of law enforcement to prevent speeding and mandate a maximum road travel speed of 30 km/hr in areas where vulnerable road users and vehicles mix in a frequent and planned manner, except where strong evidence exists that higher speeds are safe, noting that efforts to reduce speed in general will have a beneficial impact on air quality and climate change as well as being vital to reduce road traffic deaths and injuries;
12. *Ensure* that all vehicles produced and sold for every market by 2030 are equipped with appropriate levels of safety performance, and that incentives for use of vehicles with enhanced safety performance are provided where possible;
13. *Ensure* that an integrated road safety approach and minimum safety performance standards for all road users are a key requirement in road infrastructure improvements and investments;
14. *Call upon* businesses and industries of all sizes and sectors to contribute to the attainment of the road safety related SDGs by applying Safe System principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and to include reporting of safety performance in their sustainability reports;
15. *Call upon* public organisations at all levels to procure safe and sustainable transport services and vehicles and encourage the private sector to follow this example, including the purchase of safe and sustainable vehicle fleets;

16. *Encourage* increased investment in road safety, recognizing the high rates of return of road injury prevention projects and programmes and the necessity of scaling up activities to meet the road safety related SDGs;
17. *Emphasize* the importance of monitoring and reporting progress towards the achievement of our common goals and, as appropriate, the Voluntary Global Road Safety Performance Targets agreed by Member States, and call upon the World Health Organization to continue to collect, publish and disseminate data through the series of Global Status Reports on Road Safety, leveraging as appropriate existing efforts including those of regional road safety observatories to harmonize and make road safety data available and comparable;
18. *Call upon* the World Health Organization to prepare an inventory of proven strategies and initiatives from a wide variety of member countries that have successfully reduced fatalities in member countries. A report should be ready for publication in 2024.

*We call for* a first High-Level Meeting of the United Nations General Assembly on Road Safety at the level of Heads of State and government to mobilize adequate national leadership and advance international and multisectoral collaboration in all the areas covered by this Declaration to deliver a 50% reduction in deaths and injuries over the next decade on our way to Vision Zero by 2050; and

*We invite* the United Nations General Assembly to endorse the content of this declaration.

## APPENDIX 9: PEDESTRIAN CROSSING FACILITY PRIORITISATION: PEDESTRIAN CRASH ANALYSIS FOR AUCKLAND

### Technical Note, Abley 2018 and Safety of Vulnerable Transport Users, ViaStrada, 2021

#### Proposed Prioritisation Framework for pedestrian crossing facilities, Auckland

The factors with a moderate to high correlation with FS pedestrian crashes are summarised below. Table 2.2 sets out the criteria for determining whether a factor or combination of factors has a high or moderate correlation.

**Table 2.2** Prioritisation thresholds

Relationship type	Pedestrian Crash Rate
Strong	$\geq 0.50$ FS ped. crashes/km/5 years
Moderate	$\geq 0.20$ and $< 0.50$ FS ped. crashes/km/5 years
Weak or no relationship	$< 0.20$ FS ped. crashes/km/5 years

**High** priority applies if any of the following are true:

- land use is commercial strip shopping (regardless of any other factor)
- land use is commercial big box/industrial and IRR risk band is medium-high or high
- ONRC is regional strategic, IRR risk band is medium-high or high, and land use is not rural
- ONRC is arterial, IRR risk band is high, and land use is not rural

There are 181.2 km of road prioritised as HIGH, accounting for 2.3% of the Auckland road network and 134 (23.1%) FS pedestrian crashes between 2013 and 2017.

**Moderate** priority applies if any of the following are true:

- land use is commercial big box/industrial and IRR risk band is medium
- ONRC is regional strategic, IRR risk band is low-medium or medium, and land use is not rural
- ONRC is arterial, IRR risk band is medium or medium-high, and land use is not rural

There are 457.5km of road prioritised as MODERATE, accounting for 5.7% of the Auckland road network and 136 (23.4%) FS pedestrian crashes between 2013 and 2017.

On a case-by-case basis, if there is a high pedestrian generator within 400m and there is no available crossing then consider risk accordingly. This will be further informed by subsequent research looking into best practice for distances between adjacent crossings on a corridor.

## APPENDIX 10: IMPACT OF INTRODUCTION OF A DEMERIT POINT SYSTEM ON FATALITIES AND SERIOUS INJURIES

(1) *Evidence-based policy on road safety: the effect of the demerit points system on seat belt use and health outcomes.* Zambon F<sup>1</sup>, Fedeli U et al, *Journal of Epidemiology and Community Health*, 01 Oct 2007, 61(10):877-881

*Objective:* To assess the effect of a demerit points system, introduced in Italy in July 2003, on the prevalence of seat belt use (intermediate outcome) and the number of road traffic deaths and injuries (health outcomes).

*Design:* Pre- and post-intervention regional observational study for seat belt investigation (April 2003, October 2004); national time-series analysis of road traffic deaths and injuries between 1999 and 2004 for health outcomes.

*Setting:* Veneto region, Italy.

*Participants:* 19,551 drivers, 19,057 front passengers and 8,123 rear passengers estimated to be aged over 11 years were included in the investigation into seat belt use. 38,154 fatalities and 1,938,550 injured subjects were examined for the time-series analysis.

*Interventions:* Demerit points system.

*Main outcome measures: Results*

The demerit points system was followed by an increase in observed seat belt use of 51.8% (95% confidence interval 48.7% to 54.9%) among drivers, of 42.3% (95% confidence interval 39.2% to 45.5%) among front passengers and of 120.7% (95% confidence interval 99.4% to 144.3%) among rear passengers. It is estimated that 1,545 (95% confidence interval 1387 to 1703;  $p < 0.0001$ ) deaths and 91,772 (95% confidence interval 67,762 to 115,783;  $p < 0.0001$ ) injuries were prevented in the 18 months after the introduction of the legislation, i.e. **an 18% reduction (1545/8570) in fatalities and a 19% reduction (91,772/473,048) in injuries.**

*Conclusions:* The demerit points system is effective both in encouraging drivers and passengers to adhere to the law and in terms of health outcomes, substantially contributing to road safety.

(2) *How Effective are Non-Monetary Instruments for Safe Driving? Panel Data Evidence on the Effect of the Demerit Point System in Denmark*, Kibrom A. Abay, K.A, *The Scandinavian Journal of Economics*, Vol. 120, Issue 3, pp. 894-924, 2018

Using unusually rich longitudinal data on traffic offenses, this paper exploits a reform that introduced a point-recording scheme in Denmark to estimate the behavioural responses of drivers to a non-monetary penalty based on demerit points. We find that drivers exhibited substantial behavioural responses to each demerit point assigned to their driving licenses. We also find that drivers' efforts, and hence responses, increased with the number of demerit points they accumulated. Depending on the number of demerit points accumulated, drivers with one or more demerit points reduced their frequency of traffic offenses by 9–34 percent.

(3) *Effects of a penalty point system on traffic violations*, Sagberg, F and Ingebrigtsen, R Accident Analysis & Prevention, Volume 110, January 2018, Pages 71-77

#### Highlights

- We evaluated effects of Norway's penalty point system on traffic violations.
- Incurring points reflects balance between driving style and fear of licence loss.
- Analysis comprised complete penalty point register for passenger car drivers.
- We find inverted U-shaped relationship between previous and new penalty points
- Probability of new points is reduced when drivers approach limit for licence loss.
- We analysed data from the Norwegian driver's licence penalty point register over a three-year period, in order to investigate whether the number of incurred penalty points in a given time period can predict the probability of incurring additional points in the subsequent period. Data for all category B drivers without penalty points at the start of the study period were included in the analyses.

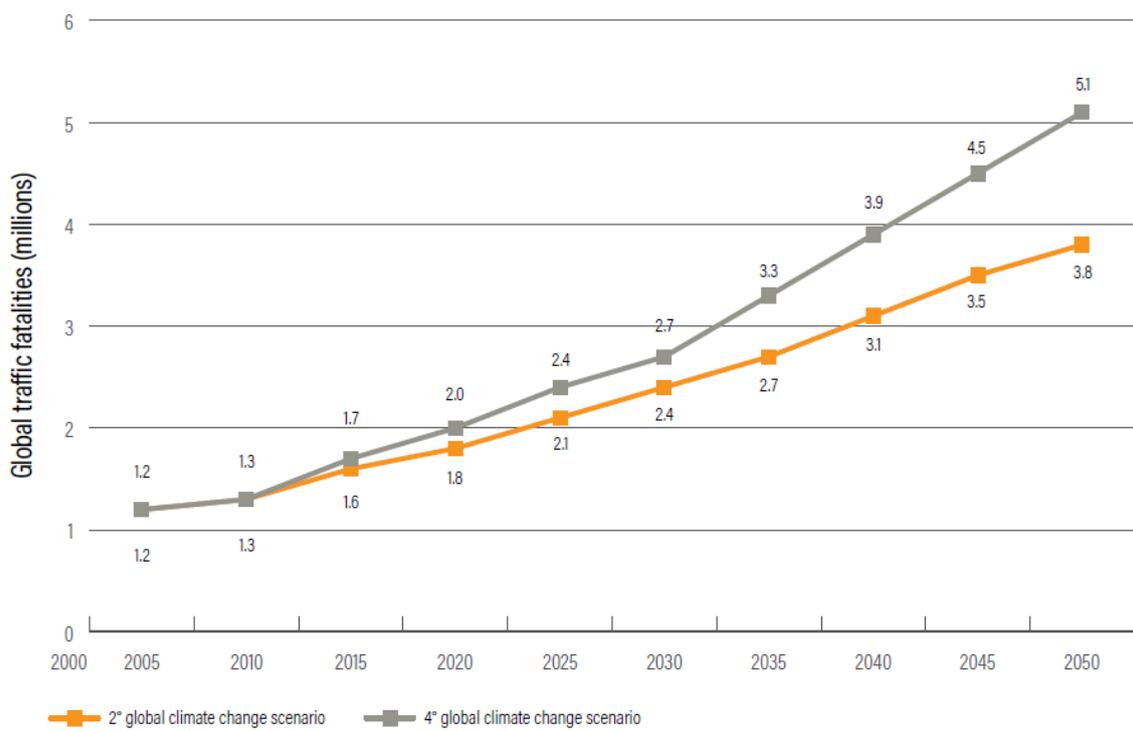
Norway's penalty point system implies that speeding and various other traffic violations result in two or three penalty points for full-license drivers and four or six points for probationary-license drivers. Eight points within a three-year period results in a six-month disqualification. Two hypotheses were formulated:

1) A "driving style effect" implying that drivers with previous penalty points have a higher probability of incurring new points than drivers without previous points; and

2) a "deterrence effect" implying that drivers with more than four points have a reduced probability of incurring new points, due to impending risk of license revocation. Results showed an inverted U-shaped relationship between number of penalty points incurred during a one-year period and the number of additional penalty points incurred in the subsequent year, with the highest number for drivers with four previous points. Thus, both hypotheses were clearly supported, and it is concluded that the penalty point system has a significant deterring effect for drivers who are at high risk of losing their license at the next infraction.

APPENDIX 11: SUSTAINABLE AND SAFE VISION AND GUIDANCE ZERO ROAD DEATHS

Figure 2.3. | Projected Annual Global Traffic Fatalities under a 2° and a 4° Global Climate Change Scenario, 2000–55



Source: Hidalgo and Duduta 2014.

Hidalgo, D., and N. Duduta. 2014. “Exploring the Connection between Climate Change and Traffic Safety: An Initial Aggregate Assessment.” Paper presented at the 93rd Annual Meeting of the Transportation Research Board, Washington, DC, January 12–16.

Reproduced in *Sustainable & Safe, A Vision and Guidance for Zero Road Deaths*, World Resources Institute, GRSF and EMBARQ 2018

APPENDIX 12: INTERMEDIATE ROAD SAFETY PERFORMANCE INDICATORS – NORWAY 2019-2021

Norway: National Road Safety Action Plan, 2018-21, Short Version

TABLE 1.1 - Overview of indicators and indicator targets

Priority areas	Indicator	Current status	Indicator target
Speed (section 4.1)	Percentage of vehicles travelling in excess of the speed limit	59,9 % (2017)	70 % (2022)
Intoxication (section 4.2)	Percentage of motor vehicle traffic involving intoxicated drivers with a blood alcohol content of 0.02%.	0,2 % (2016/2017)	0,1 % (2026)
	Percentage of motor vehicle traffic involving intoxicated drivers under the influence of drugs and over the threshold for criminal punishment.	0,6 % (2016/2017)	0,4 % (2026)
Seat belts/securing of children in the car (section 4.3)	Percentage of drivers and front-seat passengers wearing seat belts in private cars	97,2 % (2017)	98 % (2022)
	Percentage of children aged 1–3 years secured in rear-facing car seats	63 % (2017)	75 % (2022)
	Percentage of drivers of heavy vehicles wearing seat belts	84,3 % (2017)	95 % (2022)
Children (0–14 years) (section 5.1)	Number of children (0–14 years) killed in the road system.	4 (2017)	0 (at least one per year for 2018–2021)
Young people and younger drivers (section 5.2)	Risk of being killed or seriously injured for car drivers aged 18–19, per kilometre driven		- 30 % <sup>A</sup>
Older road users and road users with disabilities (section 5.3)	Risk of being killed or seriously injured for car drivers aged 75+ years, per kilometre driven		- 30 % <sup>A</sup>
	Risk of being killed or seriously injured in a traffic accident for pedestrians aged 75+ years, per kilometre walked		- 30 % <sup>A</sup>
Pedestrians and cyclists (section 6.1)	Number of kilometres of national roads and county roads adapted for pedestrians and cyclists	Total for the plan period: 165 km of national roads (2018–2021) B 230 km of county roads (2018–2021)	
	Percentage of cyclists wearing bicycle helmets	58,8 % (2017)	70 % (2022)
	Number of pedestrians using reflectors on lighted roads in the dark	40 % (2017)	50 % (2022)
Motorcycles and mopeds (section 6.2)	Risk of being killed or seriously injured for motorcycle and moped drivers per kilometre driven		- 30 % <sup>A</sup>
Transportation involving heavy vehicles (section 6.3)	Percentage of heavy vehicles with a maximum authorised mass of over 7500 kg that pass the periodic roadworthiness test without serious remarks	23,2 % (2017)	30 % (2022)
Head-on collisions and Run-off-the-road accidents (section 7.1)	Percentage of motor vehicle traffic on national roads with speed limits of 70 km/h or higher that takes place on roads with median barriers	49,3 % as of 1 Jan 2018	54,1 % as of 1 Jan 2022
	Number of kilometres of national road with speed limits of 70 km/h or higher that have been assessed, and that meet the minimum standards set out in the NTP to prevent serious run-off-the-road accidents		1500 km (to undergo improvement works in 2018–2023) <sup>C</sup>
Vehicle technology (section 8.2)	Percentage of motor vehicle traffic involving cars with autonomous emergency braking (AEB)	14,4 % <sup>D</sup> (2017)	25 % (2022)
	Percentage of motor vehicle traffic involving cars with lane departure warning	39,2 % <sup>D</sup> (2017)	52 % (2022)
	Percentage of motor vehicle traffic involving cars with autonomous emergency braking to prevent collisions with pedestrians and cyclists (pedestrian AEB)	14,4 % <sup>D</sup> (2017)	25 % (2022)
Road safety work in county administrations and municipalities (section 9.1)	Number of municipalities approved as Road safe municipalities	62 <sup>E</sup> as of 1 Jan 2018	125 as of 1 Jan 2022

### APPENDIX 13: ROAD SAFETY PROGRAMME DEVELOPMENT BY AT

The broader context for road safety programme development by AT is set out below.

#### **The Auckland Transport Alignment Project (ATAP), Regional Land Transport Plan (RLTP), Auckland Long Term Plan and Auckland Road Safety Programme Business case (PBC)**

The *Auckland Transport Alignment Project (ATAP)* brings together the Government and Auckland Council to strategically align transport objectives and investment priorities for Auckland. It is a cross-agency partnership that includes Auckland Council, Auckland Transport, Ministry of Transport, Waka Kotahi NZTA, KiwiRail, Treasury and the State Services Commission. ATAP agrees an indicative ten-year investment package which guides the Regional Land Transport Plan, which is a statutory funding plan.

The *Regional Land Transport Plan (RLTP)* is the ten-year plan for Auckland's transport network. It includes the land transport activities of AT, Waka Kotahi and KiwiRail and outlines the proposed 10-year investment programme for specific transport projects, including the projects which deliver the Road Safety PBC. It sets out the proposed funding and expenditure. This informs the National Land Transport Plan which represents the commitment between Waka Kotahi and local government for how funding will be used. The plan is updated each 3 years.

The *Auckland Long Term Plan* is Auckland Council's 10-year Budget for activities, services and investments, including funding of transport activities. This budget informs and is informed by the RLTP.

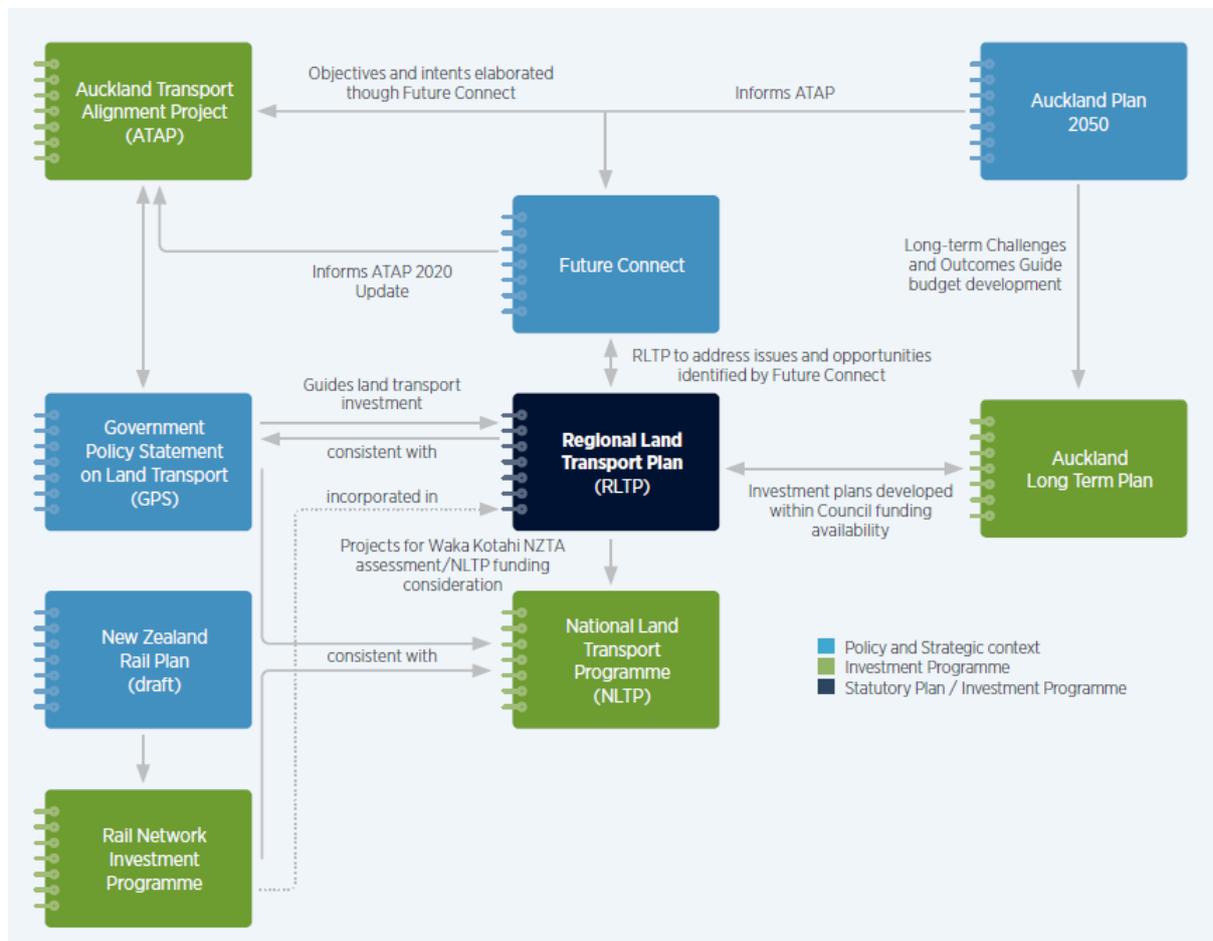
The *Auckland Road Safety PBC* outlines the recommended 10 year programme of investment from 2018 to 2028 to proactively reduce road deaths and serious injuries (DSI) on the transport network and includes wider legislation, education and enforcement across all roads and transport facilities, including state highways.

The Road Safety PBC identified a stronger governance system that delivers a preferred 10 year programme of combined investment in infrastructure and non-infrastructure responses to the problem of increased DSI on Auckland's roads, that was also affordable within the current Auckland Plan 2050, Auckland RLTP 2018/28 and ATAP Capex budget. This included an expected (as at 2019) annual Safety Capex investment of \$76M and annual Safety Opex investment of \$25M.

The Capex programme of investment is delivered through the Road Safety Programme and is grouped into themes – speed management, high-risk intersections, high-risk corridors and vulnerable road users – to align with the PBC programme themes. For high-risk intersections, high-risk corridors and vulnerable road user themed projects the project life cycle is a standard loop of investigation, scheme, design, construction, monitoring and evaluation and network screening feeding back into investigation. Projects are prioritised to DSI reduction and risk, informed through a variety of evidence-based tools, such as Waka Kotahi's Safer Networks Programme, later the Road to Zero Pipeline tool, Urban KiwiRap, NZTA High Risk Intersection Guide. The speed management theme follows a slightly different process as it must align with Waka Kotahi's Speed Management guidance and a legal bylaw change process, however projects within speed management follow a similar lifecycle of investigation, etc.

As above, the PBC identified an indicative investment cost of the full programme and of the component themes of \$604M. This is currently funded through a combination of funding from Auckland Council and the

Government. There are several mechanisms that operate in this space. The PBC is reprioritised every 3 years in line with the 3 yearly review of the RLTP.

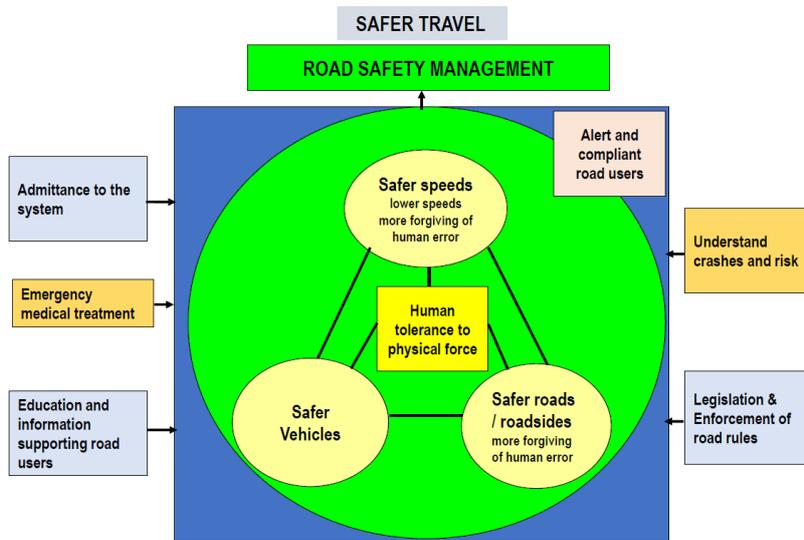


*DRAFT Regional Land Transport Plan 2021-31*

Through these mechanisms, activities identified in the RLTP are considered the agreed activities to be funded by Waka Kotahi and Auckland Transport. Individual programmes and projects are then implemented.

**AT, May 2021.**

APPENDIX 14: SAFE SYSTEM DIAGRAM, VISION ZERO PRINCIPLES, AND ROLE FOR EACH IN AT'S ROAD SAFETY JOURNEY



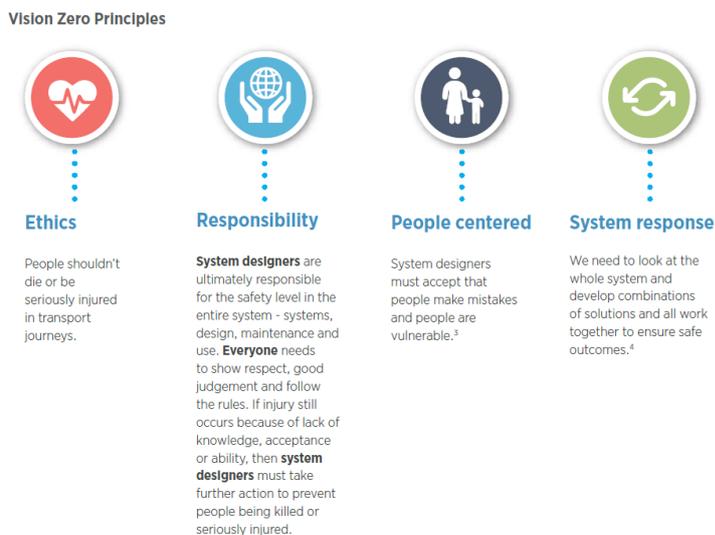
What is the Safe System and Vision Zero?

Eric Howard lead the development of the Safe System approach as part of chairing the OECD *Towards Zero* Report in 2008. The Safe System approach is a human centred approach to crash survivability as shown in the diagram above.

Vision Zero is an ethics-based transport safety approach developed in Sweden in the late 1990s. It was adopted in Tāmaki Makaurau in 2019 and has four principles that are very well aligned with the Safe System approach.

Eric explains Vision Zero as the vision and goal for road safety of zero deaths and serious injuries. The Safe System approach is the means of achieving these.

The Vision Zero Principles diagram below is from AT’s Tāmaki Makaurau Vision Zero Strategy.



APPENDIX 15: LIST OF PEOPLE INTERVIEWED

#	Full Name	Organisation
1	Adrienne Young-Cooper	AT Board of Directors
2	Wayne Donnelly	AT Board of Directors
3	Kylie Clegg	AT Board of Directors
4	Mary Jane Daly	AT Board of Directors
5	Darren Linton	AT Board of Directors
6	Jim Mather	AT Board of Directors
7	Chris Darby	Auckland Councillor
8	Shane Ellison	Auckland Transport
9	Bryan Sherritt	Auckland Transport
10	Andrew Allen	Auckland Transport
11	Mark Lambert	Auckland Transport
12	Jenny Chetwynd	Auckland Transport
13	Vanessa Ellis	Auckland Transport
14	Wally Thomas	Auckland Transport
15	Rodger Murphy	Auckland Transport
16	Natasha Whiting	Auckland Transport
17	Kathryn Musgrave	Auckland Transport
18	Ping Sim	Auckland Transport
19	Nicola Gray	Auckland Transport
20	Ben Hawkins	Auckland Transport
20	Marina Palalagi	Auckland Transport
21	Ngairie Atmore	Auckland Transport
22	Victoria Putwain	Auckland Transport
23	Randhir Karma	Auckland Transport
24	Irene Tse	Auckland Transport
25	Andrew Garratt	Auckland Transport
26	Teresa Burnett	Auckland Transport
27	Nathan Cammock	Auckland Transport
28	Nicole Rosie	Waka Kotahi
29	Greg Lazzaro	Waka Kotahi
30	Fabian Marsh	Waka Kotahi
31	Brent Johnson	MoT
32	Lucy Nie	MoT
33	Steve Greally	NZ Police
34	Naila Hassan	NZ Police
35	Scotty Web	NZ Police
36	Glen Koorey	ViaStrada
37	Heidi O'Callahan	Writer/Blogger
38	Phil Harrison	WSP Opus
39	Sarah Geard	AA
40	Dylan Thomsen	AA

Comments displayed in these text boxes throughout the document are direct quotes or paraphrased comments from conversations and interviews with this list of people.

APPENDIX 16: PRIORITY 1 RECOMMENDATIONS BY IMPORTANCE AND URGENCY

PRIORITY 1 RECOMMENDATIONS (Heading)	Order of Priority
<b>IMPORTANCE: Very High. URGENCY: Very High</b>	
<p><b>7. Substantially improve deterrence of drink driving</b></p> <p>Obtain Central Government support to enable regional traffic police to improve the intensity and tactical conduct of drink driving enforcement to good international practice levels as scheduled in the current Waka Kotahi/NZ Police agreement and deliver at least 840,000 breath tests annually in order to reduce drink driving related fatality levels crashes from 30% of all road crash deaths in 2019 to some 14% in 2022 and beyond.</p>	1
<p><b>8. Substantially improve deterrence of speeding</b></p> <p>8.1 To adequately deter low and high level speeding expand the covert mobile camera programme as planned (currently from some 1400 hours a month) to a level set out in Road to Zero of 100,000 hours annually for New Zealand, an assumed level of some 2500 hours a month for Auckland in 2021.</p> <p>8.2 AT to continue to expand its fleet of fixed speed/red light camera installations at higher risk intersections across Auckland and continue to work with Waka Kotahi/NZ Police to encourage further moves towards good international practice operational intensity of mobile covert camera operation for Auckland of some 5000 hours a month in the medium term (3 to 4 years).</p> <p>8.3 AT to request Central Government to introduce point-to-point speed camera systems in NZ to reduce non-compliance with speed limits, with early pilots in Auckland.</p>	2
<p><b>12. Pursue significant road safety regulatory reform at national level</b></p> <p>12.1 Seek to participate in regulatory reform team at national level.</p> <p>12.2 Seek higher fines for speeding especially fines for low-level speeding (10km/hr above the limit) and stronger license sanctions for speeding say 25km/hr over the limit and a review of the demerit point system structuring and authorising of the allocation of demerit points for all speed camera detected offences.</p> <p>12.3 Seek increased fines/demerit points for commercial vehicle drivers – including 50% higher speed penalties than for the drivers of light vehicles.</p>	3
<p><b>9. Deliver improved pedestrian (and other VRU) safety across the arterial and other roads in the network – safer pedestrians</b></p> <p>Leadership is required by AT to improve the scope and extent of delivery of safety improvement programmes for vulnerable road users, especially pedestrians and cyclists. Early action to improve programme planning and delivery is needed alongside further concurrent policy work for the medium term.</p> <p>9.1 Introduce permanent 30km/hr speed limits on non-arterial roads/ streets in the vicinity of schools and for locations on arterial roads, utilise time based electronic signage to apply on all lengths and to operate around school access and departure times, where a permanent 30km/hr time based limit would not be considered advisable.</p> <p>9.2 Introduce permanent 30km/hr limits on non-arterial roads for Marae. For locations on arterial roads, utilise variable electronic signage on relevant road lengths, manually operated by agreement around active marae operation, where a permanent 30km/hr limit would not be considered advisable.</p> <p>9.3 Introduce a permanent 30km/hr limit with platforms and other infrastructure safety measures to assist speed compliance for busy pedestrian areas on arterial road lengths, including town/ village centres and bus stop locations.</p> <p>9.4 Develop measures to address the extent of hospital recorded injuries from slips, trips and falls unrelated to motor vehicles, but occurring on Auckland’s streets and footpaths.</p>	4

<p>9.5 Obtain national endorsement of a prioritised funded safe walking programme for pedestrians which reflects arterial road crash risks and responds to pedestrian non- motorised injuries (not vehicle related) and which reflect the recommendations above and implement it.</p>	
<p><b>13. Advocate for and advise on policy reform at national level</b>            13.1 AT should seek the opportunity to meet with the National Road Safety Committee (NRSC) twice each year to advocate the case for reform. Sensible good international practice measures are not being implemented and many New Zealand lives annually are being unnecessarily lost. Seek a high-level meeting twice a year between AT and NRSC to share information at high level, provide comment on policy priorities and to build partnership.            13.2 AT to provide resource and commitment to prepare adequately for this opportunity which should be embraced for the potential benefits it offers.            13.3 <b>AT to develop a clear shared priority listing</b> and a written position <b>on key policy matters</b> and obtain adoption by Tāmaki Makaurau (TM), AT and Auckland Council.            13.4 Train/brief/coach Board members, ELT members, Councillors, senior staff and TM representatives on the substantive cases to be made and in encouraging their advocacy of the benefits of adoption of these policies to the Auckland Community and the NRSC members.            13.5 AT Policy and Regulatory Lead to also meet regularly with MoT on an advisory basis to progress the AT Road safety policy agenda.            See <u>Policy reform priorities</u> to be sought by AT - at this stage - as listed in adjacent commentary column. See also Priority 2 Recommendations at end of this Priority 1 Recommendations section</p>	<p><b>5</b></p>
<p><b>11. Lower travel speeds across higher risk sections of the Auckland network.</b>            Accelerate the lower speed limits programme for Auckland on the basis of risk to capture the very substantial further DSI reduction benefits available. Stronger, bolder and more ambitious direction from the Board/ ELT on speed limits should include:            11.1 Introducing 30km/hr limits for all residential streets as soon as possible.            11.2 Beyond and in addition to the detailed risk assessment approach, review with Waka Kotahi the current speed limits on the network in order to reduce likely fatal outcomes from head on, intersection, run off-road and pedestrian crashes as quickly as possible.            11.3 Seek acceptable change in the current national by-law process which is considered unnecessarily cumbersome and mitigates against sensible ready change. The development of a streamlined process is underway at national level. Accelerate the overall lower speed limits review programme on the basis of risk for Auckland, assuming the revised and reportedly simpler speed limit setting process is adopted by government later in 2021. If it is not a simplification permitting <u>a two to three year full Auckland implementation</u>, then an approach to Ministers seeking removal of barriers to policy level change to treat Auckland in total with appropriate difference to enable an early review and speed limit changes would be necessary.</p>	<p><b>6</b></p>
<p><b>16. Expand safer urban infrastructure treatment programmes in association with safer speed limits introductions to continue to lower DSI</b>            16.1 Include increased low cost infrastructure safety provision within maintenance and renewals programme. Build business case development expertise here and across all road safety activity areas to strengthen the likelihood of identifying further funding opportunities for higher return investments.            16.2 Carry out AT wide discussions to build safety into the streets and roads maintenance programme activity.            16.3 Press for increased urban road safety treatments in the Safer Network Programme (Waka Kotahi’s Road to Zero programme) which is heavily focused on rural improvements</p>	<p><b>7</b></p>
<p><b>5. AT to substantially ramp up investment in/resourcing of capabilities for informed road safety partnership activities</b> with local Auckland partners-Local Boards, Council, Citizens, Tāmaki Makaurau partnership, plus other stakeholders and national partners: Waka Kotahi, NZ Police, MoT, Ministers, and national stakeholders to deliver improved safety policy and regulatory outcomes. The substantive policy and regulatory reform opportunities at national level require</p>	<p><b>8</b></p>

<p>much of AT to resource a knowledgeable road safety policy and regulation capability in order to lobby effectively for beneficial change through interactions with national and regional partner organisations.</p>	
<p><b>1. With Board and CE leadership, AT to continue to work to genuinely embed the Vision Zero and Safe System principles in all they do to achieve a 65% reduction in fatalities by 2030 and zero fatalities by 2050 for their community.</b></p> <p>1.1 Gaps remain between Vision Zero theory and practical application in operations as well as in strategic project development. Focus on not acting in ways that inadvertently increase DSI across the network while on the other hand pursuing measures to reduce DSI.</p> <p>1.2 Support staff in key strategic programme development activity areas to develop a deeper understanding of Vision Zero concepts and principles, including kinetic energy management in the transport system, and apply that thinking to potential project development from the concept/project initiation stage, rather than requiring a reset when the Vision Zero fundamentals have not been given early consideration.</p> <p>1.3 To support proposals to be compliant with Vision Zero, subject all AT projects to the Safe System Assessment Framework (SSAF) evaluation at all gateway stages including the initiation stage.</p> <p>1.4 Recognise risks flowing from the loss of knowledge through substantial turnover of active/effective AT officers and Board members. Develop organisational knowledge resilience plans to cope with this ongoing change. Examine ways to address these risks effectively. Sustain and refresh overall organisational, partnership and community awareness.</p>	<p><b>9.</b></p>
<p><b>18. Ensure Health and Safety responsibilities cover transport network operating risks.</b></p> <p>As a Person Conducting a Business or Undertaking (PCBU) and with a primary duty of care responsibilities, AT’s intention to develop a Safety Strategy in 2021 that covers risks that have traditionally been categorised as either health &amp; safety or transport safety risks, based on a range of advice, is supported as necessary and important.</p> <p>Risks upon which advice should be obtained would include:</p> <p><b>18.1 Any risks to other persons (e.g .the public) that arise from the work of AT’s business or undertaking - to eliminate or minimise risks that arise from its transport work such as the provision of a road transport network.</b></p> <p><b>18.2 AT’s responsibility for customers (as part of a shared responsibility with the bus companies) for the first and last leg of their bus related journey which may involve active travel to and from bus stops and PT stations.</b></p> <p><b>18.3 Heavy vehicles and commercial vehicles, are places of work and are subject to the Health and Safety at Work Act (HSWA) as identified in Road to Zero as a key focus area. There is a further opportunity to apply the provisions of the HSWA to improve safety requirements for vehicles which are a place of work, (e.g. side under protection for heavy vehicles and speed control).</b></p> <p>The AT safety strategy should consider covering contractors and sub-contractors who work for AT. As a major client, there is the opportunity to require safe technology in the vehicle fleet of organisations seeking to work for AT. AT’s health and safety pre-qualification requirements for suppliers is another tool which can be used to further improve safety outcomes. This specific issue receives some (limited driving and vehicle safety) attention in Recommendation 15.</p> <p>Risks to be assessed and responded to include:</p> <p><b>18.4 Managing risks related to construction on the road network, including temporary traffic management related risks.</b></p> <p><b>18.5 Long term/chronic harm (air pollution, diseases of inactivity, mental health, climate change, environment) as well as acute harm (death from a crash) that may arise as a result of AT activities. As part of the development of a safety strategy for AT and identifying its span of responsibilities as a PCBU, AT should seek to any identify longer term/chronic harm that may arise from its transport work.</b></p>	<p><b>10.</b></p>

<b>IMPORTANCE: Very High. URGENCY: High</b>	
<p><b>2. Promote understanding and further progressive implementation of <i>Sustainable Mobility and Movement and Place</i></b> thinking in conversations, policy development and programme implementation within AT Active Travel and other programmes, with Local Boards, Auckland Council and the Auckland community as well as with Waka Kotahi and MoT interactions. Note: AT use different language to describe their sustainability commitments which include active travel programme objectives plus commitments to safety, universal access, efficiency and green mobility.</p> <p>2.1 AT to progressively ensure that investment programmes reflect commitment to the four sustainable mobility elements (safety, universal access, efficiency and green mobility) plus movement and place principles which support healthier community outcomes from active transport and deliver improved amenity.</p>	<b>11.</b>
<p><b>7. Strengthen coordination for AT road safety policy development and awareness of policy development priorities</b> and progress at national level across AT, and improve information sharing re internal AT actions and about AT partnership representation efforts with all AT road safety contributors.</p>	<b>12.</b>
<p><b>4. Develop and deploy 360° advocacy</b> to progress the rollout of measures for delivering on Vision Zero through progressively providing a safe system.</p> <p>4.1 Vision Zero/Safe System to a much broader level of public awareness and move towards greater community understanding of what it requires. Outline shifts in long accepted thinking about the nature of road crash injury risks required, to support necessary change in outcomes to be delivered.</p> <p>4.2 AT advocacy needs to become more robust and multi-layered at the national level.</p>	<b>13.</b>
<p><b>3. Develop a meaningful intermediate road safety indicators programme</b> (establish, monitor and report on) and make it an agent for assisting responses to the actual experience it will reflect.</p> <p>3.1 Prepare as a priority an action plan for internal use by the road safety partners detailing agreed annual outputs.</p> <p>3.2 Operate an annual results conference where the status of road safety development over the last year is to be presented and discussed. Issue a report showing the status of intermediate indicator targets and progress towards interim targets.</p> <p>3.3 Monitor Auckland’s comparative road safety performance with other good international practice international cities. ELT need to maintain good awareness about what needs to be done to improve performance and to reach best practice outcomes.</p>	<b>14.</b>
<p><b>17. Upgrade project management arrangements for the AT road safety capex programme</b> (additional to the Safe Speeds [speed management] programme). Appoint a project manager position within Integrated Networks, liaising with Service Delivery and Safety, to address timely delivery, ensure good alignment of delivered projects with programme objectives, uplift recognition of the capex programme as a substantial road safety activity rather than a collection of projects, increase the transparency of the programme to all internal and external stakeholders and enable an increased common understanding to be developed of the roles and responsibilities of all involved in the governance and delivery of the programme.</p>	<b>15.</b>
<b>IMPORTANCE: High. URGENCY: High</b>	
<p><b>10. Deliver improved pedestrian (and other VRU) safety across the arterial and other roads in the network – safe cycling</b></p> <p>In recognising that cycling is higher risk where vehicle speeds are higher, review speed limits to seek a 30km/hr limit for on-road cycle path lengths (with paint only markings or no markings) on urban arterial roads. Where this is difficult to achieve, off-road cycle paths or another safe alternative solution involving at least some physical separation barrier between cyclists and higher speed motor vehicles need to be developed and provided.</p>	<b>16.</b>

<p><b>14. Review Metro bus operations to proactively improve safety performance</b> (i.e. reporting on crashes, number of speeding and red light running infringements incurred each month by AT bus drivers). Upgrade the safety of existing pedestrian access facilities to bus stops to lessen DSI risk, noting the Viastrada finding that 10% of pedestrian injuries occur near bus stops.</p> <p>14.1 Drive change to safer operation of buses including for those cyclists and motorcyclists using bus lanes. Ensure bus drivers are not impaired and observe speed limits and red lights. AT to progressively introduce contract deduction provisions in contract renewals for speeding and red light offences.</p>	<p><b>17.</b></p>
<p><b>15. Expand modelling of safe driving and vehicle practices to all AT and Auckland Council activity and propose adoption to all government authorities and businesses in Auckland</b>, encouraging emulation of the approved practices. Require all contractors/ suppliers providing transport related services to AT and Auckland Council, including public bus transport services, to apply Safe System principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and include a summary of their efforts in AT's reporting of safety performance in annual reports.</p> <p>15.1 Encourage all these suppliers of transport services to AT (and all similar transport service provider organisations in Auckland) to apply Safe System principles to their entire value chain providing services to organisations other than AT, again including internal practices throughout their procurement, production and distribution process, and to include details in their annual reporting.</p>	<p><b>18.</b></p>