

# High Visibility and Cycling - Balancing Safety and Culture



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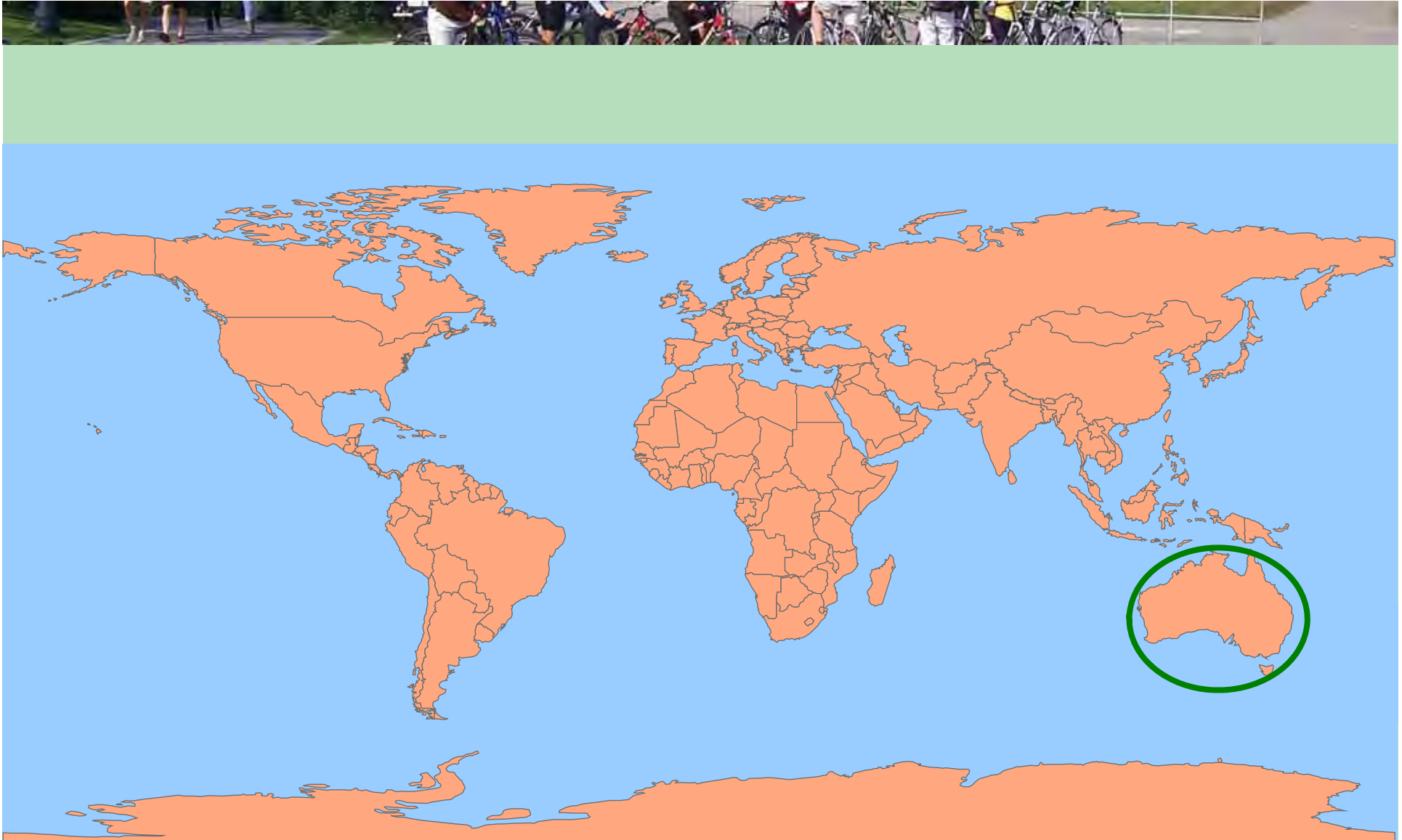
# Presentation Outline



- Cycling in NZ
- Risk and Cycling
- Coroner's Inquests
  - Recommendations
  - Public Opinion
- High-Visibility Clothing
  - Evidence for wearing it
  - Practical Aspects
  - Potential Societal Implications

*...with a bit  
of research  
along the  
way...*

# So you're from Australia, right?

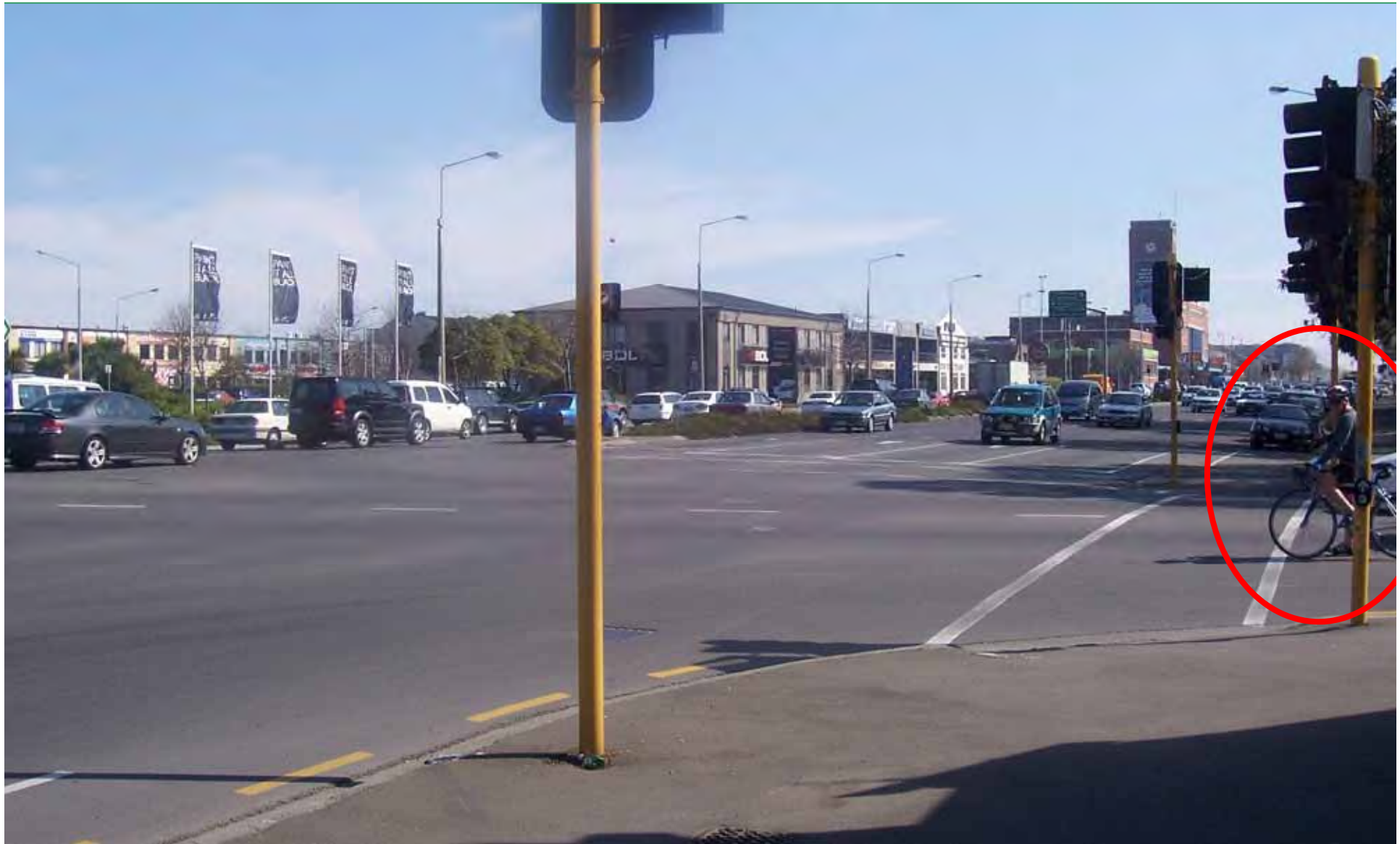




# The great New Zealand Image...

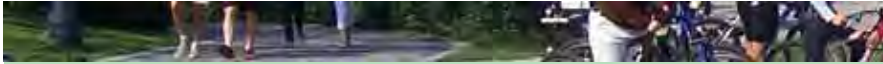


# The great New Zealand Reality...





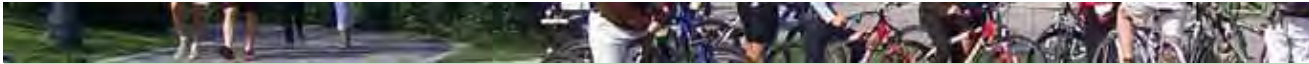
# New Zealand



- 4.5 million people
  - Low population density
  - Very urbanised
- Typical Western Development
  - Motor Vehicles
- ~1.4% of Trips by Bike
  - ~3% commuting



# Cycling Safety in New Zealand



- ~10 Cycling Fatalities/yr
  - ~1000 Reported Injuries/yr
- Widespread perception about "danger" of cycling



*Sporadic cycling facilities*





# Isn't Cycling Unsafe?

*"Peak hour urban traffic is dangerous for cyclists... The best protection for cyclists is prohibition from peak hour urban roads"*

*"Really, you must have a screw loose to want to ride a bike on today's roads, you just don't know what nutter is behind the wheel."*

## Onlooker saves cyclist dragged under truck

CAROLINE KING

Last updated 08:55 30/07/2013

48

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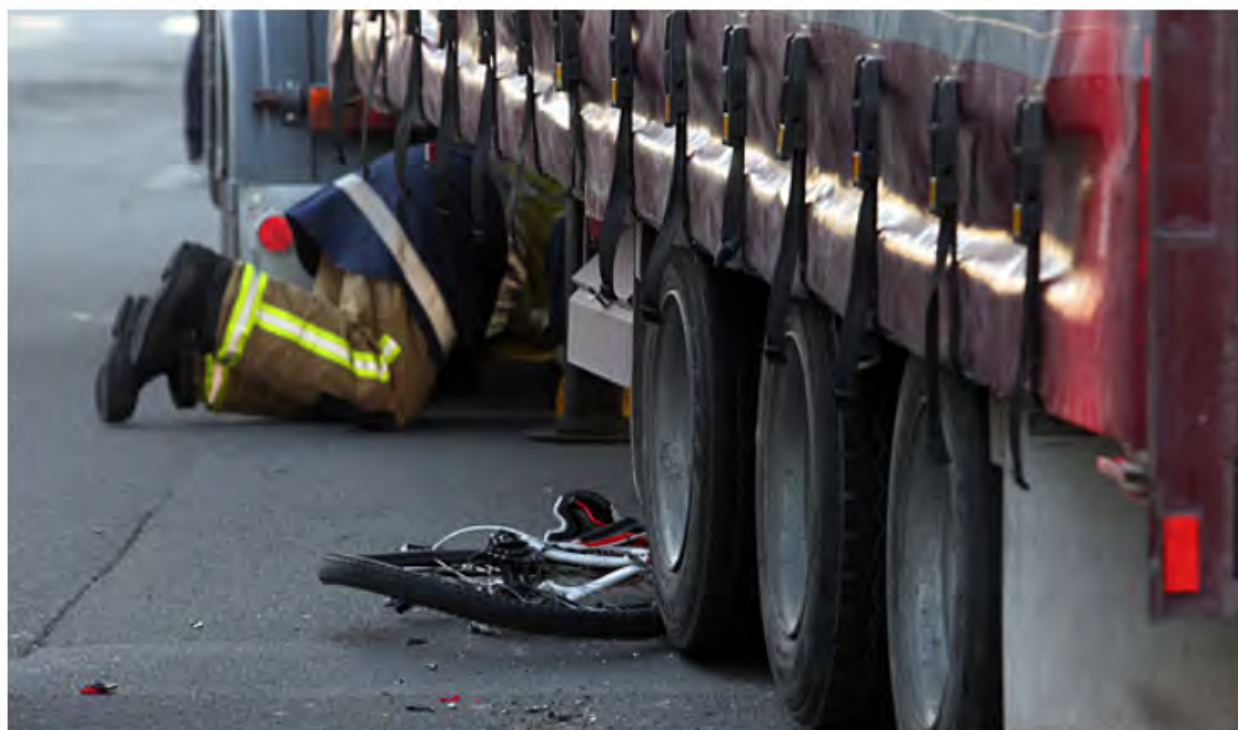
312

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DEAN KOZANIC/Fairfax NZ

CRASH: Christchurch roofer Richard Mitchell says the truck dragged the cyclist up to 30 metres. The cyclist, in his 30s, is in an induced coma in Christchurch Hospital.



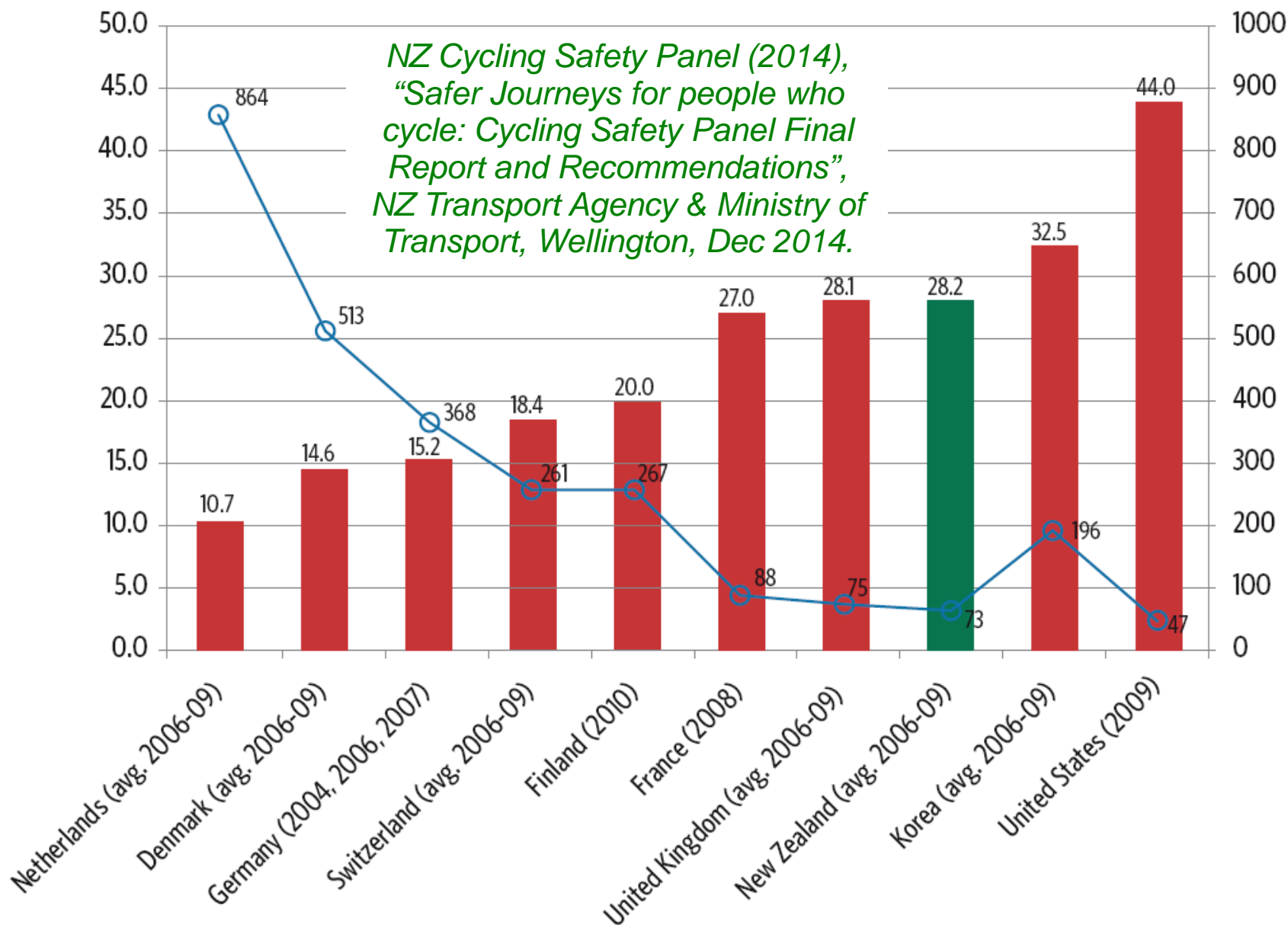
# Risk of Cycle Crashes



- **Perceived** Risk influenced by:
  - Regular Negative Media
  - Lack of Familiarity with Cycling by many
  - Can't Control Behaviour of Other Road Users
  - Immediacy of Injury/Death
- **Actual** Calculated Risks in NZ:
  - 1 Cycling Death per **2.5 million hrs** cycled
  - 1 Serious Injury for every **20,000 hrs** cycled
  - Health benefits of cycling outweigh risks **20:1**

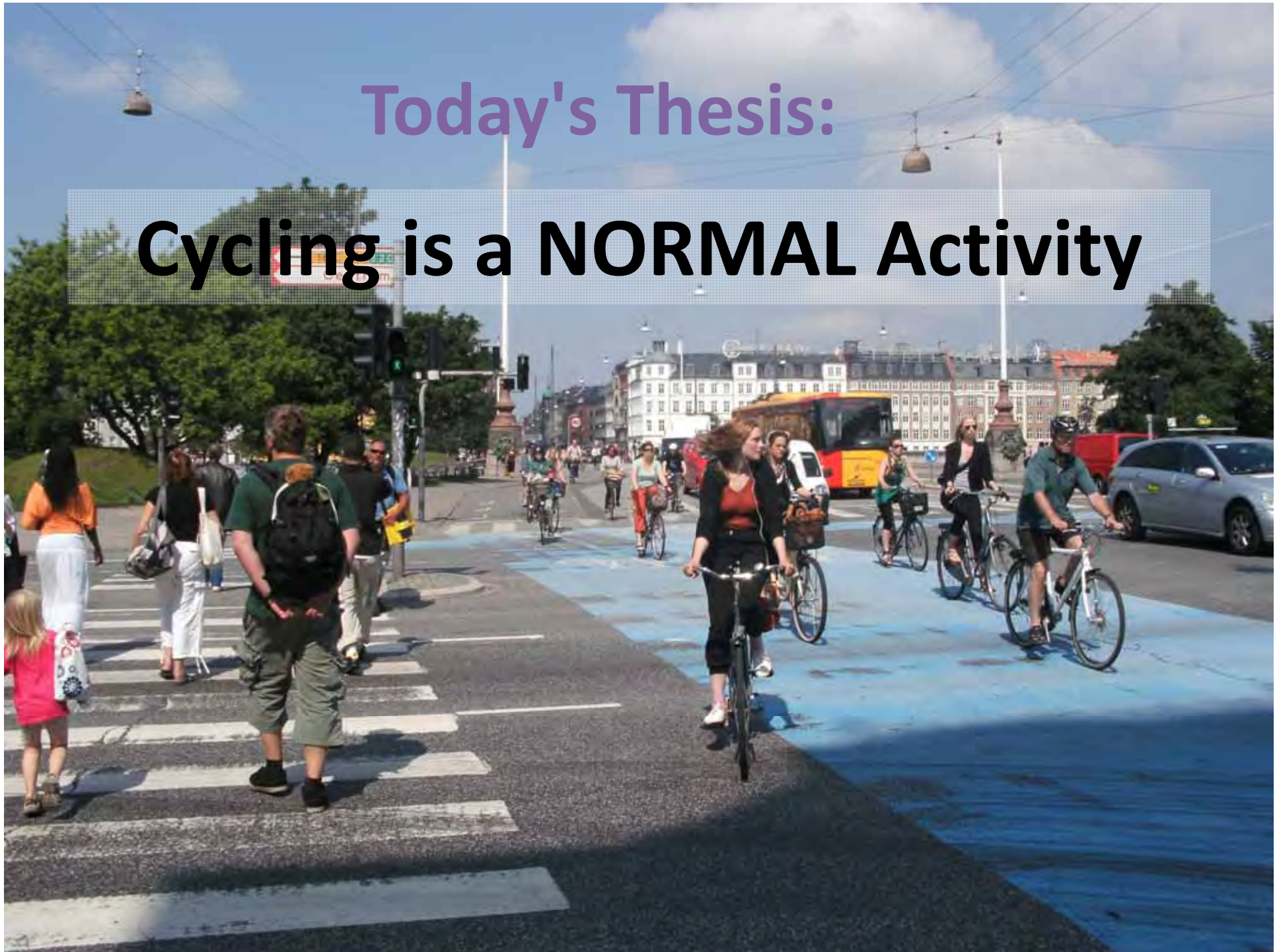
# Bicycle travel per inhabitant per year (km) and Number of cyclists killed per billion km of bicycle travel

■ cyclists killed per billion km travel      ○— travel per inhabitant per year (km)



Today's Thesis:

**Cycling is a NORMAL Activity**





# Genesis

Cyclist killed

Third Morrinsville

November 18, 2010

Friends grieve for 'wonderful' nurse

## Schoolgirl hit amid cycle death spate

Last updated 10:50 18/11/2010

549 comments

Text Size

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DEREK FLYNN

A Blenheim schoolgirl was **seriously injured when she was run over by a truck** while cycling this morning, as the cycling death toll in the past five days rose to five.

The cycling deaths have seen the Cycling Advocates Network renewing calls for drivers to undergo testing every 10 years.

The 12-year-old girl was riding with another girl when she was hit by the truck and trailer, which was carrying a tractor, on State Highway 1 just outside Blenheim about 8.20am.

Blenheim St John Ambulance operations team leader Pete Davidson said the girl suffered serious head, chest and abdominal injuries and was taken to Wairau Hospital.

### FIFTH CYCLE DEATH SINCE SUNDAY

Kay Wolfe, the third cyclist hit by a car near Morrinsville on Sunday has died in Waikato Hospital.

Wolfe, 45, of Gordonton, had been one of 10 cyclists from the Morrinsville Wheelers Cycling Club travelling in a group along the Morrinsville-Walton Rd when a car driven by a 23-year-old woman crossed the centreline on a corner and crashed into the group.

**INJURY:** A school girl was seriously injured after falling under the rear wheels of a truck and trailer unit south of Blenheim on State Highway 1.

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**VIDEO** John Key on cycling deaths (1:28)

- Waterfront cyclist killed in crash named
- Driver forces cyclist off road - lectures him
- Auckland cyclist killed trying to avoid opening door - police
- Spontaneous photo stop ends in tragedy

nzh your views

What needs to be done to make cycling safer?

Share your view »

Read what others think

# NZ Coroner's Inquest Into Cycle Deaths (2011-13)

## Inquest into death of eight cyclists begins

MICHAEL FORBES

*"Would it not be in the interests of the 1.3 million [New Zealanders] who do cycle, to have clothing that would increase the likelihood of them being seen? ...If you get the **irresponsible ones** off the road, wouldn't that be a good thing?"*

Coroner Gordon Matenga, 21/07/2011



Supplied

SAFETY INQUEST: Patricia Fraser was killed while out training for the 100km time trial.

Today's hearing focused on the deaths of Patricia Fraser, 34, who was hit by a careless driver, near Bulls, on November 13 and Rex Dalzell, 75, who collided with a car north of Palmerston North on January 7.

Mr Morgan told Coroner Gordon Matenga that making high-visibility clothing mandatory for cyclists could discourage people from cycling.

# Not the Only Coroner...

## Hi-vis clothes a must for cyclists - Coroner

Last updated 16:11 14/02/2013

232

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823

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A coroner is calling for high-visibility clothing to be compulsory for cyclists after a top road safety cop was struck while cycling in Petone.

*"Turning to the issue of high-vis clothing, it is in my view a **no-brainer**. It should be compulsory for cyclists to wear at all times when riding in public."*

Coroner Ian Smith, 14/02/2013

After investigating the site at the Hutt Road and Petone Esplanade intersection, they "still fall short of making the road safe for cyclists.

"The intersection is in my view a most dangerous area for cyclists to use, no matter how experienced the riders are.

"Cyclists using this cycle/traffic lane area are literally taking their lives in their hands and a complete rethink and design of this area is required."



# "It's Just Obvious!"

## ***Should it be compulsory for cyclists to wear high-visibility clothing?***



*Stuff.co.nz Opinion Poll*

# And Still Making Headlines...

## Cyclist death prompts high-vis warning

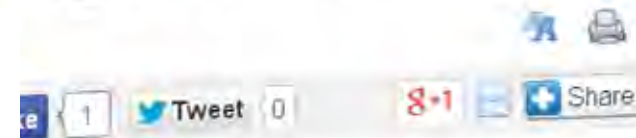
Yes, safety is paramount.

186 votes, 67.6%



No, it makes cyclists look silly. Instead motorists should learn to share the road.

80 votes, 29.1%



*"I recommend that all cyclists when using public roads take all appropriate steps to make themselves more obvious to other road users... including the use of auxiliary lighting and the wearing of high-visibility clothing."*

Coroner David Crerar, 29/05/2014

Coroner David Crerar released his findings into Drummond's death today, confirming she was killed by serious crush injuries to the chest. Crerar said he was satisfied the causes and circumstances surrounding Drummond's death had been dealt with by a district court judge.

# So What's the Evidence on the Effect of Hi-Vis?

- Study of NZ fatalities 2006-14 (~100 people)
  - >Half have no data available on rider clothing

	Seen by Driver	Not Seen / Too Late
Hi-Vis Worn	10	16
No Hi-Vis Worn	5	11

- **No statistically significant effect** of hi-vis on likelihood of being seen beforehand













(O/R = 0.194–2.722, Chi-Sq  $p=0.636$ )

*Koorey G. (2014), "Investigating Common Patterns In New Zealand Cycling Fatalities", IPENZ Transportation Group Conference, Wellington, 23-26 Mar 2014*

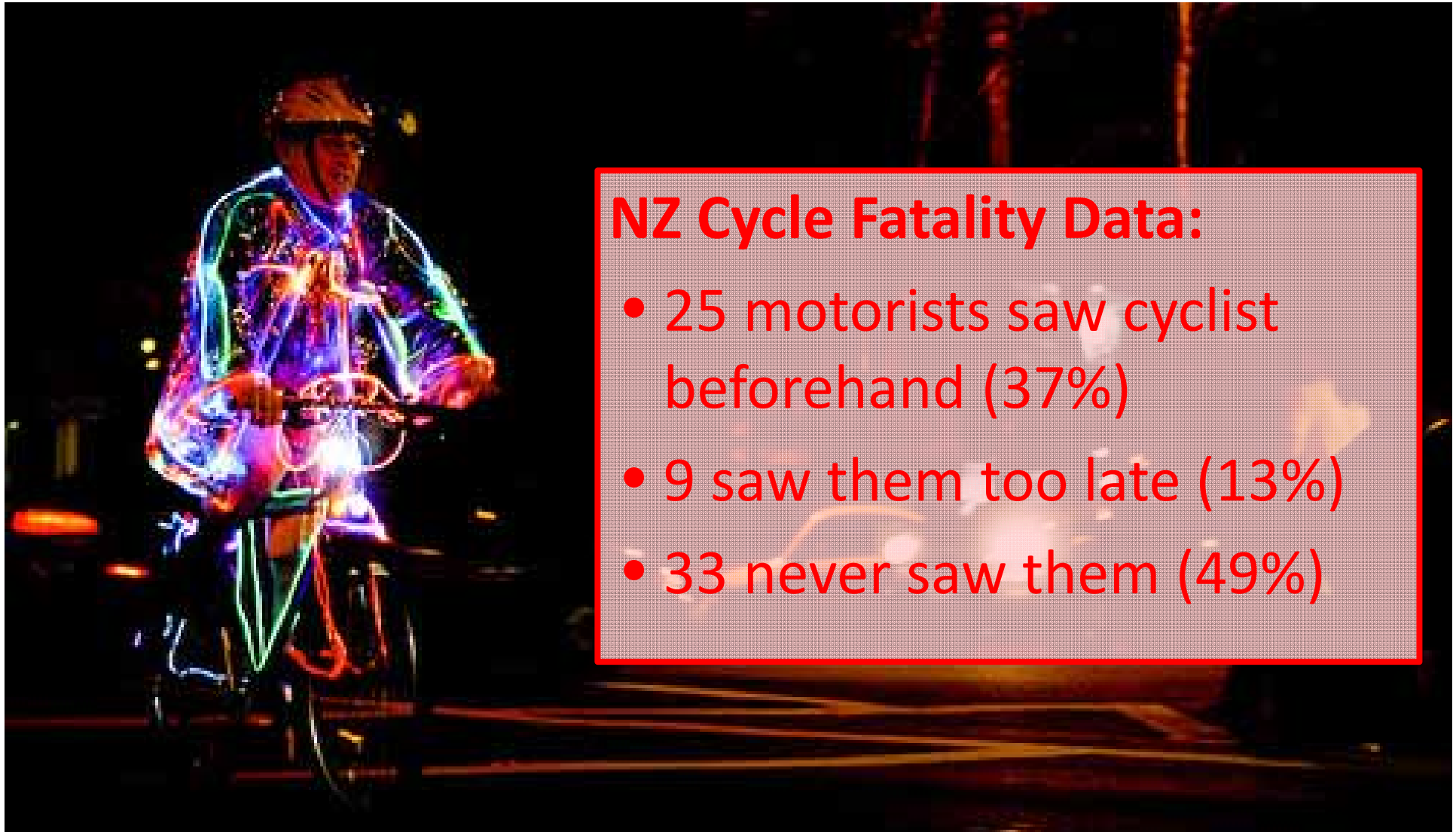


# Other Studies

Thornley <i>et al</i> (2008)	Cyclists who "always" wore fluoro had 8x reduction in crash risk than those who "never"	
Kwan & Mapstone (2009)	No studies on visibility aids vs ped'n/bike crash risk	
Wood <i>et al</i> (2009)	Fluorescent vests were not a significant improvement on black clothing at night	
" "	Retro-reflective strips more effective when attached to knees/ankles than a jacket	
Wood <i>et al</i> (2010)	Not clear whether wearing hi-vis would reduce "look but did not see" crashes	
Washington <i>et al</i> (2011)	"Never wearing bright coloured clothing" correlated with increased crash risk	
" "	Use of fluoro/reflective clothing had no effect	
Miller (2012)	A non-significant increase in the odds of a crash for users of conspicuity aids compared to non-users whilst cycling	
TinTin <i>et al</i> (2013)	No significant difference in hazard ratio when wearing reflective clothing in dark or fluoro colours	
Hagel <i>et al</i> (2014)	During dark conditions, reflective clothing were estimated to increase the odds of a MV collision	

**• No evidence worldwide with regards to the efficacy of a mandatory hi-vis clothing law**

# "Sorry Mate, I Didn't Look for See You"



## NZ Cycle Fatality Data:

- 25 motorists saw cyclist beforehand (37%)
- 9 saw them too late (13%)
- 33 never saw them (49%)

# Is Cycling a Special Activity?





# “Cyclists” vs “People Cycling”



*Koorey G. (2007), “Are You a Cyclist or Do You Cycle? The Language of Promoting Cycling”, NZ Cycling Conference, Napier, 1-2 Nov 2007*



# Perceptions of Risk





# What Counts as "Hi-Vis"?



*Walker et al (2014): Different clothing worn had no effect on the proportion of "close" passes by motorists*



# Something else to Blame?

## Woman sues family of boy she killed in car accident

April 28, 2014

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Rosa Prince



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**New York:** A Canadian motorist who killed a 17-year-old cyclist in a late-night collision is suing his family for emotional distress, claiming **he was to blame for the accident because he failed to wear a high-visibility vest.**

In the lawsuit, Sharlene Simon says her "enjoyment of life has been irretrievably lessened" since the accident in which Brandon Majewski was killed and his friend Richard McLean, 16, seriously injured in October 2012.

She is now suing both teenagers, along with Jake Roberts, 16, who was also knocked off his bike in the collision near the town of Innisfil, Ontario, but was unhurt, for more than 1 million Canadian dollars (\$976,000).



# The Opportunity to Ride Anywhere, Any Time





# Does Hi-Vis always Stand Out?





# Try Telling My Kids to Wear Hi-Vis...



# Talking Past Each Other...

Mandatory Hi-Vis  
is Not Great!

Wearing Hi-Vis  
is Great!





# We've Had This Problem Before...

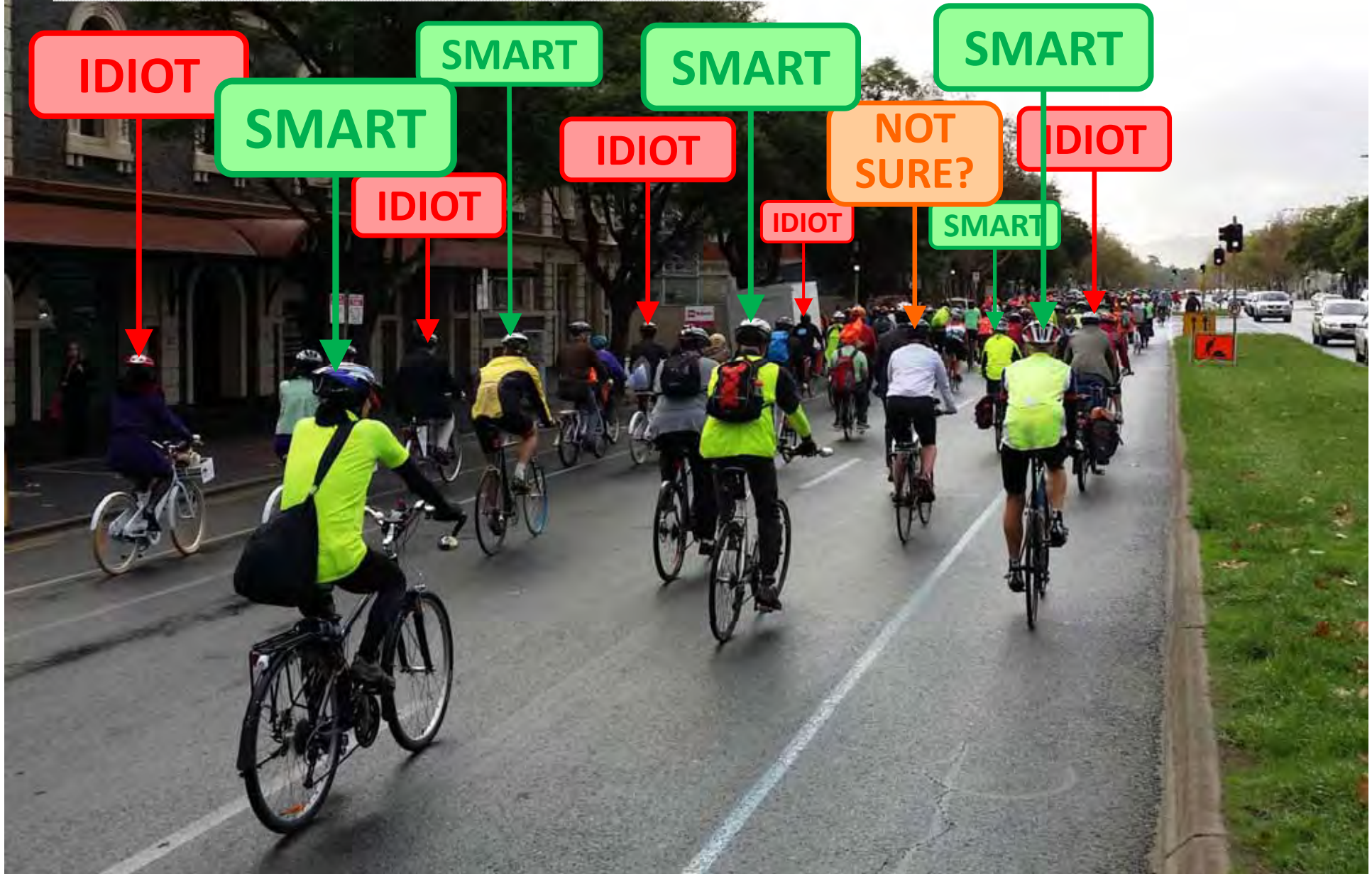
Mandatory Helmets  
are Not Great!

Wearing Helmets  
is Great!



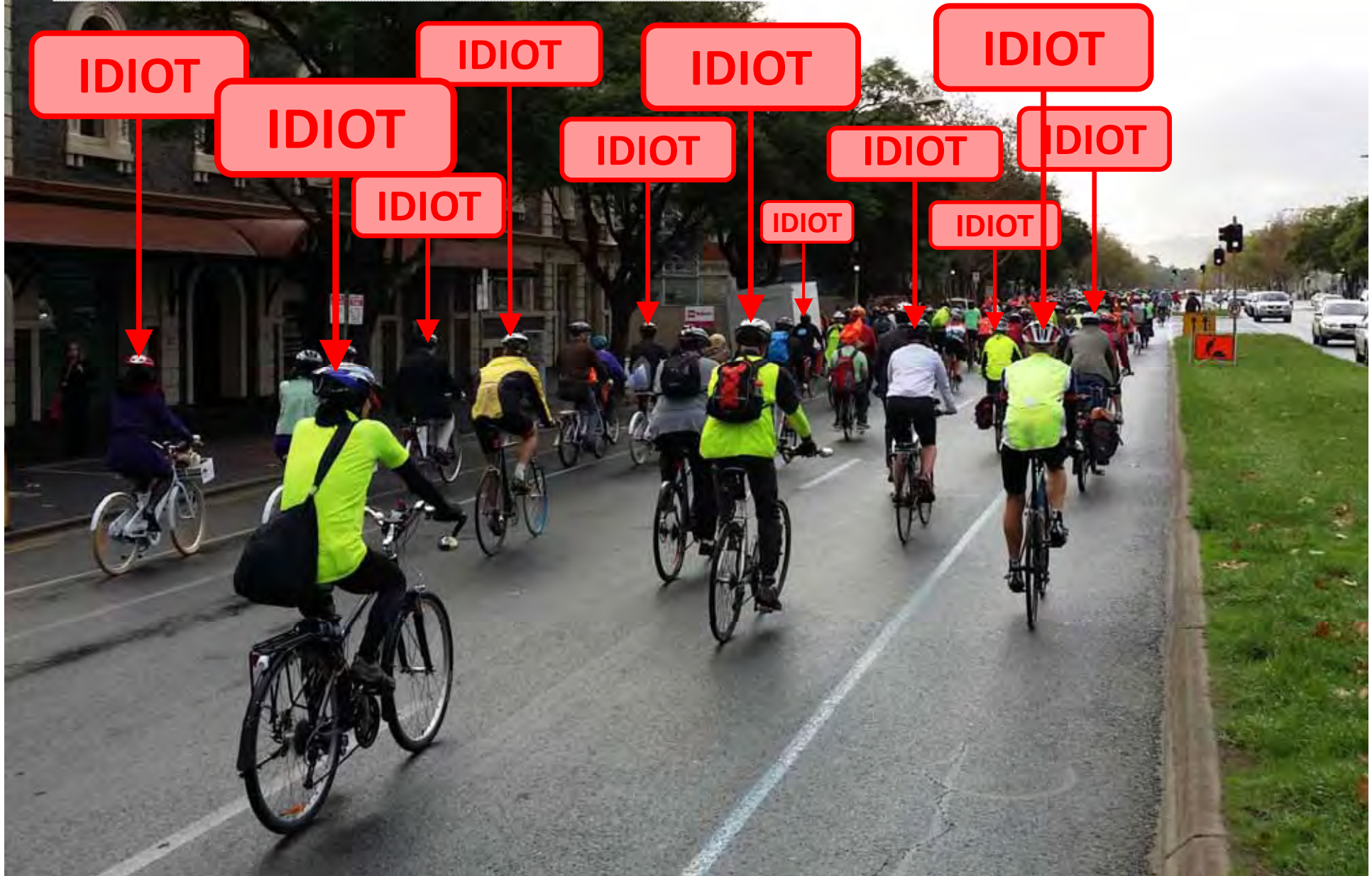


# What Jo Average Thinks...



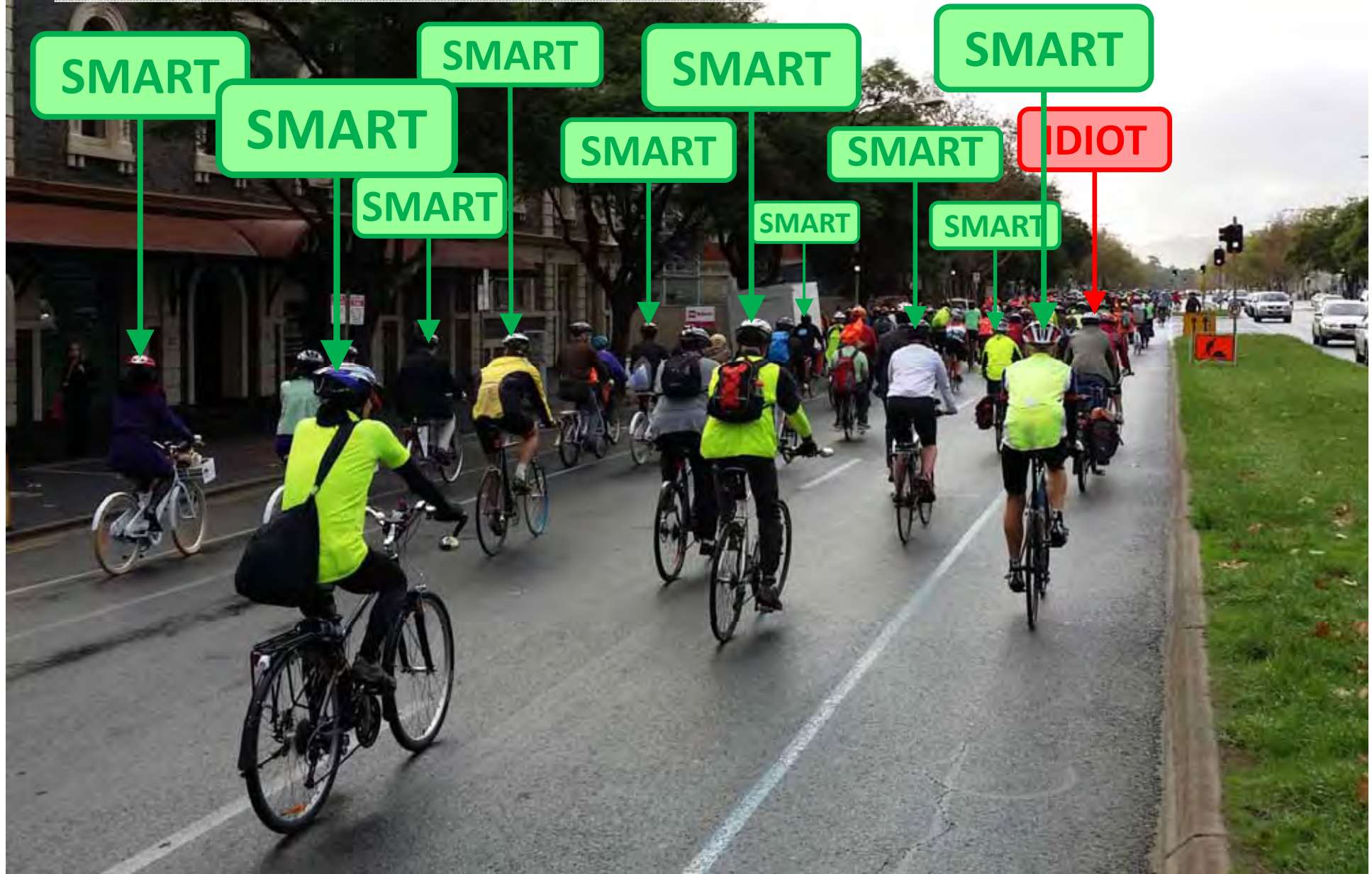


# What Rodney Roadrage Thinks..



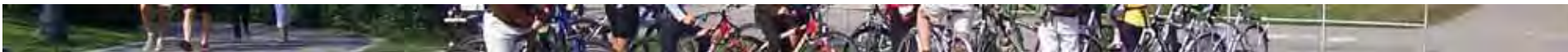


# What We Need To Think...





# A Shameless Plug...



- [www.cyclingchristchurch.co.nz](http://www.cyclingchristchurch.co.nz)



*Continue the Conversation!*

# Thank You!



Any Questions?

- *Glen.Koorey@canterbury.ac.nz*