Small changes, big impacts: reimagining roundabouts for people and safety

Ann-Marie Head
Abley

Gemma Dioni
Christchurch City Council

Why roundabouts? Why now?

- Roundabouts are widely recognised as one of the safest intersection forms for motor vehicle occupants
- They reduce severe crashes by eliminating high-speed, right-angle and head-on conflicts.
- But… these safety benefits do not always extend to people walking and cycling

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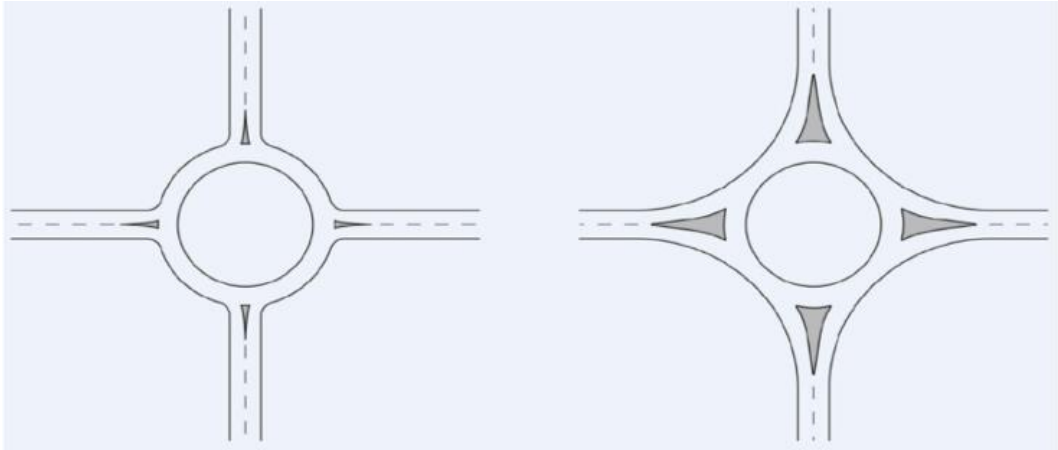
The urban roundabout problem

- Many roundabouts were designed to prioritise traffic efficiency over low-speed environments
- Approach speeds well above survivable Safe System thresholds for people outside vehicles
- Are missing or have poor crossing facilities for pedestrians
- Leave cyclists to fend for themselves



Radial design

Tangential design

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Christchurch Urban Roundabout Programme

- City-wide retrofit programme commenced in 2023
- Identified through:
  - Crash history
  - Proximity to schools and activity centres
  - Network function
- 6 roundabouts reviewed in this study of the programme

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What does retrofitting involve?

- Make use of existing infrastructure
- Physical measures to reduce vehicle speeds
- Avoiding extensive (and often expensive) stormwater/drainage changes
- Filling gaps in facilities for people walking, scooting and cycling
- Messaging to highlight other users

- Great for constrained budgets!

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Treatments

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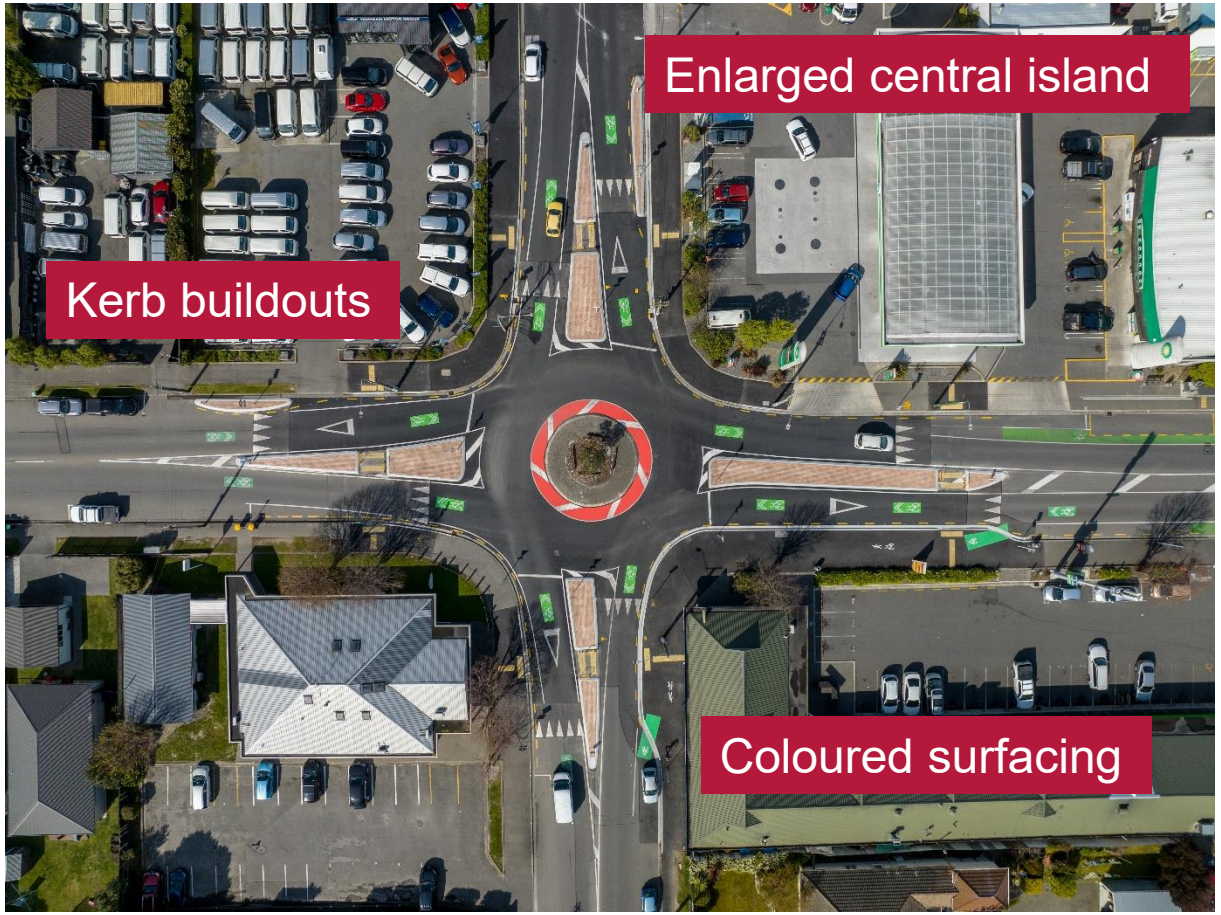
Treatments



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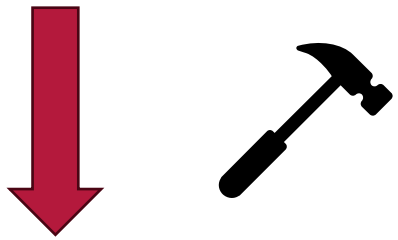
Implementation costs

- Ranged from:

$100K



$750K

Clyde / Ilam

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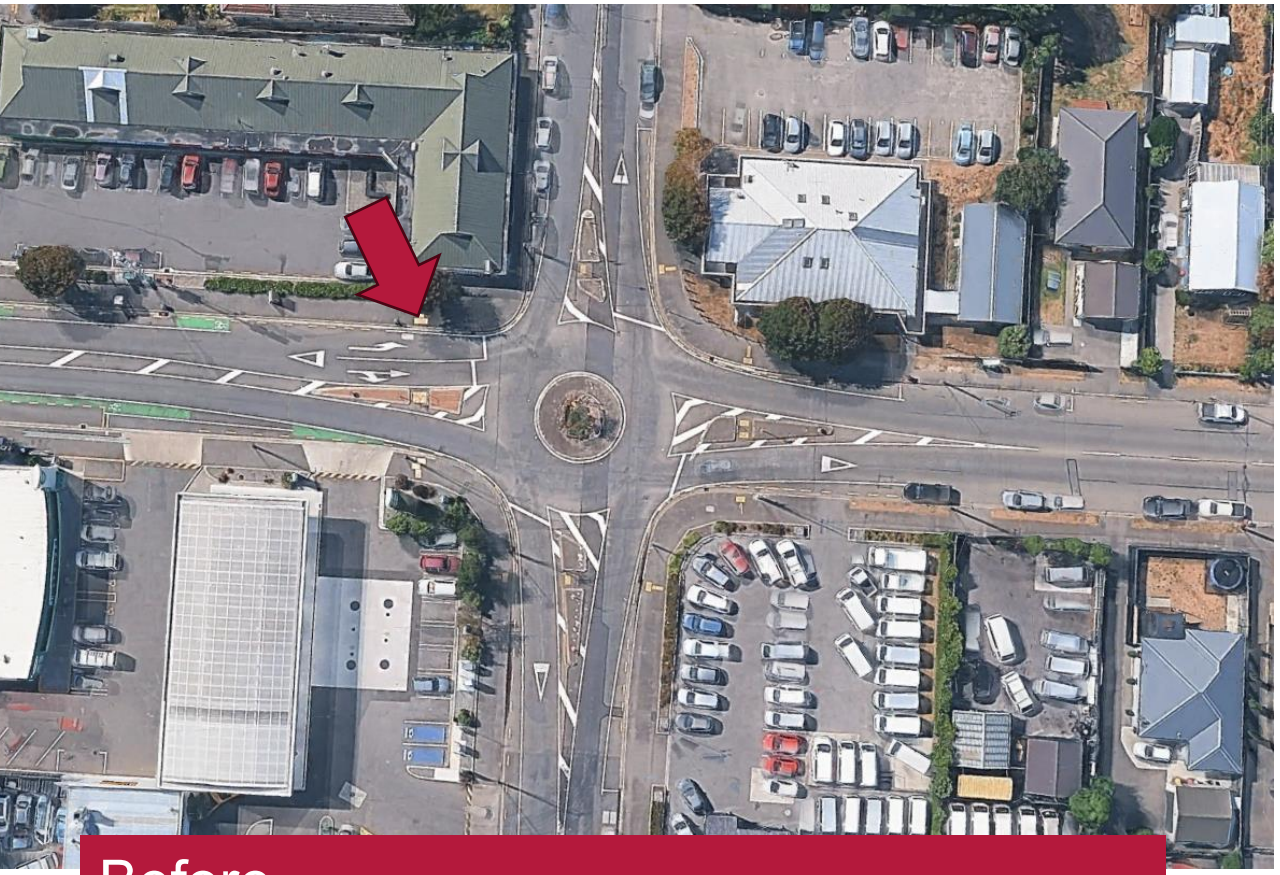
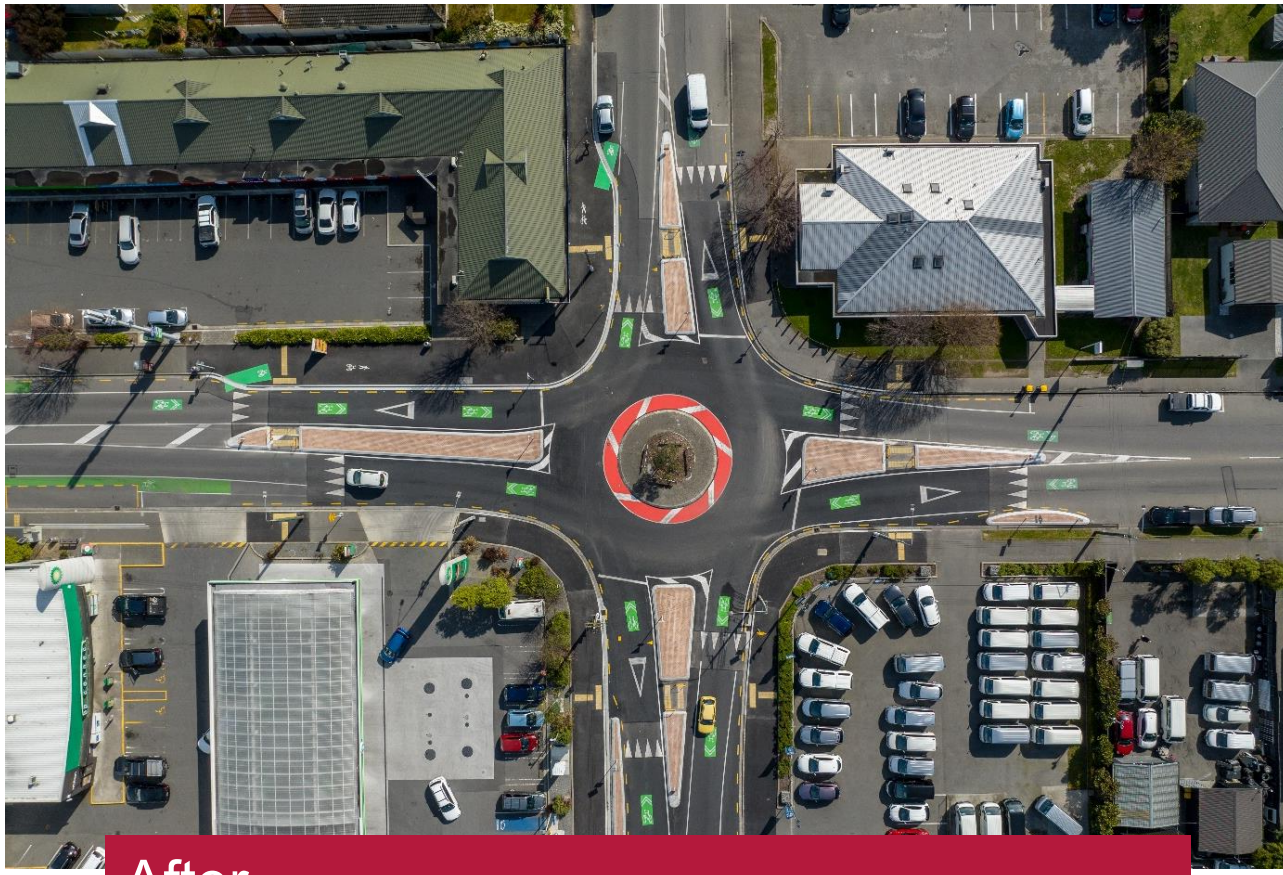
Before/ After



Before



After

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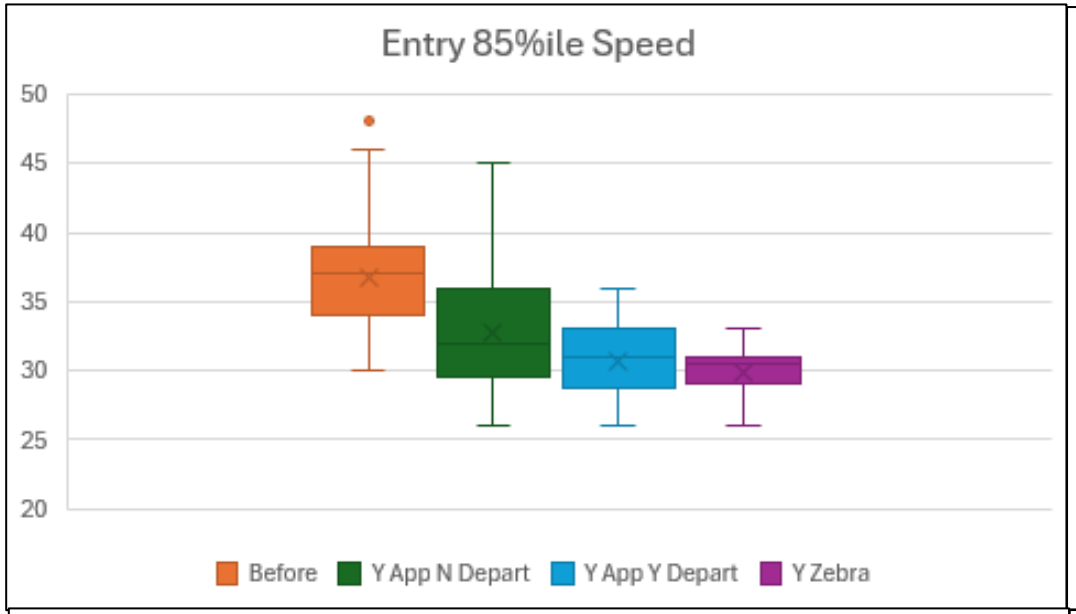
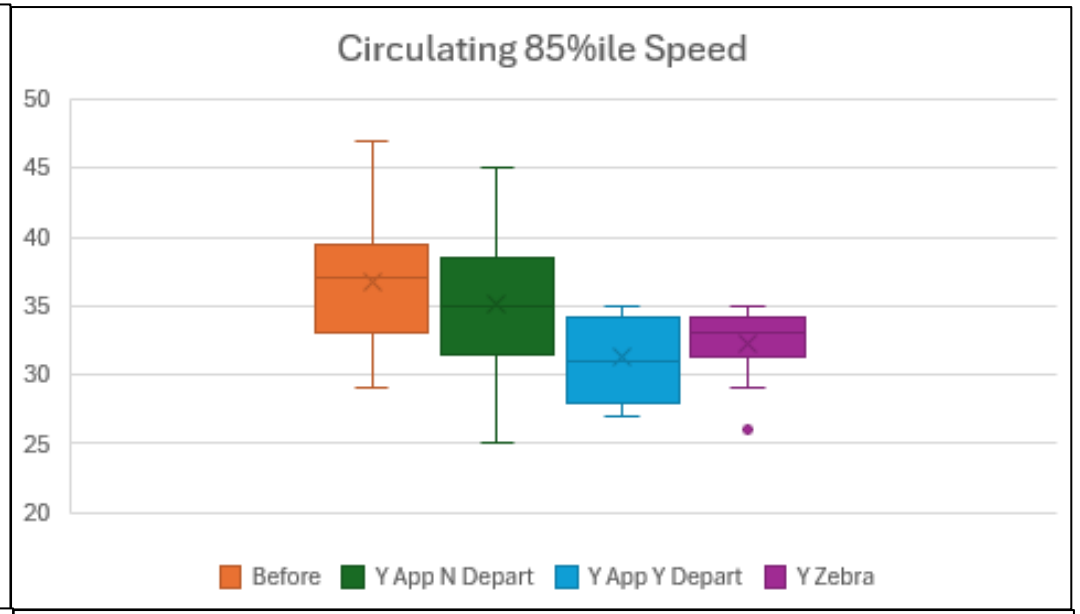
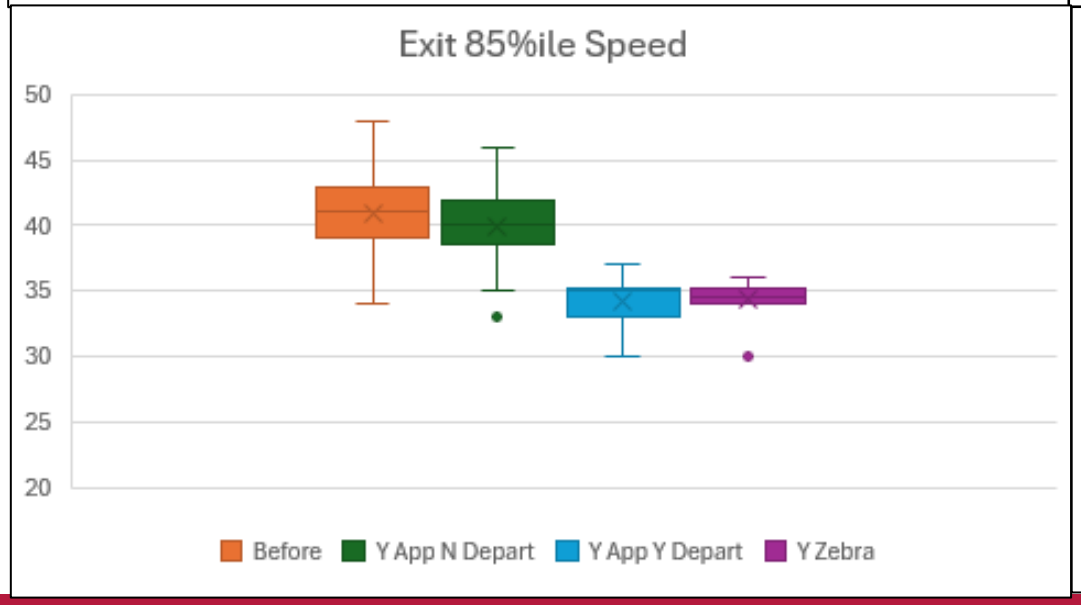
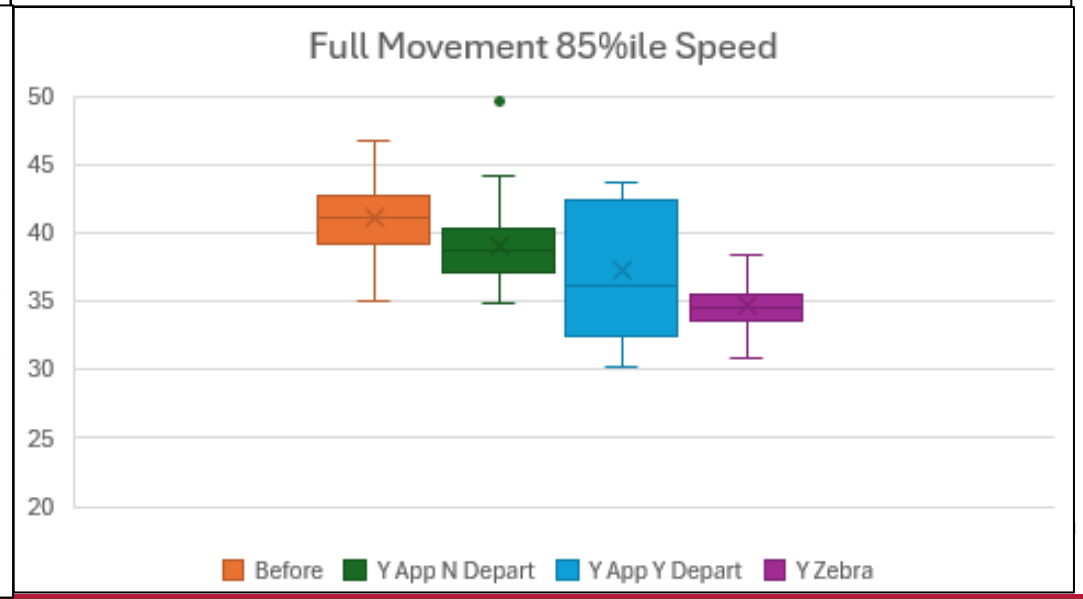
Speed changes (TomTom)









Crash analysis

- Crashes pre-implementation: 35% minor, 50% non-injury across the 6 sites
- Post-implementation:
  - Reductions in total reported crashes across all sites
  - Some sites have had no reported crashes since installation

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User behaviour

- Speed humps placed before crossing points increased driver yielding behaviour

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Community feedback

- High levels of acceptance and satisfaction

‘There is a proper space to wait in the middle now which makes it easier to cross both sides.’

‘The speed humps before the crossing point means vehicle drivers often stop and let me cross.’

‘I tried cycling through the roundabout once and it was chaos because cars still travel too fast and I can’t work out which way they’re going to turn. I haven’t cycled through there again.’

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Community feedback

Unpopular changes to busy Christchurch roundabout actually worked, report says

Tina Law | THE PRESS

July 21, 2025

Comment (66) Share

Christchurch City Council has installed raised platforms, speed humps, zebra crossings and cycle crossings at Colombo St/Cashmere Rd/Centaurus Rd/Dyers Pass Rd roundabout.

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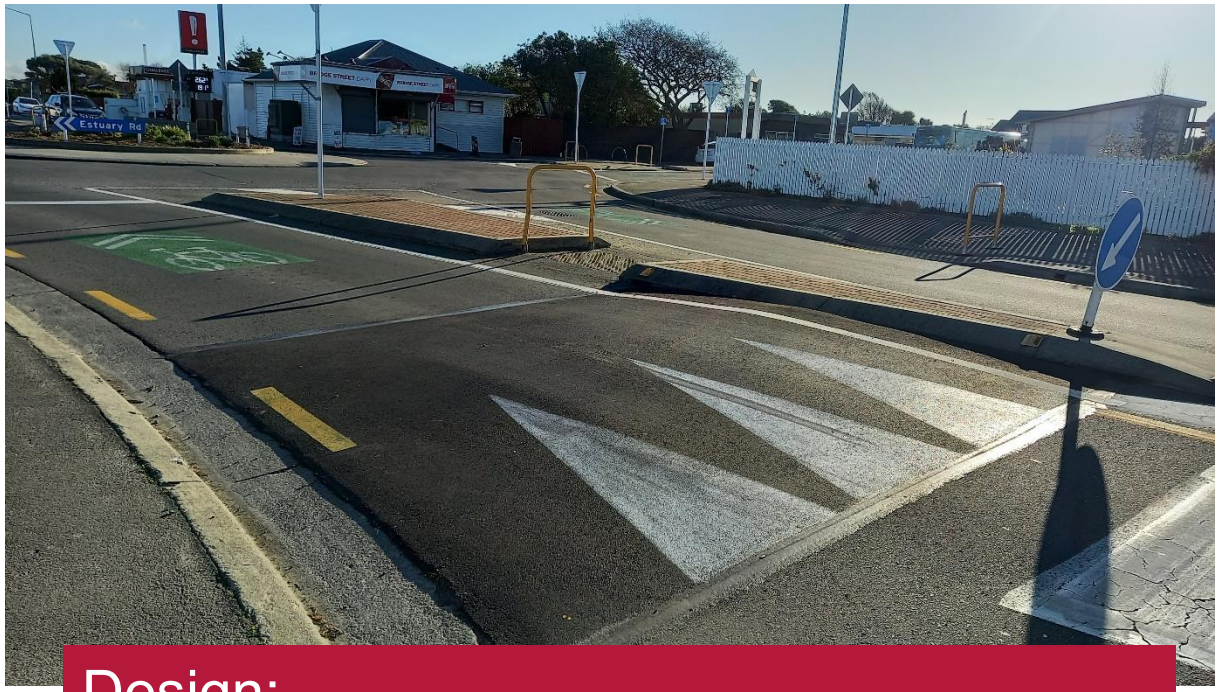
Bridge/ Estuary, Christchurch, NZ - Retrofit



Design:
- Approach speed humps
- Markings and signage
- Very low cost

Effectiveness:
- Speeds reduced on approaches
- Some vehicles speed up when exiting roundabout

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Travis/ Bower, Christchurch, NZ - Retrofit

Design:

- Approach and departure speed humps
- Enlarged splitter/ median islands
- Coloured surfacing

Effectiveness:

- Speed reductions of 4.6km/hr
- No reported crashes since implementation (May 2024)

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Colombo/ Dyers, Christchurch, NZ - Retrofit

Design:

- Raised wombat crossings
- Approach & departure speed humps
- Off-road path

Effectiveness:

- Most vehicles now travel 20-35km/hour
- Side impact conflicts reduced by 50%

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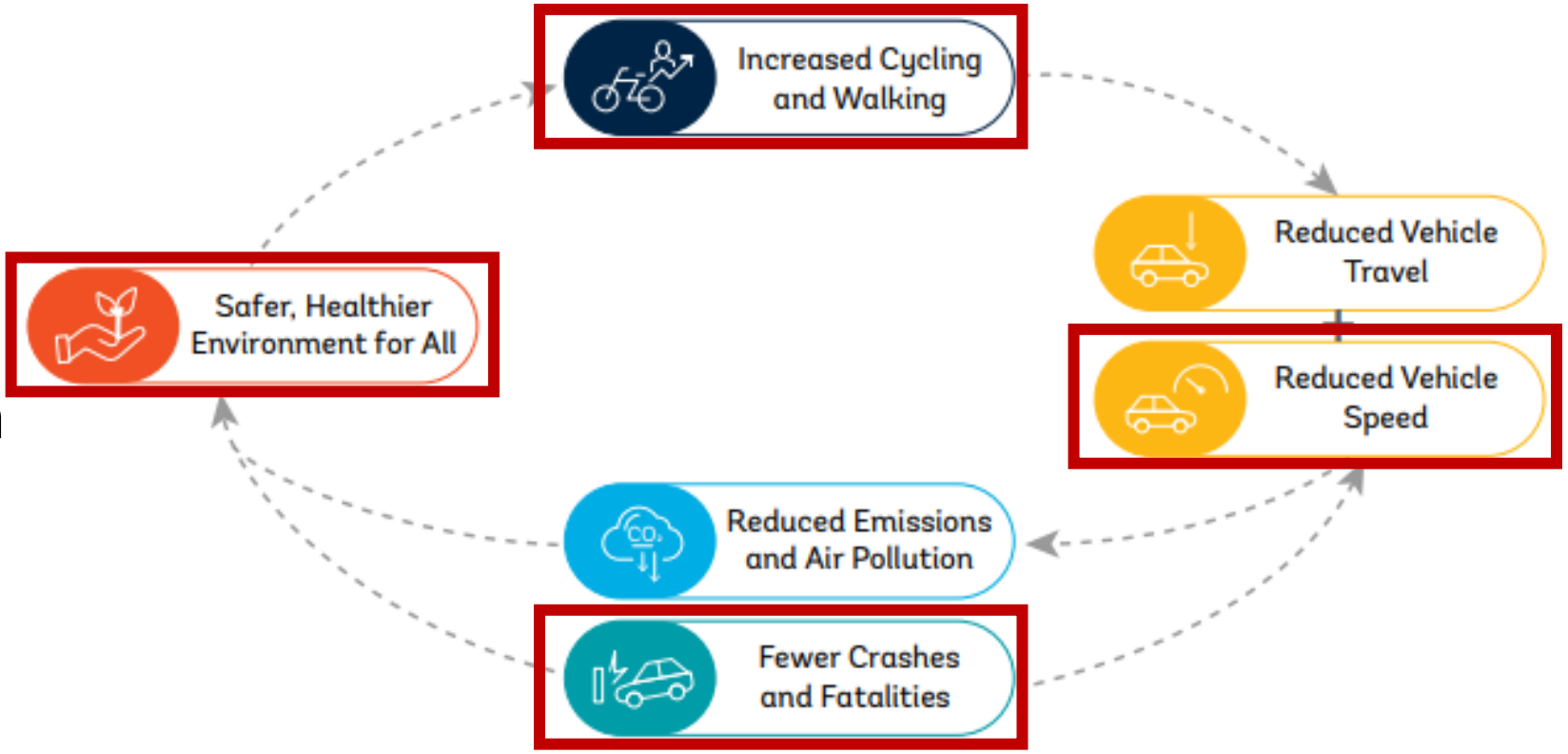
Effectiveness

- Reduced vehicle speeds
  - Approach and departure speed humps have a greater impact
- Reduced crash risk and incidence of crashes
- Easier for people outside vehicles to travel through or cross



Source: Adapted from Sustainable & Safe. WRI, 2018.

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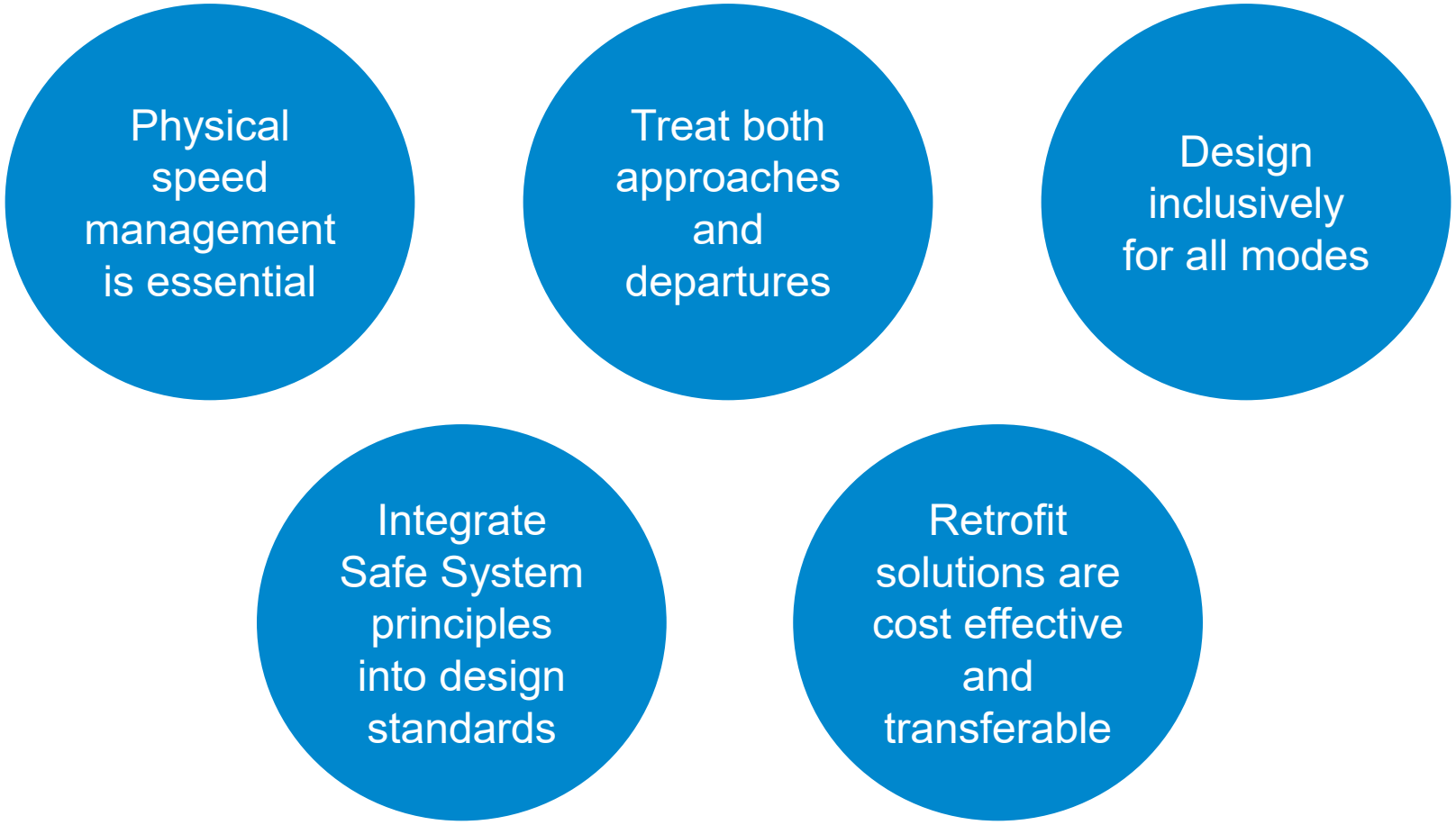
Key lessons and recommendations



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Thank you!

Ann-Marie Head
Associate Director, Transportation Engineering, Abley
ann-marie.head@abley.com

Gemma Dioni
Principal Advisor – Transport, Christchurch City Council
gemma.dioni@ccc.govt.nz