



Non-motor vehicle related pedestrian injury on and near the road – implications for the *Safe System Approach* to road safety

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Safer Journeys Road Safety Strategy

- The Safer Journeys Road Safety Strategy incorporates a *Safe System Approach*.
- It follows that:
 - The management of all modes on the network should have a *Safe System Approach*
 - These *Safe System Approaches* should work together to move towards a safe system
 - Road Safety Funding should be structured so as to allow this to happen.

Walking

- Walking, as an active mode is part of a Government push towards safe sustainable transport.
- It is important that the public has confidence in its ability to walk safely on the street network.
- This means putting effort into identifying under what circumstances pedestrian injury occurs, and to instigate effective counter measures.
- Our Safe System approach means that:
 - Road Controlling Authorities (RCAs) are responsible for minimising injury on their networks, whether or not motor vehicles are involved.
 - Their networks include the roadway and areas near the roadway used by pedestrians.
 - Thus the responsibility to mitigate pedestrian injury falls upon the RCA.

• **Type of injury *Safer Journeys* addresses**

- Injury which occurs on the road network and about which we have accessible data.
- There is some information on cycling where no motor vehicle is involved.
- However, non-motor vehicle pedestrian injuries are recorded in separate databases that do not feed into *Safer Journeys*.

• Impacts on non-motor vehicle pedestrian injuries

- They receive scant attention, although they form an important part of the road injury burden.
- Therefore there is a knowledge gap about non-motor vehicle pedestrian injuries, particularly how they relate to infrastructure.
- This impedes our ability to provide the correct infrastructure and fix problems.

• Impacts on non-motor vehicle pedestrian injuries

- This needs to be remedied if we are to achieve the potential of walking as a serious and safe mode of transport.
- This presentation seeks to address this knowledge gap by presenting information related to the circumstances surrounding ACC* claims for pedestrian injury, occurring on or near the road, where motor vehicles were not involved.
- This required a home interview survey of injured people as the information on the ACC claim form on the circumstances of the injury is scant.

* The Accident Compensation Corporation (ACC) is New Zealand's publicly owned no-fault personal injury insurance provider.

Information sources

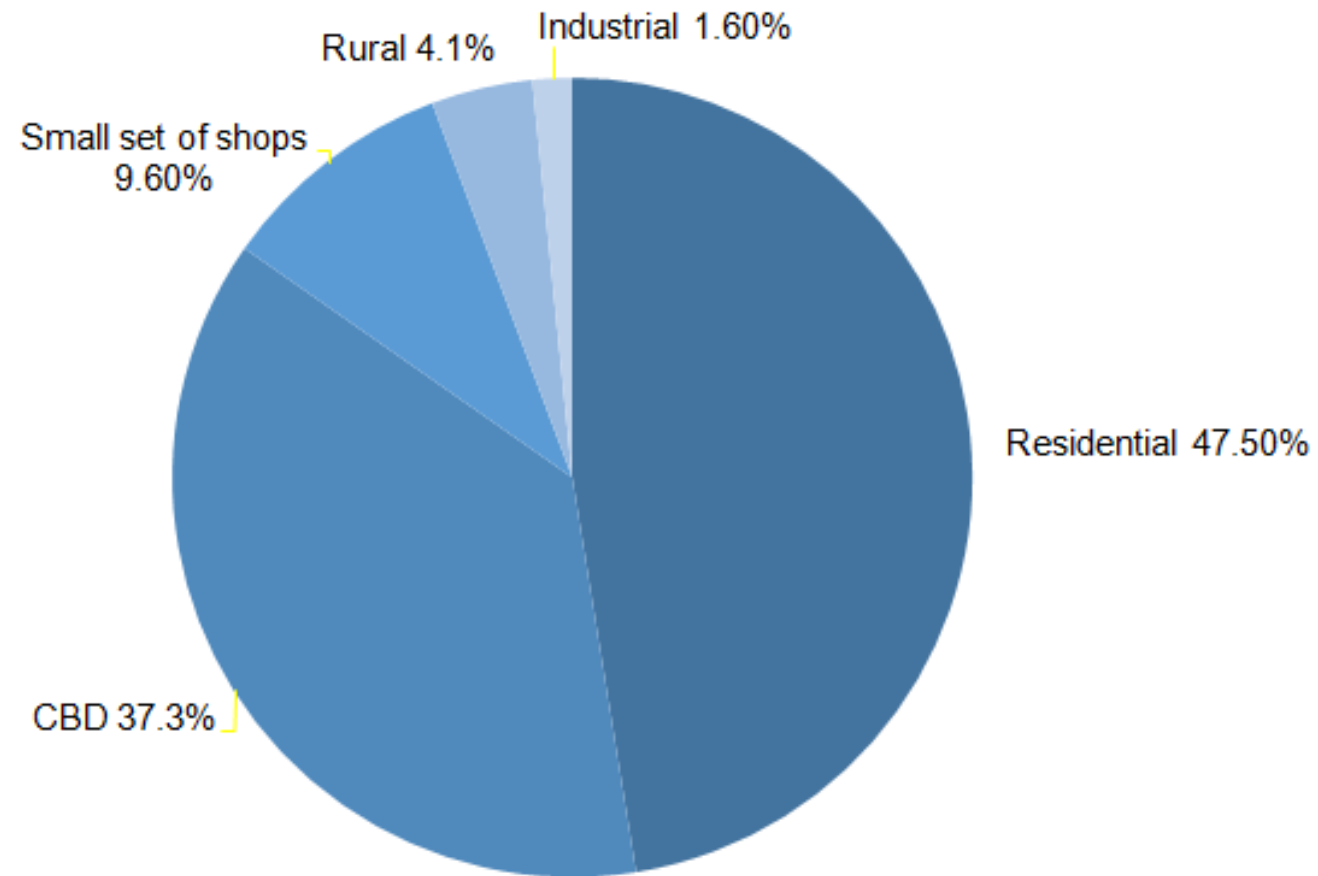
- Two sources of information and data were used:
 - ACC claims for pedestrian injury occurring on or near the road, where motor vehicles were not involved; and
 - a structured home interview survey of Wellington pedestrians injured on roads or footpaths and other roadside areas.
- Excluded were injuries that did not occur on or near a road (e.g. on a walking track, park or golf course) and rare events like a mugging or sudden physical disability (e.g. muscle cramp) causing a fall.
- Survey participants ranged in age from toddlers, where a parent, present at the time of the accident, was interviewed, to elderly pedestrians (up to 97.5 years), with an average age of 52 years.

Survey sample

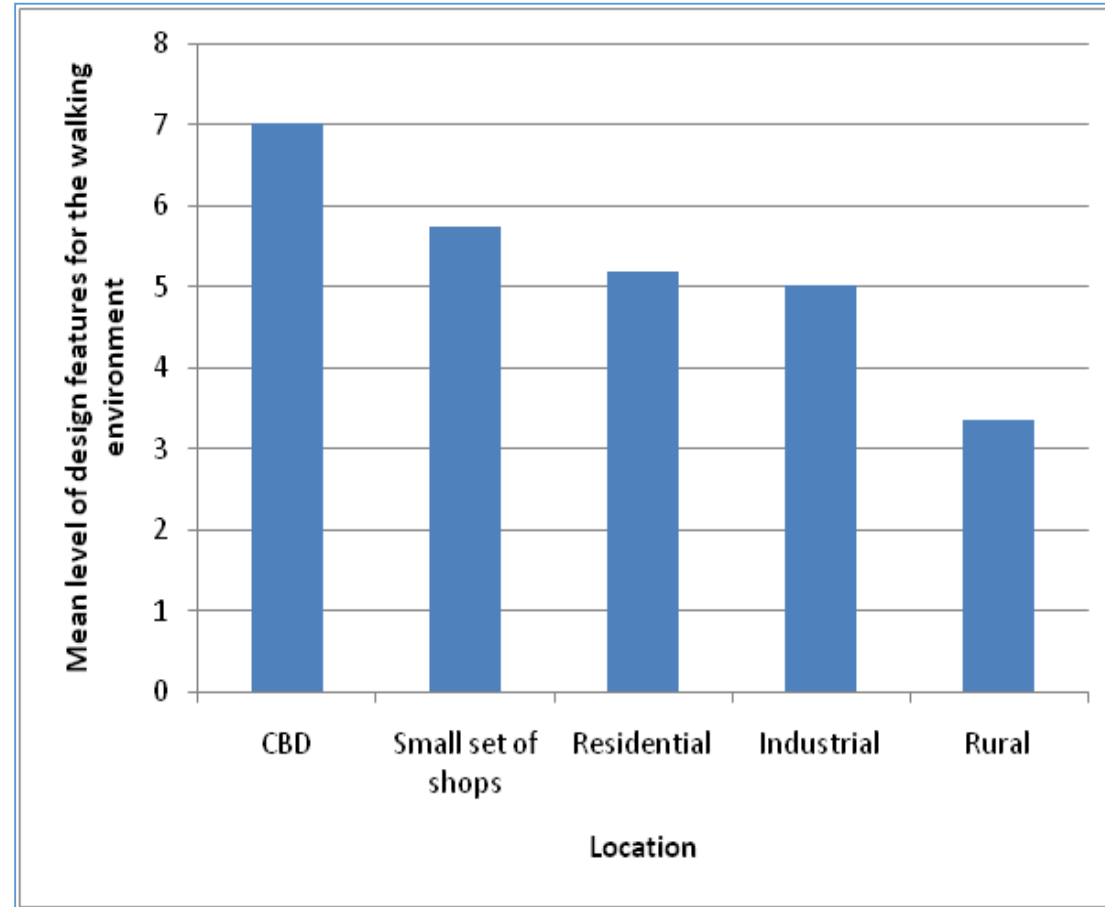
- As expected, the survey sample was age-biased.
- Percentage of sample 64+ was 29% while the estimated population percentage 65+ was 13%.
- This relates to increased pedestrian fragility with age.



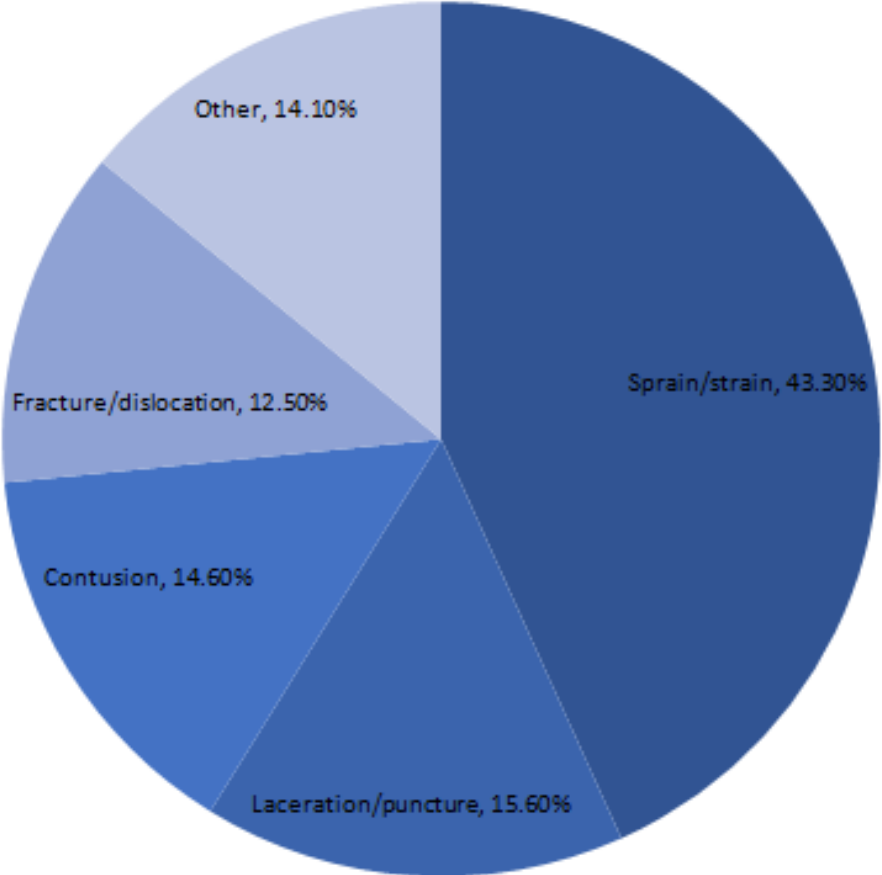
Walking environment



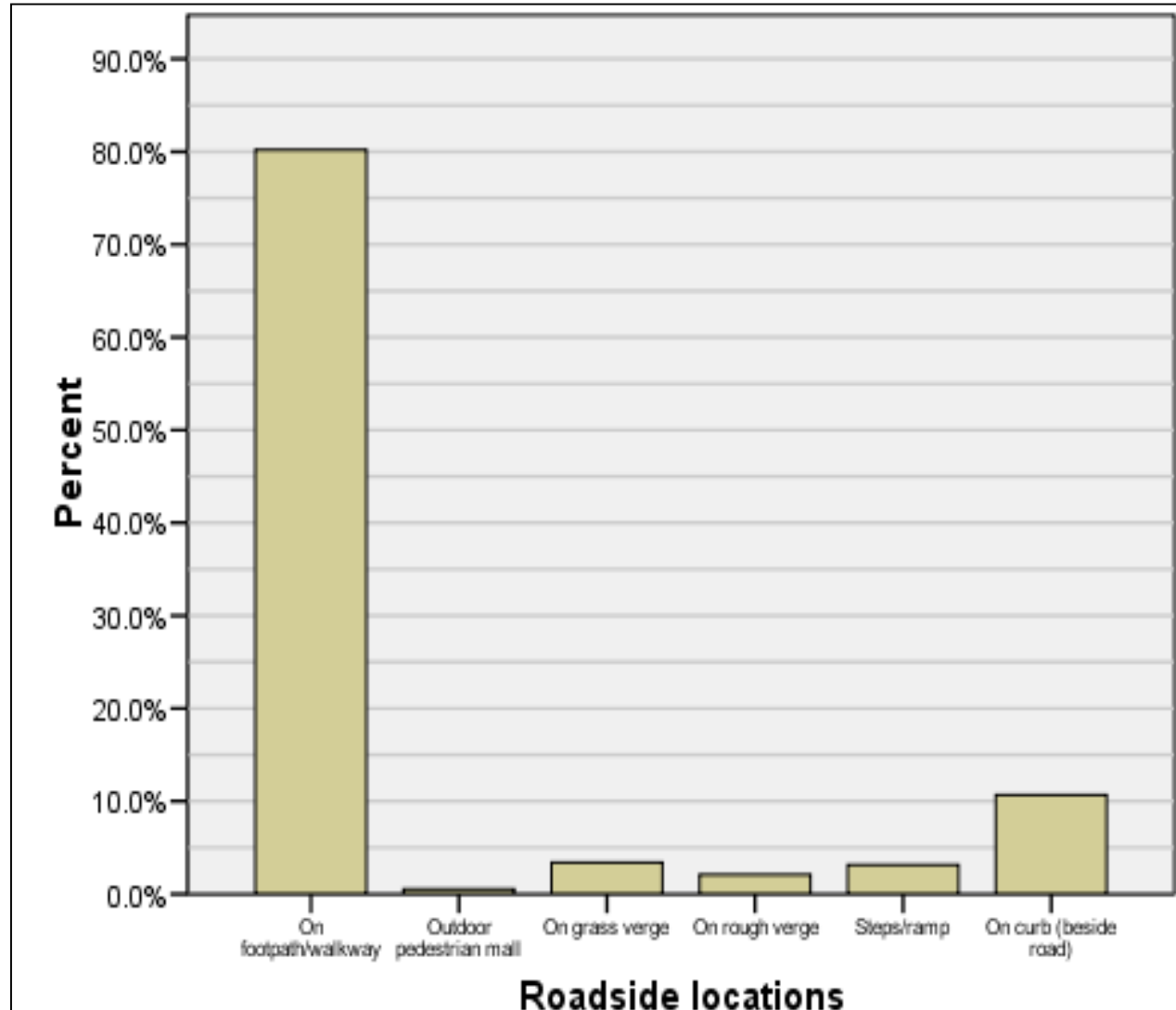
Level of design features for a pleasant walking environment (out of 10)



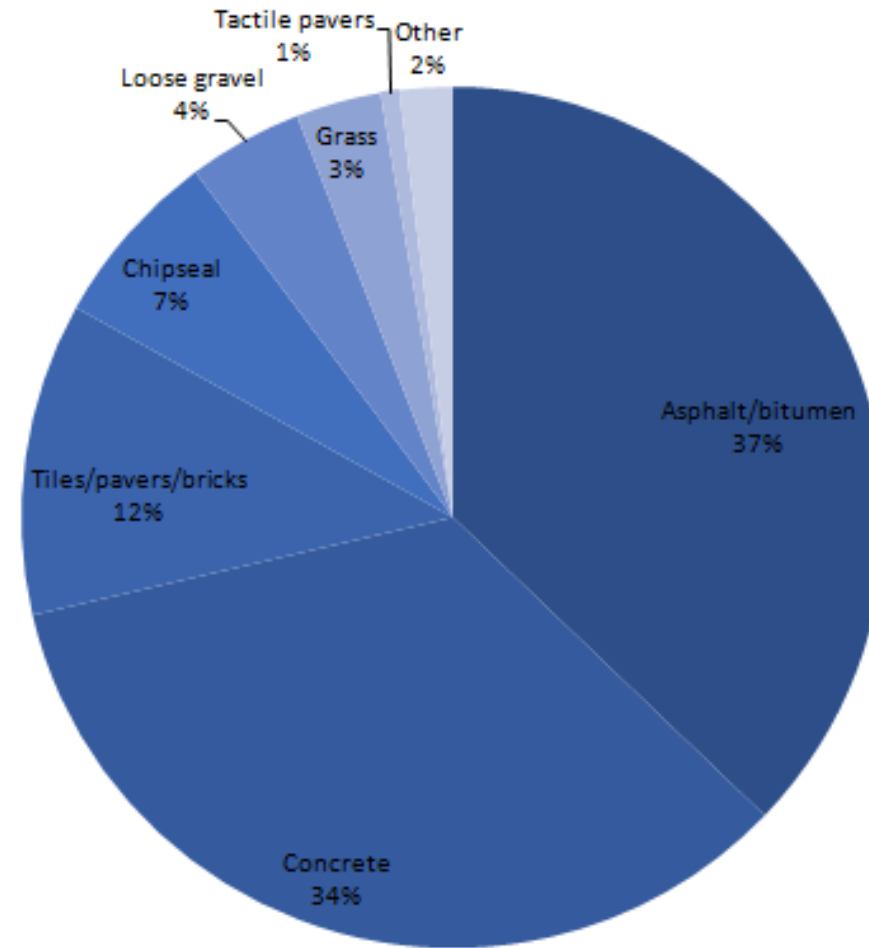
Type of injury



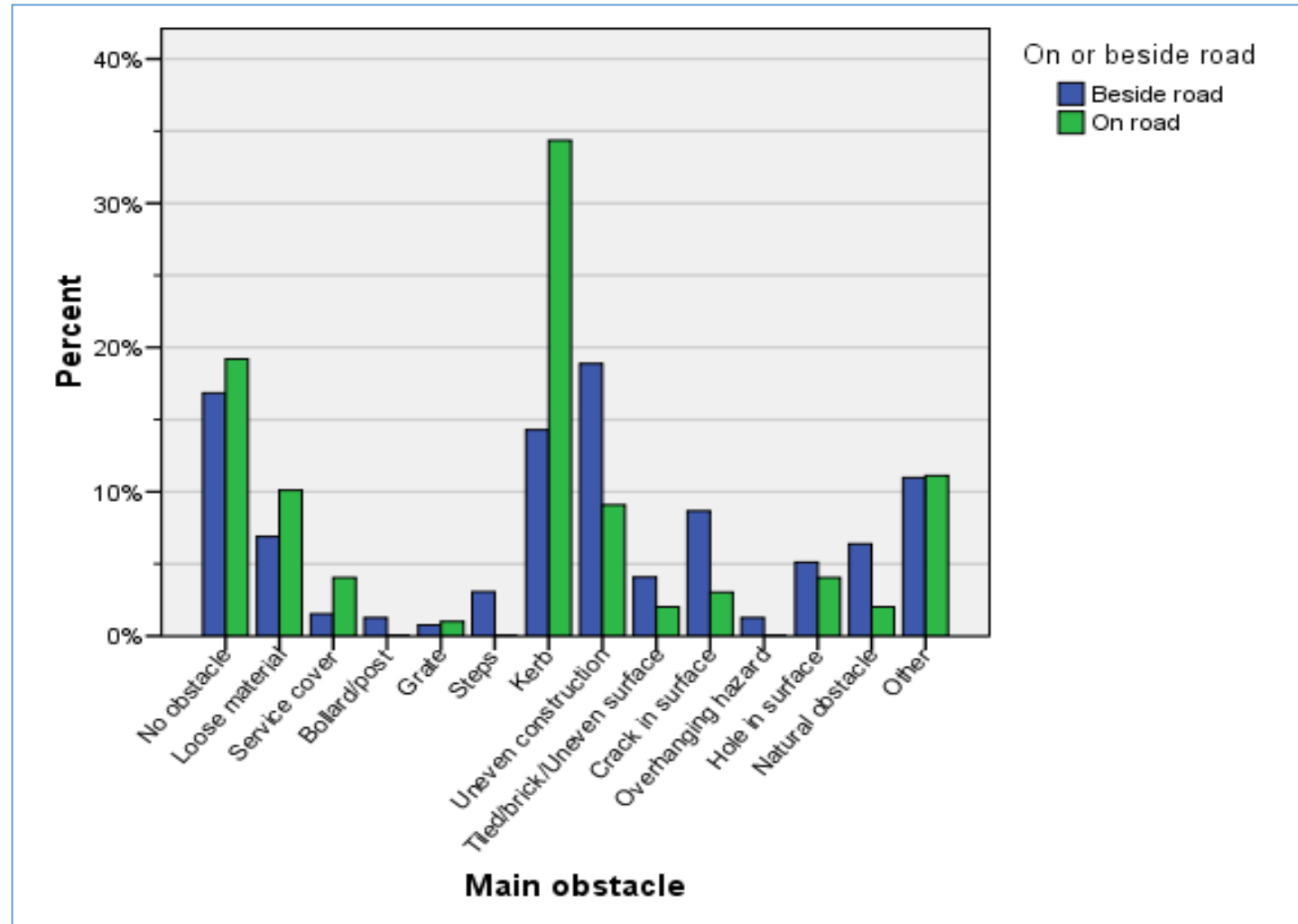
Location of injury



Surface pedestrians slipped, tripped or fell on



Obstacles



• Maintenance or design?

- Poorly maintained surfaces are ranked as a more persistent cause of accidents than design issues.
- Poor maintenance includes:
 - uneven construction (e.g. cracks)
 - temporary deterioration
- Design issues include:
 - vertical changes (e.g. kerbs), particularly when stepping up (as opposed to down)
 - slippery surfaces



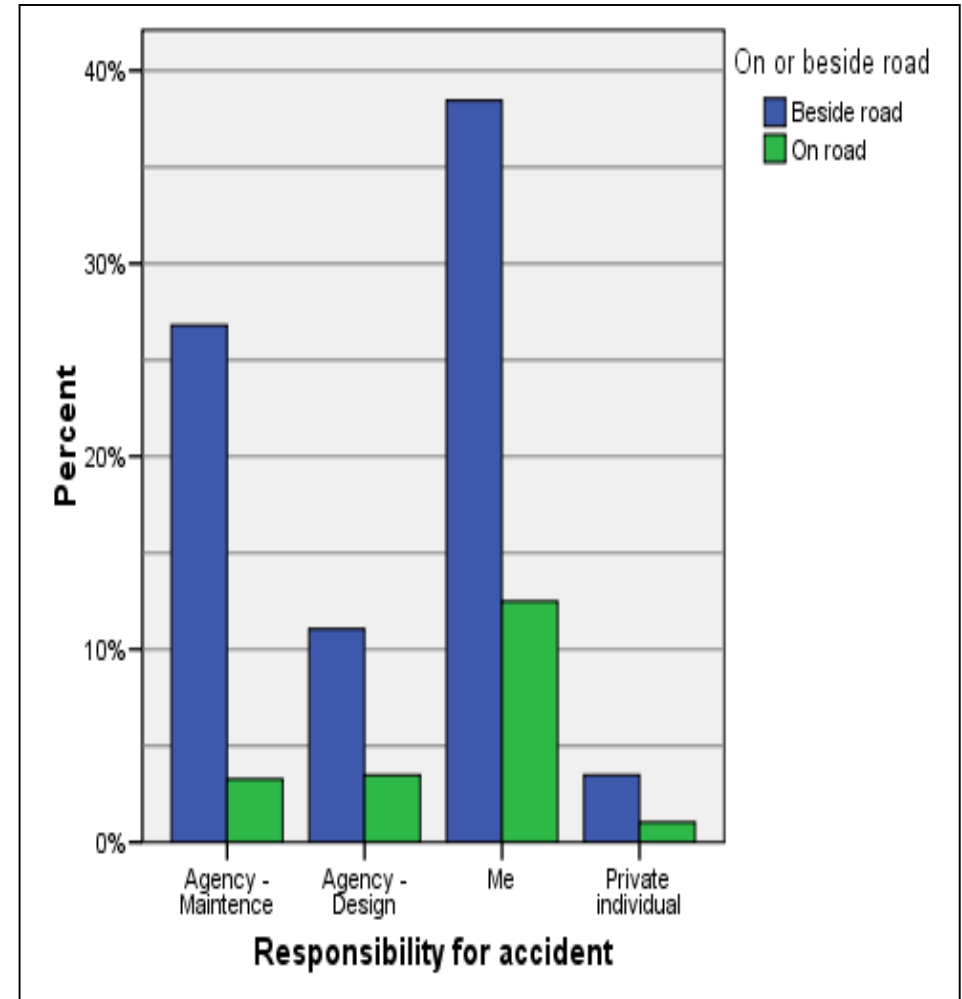
• Lighting

- 13% of accidents occurred where lighting is perceived to be poor.
- These were overwhelmingly in artificially lit areas.
- Indicates that:
 - current artificial lighting may not always be adequate
 - possible hazards may need to be “flagged” in some way if they cannot be removed



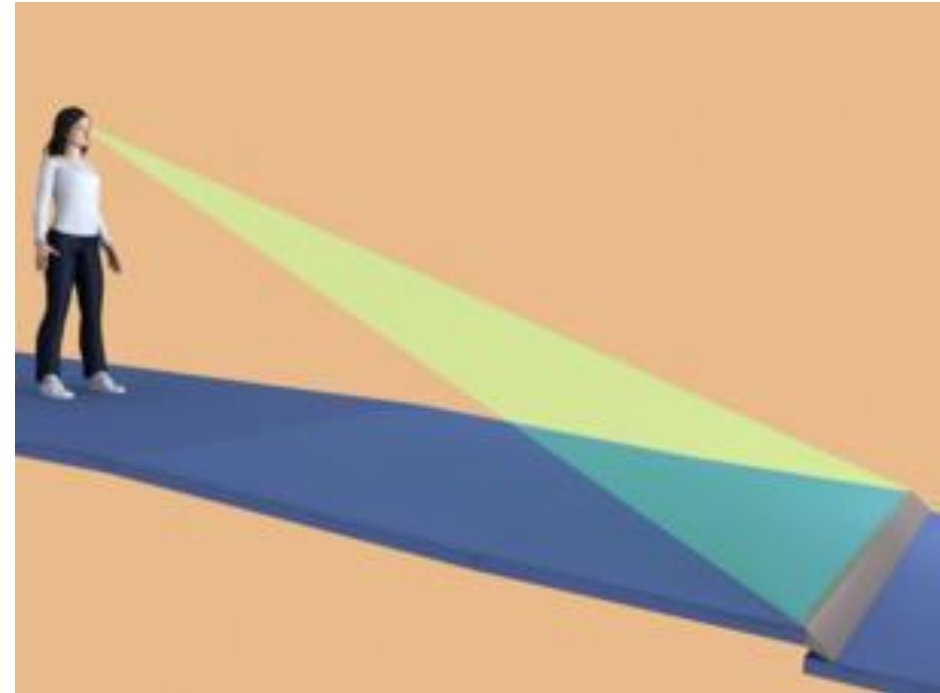
Responsibility and prevention

- Most pedestrians felt responsible for the accident and its prevention.
- 51% thought they had the best chance of preventing the accident and 38% thought they were its main cause.
- Seventy-six people felt responsible for an accident while believing the main prevention mechanism related to maintenance, design or another person.
- May contribute to underreporting.



• The role of predictability

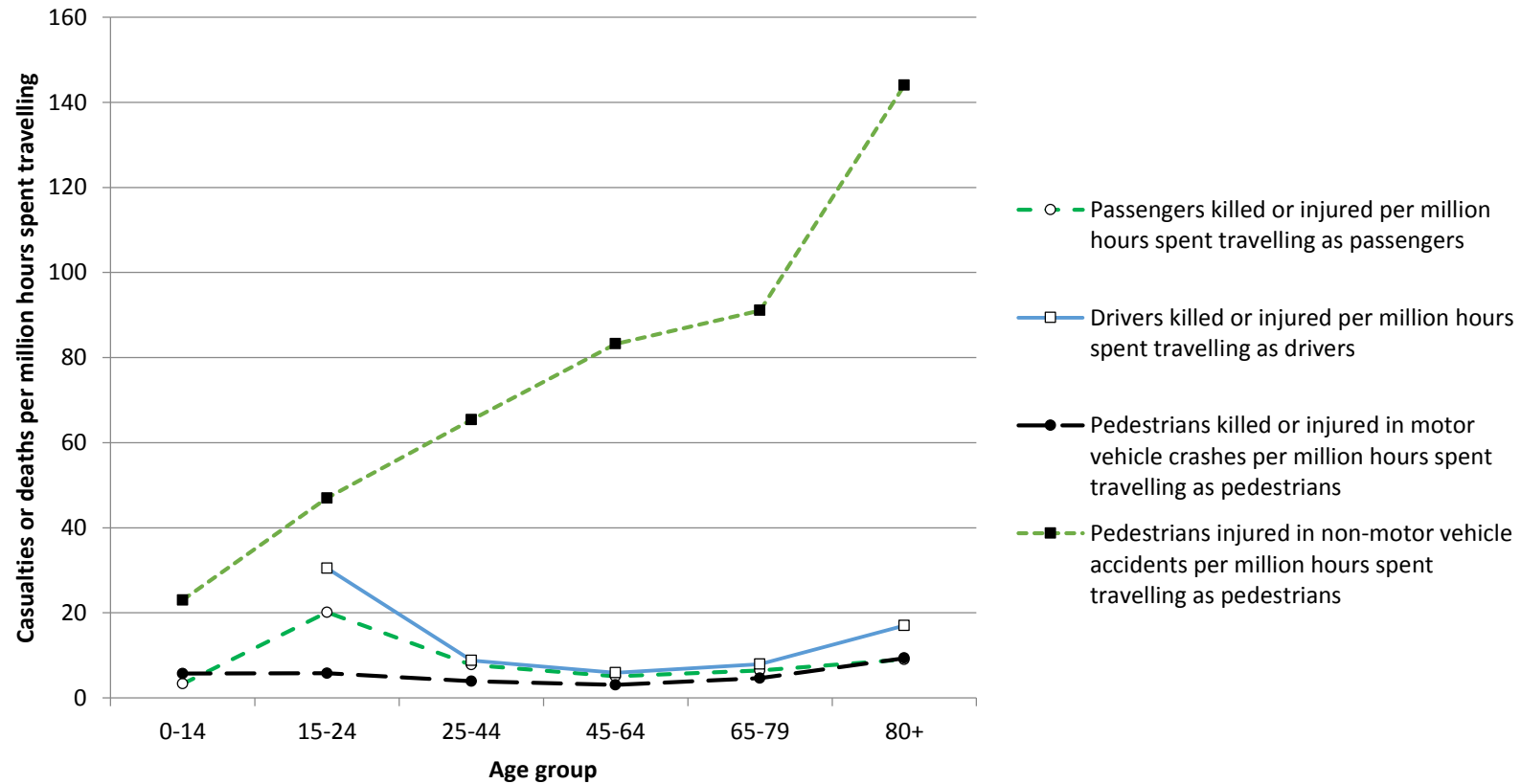
- Predictability problem:
 - occurs when there is a disparity between the perceived predictability of the environment and the actual continuity of the environment
- Self-explaining footpaths:
 - “no surprises” environments
 - intuitively encourage safe user behaviours



• Complexity of pedestrian injury factors

- The causes of a pedestrian slip, trip or fall are typically complex and certainly not solely a function of the environment.
- The survey indicates that people carry loads, may be fatigued, engage in other activities or hurry through their walking environment.
- These factors can block their vision, distract them from their task and alter their gait.
- Therefore, environments that are not forgiving to pedestrians that may be fatigued, visually impaired or distracted etc are more likely to cause injury than those which are more forgiving.

· Pedestrian injury/death rates per million hours walked



• Pedestrian injury related to PT journeys

- Pedestrian journeys often involve a PT leg.
- Injuries to people on PT or entering or exiting PT are not reported through the tradition methods.
- The next slide looks at ACC claims related to various types of PT.

ACC database search by claim and transport type

Table 1. Number of new claims by transport type text term : 2009-2014

	2009	2010	2011	2012	2013	2014
Bus	1,114	1,080	1,059	1,123	1,238	1,395
Train	98	129	120	138	129	148
Ferry	37	35	43	41	56	44
Tram	7	9	6	8	9	12
Carriage	7	6	9	7	7	11
Total by year	1,263	1,259	1,237	1,317	1,439	1,610

Table 2. Transport type by text search for activity prior Getting On/Off or In/Out of : 2009-2014

	2009	2010	2011	2012	2013	2014
Bus	719	751	757	817	922	1,007
Train	66	90	78	95	97	96
Ferry	21	25	26	25	35	33
Tram	5	5	5	7	8	11
Carriage	3	2	1	5	2	4
Grand Total	814	873	867	949	1,064	1,151

• **The future**

- With predicted increases in the older population, vulnerable older pedestrians will be more numerous.
- This is likely, all other things being equal, to increase pedestrian injury.

▸ Recommendations

- That:
 - The prevention and mitigation of non-motor vehicle pedestrian injury be formally recognised as an integral and important part of road safety.
 - At local, regional and national levels, all road safety strategies, safety management systems and associated action plans have regard to these pedestrian injury events.
 - Research be instigated to provide improved data and analysis tools to prioritise such countermeasures vis-à-vis other uses of road safety funds.



• Acknowledgement

The NZ Transport Agency provided the funding for this work