Cycling in a rebuilt Christchurch: evidence and advocacy

Prof Simon Kingham
Professor of Geography and Director of the GeoHealth Laboratory

PHA Canterbury and West Coast Branch AGM
August 20th 2014
Who am I?

- University Professor
  - Teacher and Researcher
- Local Transport involvement
  - Regional Transport Committee
- Christchurch resident for 14 years
- Commuter & utility cyclist
- Husband and father

Evidence based cycle advocate
Talk today

• Context
• Why do we want more people to cycle?
• How do we get more people to cycle?
• How do we advocate for more investment for cycling?
Context

Percent Cycled to work, Christchurch

- 1986
- 1991
- 1996
- 2001
- 2006
- 2013
Roger Geller’s 4 types of cyclist

- Strong & fearless
- Interested but concerned (50 - 60%)
- Not able or not interested (~33%)
- Enthused & confident

http://www.portlandoregon.gov/transportation/44597?a=237507
Peak car

Passenger-kilometres by private car and light trucks, 1990 – 2009, index (1990 = 100)

- Germany
- Australia
- United States
- France
- Japan
- United Kingdom

Oil price shock and start of crisis
Peak car

... especially younger people ...

Brian Rudman: End of the road for the sacred car?

As New Zealand's largest roading project roars ahead, people are using their vehicles less and their legs more
Peak car and age

Annual vehicle miles per driver by age, USA, 1995, 2001, 2009
WHY DO WE WANT MORE PEOPLE TO CYCLE?
Climate change

- Domestic transport contributes 42% of total carbon dioxide emissions in NZ
- 17% of ALL carbon emissions are from motor vehicles
Traffic pollution:

• Kills 45 adult Cantabrians per year
• Causes 47,000 restricted activity days among Canterbury
• From PM$_{10}$ costs $126m per year in Christchurch ($164m Canterbury)

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Fuel efficiency

Characteristics of New Light Vehicles over Time

[Graph showing trends in horsepower, weight, fuel economy, and 0-60 time over Model Years 1980 to 2010]

www1.eere.energy.gov/vehiclesandfuels/facts/m/2011_fotw690.html
Road space and congestion
• National $12.3bn funding package (2012-15)
  – Roads especially new state highways (Roads of National Significance)
  – 0.43% for walking & cycling

“this means the funding available for public transport, cycling and walking networks ... will be heavily constrained for much of the early recovery period”

- Christchurch Transport Strategic Plan
Economic sense

• NZ research: “transforming urban roads over the next 40 years, using best practice physical separation on main roads and bicycle-friendly speed reduction on local streets, would yield benefits 10–25 times greater than costs” (Macmillan et al, 2014)

• A 3 yr intervention in 6 cycling demonstration towns found £2.59 benefit for every £1 invested in decreased mortality alone (Sloman et al, 2009)

• Review of sixteen economic evaluations of the health effects of transport interventions that increased walking and cycling found that mean benefit-cost ratio of 5:1 (Cavill et al, 2008)
35% decrease in injuries to all street users (8th Ave)

58% decrease in injuries to all street users (9th Ave)

Up to 49% increase in retail sales (Locally-based businesses on 9th Ave from 23rd to 31st Sts., compared to 3% borough-wide)

New York City Dept of Transportation, Measuring the Street: New Metrics for 21st Century Streets
Average Customer Expenditures by Mode of Travel and Type of Establishment

Clifton K, 2012, Business Cycles: Catering to the Bicycling Market, TRB 280, 26

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**Note:** N = number of respondents.
Safety


*Source*: Danish Ministry of Transport (2007); Department for Transport (2007); German Federal Ministry of Transport (2007); Netherlands Ministry of Transport (2007); U.S. Department of Transportation (2007)

**Figure 10.** Fatality rates and non-fatal injury rates in the Netherlands, Denmark, Germany, the UK and the USA (2004–2005).
Safety

Source: Netherlands Ministry of Transport (2007)

**Figure 12.** Inverse trends in cycling fatality rates and annual kilometres cycled per inhabitant in the Netherlands (1950–2005).

Pollution exposure

Source: Simon Kingham and Woodrow Pattinson
Pollution exposure

Source: Simon Kingham
Communities that promote sustainable and active can:

• Reduce disparities between the rich and poor
• Promote good neighbourhood
• Enable poor to gain better access to healthy food
• Lead to decreased crime

Happier people

Bicycling the 'happiest' form of transport

A study found that people are in the best mood while they are bicycling, compared to any other mode of transportation.

Morris EA and Guerra E, 2014, Mood and mode: does how we travel affect how we feel? Transportation DOI 10.1007/s11116-014-9521-x
"New Zealand is in the grip of a global obesity epidemic, the future costs of which will be enormous, potentially unaffordable for the health system."

Higher taxes on vehicle fuel could also go to expand walkways and cycleways – with a study from Oregon suggesting that cycle infrastructure is very cost-effective.

Not only does increased active transport help prevent and control obesity – it may also be good for mental health, reducing air pollution, and reducing ..... high green house gas.”

- Assoc Prof Nick Wilson, Otago Uni
NZ Medical Association report (June 2014) recommends:

- Doctors should give obese healthy living advice and tell them to exercise
- Expand nutrition and exercise programmes
- Stop unhealthy food marketing aimed at children
- Tax sugary beverages
- Bring in a consistent and easy-to-use food labelling system
- Food and nutrition guidelines for school canteens and hospitals
- Nutrition part of school curriculum
- Licensing of fast food premises
- Make urban environments support physical activity
- Possibly expand health target for pregnant women to all
What level of impact

What level of impact

- Obesity costs NZ $622m per year* in health costs alone (+ $98-$222m lost productivity)#
- That equates to $64m in Christchurch for health costs (+ $10-$23m in lost productivity)

* Based on 2006 figures
What level of impact

Obesity rates – OECD

By country

2010 or latest available data

- United States
- Mexico
- Hungary
- New Zealand
- United Kingdom
- Chile
- Australia
- Canada
- Ireland
- Luxembourg
- Czech Republic
- Iceland
- Finland
- Greece
- Estonia
- Slovak Republic
- Turkey
- Slovenia
- Israel
- Spain
- Poland
- Portugal
- Germany
- Belgium
- Denmark
- France
- Sweden
- Austria
- Netherlands
- Italy
- Norway
- Switzerland
- Korea
- Japan
- OECD total

Source: OECD
What level of impact

If Christchurch’s obesity rates dropped from 33% to:

• 11.4% (Netherlands); we’d save over $50m p.a.
• 20% - we’d save over $30m p.a.
• 25% - we’d save over $20m p.a.
HOW DO WE GET MORE PEOPLE TO CYCLE?
Assessment of the type of cycle infrastructure required to attract new cyclists

• Type of infrastructure needed to attract ‘new’ cyclists

• Investigate the barriers and motivations for cycling
  – Perceived danger is main barrier!
  – Physical separation was key

If you build it, they will come: New study shows that bike lanes increase ridership

Cycling is dangerous?

Other barriers
HOW DO WE ADVOCATE FOR MORE INVESTMENT FOR CYCLING?
Advocacy

• Economise evidence
  – But, ... fragmented government ... Local Council spends money, MoH/CDHB reaps the benefit

• Speak up
  – People listen to health professionals!

• Be persistent and consistent

• Cycle chic
  – Make cycling cool!
The bike revolution and its backlash

From bike lanes to Citi Bike and beyond, how the two-wheeled insurgency resembles other social uprisings

BY LIONEL BEHINER / NEW YORK DAILY NEWS / Friday, May 10, 2013, 4:15 AM

The bike wars are still at fever pitch, with mayoral candidates tripping over themselves in the rush to reverse some of Mayor Bloomberg’s pro-cyclist policies.

Over the last four years, the streets of New York City have undergone a transformation: More than 250 miles of traffic lanes dedicated for bicycles have been created, and several laws intended to promote cycling have been passed.

The efforts by the Bloomberg administration have placed the city at the forefront of a national trend to make bicycling viable and safe even in the most urban of settings. Yet over the last year, a backlash has taken hold.
**Bikelash!**

**Calls for calm as bike lane backlash gains momentum**

**TIM WILLIAMS**

**CITY EDITOR**

The parents of tragically killed national cyclist Amy Gillett are pleading with Adelaide City Council not to buckle to a growing campaign against separated bike lanes.

Councillor Mark Hamilton will push for the Frome St bikeway to be ripped up in the wake of a backlash from motorists and traders over the loss of traffic lanes and parking spaces.

A backflip on the project would be a major embarrassment for the council, which is a partner in the Velo-city international cycling conference at the Convention Centre next month.

Mary Safe, whose daughter Amy Gillett was hit by an autocar, said she had never previously thought it would be such a widespread issue

**Congestion sparks push to reinstate bike lane for cars**

**TIM WILLIAMS**

**CITY EDITOR**

Traffic lanes cut for the Frome St bikeway will be reinstated at peak times if Adelaide City councillor Anne Moran has her way.

Two traffic lanes have been reduced to one in each direction to allow for kerbside bike lanes. They are separated from traffic by wide concrete blocks and planter beds that motorists will be able to park between.

Cr Moran said the blocks and planter beds should be removed to create peak hour clearway lanes for cars, where parking would be allowed the rest of the day.

The kerbside bike lane would remain separated from cars at all times by a thin concrete strip.

**WHAT WOULD YOU DO TO END THE WAR BETWEEN CARS AND BIKES?**

Share your ideas with us. Go to facebook.com/theadvertiser

The project is causing major delays, while traders have objected to a loss of parking spaces because of the concrete blocks.

Bike SA chief executive Christian Haag said Cr Moran's idea “theoretically could function” but would mean scrapping the new trees and landscaping that were an integral part of the project.
Road cyclist conflict likened to apartheid

KURTIS EICHLER
CITY NORTH MESSENGER

LORD Mayor Stephen Yarwood has compared tensions between Adelaide’s cyclists and motorists to the South African apartheid.

The comment was branded offensive by the chairman of the African Communities Council of South Australia.

Mr Yarwood’s Lord Mayor rival in the upcoming council election has also slammed the comment, made on a podcast, branding it “stupid” and “most unfortunate”.

“I could have sworn apartheid went out in the 20th century,” Mr Yarwood told podcast show Another Boring Night in Adelaide.

“But apparently cyclists are evil and must be rid from the surface of the Earth,” Mr Yarwood told the show. When contacted by The Advertiser, Mr Yarwood said he was not joking or being offensive.

“It wasn’t a joke,” he said. “I was saying that I was pleased apartheid no longer existed and that providing services for all groups is important.

“IT was a blunt statement that apartheid was wrong and that calling for no safe infrastructure for cyclists seems to be a very unfair approach to providing equality and justice.

“If I have offended anyone in the community I am genuinely sorry.”

Simmering tensions between cyclists and motorists boiled over this month ahead of the opening of the controversial Freme St bikeway.

Motorists and prominent business leaders have slammed the separated bike lane, while Adelaide City councillor Mark Hamilton labelled it cycling policy “gone berserk”.

Cr Mark Hamilton – who is running against Mr Yarwood at the November council elections – said the apartheid comment was “most unfortunate.”

“If one is going to make historical references, the Lord Mayor sounds like a crusader from the middle ages,” he said.

“No one is against cyclists at all.”

The chairman of the African Communities Council of South Australia, Mabok Deng Marial Mabok, said the comment was offensive.

Cr Anne Moran said Mr Yarwood’s comments could aggravate tensions between cyclists and motorists.

“The apartheid was a terrible crime against humanity and this is a little,” she said.

Gr Hamilton said he will push to scrap the bikeway.

FRI DAY: BIKE SA MAGAZINE

Adelaide City councillor Mark Hamilton will push for the Freme St bike lane to be scrapped

TIM WILLIAMS CITY EDITOR THE ADVERTISER APRIL 25, 2014 7:48PM

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Flying into Adelaide? Now You Can Rent ACE Cars in Aussie Great Rates Right at the Airport! acercar.com.au/adelaide
So how many people might actually cycle?

• Christchurch commuting 2013 – 7% mode share
• What can we achieve?
• What are the barriers to us reaching Dutch levels – i.e. 30-40% mode share?
Christchurch - Copenhagen of the South?

For
• Plenty of road space
• Flat terrain
• Mild climate
• Many short journeys
• People like cycling
• Some existing infrastructure
• $70m investment

Against
• Dangerous!
• Low population density?
• Our love of cars!
• Limited investment
• Political leadership
• No central govt interest
Final Conclusions

• Investing in cycling is good economically
  – Especially health benefits

• Safety is the main barrier
  – Separation from traffic is the key

• If we provide safe cycling we will see a boom in cycling rates with multiple benefits

• Leadership and political will is needed
  – Local and national
Questions?