

Evaluation of the C-Roundabout

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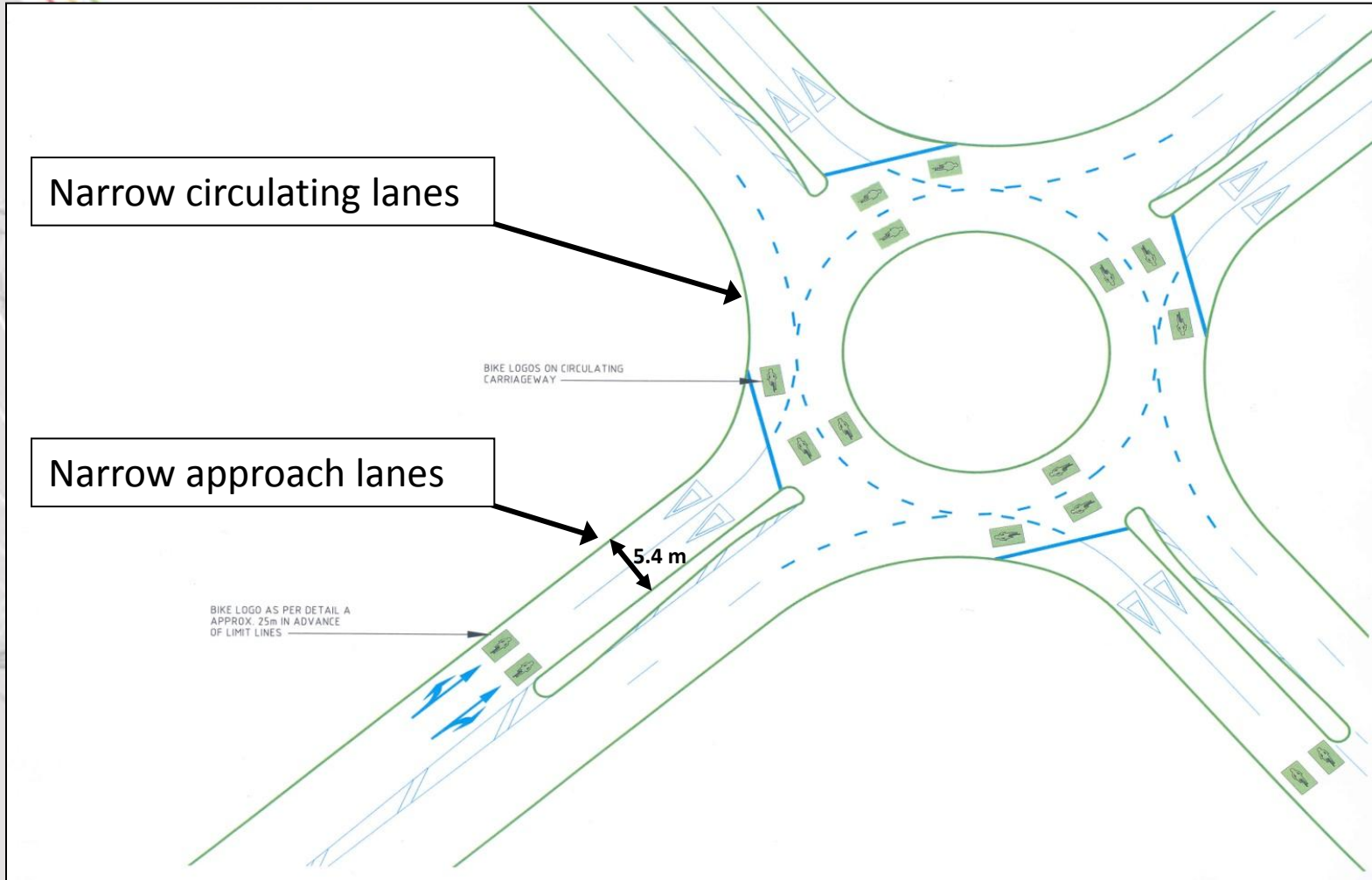
The C-Roundabout

A new design tool for economically improving safety and capacity at urban road intersections

Current NZTA Research Project



C-Roundabout Design



What is the C-Roundabout?

- New 2-lane roundabout
- Specifically to improve **cyclist** safety
- Reduce vehicle speeds by confined geometry
- Improves pedestrian and driver safety
- Improves capacity at existing 1-lane roundabouts
- Low cost



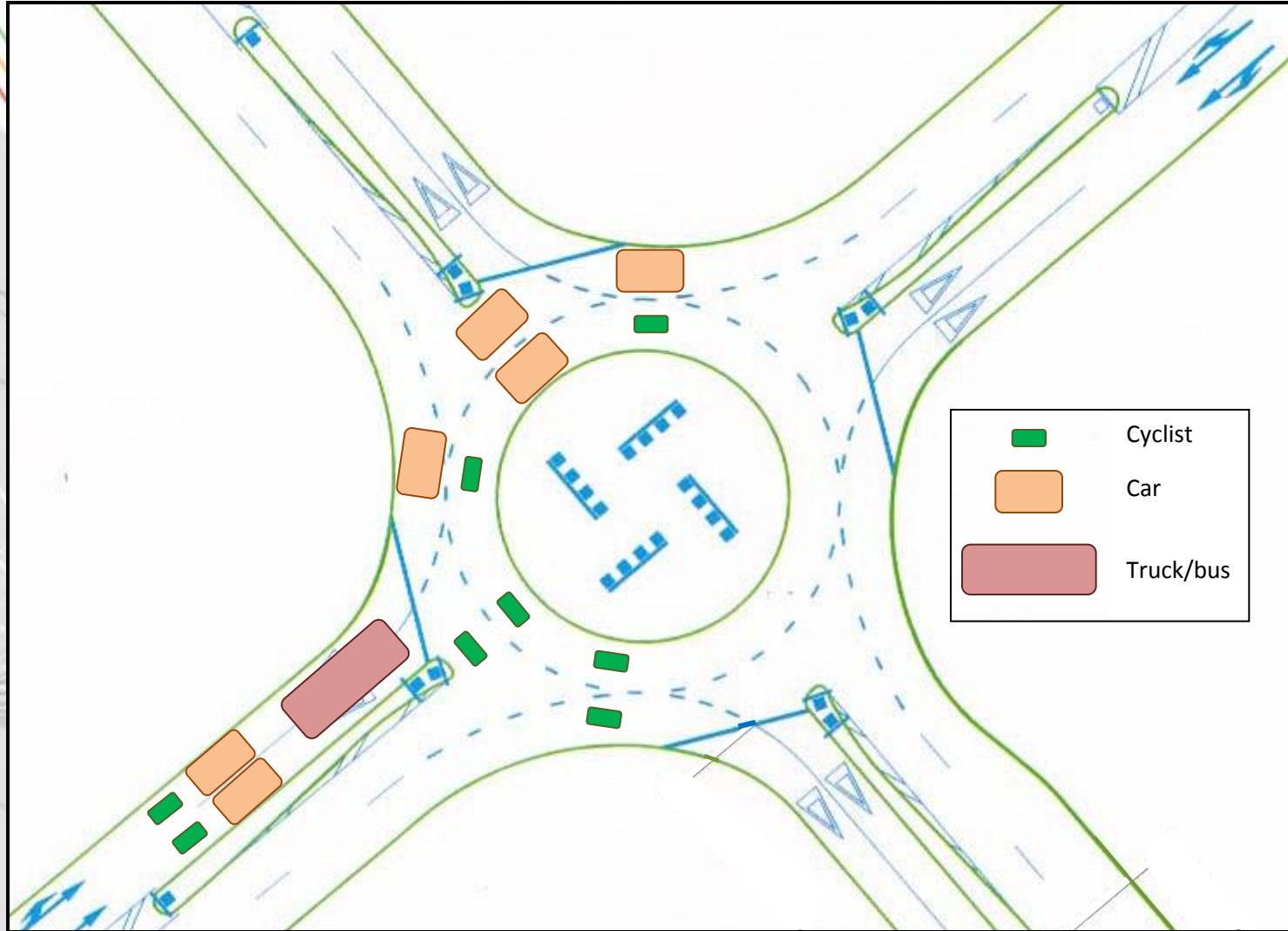
Cyclists at Multi-lane Roundabouts

- Viewed by cyclists as hazardous
- High casualty rate for cyclists relative to motorists
- Safer if vehicle speeds around 30km/hr
- Experienced cyclists prefer to cycle on-road than use off-road facilities

How the C-Roundabout operates

- Low speed
- Narrow lanes
- Cyclists – intermingle with cars, travel in middle of lanes
- Cars – use as normal
- Trucks/Buses – straddle both lanes

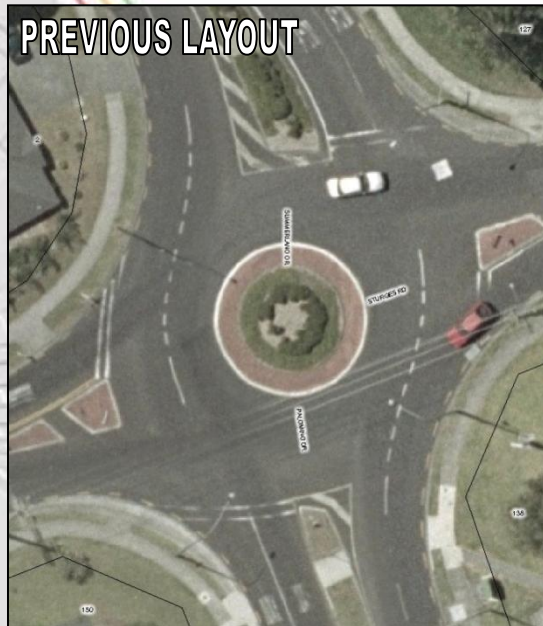
How the C-Roundabout operates



C-Roundabout being road-tested:

Palomino Drive/Sturges Road intersection Waitakere, Auckland

Converted existing roundabout to C-Roundabout (in 2009)



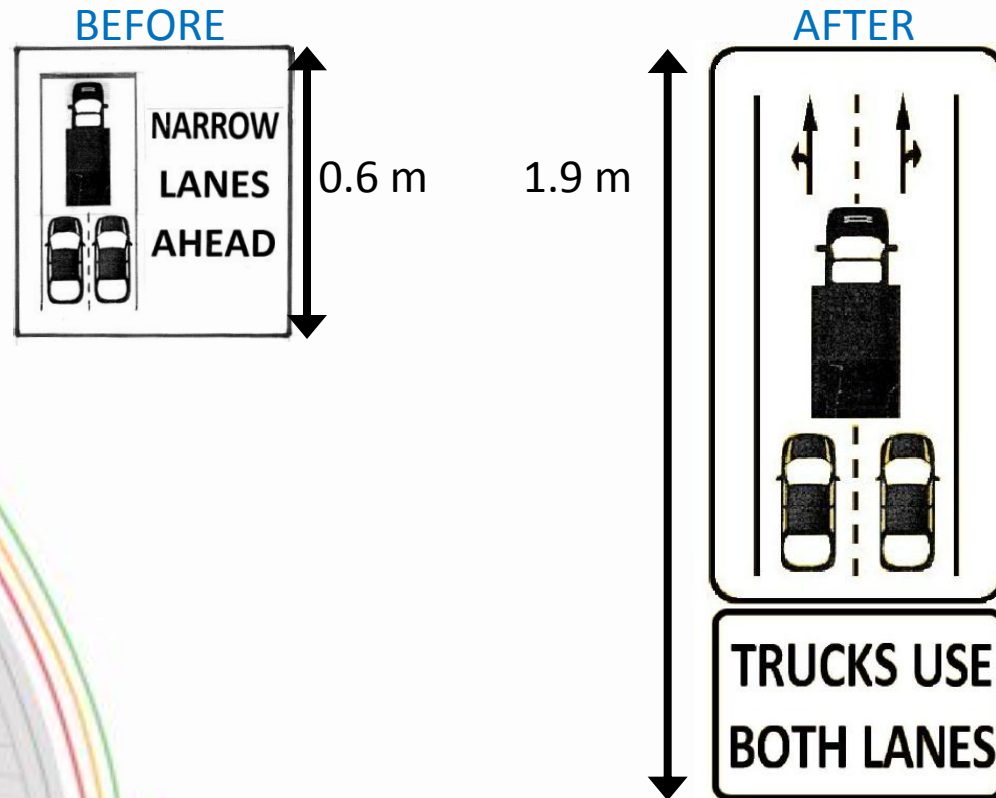


Issues encountered

1. Lane usage by trucks
2. Cars cutting across lanes

Issue 1: Truck Lane Usage

- Solution: Signs installed



- After surveys show **improved** lane usage

Issue 1: Truck Lane Usage

- Before

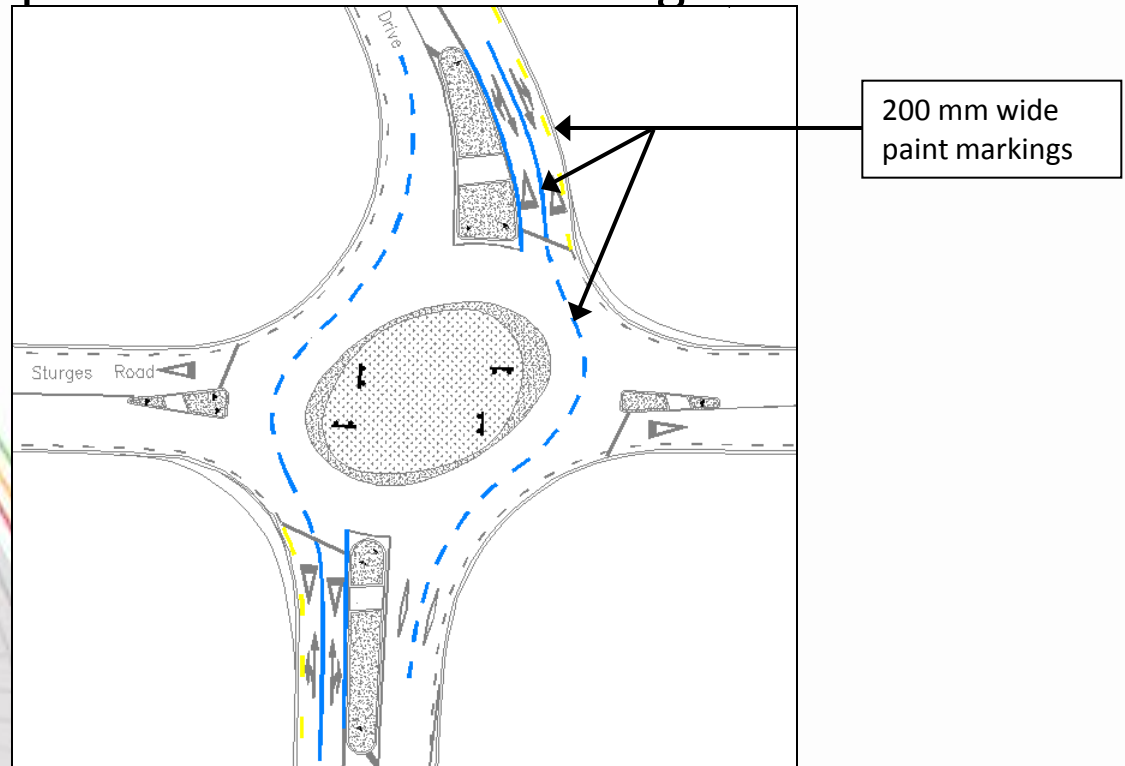


- After



Issue 2: Cars cutting across lanes

- Solution: Wider paint markings
- Important that lane markings are set out correctly



- After surveys show **reduction** in cars cutting across lanes



Evaluation

1. Vehicle speeds
2. Safety analysis
3. Cyclist opinion
4. Pedestrian and motorist opinion
5. Operational capacity



Videos and Photos of Palomino Dr/Sturges Rd C-Roundabout

1. Cyclists using the C-Roundabout
2. Trucks, buses and cars using the C-Roundabout
3. Approaching the C-Roundabout, illustrating signs and road markings

1. Cyclists using the C-Roundabout

Video No. 1



1. Cyclists using the C-Roundabout

Video No. 2



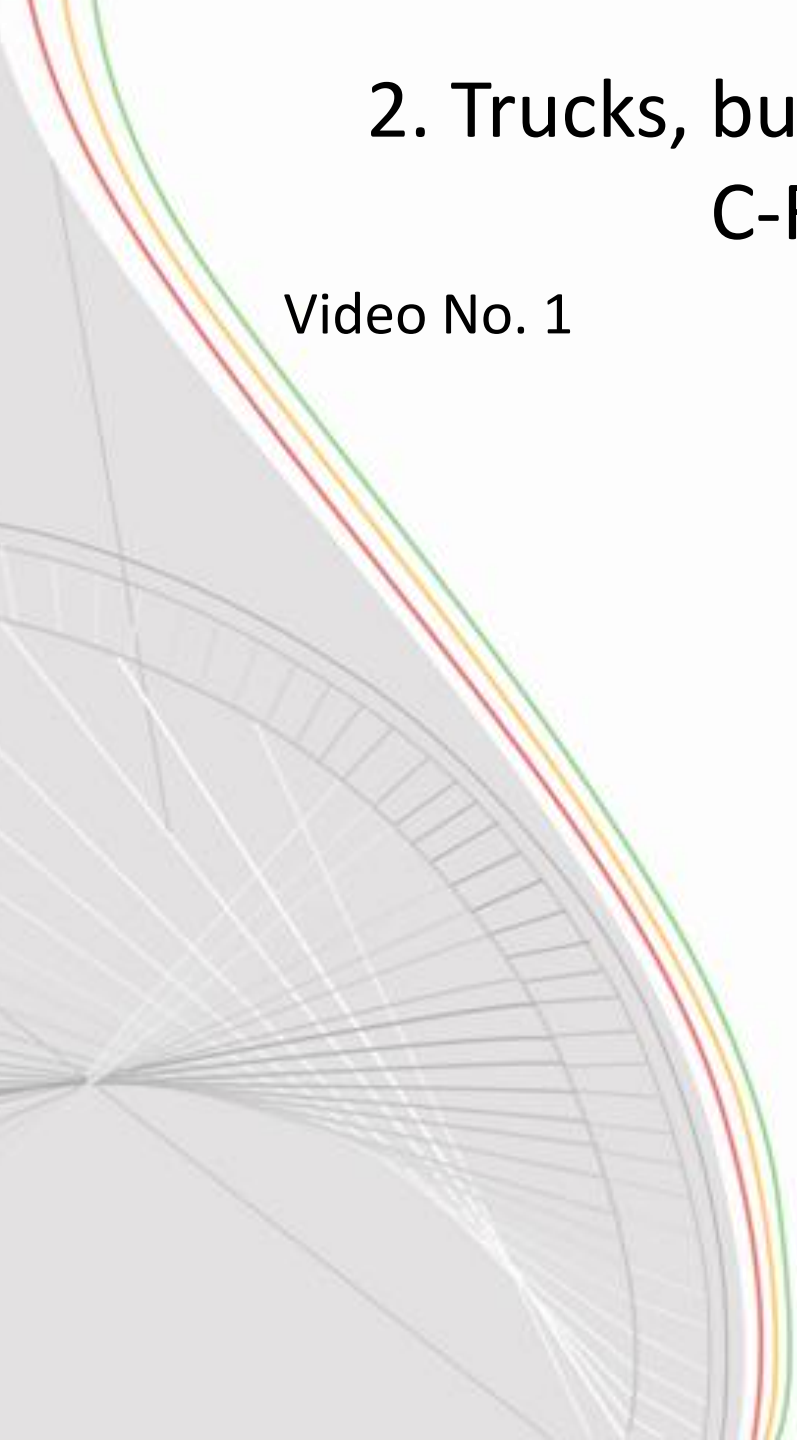
1. Cyclists using the C-Roundabout

Video No. 3



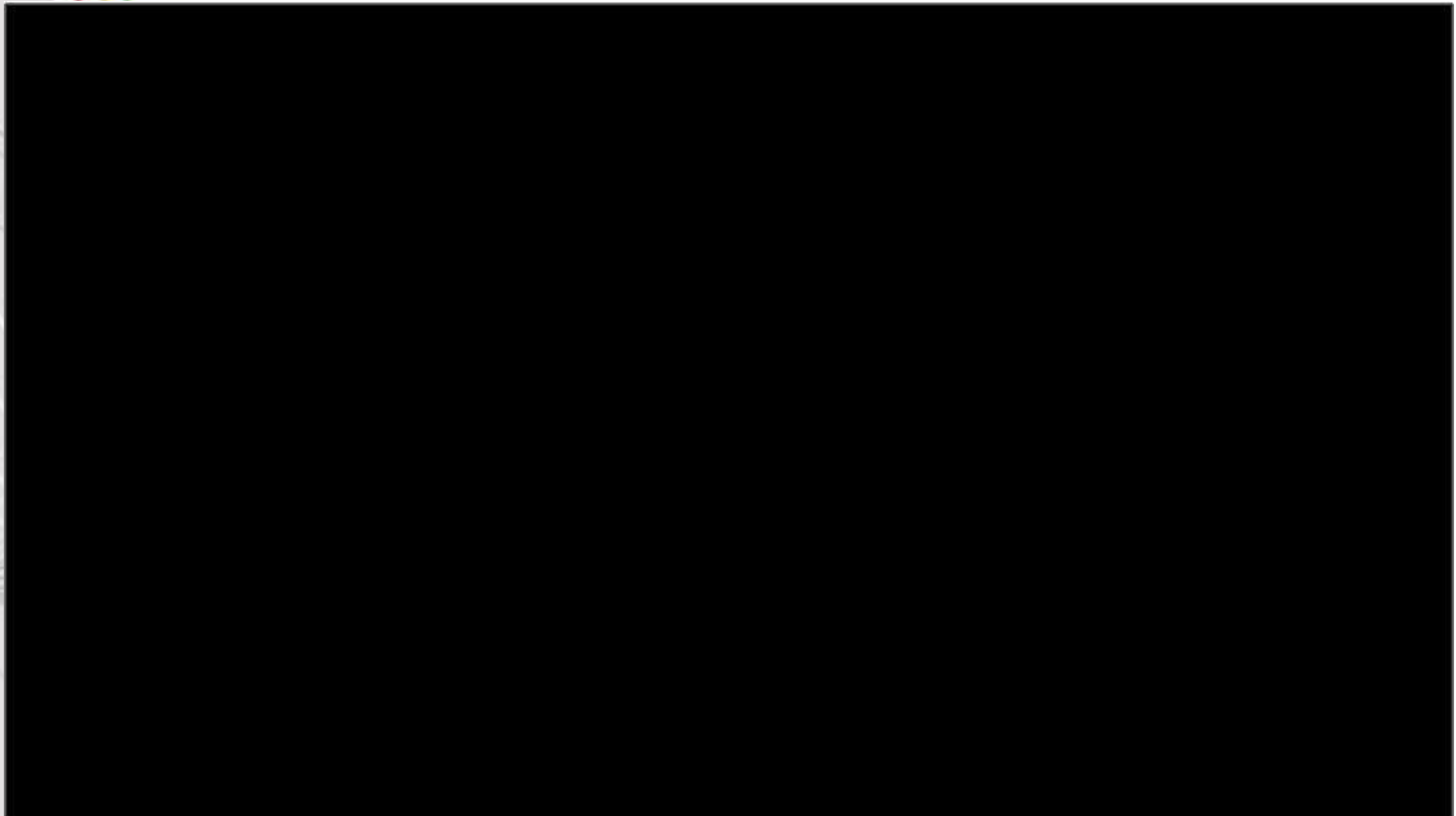
2. Trucks, buses and cars using the C-Roundabout

Video No. 1



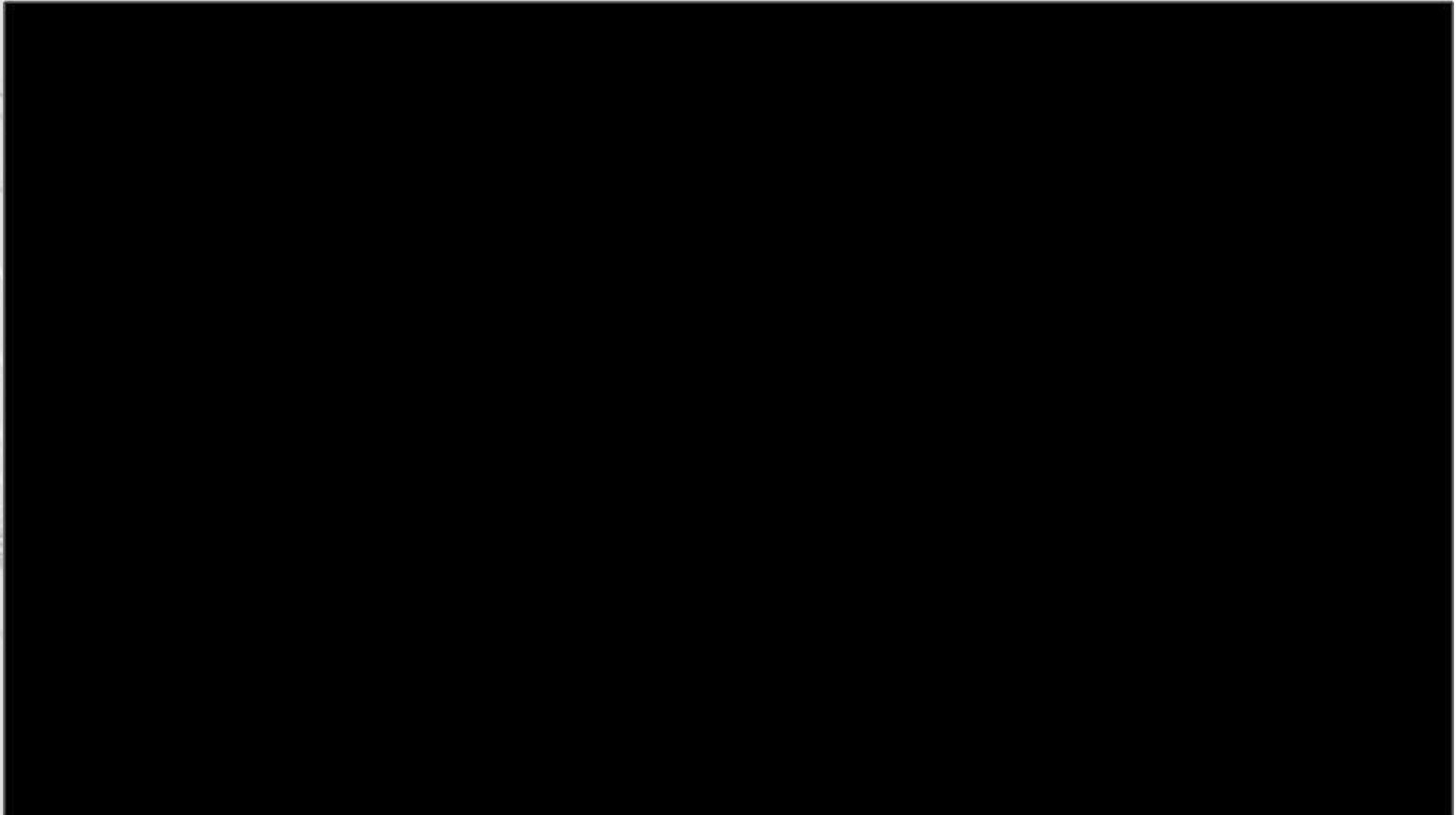
2. Trucks, buses and cars using the C-Roundabout

Video No. 2



2. Trucks, buses and cars using the C-Roundabout

Video No. 3



3. Approaching the C-Roundabout



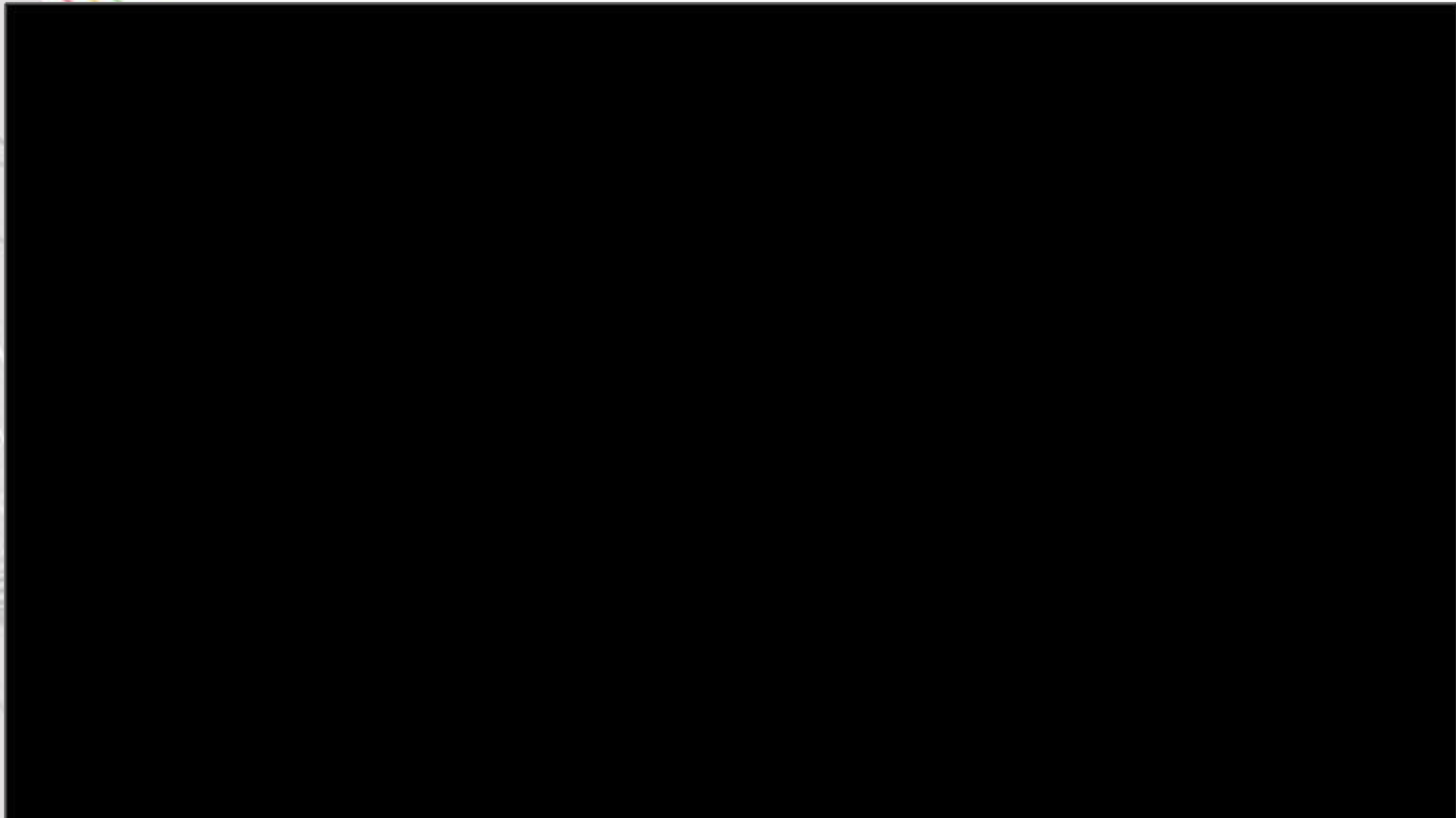
3. Approaching the C-Roundabout

North Approach



3. Approaching the C-Roundabout

North Approach, Video



Other C-Roundabouts in Waitakere City

Currently operating

1. Margan/Hutchinson
 - Operating for 2 years



Other C-Roundabouts in Waitakere City

Currently operating

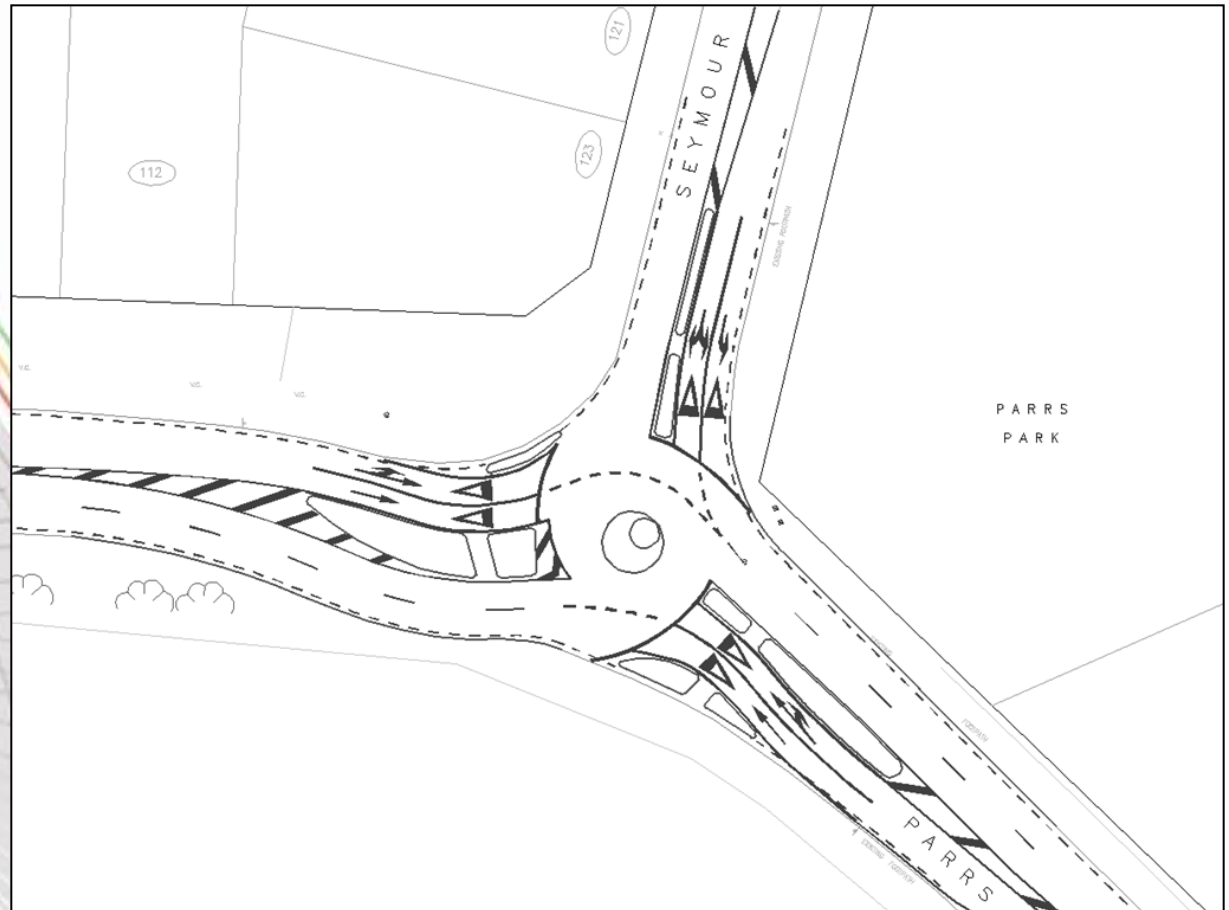
2. Henderson Valley Rd/Border Rd
 - Operating for 2 ½ years



Other C-Roundabouts in Waitakere City

Currently being constructed

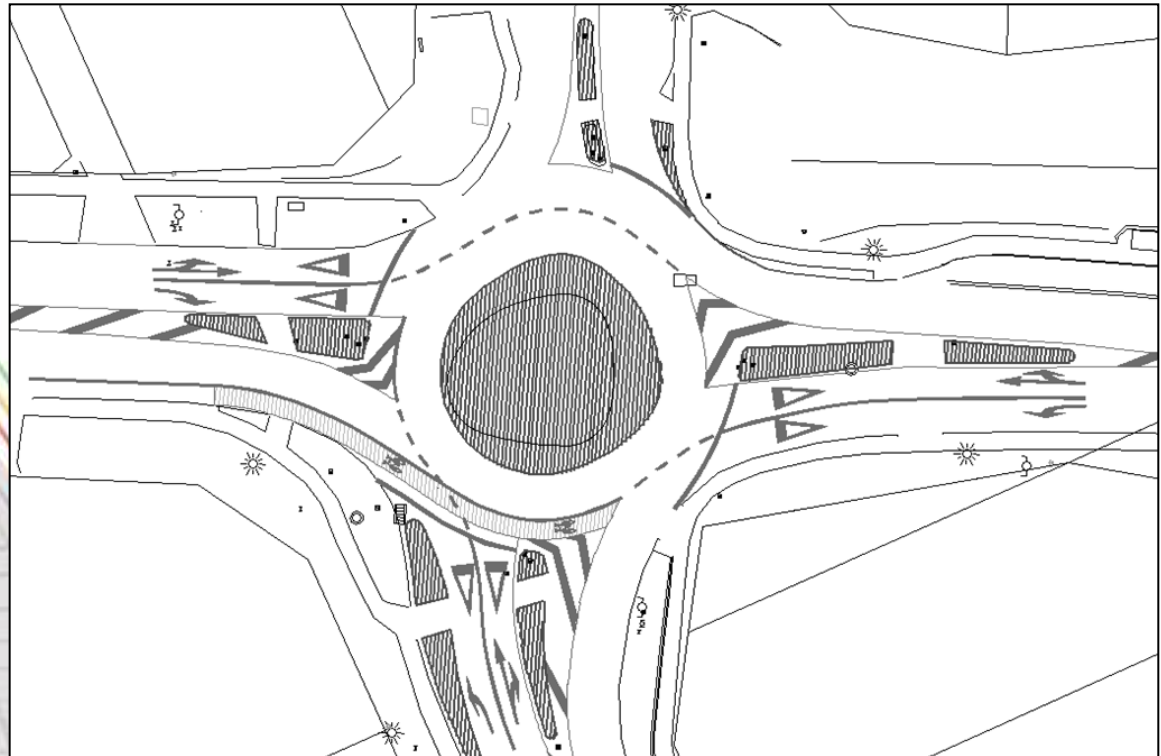
Seymour Rd/Parrs Cross Rd



Other C-Roundabouts in Waitakere City

Proposed Sites

1. Triangle Rd/Waimumu Rd



Other C-Roundabouts in Waitakere City

Proposed Sites

2. Don Buck Rd/Royal Rd

C-Roundabout currently being designed



Next challenge: Three-lane C-Roundabout



Why a C-Roundabout?

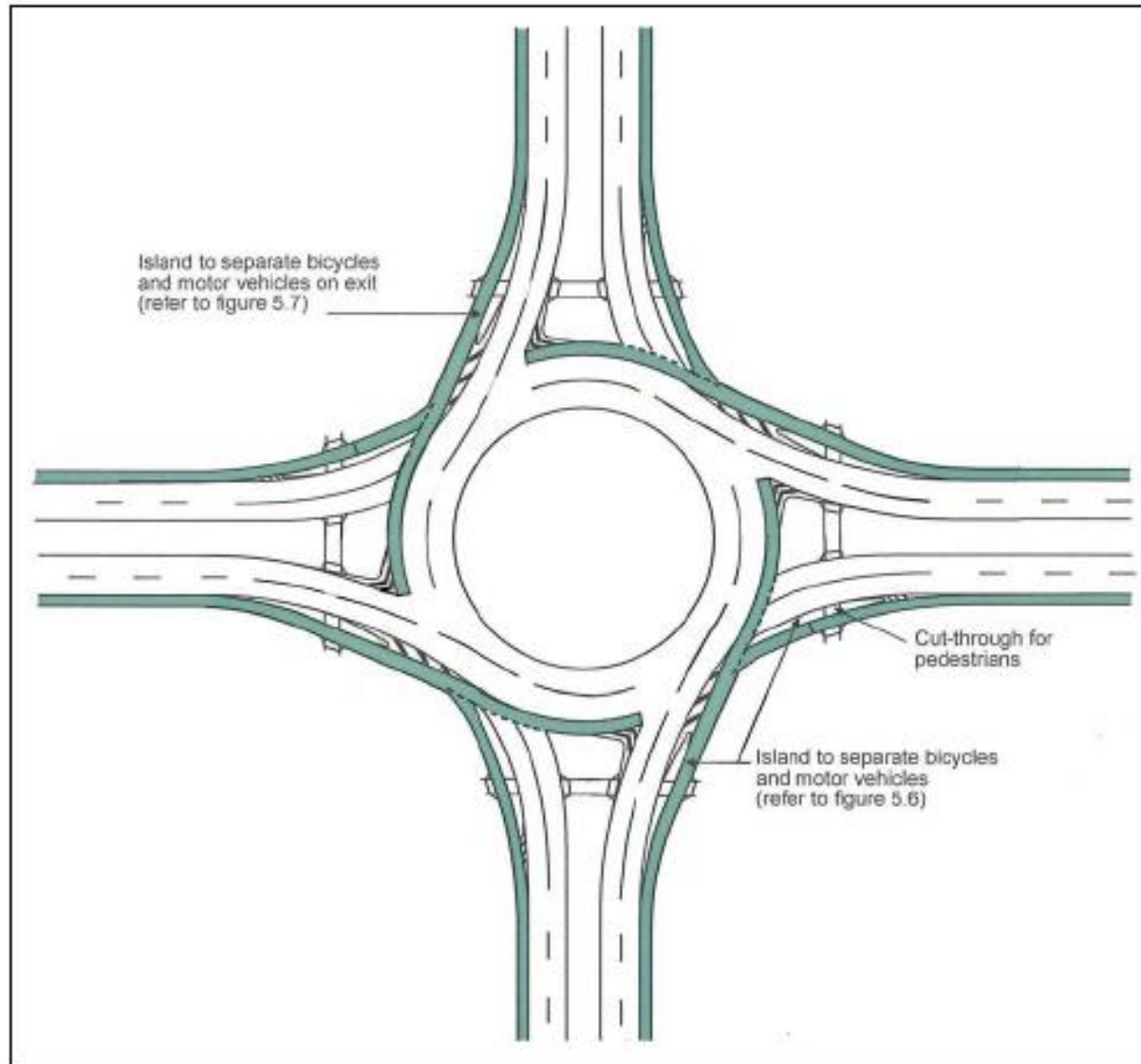


Figure 5.5: Bicycle lanes at a two-lane roundabout with physical separation for cyclists

Thank you

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