Achieving ambitious road safety outcomes

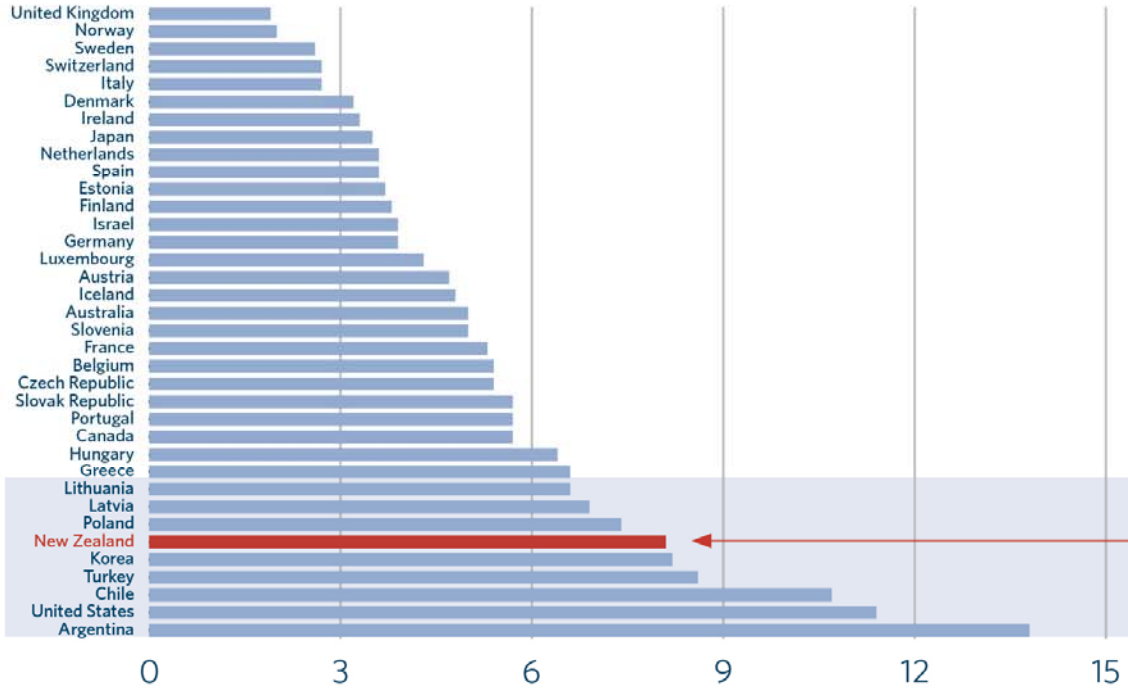
The role of system management

NZ TRANSPORT AGENCY
WAKA KOTAHI

New Zealand Government

Catalysts for large scale systematic change

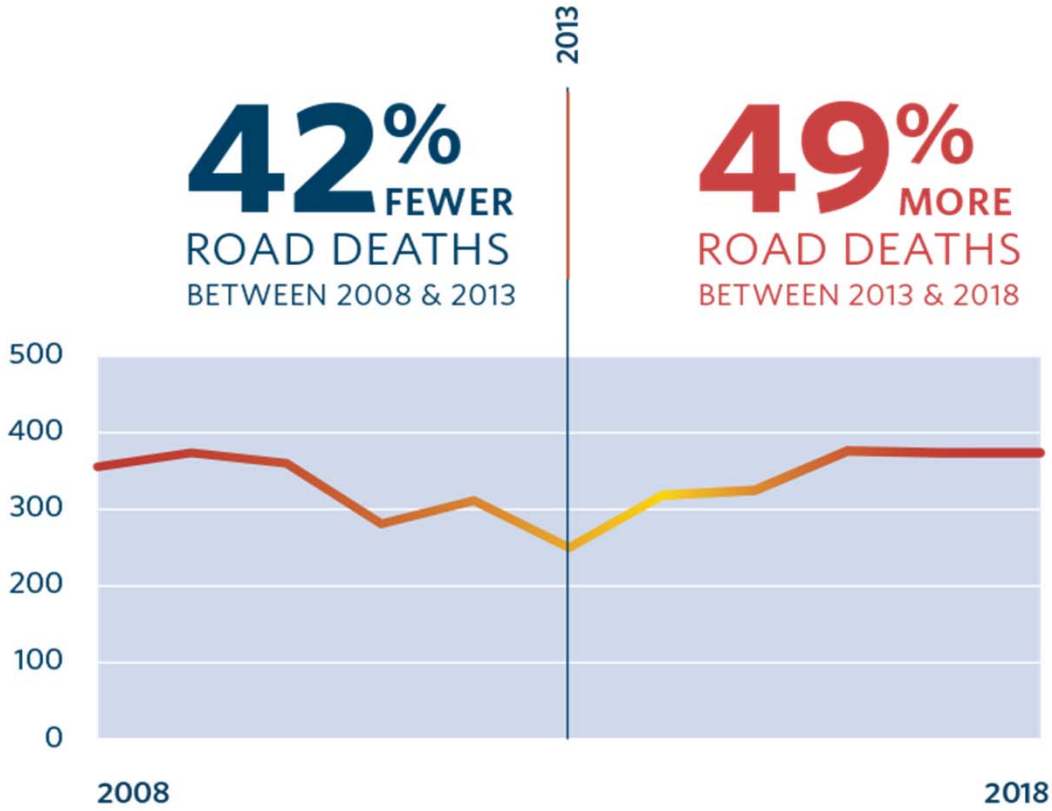
International performance



New Zealand is now in the bottom quarter of the OECD on a road death per capita basis

7.6 deaths per 100,000

NZ's road safety performance



Current social cost = $4.8B per annum

The road network in New Zealand is largely designed to operate outside the bounds of a Safe System. This means that when a mistake inevitably happens, the impact of speed and resulting crash energy often results in death or serious injury.

Road safety: a public health issue

> ***The carnage that occurs on the world's roads every single day is a public health crisis of gargantuan proportions.***

Dr Bernhard Schwartländer, WHO

THE HUMAN IMPACT EVERY DAY

NEW VICTIMS EVERY DAY	HUMAN IMPACT	NEW COSTS EVERY DAY (USD)
3,626	Lives Lost	$ 1,731,400,000
932	Severe Acquired Brain Injury	$ 1,271,400,000
20,865	Fractures - Limb	$ 788,500,000
9,090	Internal Injuries	$ 575,400,000
6,672	Brain Injury (Mild) / Head Injury	$ 465,000,000
17,327	Soft Tissue (Neck / Back) / Whiplash	$ 262,900,000
56	Quadriplegia	$ 199,600,000
5,800	Fractures - Other	$ 185,700,000
18,270	Contusion / Abrasion Laceration	$ 109,800,000
2,865	Dislocations	$ 103,200,000
920	Other Spinal	$ 91,600,000
75	Paraplegia	$ 76,400,000
914	Degloving	$ 59,100,000
8,486	Other Injuries	$ 55,400,000
4,266	Sprains / Strains	$ 38,200,000
2,293	Concussion	$ 23,900,000
161	Amputations	$ 15,000,000
176	Burns (Severe / Moderate)	$ 5,800,000
33	Nerve Damage	$ 1,500,000
9	Loss Of Sight / Eyes	$ 300,000
102,835	**TOTAL**	**$ 6+ BILLION**

Source: iRAP

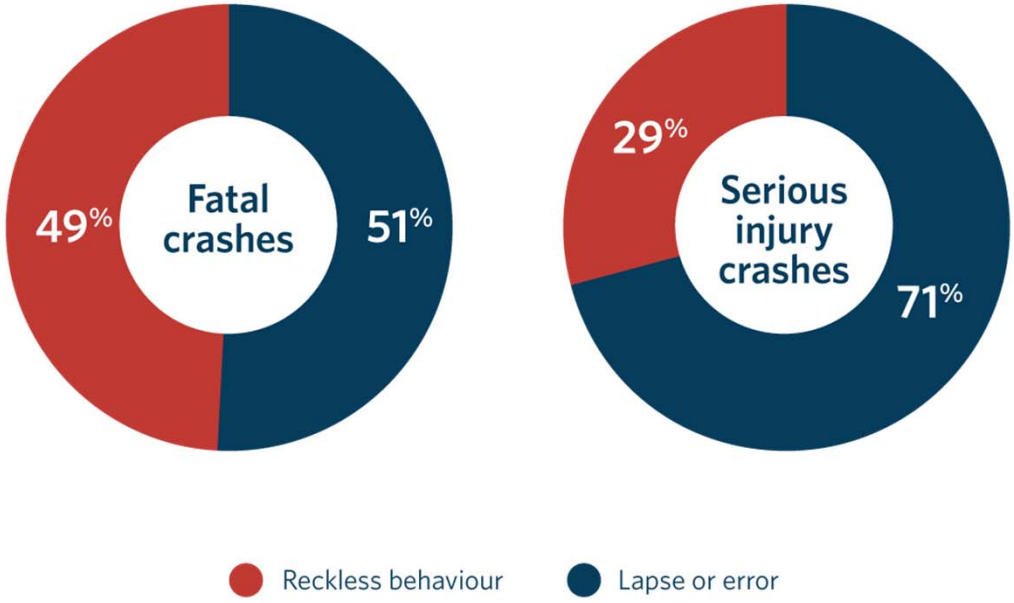
Conventional medicine approach

Targeting high risk individuals

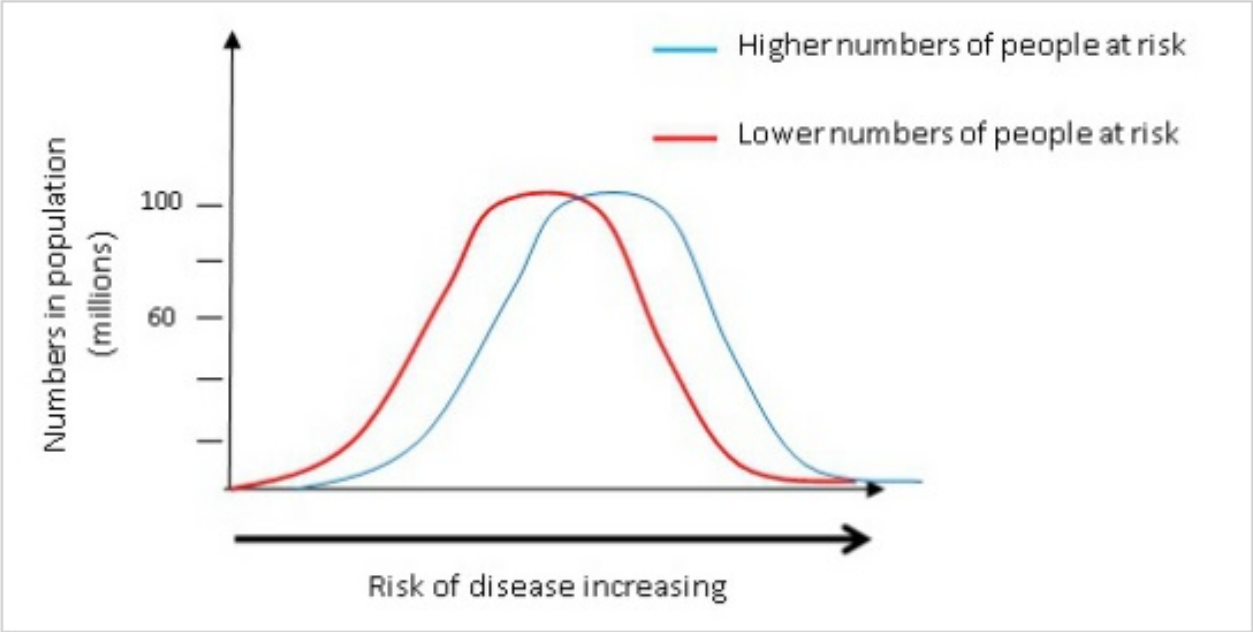
- Identify people with a condition and prescribe medication to prevent it
- (e.g. high blood pressure)

We must change the conversation away from driver blame

- A recent study found around ¾ of crashes where vehicle occupants were seriously injured, drivers had generally followed the road rules
- They had simply made a poor decision or something unexpected happened, and the road system was unforgiving



Source: 2018 study from the AA Research Foundation



The largest number of cases of ill health happen not in those at high risk, but in those who have just some risk, *simply because there are more of them*

Prevention Theory, Geoffrey Rose

Preventative medicine approach

Population based strategy

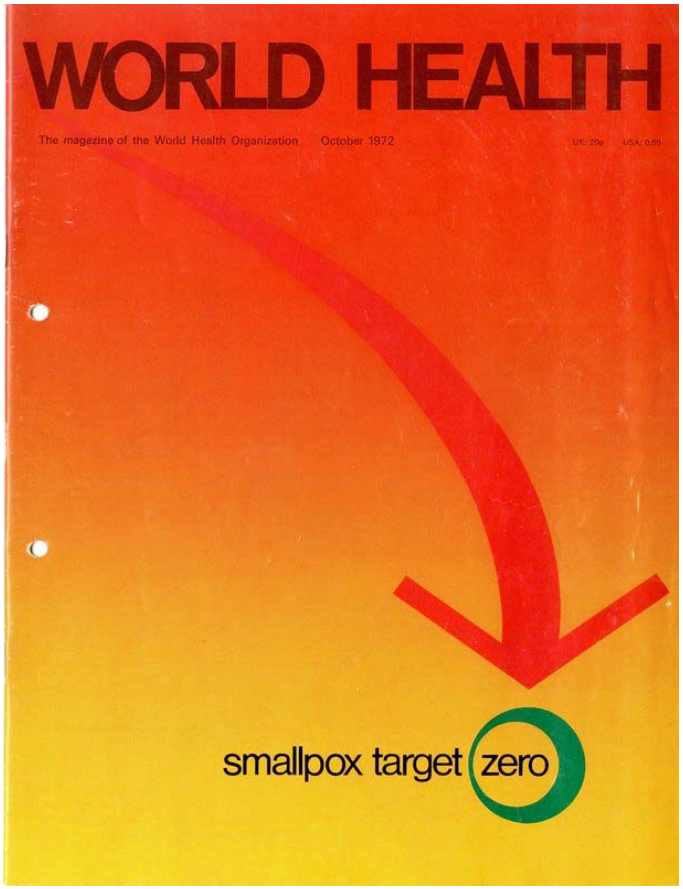
- Reducing average population blood pressure by 5% is predicted to reduce the number of strokes by 30%; compared to a 15% reduction if all individual hypertension cases were identified and treated

Rose (1981)

Global public health crisis

What can we learn from smallpox eradication?

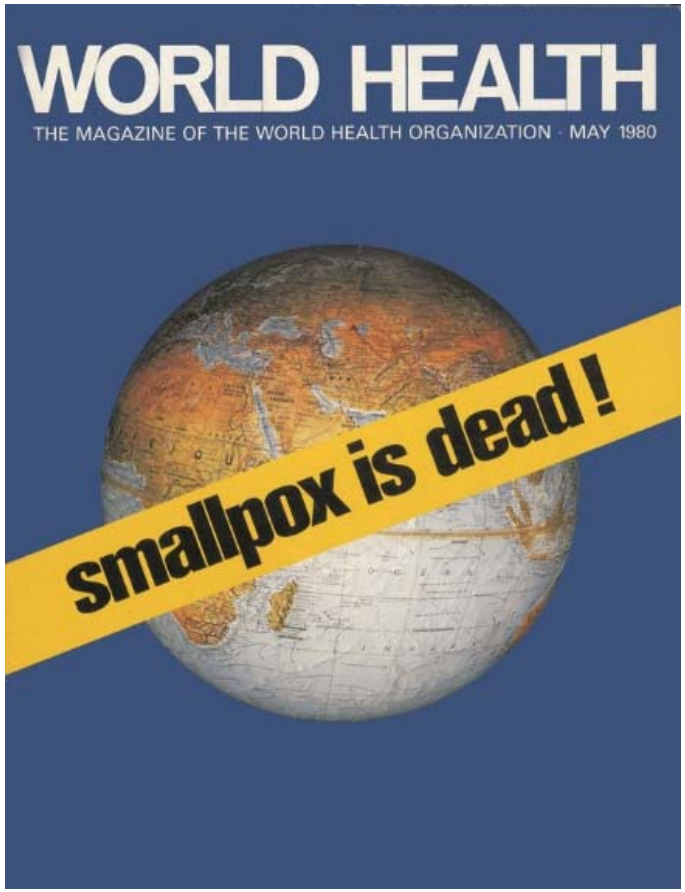
- 50 million cases per year in early 1950s worldwide
- In 1966, 1.5 to 2 million people died from the disease each year
- WHO launches Smallpox Eradication Programme in 1967
- Last case of smallpox reported in Somalia in 1977
- On 8 May 1980, WHO declares global eradication of smallpox



Global public health crisis

What can we learn from smallpox eradication?

- Mass produced high-quality vaccine
- Efficient delivery (bifurcated needle)
- Mass vaccination and surveillance containment
- Political commitment and coordination
- Dedicated programme with clear objectives and goals
- Quality control, training, programme management, research and certification



… a triumph of management, not of medicine.

Dr H Mahler, WHO Director General

Adopting a public health approach

Road deaths and injuries are preventable and there are solutions to the problem

- Preventative rather than conventional approach (tools)
- Setting an ambitious vision and targets (scale)
- Leadership and system management (leadership)

Vaccines for Roads

Preventative rather than conventional approach

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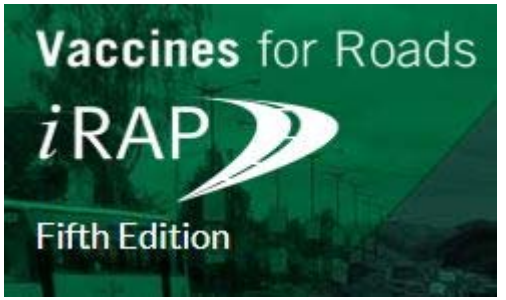
What if we had vaccines to prevent the 1.35 million deaths and 20-50 million injuries that occur on global roads each year?

We do …



vaccinesforroads.org

Vaccines for Roads V

iRAP

Big Data Tool

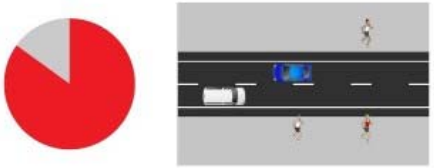
Home | How Safe? | Human Impact | Global Impact | Case Studies | Business Case | About | Take Action

The road features that matter based on a 358,000km sample of roads across 54 countries:

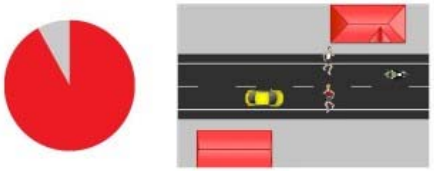
Pedestrian

Road features elevating this risk

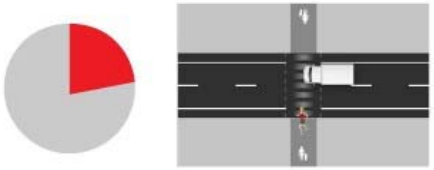
85%
of roads where pedestrians are present and traffic flows at 40km/hr or more have **no formal footpaths or sidewalks**



92%
of roads where pedestrians cross and traffic flows at 40km/hr or more have **no pedestrian crossing facilities**



22%
of pedestrian crossings are **poorly signed or maintained**



Vehicles

Road features elevating this risk

81%
of roads where traffic flows at 80km/h or more **are undivided**

79%
of roads where traffic flows at 80km/h or more **have dangerous roadsides**

73%
of intersections where traffic flows at 60km/h or more have **no safe turning provision**


… fatalities can be reduced by 85–90% by applying mid- and side barriers.
Johansson (2008)

Vision Zero

Setting an ambitious vision and targets

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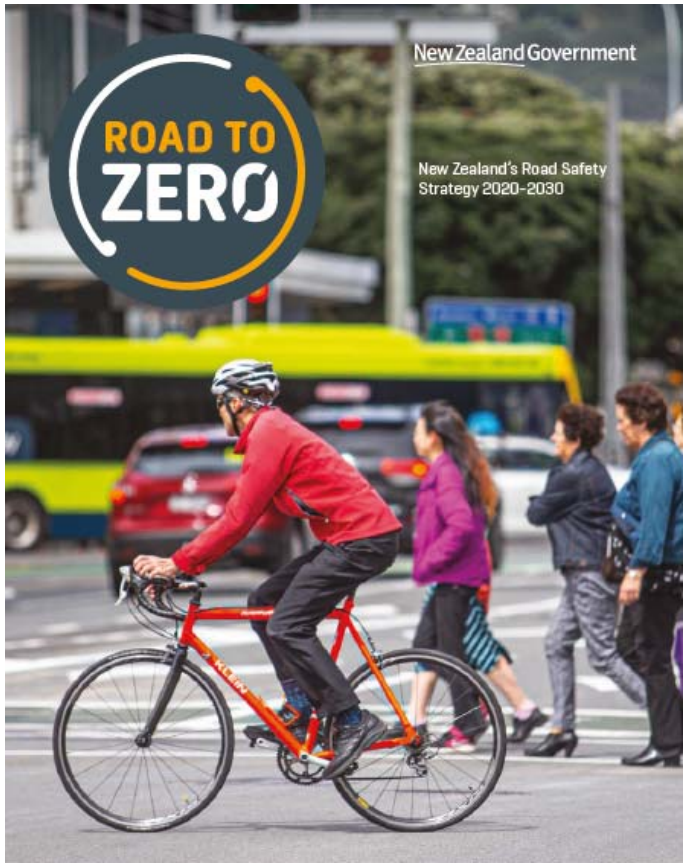
New Zealand Government

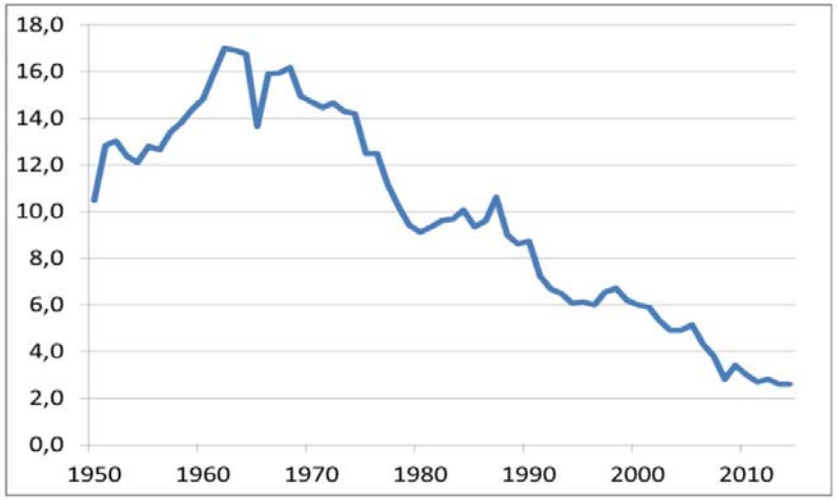
A vision for a New Zealand where no one is killed or seriously injured in any road crash



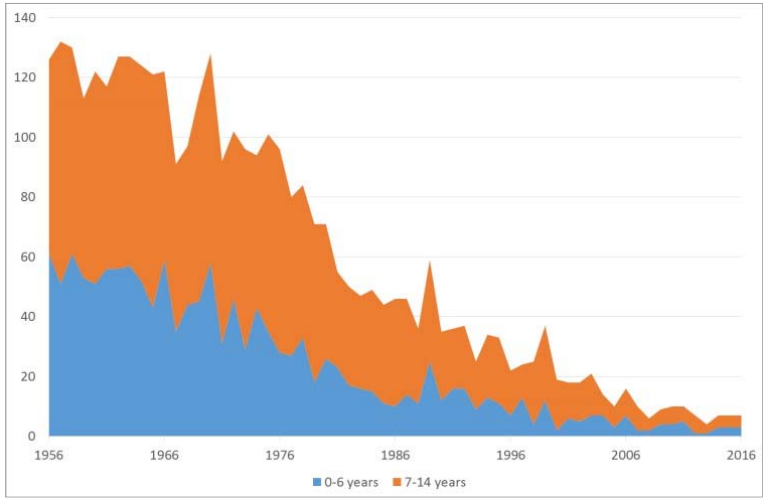
Vision Zero

Fatalities in Sweden over time

Fatalities per 100,000 population



Children killed in traffic 1956-2016



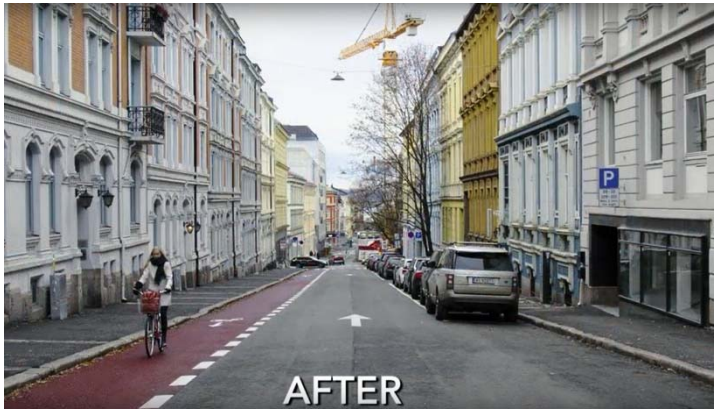
In 1960s & 70s, between 100 and 200 children died in traffic in Sweden every year. Now this figure is 2 to 3.

Source: Swedish Transport Administration

Oslo

Zero pedestrian and cyclist deaths last year

- reduced car traffic
- lower speed limits
- improved infrastructure
- heart zones (*hjertesoner)* around schools
- public transport, bicycle lanes and facilities for pedestrians

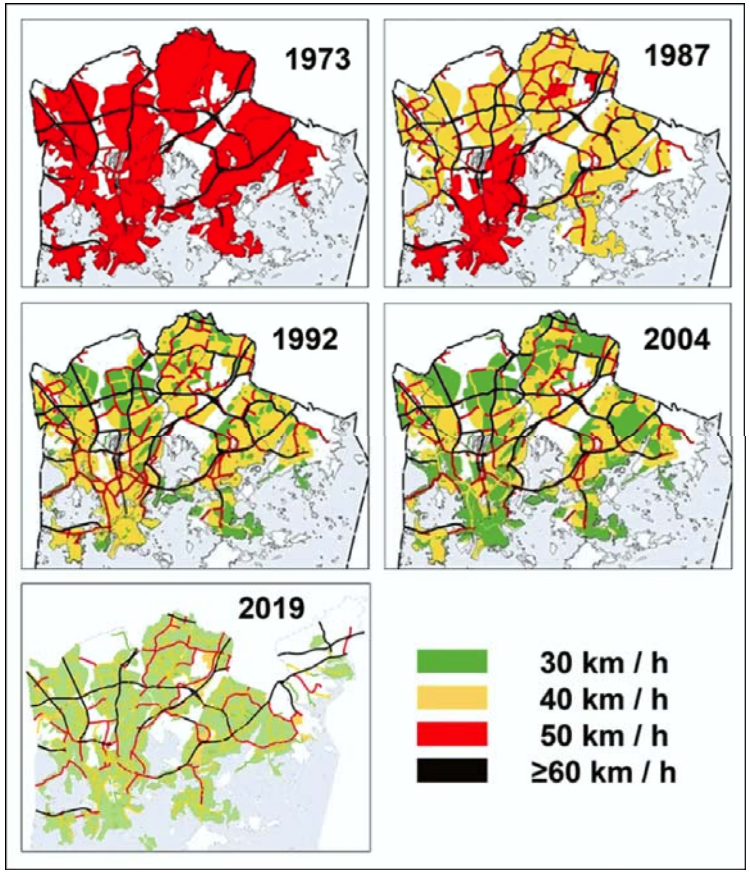


Source Oslo: The Journey to Car-free

Helsinki

Zero pedestrian and cyclist deaths last year

- city centre: 30km/h zone
- new residential areas: designed to encourage lower speeds
- other areas: speed bumps, elevated pedestrian crossings and roundabouts to reduce speeds
- human-centered street design
- public transport and cycling



Source City of Helsinki

“

Europe’s metropolitan areas now have a template to follow if they want a pathway to ending road deaths … Through constant effort, political leadership, target setting and clear responsibilities, they have shown it is possible to achieve what, only fifty years ago, seemed impossible..

”

Antonio Avenoso, Eurpean Transport Safety Council (ETSC) Executive Director

Leadership at all levels

Leadership and system management

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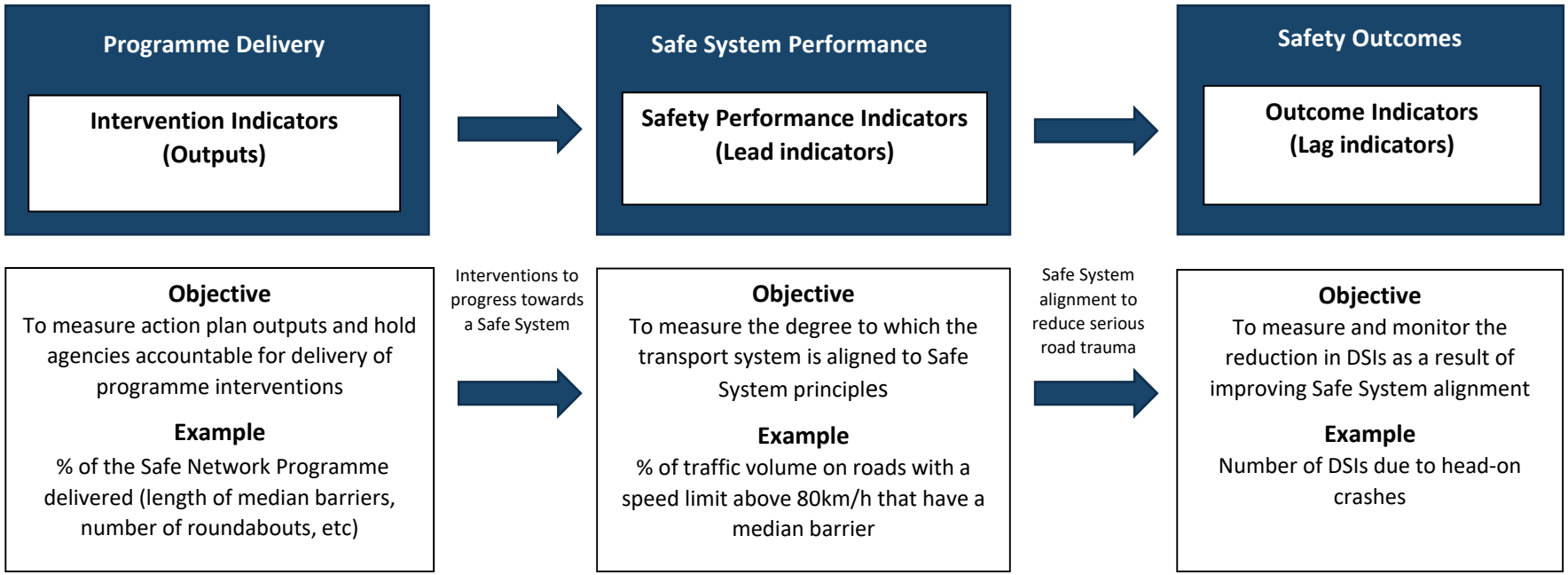
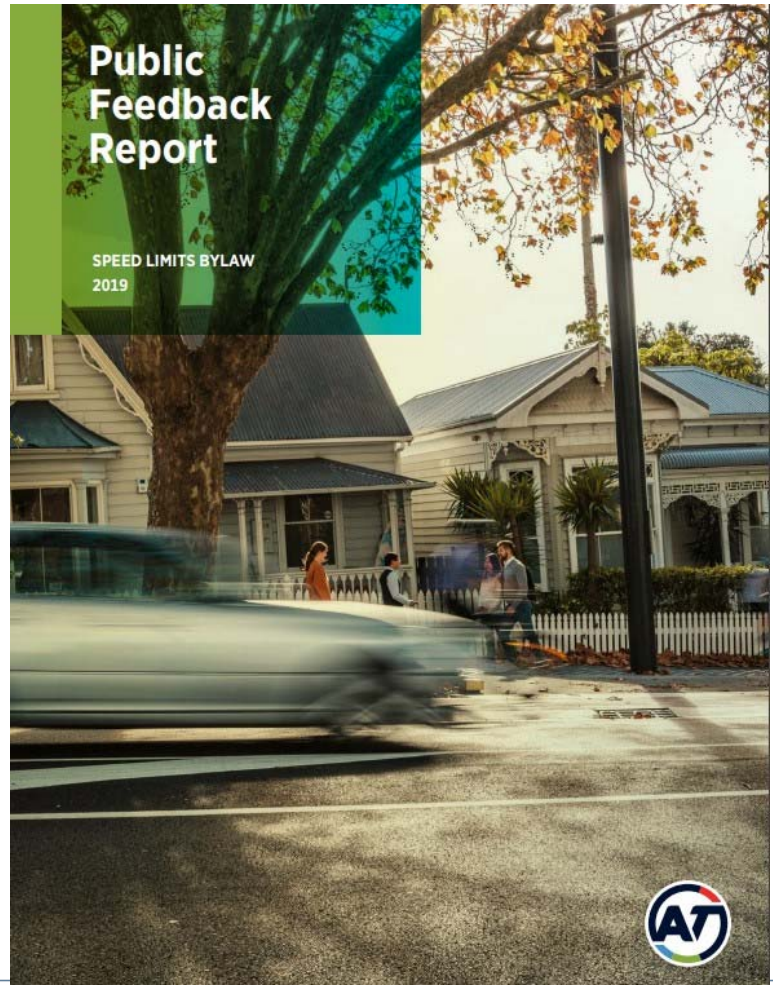
System Management - Outcomes framework

What gets measured gets managed




Vision Zero
for Tāmaki
Makaurau
A TRANSPORT SAFETY STRATEGY
AND ACTION PLAN TO 2030
A PRESENT
WITHOUT A
PAST
C.K. STEAD


Public
Feedback
Report
SPEED LIMITS BYLAW
2019


50
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Key messages

Achieving a step change in road safety performance

- We have the tools
- We need to implement at scale
- This will require leadership at all levels


RICOCHET

We also need to build capability and capacity at all levels

ROAD TO ZERO

To register interest for our pilot Vision Zero course, email maria.drinkwater@nzta.govt.nz

This includes supporting those at the start of their road safety career

www.roadsafetyeducation.vic.gov.au/teaching-resources/tertiary-education