

Safe Infrastructure for PTWs – Knowledge Gaps



Dr Shane Turner

Crash Statistics

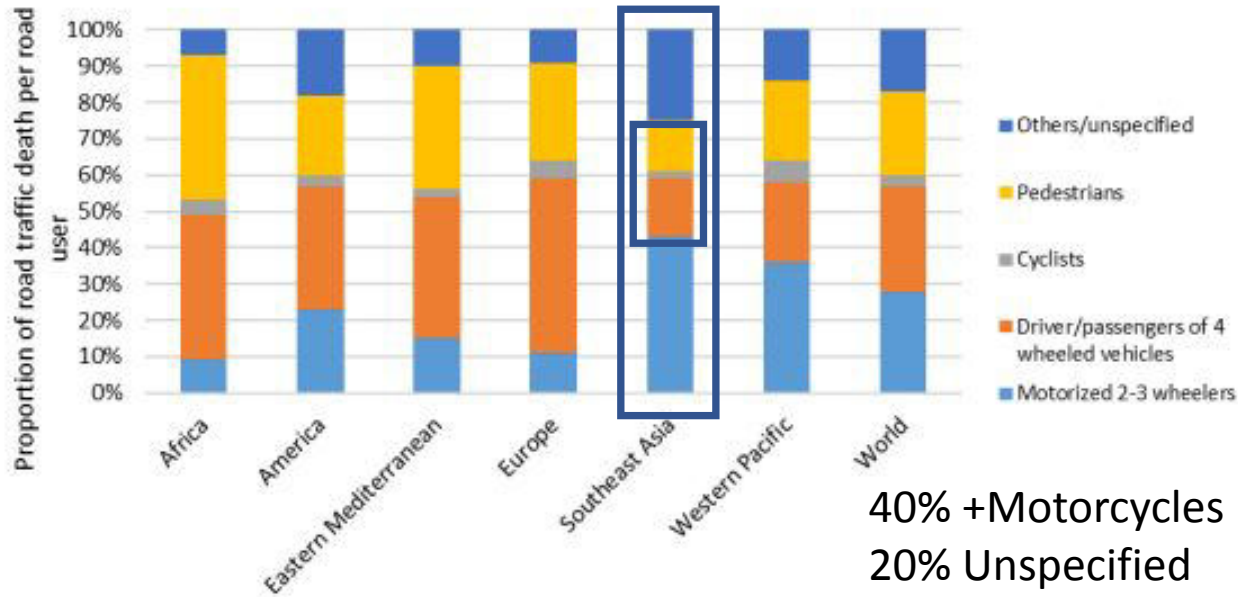
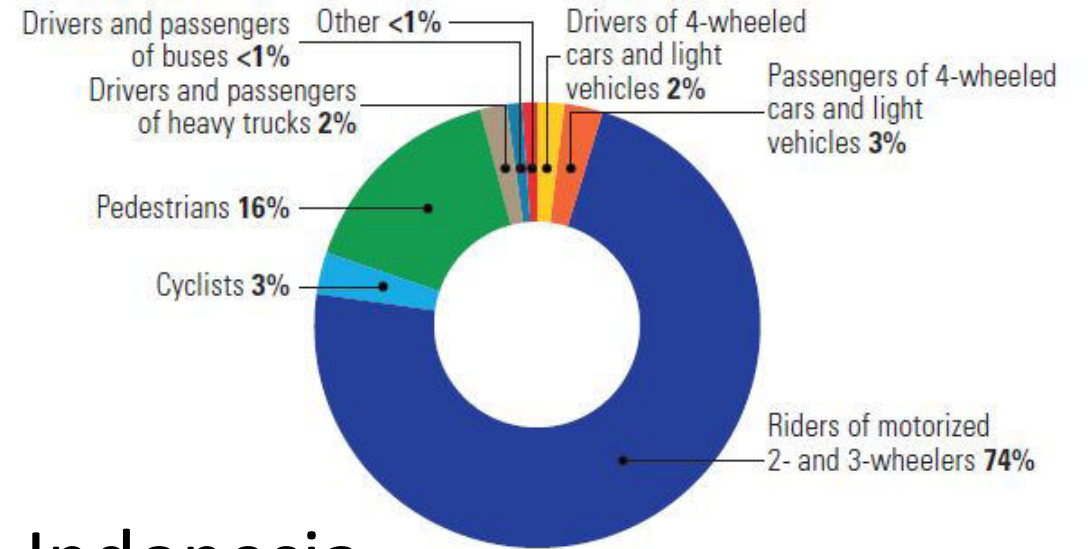


Figure 4 Road traffic deaths per region distributed by road user type. Source: WHO (2018).

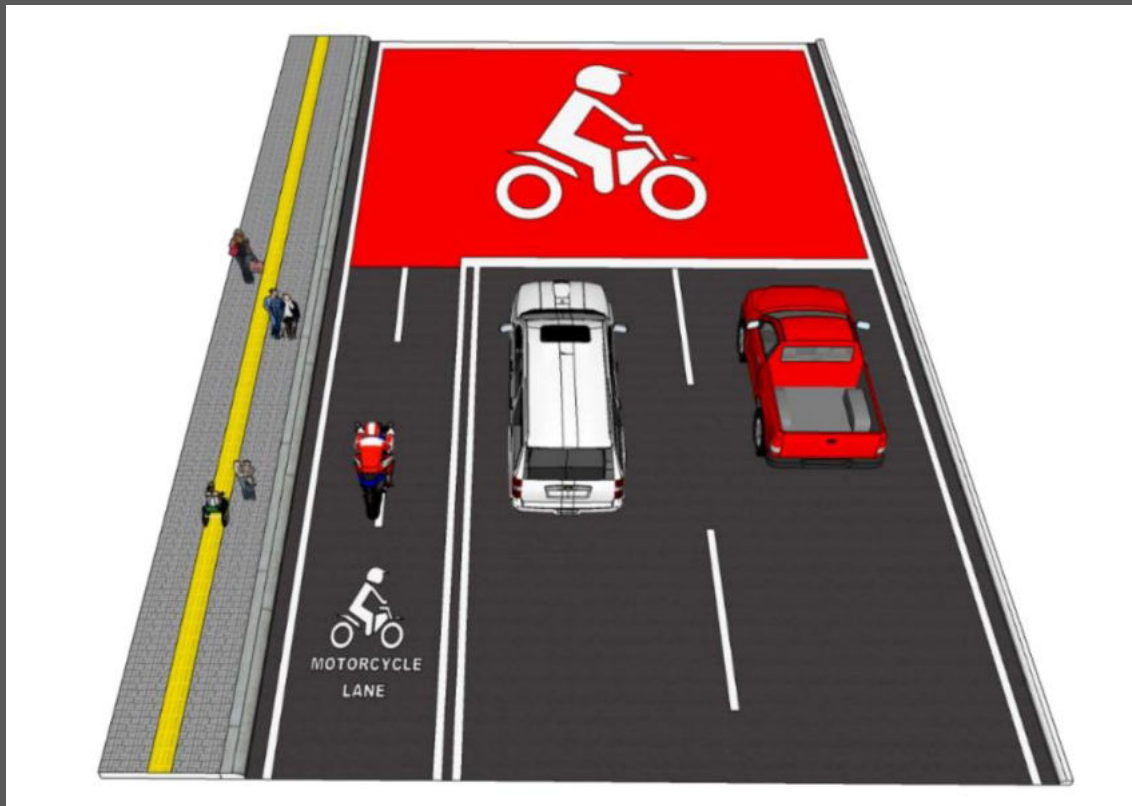


Indonesia

Typical ASEAN
- 70% plus Motor-cycles

Source: 2016, Indonesia National Police

Infrastructure Measures



- Pavement Quality and Consistency
- Road-Side Barrier Designs
- Shoulder Widening/Upgrades
- Median Islands
- Motorcycle lanes (MCLs)
 - Exclusive (EMCLs)
 - Inclusive (non-exclusive)
- Intersection Facilities
 - Advanced Stop Lines (Bike Boxes)
 - Median Islands
 - Motorcycle standup Lanes
- Speed Management Devices
 - Raised platforms/humps

Narrow Lanes & No Shoulders



BLACKSPOTS



Median Treatments



Motorcycle Lanes - Exclusive

Exclusive motorcycle lanes have been implemented in several countries in Southeast Asia with mostly good results. However, there are problems with this solution that need to be managed, such as access points and delineation to the other lanes. An example from Latin America was raised where an exclusive motorcycle lane was implemented with bad results. A reason for this might have been inaccurate design, and the need for detailed design guidelines were stressed. More generally, it is not enough to propose the safety measure in itself, specific guidelines must also be developed for a successful implementation in other areas.



9. Expert session #5: Road Infrastructure and road environment

This session was moderated by Mr Greg Smith, IRAP and Dr Pierre Van Elslande, University Gustave



Inclusive (non-exclusive) Motorcycle Lanes

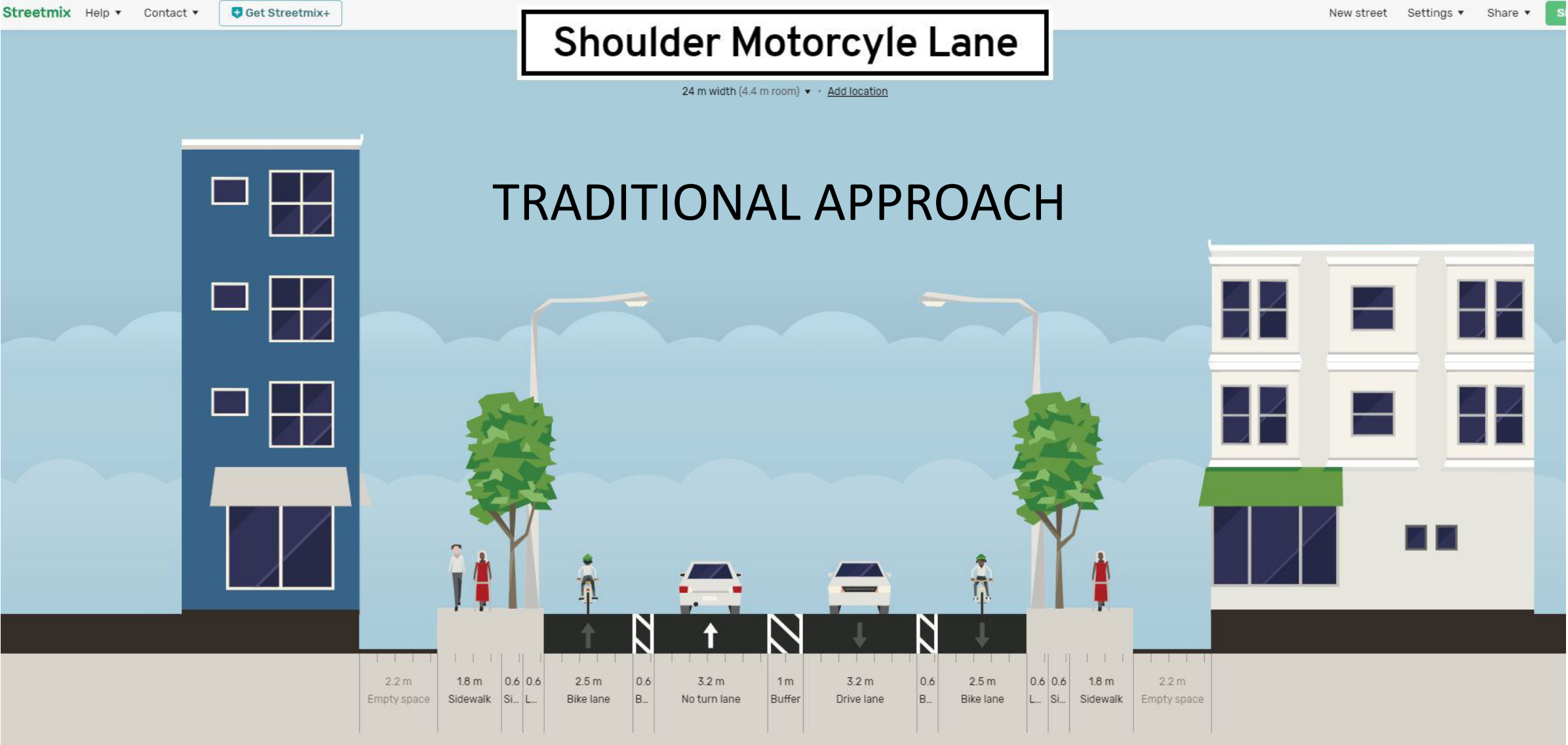
Often just a painted line between
motorcycles and traffic (or flush separator)



Changing Behaviours

Lower powered stay near kerb-side (like bicycles) while higher powered near centreline



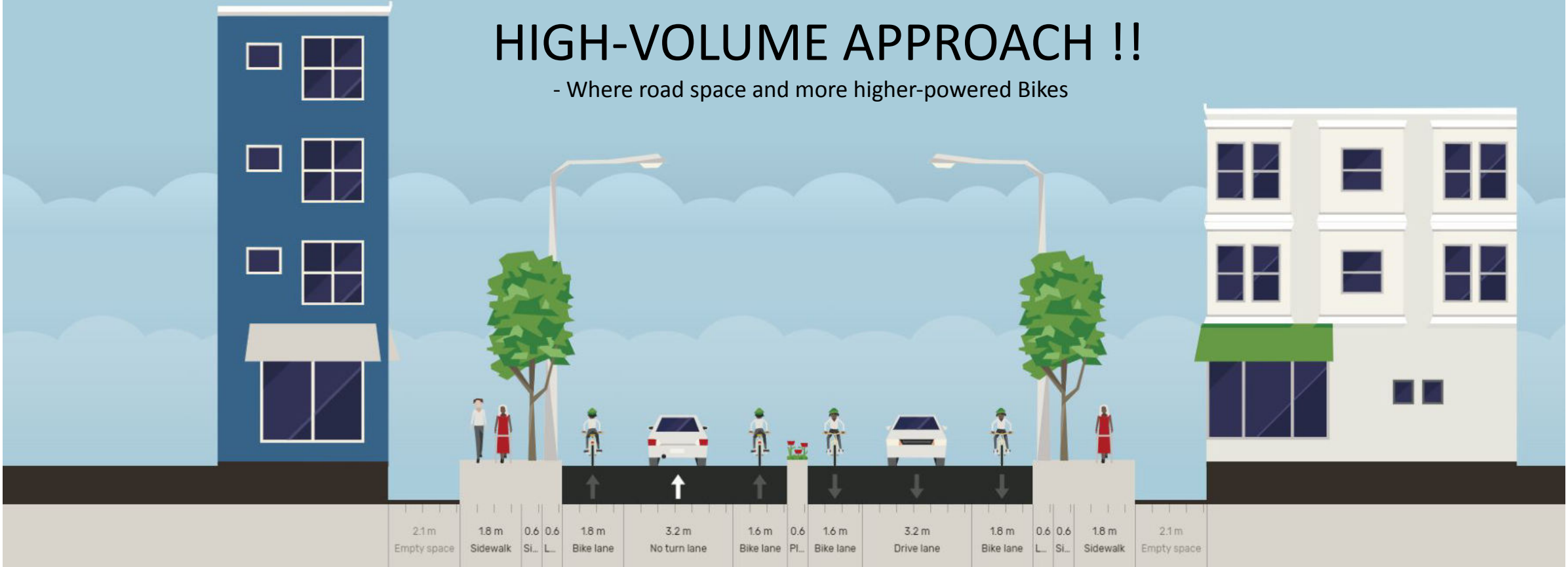


Central Motorcycle Lane

24 m width (4.2 m room) Add location

HIGH-VOLUME APPROACH !!

- Where road space and more higher-powered Bikes



Major Intersections

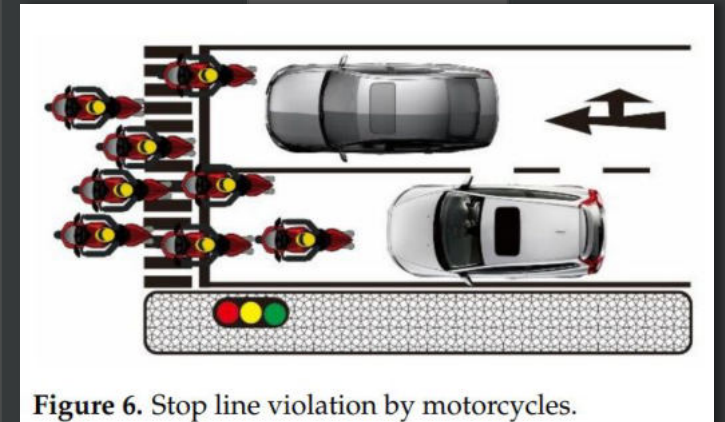


Figure 6. Stop line violation by motorcycles.

Major Intersections Bike Boxes (or ASL)



(a)



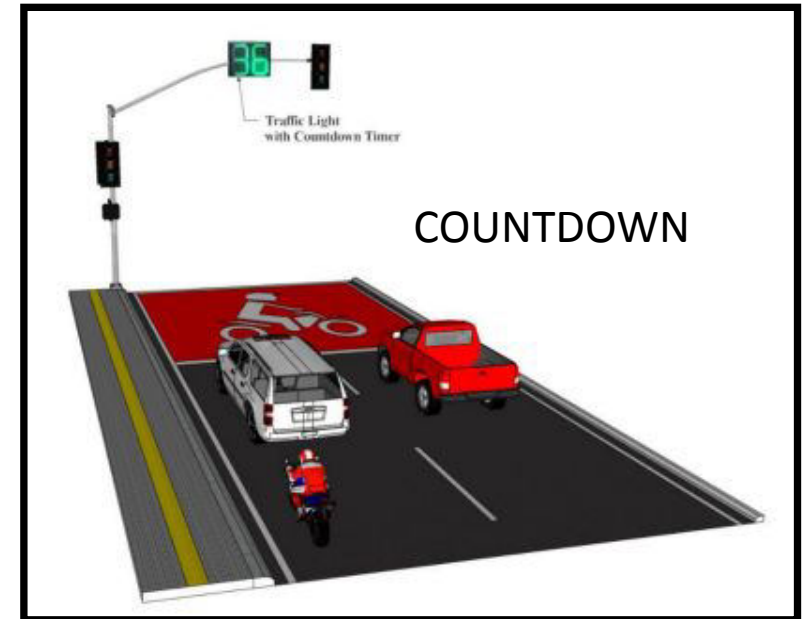
(b)



(c)



(d)



Speed Management for PTWs

Managing Kinetic Energy

Successfully managing kinetic energy is a crucial part of a safe system, thereby making speed a very important aspect. Several attendees discussed traffic calming measures and the experiences seemed to be that traditional measures, such as speed bumps, do not necessarily work well for PTWs and can even be dangerous. Roundabouts were also given as an example of a measure that successfully could manage kinetic energy and speed compared to traditional crossings. However, different views came up in the discussion as to whether roundabouts are safe for motorcyclists or not. The general perception seemed to be that the design of the roundabouts and good friction is very important, and with the right design, roundabouts could be safe also for motorcyclists. Narrow lanes were also put forward as an example of a successful measure to reduce speeds.



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Speed Bumps?
Roundabouts?
Narrowing?

Speed Management Devices



Signalised Roundabout



Platforms



Narrowing

Effectiveness - Traffic Conflict Studies



Conflicts Heat Maps
by road user

CONFLICT HEAT MAPS

DENSITY SEVERITY

Map Satellite

SITE: Figtree Avenue & Grant Terrace

CONFLICT TYPE: Select All

ROAD USERS:
 Truck
 Bus
 Passenger Car
 Pedestrian
 Bicycle
 Motorbike

DATE RANGE:
From: 20-Aug-19 To: 23-Aug-19

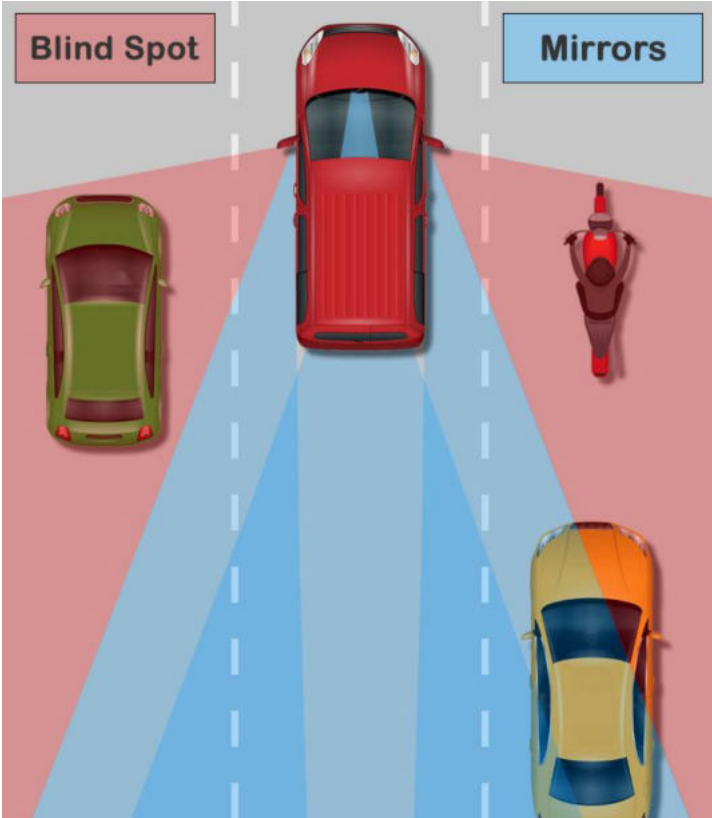
TIME RANGE: 8:00 - 24:00

LOAD

Number of Conflicts Per Square Meter

5 10 15 20 25 30

Traffic Conflicts in Vehicle Blind-Spots



End/Questions



Auckland

Level 1/70 Shortland Street
PO Box 613, Shortland Street
Auckland 1140
Aotearoa New Zealand

Wellington

Level 1/119-123 Featherston Street
Wellington 6011
Aotearoa New Zealand

Christchurch

Level 1/137 Victoria Street
PO Box 36446, Merivale
Christchurch 8146
Aotearoa New Zealand

Dr Shane Turner

Sahne.turner@abley.com
+64 27 4955048
abley.com

