Safer Journeys for Motorcycling on New Zealand Roads

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Safer Journeys for Motorcycling on New Zealand Roads

- The Guide is a motorcycling centric coordinated approach to road safety
- Deals with road safety issues within Safe System context
- Do we, as road safety professionals, have the right perspective for motorcycling road safety?
Different country, same company

Source: Google Maps
• Do we, as road safety professionals, have the right perspective for motorcycling road safety?

• Do we take action through our work to treat road safety for motorcycles differently to road safety for four (or more) wheeled vehicles?
Some things are different: Toyota Corolla Canada

- Left-hand drive
- Right-hand side of road

Source: Toyota Canada
Some things are different:
Toyota Corolla NZ

- Right-hand drive
- Left-hand side of road
Honda CBR600RR Canada

- Some things look similar

Source: Honda Canada
But motorcycles are not cars

- Do we recognise the differences?

Source: Honda NZ and Toyota NZ
Basis for Preparing the Guide

• NZ Safer Journeys Strategy:
  – "... a safe road system increasingly free of death and serious injury"

• For motorcycling, the Guide addresses Strategy aims of:
  – Policies for treating routes to improve safety for motorcyclists
  – Identifying high risk routes and treatment programmes for these
Basis for Preparing the Guide

• Motorcycle crash history (2008-12):
  – 14.9% of all fatal crashes
  – 21.3% of all serious injury crashes
  – Risk of fatal or injury crash is 22 times higher for motorcyclist than car driver (vkt)
  – Around 11 fatalities per 1 million population per annum
  – Victoria (Australia) has around 7 fatalities per 1 million population - that's our maximum target
Basis for Preparing the Guide

• Target audience:
  – RCAs
  – State highway and local road engineers
  – Planners
  – Funders
  – Policy makers
  – Road system designers
  – Road maintenance personnel
  – System users
Basis for Preparing the Guide

- Organisations/agencies contributing
Key Processes Involved

• Overview:
  – Identifying, assessing and prioritising high risk routes based on crash data
  – Methodology for treatment encompassing elements of a safe system
  – Developing programmes, and evaluation and reporting framework
Key Processes Involved

- Initial analysis. Selected route:
  - Popular rural motorcycling route 130 km long
  - 5 fatal, 21 serious, and 20 minor crashes (2001-10)
  - Consultation with motorcycle groups
  - Ride over for inputs to pilot project
Key Processes Involved: Pilot Study Route

Southern Coromandel Peninsula
Key Processes Involved: Pilot Study Route

Beaches and water sports

Credit: Destination Coromandel www.thecoromandel.com
Key Processes Involved: Pilot Study Route

Rugged hill country

Credit: Destination Coromandel www.thecoromandel.com
Key Processes Involved: Pilot Study Route

Great fishing

Credit: Destination Coromandel www.thecoromandel.com
Key Processes Involved: Pilot Study

- Analysis process involved:
  - Key stakeholders
  - Highway maintenance personnel
  - Local road safety coordinators
  - Motorcycling experts from VicRoads and Monash
Key Processes Involved: Pilot Study

- **Analysis process identified features:**
  - Uneven surface condition
  - Consistency of surface condition
  - Readability of the route
  - Pavement marking gives riders guidance
  - Pavement marking – skid resistance
  - Audio Tactile Profiled (ATP) markings
  - Consistency of route delineation
  - Debris on the road surface
  - Objects in clearzones
  - Barriers
Guide Contents: Identifying favoured and high risk routes

- Favoured = route motorcyclists frequently choose to ride
- High risk = collective risk high or medium-high
- Two or more motorcycle injury crashes in five years or four motorcycle injury crashes in 10 years in rural areas to be high risk

Rural collective risk = \[
\frac{\text{Motorcycle injury crashes}}{\text{number of years of data}} \times \frac{1}{\text{Length of road section}}
\]

Three thousand minds per hour.
Guide Contents: Identifying high risk routes
Safe System Context: Four Elements

- Safe Speeds
- Safe Vehicles
- Safe Roads and Roadsides
- Safe Road Use

A Safe Road System Increasingly Free of Death and Serious Injury

OPUS
Three thousand minds per hour.
Guide Contents: Key Issues

- Roads and roadsides element:
  - Surface conditions
  - Pavement marking and delineation
  - Hazard/roadside furniture
  - Geometry and alignment
  - Intersections
Guide Contents: Key Issues

• Road users element:
  – Training and education
  – Rider experience
  – Fatigue
  – Rider safety gear
  – Group riding and rider position
  – Alcohol and drug use
Guide Contents: Key Issues

- Example: Motorcyclists subject to same CBT requirements as other road users
Guide Contents: Key Issues

- Vehicle element:
  - Maintenance
  - Power to weight for novice/learner
  - Safety features
  - Headlight performance
Guide Contents: Key Issues

- Speeds element:
  - Too fast for conditions
  - Following distances
  - Posted speed limits
Guide Contents: Key Issues

• Injury treatment - Post crash element:
  – Mobile phone coverage
  – Personal responsibility
  – Locator beacons to summon assistance
  – Helicopter landing areas
27 April 2014

A motorcycle rider has been seriously injured ... male rider came off his bike ... he was flown to Nelson Hospital in a serious condition
Guide Contents: Countermeasures

COLLECTIVE RISK
- LOW
- LOW-MED
- MED
- MED-HIGH
- HIGH

SAFETY MANAGEMENT
- Asset Management
  - e.g. speed management, delineation improvements, skid resistance management

SAFE SYSTEM TRANSFORMATION WORKS
- Larger Cost Infrastructure Works

SAFETY MAINTENANCE

SAFER CORRIDORS
- Medium Costs Corridor
  - e.g. roadside improvements, centreline treatments

ROAD PROTECTION SCORE
- >25
- 25

STAR RATING
- 1
- 2
- 3

RISA
- 1.5
- 2.5
- 3.0

AADT
- LOW
- HIGH
## Guide Contents: Key Countermeasures

<table>
<thead>
<tr>
<th>Key crash type</th>
<th>Recommended Safe System treatments</th>
<th>Recommended safe corridor treatments</th>
<th>Recommended safety management treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run-off road</td>
<td>• Roadside barriers.</td>
<td>• Wider shoulders.</td>
<td>• Increased intervention levels.</td>
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<td></td>
<td>• Clearzones.</td>
<td>• Improved delineation.</td>
<td>• Skid resistance.</td>
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<td>• Safe System speeds.</td>
<td>• Harm reduction speeds.</td>
<td>• Planting policies.</td>
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<td>• Hazard removal.</td>
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<td>Head-on</td>
<td>• Median barriers (solid/semi-rigid and flexible). • Safe System speeds.</td>
<td>• Marked median treatments. • ATP markings, improved delineation. • VAS. However, difficult for motorcycles only. • Harm reduction speeds.</td>
<td>• Increased intervention levels. • Skid resistance. • Hazard removal.</td>
</tr>
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| Crossing or turning at intersections | • Grade-separated interchanges or overpasses.  
• Roundabouts.  
• Safe System speeds. | • Wider shoulders and separated turning facilities.  
• Improved delineation.  
• Active signs.  
• Harm reduction speeds. | • Intervention levels.  
• Skid resistance.  
• Improved sight distance through various treatments. |
Guide Contents: Understanding the Issues

- Need to understand issues behind motorcycle crashes to identify treatment; reliable crash data needed
- Guide endeavours to bridge knowledge gap for practitioners
- Safe system elements very important
- High use of route ≠ safety issues on route
Guide Contents: Implementation, monitoring & evaluation

- Primary outcome metrics are to reduce:
  - ACC claims from motorcyclists
  - Motorcycles/mopeds riders killed/100,000 pop.
  - Percentage motorcycles/mopeds without WOF (similar to Canadian safety standards certificate) involved in crashes
  - Motorcycles/mopeds riders hospitalised for > 1 day/100,000 population
Next Steps

• Physical works for southern Coromandel pilot project route; includes:
  – Road marking and signage to assist with guidance on curves
  – Improved surface condition
  – Works to improve visibility
  – Creating more forgiving roadsides
  – Constructing helicopter landing areas
  – Improving cell phone coverage
Next Steps: Example

Less than 3% of vehicles on the 130 km Southern Coromandel Loop are motorcycles; yet for 2008-12 motorcycles accounted for 44% of all fatal and serious injury crashes
Conclusions

• Likelihood of DSI much greater for motorcyclists than 4+ wheeled road users
• Approach for road safety treatments and programmes for motorcyclists must be different to those for other road users
• Safe system approach improves safety for all road users
• Safer Journeys for Motorcycling on New Zealand Roads is important key element to improve safety for these vulnerable road users
Conclusions

- The work on the ground has started, now we need to follow through
- It's a team effort and we all need to work together

Source: Honda NZ and Toyota NZ
Thank you
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