Cycling – Providing for this Safe & Efficient Mode of Transport

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Presentation Outline

- Risk and Cycling
- Why Make NZ Cycle-Friendly?
- How to Provide for Cycling?
  - Land Use Planning
  - Lower Speeds
  - Neighbourhood Greenways
  - Oh, and some Cycleways...
- What's Christchurch Doing?

...with a bit of research along the way...
It's not about "Cyclists..."
"People who Cycle"
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

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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
But it's Riskier than Driving, Right?

- Safety comparisons may not always be “comparing apples with apples”
  - Relative amount of time taken by each mode
  - Average distance travelled by different modes
  - Age distributions/"road experience" of travellers
  - Types of road environments/facilities ridden
  - Different crash reporting rates by mode
  - Cumulative "safety in numbers" effect
  - Relative health costs other than road crashes

Sometimes cycling not really more dangerous
Findings from Study into NZ Cycling Fatalities (84 cases, 2006-12)

- ~Half are rural *(but <10% of riding)*
- Half of victims are *aged 50+* *(27% >65)*
- Cyclist fault prevalent at young and old ages
- 30% involve a **Heavy Vehicle** *(bus/truck)*
- 31% occurred on **State Highways** *(17% of km)*
- >Half of drivers *did not see/look* for the rider
- Helmet/Hi-Vis wearing did *not* change the risks
- Most common: Bike struck by passing m.veh
  Then: Rider lost control, went off road, hit obj.
Why Make New Zealand Cycle-Friendly?

- Benefits for People who Bike
  - Improved Health
  - Financial Savings
  - Convenience
  - Independence

- Benefits for **Others**
  - Reduced Congestion
  - Reduced Expenditure for Maintenance/Congestion
  - More Efficient Use of Public Space
  - More Dollars back into Local Economy
Evaluation of a City-Wide Cycle Network in Chch

- Estimated Cost: ~$70 million
- Conservative Benefits: ~$400-450 million
  - Only assumed ~40% growth in cycle numbers
- Estimated Benefit/Cost Ratio: >6:1

- A similar study for an Auckland-wide cycle network (~$600m) produced a BCR of 22:1
- RoNS Motorway projects have BCRs of 0.7-3
  - Total cost ~$9 billion
Land Use is the Best Transport Solution

- LIVE
- WORK
- PLAY

Copenhagen, Denmark
Lower Speeds

Wellington

Hamilton

Lower Speeds
Won't Lower Speeds Increase Travel Times?

- Maybe a little but...
  - Most traffic delay is due to other traffic
  - Most traffic delay occurs at intersections
  - Arterial routes generally aren't affected

- You will gain more economic benefits from:
  - Safety benefits of reduced speeds
  - Health benefits of encouraging more active trpt
  - Retail benefits from encouraging passing trade
  - Property Value benefits due to more liveability

→ More "Efficient" in Other Ways...
How do we make this Happen?

Local research on Effects of Speeds

Rules allowing Lower Speeds

Physical Tools for Lower Speeds

Lower Speeds IN NEW ZEALAND

Technical & Policy Guidance

Public, Political & Technical Support

NOT ENOUGH HAPPENING

Easily accessible Info about all of this

“AAA” Routes: for All Ages & Abilities

www.8-80cities.org
This Means Either...

**SEPARATION**

- At Intersections
- Along Roads

Vancouver, Canada
...Or...

INTEGRATION

with

SLOW...

...LOW...

...or NO Traffic

Vancouver, Canada
Neighbourhood Greenways

aka: “Bike Boulevards” or “Local Street Bikeways”

Vancouver, Canada

Eugene OR, US
Low Speeds and Volumes

Portland OR, US
Traffic Restrictions

Vancouver, Canada

Eugene OR, US
Bicycle Bypasses

Vancouver, Canada
Major Road Crossings

Portland OR, US
Major Road Crossings

Vancouver, Canada
Separated Bikeways

Copenhagen, Denmark

Munich, Germany

Melbourne, Australia

Vancouver, Canada
How to Separate

- Concrete Islands
- Small raised Delineators
- Raised Kerbs
- Grass Berms
- Vertical Posts
- Parked Cars
- Planter Boxes
- Painted Hatching

Or a combination...

Brisbane, Australia
Already Trialling Separation Here

Try things out First using a “PPP” Approach...

- **PAINT**
  - Portland OR, US

- **PLANTERS**
  - Vancouver, Canada

- **POSTS**
  - Melbourne, Australia

  (and PARKING)

  - Copenhagen, Denmark
The Rise of Protected Bike Lanes in North America

Separated from traffic by parked cars, plastic posts, curbs, and even planters, the number of protected bike lanes doubled in the US in 2012 and is expected to nearly double again by the end of 2013.

- **Vancouver, BC**: 50%, 3.7 miles (6.8km)
- **Montreal, QC**: 72%, 40.3 miles (64.7km)
- **Chicago, IL**: 55%, 27 miles (43.2km)
- **San Francisco, CA**: 115%, 6.8 miles (11km)
- **Philadelphia, PA**: 95%, 11.3 miles (18km)
- **New York, NY**: 190%, 44.5 miles (71.6km)
- **Washington, DC**: 200%, 6.5 miles (10.5km)
So What's Christchurch Doing?

- Developing new cycle design guidance
- Spending a lot of Money!
  - 13 Major Cycleway Routes + "Quick Wins" programme
  - $70 million over 5 years
  - $9 million Coastal Pathway
- Creating a cycle-friendly central city (CERA/CCDU)
Chch Cycle Design Guidelines
Major Cycleway Routes
A Variety of Treatments...
Central City Routes

Key cycling routes in the central city
Now on Campus...
ROAD USER WORKSHOP
Thank You!

Any Questions?

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Effect of Cycle Lanes on Numbers & Safety

- J. Parsons (MEngSt 2012)

Results: Effect of Bicycle Facility Colour

- E. Mangundu (MEngSt 2009)

Effect of Traffic Calming on Safety

Crash Analysis from 19 Sites (J. Mao 2009)

- Overall Trend: A **16% reduction** in crashes per year
- Despite general increase in crashes on local Chch roads

**Effect of Traffic Calming on Safety**