Road safety performance in New Zealand

Why is New Zealand's road safety performance declining?
Is our system safe?

- 95,000 km of roads
- 3.5 million vehicles
- 4.8 million people
- 45.8 billion vehicle-kilometres travelled
- 3,200 deaths and serious injuries

Ten years ago

- 94,000 km of roads
- 2.9 million vehicles
- 4.2 million people
- 40.1 billion vehicle-kilometres travelled
- 3,100 deaths and serious injuries
Fatalities in last 5 years

• 55% increase since 2014
• highest total since 2009
• today 394
We were doing better

- 42% reduction from 2008 to 2013
- lowest annual road toll (253) in 2013
All casualty measures trending upwards

- fatalities +55%
- deaths and serious injuries (DSIs) +40%
- hospitalisations +10%
- ACC claims +39%
Where are the increases – users

- drivers
- passengers
- m/cycle
- cyc/ped
- 16-24yrs
- >75yrs
- overseas

Killed or seriously injured
- 2017
- 2016
- 2015
Where are the increases – regions

![Bar chart showing increases in regions for 2015/16, 2016/17, and 2017/18]
Where are the increases – regions

Deaths and serious injuries, per 100,000 population

- Nthland
- Auckland
- Waikato
- BayPlenty
- Gisborne
- HawkesBay
- Taranaki

2015/16
2016/17
2017/18

New Zealand Government
Where are the increases – regions

Deaths and serious injuries, per 100,000 population
More vehicles and more travel

• with increasing population, increasing numbers of vehicles and increasing travel, the number of crashes on the network would be expected to increase

• however, fatalities and serious injuries are increasing at a faster rate than can be explained by simple traffic growth
More vehicles and more travel

- cars: +14%
- all vehicles: +17%
- vehicle kilometres travelled: +10%
- population: +8%
- fatalities: +55%
- DSIs: +40%
Crashes vs injuries

• it is important to reduce crash numbers, and we have a good understanding of the factors which lead to crashes –
  o drivers impaired, by alcohol, drugs, fatigue
  o drivers distracted, by cellphones, passengers
  o too fast for conditions
  o the state of the road or the weather
  o inexperience, etc, etc

• but, accepting that crashes are inevitable, we also need to understand the factors which lead to fatal and serious injuries in those crashes
Crashes vs injuries

- reducing injury severity is about mitigating energy exchange in a collision
  - within the vehicle – crumple zones, seatbelts, side airbags
  - with roadside features – vegetation, barriers, culverts, poles
  - speed of impact – less speed, less harm
  - vulnerability of user – collisions involving pedestrians, cyclists, motorcyclists
  - road user incompatibility – e.g. truck vs car, car vs bicycle

If there are severity-increasing influences, deaths and injuries will increase.
Trends which increase injury severity

• crashes involving trucks are more severe
• crashes at higher speeds are more severe
• crashes involving motorcycles are more severe
• crashes involving older vehicles are more severe
• injuries in crashes when not wearing seatbelts are more severe
Vehicle mass makes a difference

In 2013-2017

• 26% of car vs truck crashes resulted in death or serious injury
• 14% of car vs car crashes resulted in death or serious injury
• 7% of car vs truck crashes resulted in death
• 1.5% of car vs car crashes resulted in death
Speed makes a difference

Percentage of crashes which were fatal/serious, by speed limit

In 50km/h zones, 16% of crashes were fatal/serious
Speed on 100 km/h roads: behaviour and enforcement

- 100 km/h average open speed
- 90 km/h vehicles detected speeding in 100 km/h zones

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Motorcycles come with risk

Licensed motorcycles and mopeds

84000
80000
76000
72000
68000
64000

Sep-13  Sep-14  Sep-15  Sep-16  Sep-17

8000 more motorcycles
Vehicle age makes a difference

Percentage of occupant fatalities in older vehicles

half of all occupant fatalities in vehicles more than 15 years old

2002 Mitsubishi Lancer GLX AUTO SEDAN NZ NEW

$4,990

Including On Road Costs
Vehicle crashworthiness makes a difference

% fleet

% driver DSI

1 Star

2 Star

3 Star

4 Star

5 Star
Influences on the road toll

**crash numbers are influenced by**

- vehicle kilometres travelled, increased by 10%
- licensed motorcycle numbers, increased by 11%
- average open road speed, increased 0.4 km/h*

*and the severity of crashes is influenced by*

- vehicle and roadside safety features
- vehicle mismatch and user vulnerability
- collision speed
Vehicle occupants killed not wearing seatbelts

Dec-12  Dec-13  Dec-14  Dec-15  Dec-16  Dec-17

Seatbelts
To build a safe road system free of death and serious injury

• reduce the opportunities for interactions between heavy and light vehicles, or between vulnerable users and other users

• improve the safety of motorcyclists (e.g. ABS, energy-absorbing roadside features)

• have speeds that ensure serious injuries are unlikely in a collision

• every vehicle occupant wears their seatbelt, all the time
A Safe System

In a safe system, people should not be seriously injured or killed as a result of someone’s mistake.

The four pillars: Safe Roads and roadsides, Safe Vehicles, Safe Users, Safe Speeds

The principles: people make mistakes, people are vulnerable, all parts of the system are needed, shared responsibility