Investigating Common Patterns in New Zealand Cycling Fatalities

By Dr Glen Koorey (Senior Lecturer, University of Canterbury)

Summary

Following five cycling deaths during November 2010, the Chief Coroner announced a national inquiry to identify any common trends or information that could prevent a re-occurrence of such tragedies. To help inform this inquiry, a larger investigation into New Zealand cycling fatalities back to 2006 was undertaken, to try to identify any consistent patterns in crash occurrences that were significantly over-represented.

From crash records and media reports, more than 90 cycling fatalities were identified between January 2006 and August 2013. A review of the relevant reports identified common attributes. Potential initiatives that could have prevented each fatality were also considered.

Some notable trends were found. Older cyclists (>50 years) are very over-represented, despite their relatively low cycling involvement, and are also more likely to be at fault. The number of fatalities involving heavy vehicles and/or state highways was also higher than expected. Poor observation by drivers was a very common factor. Better recording of non-motor vehicle crashes and clothing/helmets worn.

The study has provided valuable information to inform both the Inquiry and transport safety agencies in general about what is needed to reduce the cycling road toll. It identifies additional trends that are not evident from just examining cycle injury crashes.

Crash Data Studied

- All cycle fatalities involving a motor vehicle since Jan 2006
- All other cycle fatalities identified on a road or path since Jan 2006
- Mountain-bike fatalities on tracks were not included

Sources: NZTA/MOT Crash Analysis System (CAS), NZ Police Total - Crash Reports, News media reports

Crash Location

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersect'n</td>
<td>7</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Non-Int'sn</td>
<td>38</td>
<td>31</td>
<td>69</td>
</tr>
<tr>
<td>Local Rd</td>
<td>27</td>
<td>42</td>
<td>69</td>
</tr>
<tr>
<td>State Hwy</td>
<td>18</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>52</td>
<td>97</td>
</tr>
</tbody>
</table>

Driver Observation and Hi-Vis Clothing

<table>
<thead>
<tr>
<th>Driver Saw?</th>
<th>Wear Hi-Vis</th>
<th>No Hi-Vis</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Too Late</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>8</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>Unknown, N/A</td>
<td>4</td>
<td>6</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>22</td>
<td>33</td>
<td>87</td>
</tr>
</tbody>
</table>

Helmet Wearing

- N/A includes clothing not recorded but not relevant - cycle-only crash
- N/A = clothing not recorded but not relevant

High-Visibility Clothing

- N/A = clothing not recorded but not relevant

- “Hi-vis” here includes yellow, orange, white, fluorescent or reflective

Driver at Fault? vs Cyclist Age

- N/A includes non-motor-veh crashes and recent crashes not yet determined

Age Group

- 5-14
- 15-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75-84
- 85-94

Average Age: 47 yrs

- 51% aged 50+
- 26% aged 65+

Driver Involvement

- Truck 25%
- Car 71%
- Bus 4%
- *Does not include non-motor-veh crashes

Speed Limits

- 50km/h 48%
- 60km/h 5%
- 70km/h 2%
- 100km/h 37%
- 80km/h 8%

Crash Data Studied

- All multi-vehicle crashes (60) were reviewed to assess partial or primary fault by the parties

- Bike Hit Object
- Bike Lost Ctrl
- Bike Misc
- MVeh-v-Bike

Age Distribution and Culpability

- All multi-vehicle crashes (60) were reviewed to assess partial or primary fault by the parties

- *N/A includes non motor-veh crashes and recent crashes not yet determined

Most Common Crash Patterns Identified

- Motorist passing cyclist (possibly turning left) not providing sufficient clearance 28%
- Cyclist lost control, went off the road 18%
- Cyclist turning or moving over to the right failed to give way to passing motor vehicle 13%
- Cyclist turning/crossing failed to give way to through motorist with right of way 12%
- Motorist turning/crossing failed to give way to through cyclist with right of way 9%

What Might Have Helped Prevent these Fatalities?

- More Training/Promotion/Legislation to Improve Motorist Behaviour 42%
- Cycle Skills Training/Promotion (incl. a focus on Older people cycling) 39%
- More/Better Cycling Facilities (Cycleways, Intersections/Crossings, etc) 26%+
- Heavy Vehicle Safety Equipment (Under-run protection, Blind-spot mirrors) 13%
- Lower Speed Limits/Environments (incl. School Zones) 10%+

For Further Information Contact: Dr Glen Koorey

Email: Glen.Koorey@canterbury.ac.nz

Dept of Civil and Natural Resources Engineering
University of Canterbury
Private Bag 4800, Christchurch 8140, New Zealand