New Zealand’s Contribution to Global Road Safety Goals

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Chief Advisor: Safety

What legacy are we leaving future generations
Presentation Content

- Global Road Safety Problem
- UN Decade of Action
- Vision Zero & Safe System
- NZ Road Safety Strategy & Performance
International Loss of Life: New York 9/11 - How many died?

2800
International Loss of Life: Road Deaths – How many die?

3500 per day

(>1.24 Million Deaths pa)
Vehicle Growth

<table>
<thead>
<tr>
<th>Total vehicles in use</th>
<th>672 million</th>
<th>1.1 billion</th>
<th>1.5 billion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22%</td>
<td>35%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>of worldwide market potential</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Lower-growth economies**
  - 2008: 8%
  - 2013: 20%
  - 2018: 42%

- **Rapidly emerging economies**
  - 2008: 8%
  - 2013: 50%
  - 2018: 50%

- **Mature economies**
  - 2008: 72%
  - 2013: 50%
  - 2018: 40%

**Source:** Booz & Company
## Leading causes of death

### 2004

<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease or Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td>2</td>
<td>Cerebrovascular disease</td>
</tr>
<tr>
<td>3</td>
<td>Lower respiratory infections</td>
</tr>
<tr>
<td>4</td>
<td>COPD</td>
</tr>
<tr>
<td>5</td>
<td>Diarrhoeal diseases</td>
</tr>
<tr>
<td>6</td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>7</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>8</td>
<td>Trachea, bronchus, lung cancer</td>
</tr>
<tr>
<td>9</td>
<td>Road traffic injuries</td>
</tr>
<tr>
<td>10</td>
<td>Prematurity &amp; low-birth weight</td>
</tr>
</tbody>
</table>

### 2030

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<td>Diabetes mellitus</td>
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<tr>
<td>8</td>
<td>Hypertensive heart disease</td>
</tr>
<tr>
<td>9</td>
<td>Stomach cancer</td>
</tr>
<tr>
<td>10</td>
<td>HIV/AIDS</td>
</tr>
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</table>
Leading causes of death among 15 – 29 years
Road traffic deaths by type of road user

50% of all road traffic deaths are among pedestrians, cyclists and motorcyclists.

- Coordinated global action supported by 90+ countries
- Based around the Safe system approach
- UN Sustainable Development Goals (2015)
  - Halve number of deaths and injuries by 2020 (on 2010 base)
Illuminations

Moscow

London

Sydney
Global Road Safety – Decade of Action

Do nothing

Global RTI Deaths

- 2000
- 2005
- 2010
- 2015
- 2020

- 500000
- 1000000
- 1500000
- 2000000
- 2500000

1900000
Global Road Safety – Decade of Action
Global Road Safety – Decade of Action

Do nothing
Decade of Action

50% Fatality Reduction Target

5 Million Fatalities
50 Million Serious Injuries

Global RTI Deaths

2500000
2000000
1500000
1000000
500000
0

2000
2005
2010
2015
2020

900000
1900000
Decade Action Plan

Five pillars for a Safe System approach

- Road Safety Mgmt
- Build Safer Roads
- Build Safer Vehicles
- Safer User behaviour
- Improve Post-crash care

www.who.int/roadsafety/decade_of_action/
UN Infrastructure Pillar

Encourage research, knowledge transfer and capacity building in safe infrastructure

Road safety training & education

Research & development
UN Infrastructure Pillar

Promote safe operation, maintenance and improvement of existing road infrastructure

Safety inspections of existing roads

Crash Monitoring and Mapping

Impact assessment & minimum star ratings for all road users
Monitoring Reports

GLOBAL STATUS REPORT ON ROAD SAFETY 2015

Road Safety Annual Report 2016

OECD International Transport Forum
Monitoring Trends

Figure 1.2. Road fatalities per 100,000 inhabitants, 2014

Figure 1.5. Percentage change in the number of road deaths, 2010-15
(or 2010-14 where 2015 provisional data are not available)

Countries showing changes in the number of road traffic deaths, 2010–2013, by country income status

More deaths | Fewer deaths
--- | ---
Low-income | 23 4
Middle-income | 34
High-income | 11

Note: Iceland and Luxembourg not included due to wide yearly fluctuations.
Safe System Guides

OECD/ITF Embedding the Safe System Approach

To be released in October 2016
Scandinavian research suggests that even if all road users complied with road rules, fatalities would only fall by around 50% and injuries by 30%.

Wundersitz and Baldock (2011)
Sweden Vision Zero

Ethical Principles

• No loss of life is acceptable
• A human being is unique. It cannot be substituted or traded with money. A specific value of life should not be stated.
• Traffic Safety shall not, as today, be a function of mobility. In Vision Zero mobility must be a function of traffic safety.
What is an “acceptable” Road ‘Toll’

Play video – original TAC advert with “70”
https://www.youtube.com/watch?v=bsyvrkEjoXI
Back to New Zealand
NZ loss of life: Pike River – how many died?

29 Died
How many people die on NZ roads?

Average 27 per month
Over 300 annually
NZ’s Road Safety Strategy 2010-2020
Safe System Principles: A paradigm shift

1. People are fallible

2. People are vulnerable

3. Shared responsibility

4. All of system response

Accept we are human

Manage the system
Human survivability

- Pedestrians
- Side-on collision
- Head-on collision

Risk of being killed

0 20 40 60 80 100 kph
A change in thinking is required

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victim blaming</td>
<td>Recognising human error and minimising its consequences; shared responsibility</td>
</tr>
<tr>
<td>Emphasis on road user education and compliance</td>
<td>Effort to create forgiving road environment</td>
</tr>
<tr>
<td>Crash reduction</td>
<td>A focus on consequences, especially severe injury minimisation</td>
</tr>
<tr>
<td>Design standard compliance</td>
<td>Safe System solutions</td>
</tr>
<tr>
<td>Reactive black spot treatments</td>
<td>Proactive network/route improvement programmes</td>
</tr>
<tr>
<td>3 – E’s approach (engineering/education/enforcement)</td>
<td>Four pillars jointly optimised (roads/use/vehicles/speeds)</td>
</tr>
<tr>
<td>Mobility-safety balance</td>
<td>Maximising safe mobility</td>
</tr>
</tbody>
</table>
An example

Driver fatigue caused the crash

The horizontal fence rail caused the death

The road and roadside didn’t help avoid the death

The vehicle didn’t protect the occupants
We need safer roads that are more forgiving
NZ State Highway Deaths

Deaths from Head-on crashes more than from Run off Road

Overall 2/3 all Deaths from Head-on or Run off Road crashes
Run off road versus head-on casualties

Run-off road and Head-on High Severity Injury Densities
(Open Road State Highways excluding Motorways and Route Stations with 500m+ divided roads, 2000-2009 injuries, 2010 AADT, excluding AADTs>16,000, plotting the average of each AADT band)

- Run Off Road High Severity Injury Rate
- Head On High Severity Injury Rate

Power (Run Off Road High Severity Injury Rate)
Power (Head On High Severity Injury Rate)

\[y = 0.0112x^{0.4586}\]
\[y = 6E^{-05}x^{1.0565}\]

\[R^2 = 0.9415\]  
\[R^2 = 0.9929\]
Why Wire Rope Barriers

Play 3 videos
- Car vs WRB
- Centennial Highway vs motorbike
Why Wire Rope Barriers

Play 3 videos
- Car vs WRB
- Centennial Highway vs motorbike
30 Tonne laden

Bombay Hills
Safer Journeys priorities and first actions

- Reduction in deaths and serious injuries
  - Young drivers
  - Motorcycles
  - Alcohol and drugs
  - Roads and roadsides
Safer Journeys progress against top priorities

Figure 2: Areas of high concern (percentage reduction/increase since 2010)

- Deaths or serious injuries in headon/runoff road crashes
- Deaths or serious injuries in alcohol/drug crashes, per 100,000
- ACC entitlement claims from motorcyclists
- 15-24 yr old drivers killed or seriously injured, per 100,000
- Deaths or serious injuries in open road (80-100 km/h) crashes
Death Trends by Road Type 2014

Deaths per year

- Rural State Highway
- Urban State Highway
- Rural Local Road
- Urban Local Road
Safer Journeys Key Actions for 2016-20

• Enable smart and safe choices - technologies

• Make motorcycling safer

• Safe roads and roadsides
  - urban arterials
  - local rural roads

• Encourage safer vehicles
A safe road system *is* the difference between life and death

www.saferjourneys.govt.nz