Assessment Of The Effectiveness Of Narrow Separators On Cycle Lanes

Dr Glen Koorey
University of Canterbury

The Problem
- Motorist encroachment of Cycle Lanes
  - Safety concerns by existing/would-be cyclists

Previous Work
- Wide separators have been trialled and researched in Victoria, Aust
  - Effective in keeping motorists out of cycle lane
  - Make cyclists feel safer
- Wide separators take up 0.7 m of road cross section
  - What if there isn’t that much width to spare?

Product Investigated
- "Riley Kerb" Separators
  - Combine with flexible Bollard if required

Sites Selected (in Christchurch)
- Site 1 – Kotare Street
  - Inside of curve
  - 12,000 veh/day
- Site 2 – Strickland Street
  - Approach cycle lane at signals
  - Inside shared through/left lane
  - 8,000 veh/day

Co-Authors
Axel Wilke
ViaStrada
Lead researcher

Judith Aussendorf
Univ. of Canterbury
Postgrad trpt student

Client: VicRoads
Local Support: Chch City Council
Survey Method

- Video Monitoring of Road User Behaviour
  - Chch CC Camera Van
- Determine level of Motorist Encroachment
  - Before/After Installation

Kotare Street

- Installed 9 Riley Kerbs
  - On Cycle Lane line
  - 1.4 m at narrowest point
- Report of a near-crash
  - Retrofitted 1 Flexible Bollard prior to "After" survey

Concluded that this should always be done when cycle lane narrow / cycle speeds high

Kotare Street – Driver Behaviour

![Graph showing encroachment comparison between Before and After surveys.]

Kotare Street – Cyclist Perception

- 37% said bike lane too narrow

![Survey results showing percentage of cyclists feeling safe or unsafe.]

Kotare Street – Feedback

- "The post is the main thing to make the difference."
- "They made me more aware of my driving, and how easy it is to cut into the cycle lane."
- "Any infrastructure that makes motorists think about cyclists is good."
- "This setup actually makes me feel more boxed in."
- "I feel a bit safer."
- "The separators are bumpy. First time, I nearly ran into the bollard."
- "I'm a downhill skier, so like to clip the post with my handlebars when I come past."

Strickland Street

- 1st driver survey (Before)
  - Installed 6 Riley Kerbs at approach to inters'n
    - On Cycle Lane line
    - 1.8 m wide Cycle Lane
- 2nd driver survey (Kerbs only)
  - Effectiveness was insufficient, so 3 flexible bollards retrofitted
- 3rd driver survey (Kerbs and Posts)
Strickland Street – Driver Behaviour

- Significant change in driver behaviour through Riley Kerbs only, but insufficient

Strickland Street – Cyclist Perception

- Comments – Riley Kerbs alone did not prevent motorists queuing in bicycle lane
- With Bollards, cyclists generally satisfied:

Strickland Street – Project History

- Christchurch City Council previously considered widening intersection
  - Separate lane for left turners
  - Prevent “left-turn hook” of thru-cyclists
  - Rejected as too expensive ($250k)
- Current setup is effective
  - Cyclists happy, possibly more so than previous proposal
  - Modification costs <$2k

Learnings – Kotare St

- 9 Riley Kerbs + 1 Bollard
  - Successfully stops drivers from cutting corner
  - Cycle lane should have been widened; too narrow at 1.4 m
  - Apart from comments on narrowness, cyclist perception is good
  - In midblock, Bollard a necessary tool to highlight Riley Kerbs

Learnings – Strickland St

- 6 Riley Kerbs only
  - Change in driver behaviour not sufficient
  - Mixed feedback from cyclists (>60% positive)
- Retrofit 3 Bollards
  - Drivers physically prevented from using cycle lane approaching intersection
  - Mostly positive cyclist feedback
  - Very cost-effective measure at intersections

Thank You!

Any Questions?