

Presentation to 7th NZ Cycling Conference

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Lake Road Cycle Options

Presented by: Andrew Macbeth (ViaStrada Ltd)

Co-author: Chris Jones (North Shore CC)



www.viastrada.co.nz

Authors

- **Andrew Macbeth**
 - BE, MEng, CPEng, FIPENZ
 - Director, Senior Traffic Engineer and Transport Planner
 - ViaStrada Ltd, Christchurch
- **Chris Jones**
 - BSc (Construction Management)
 - Transport Programmes Manager
 - North Shore City Council

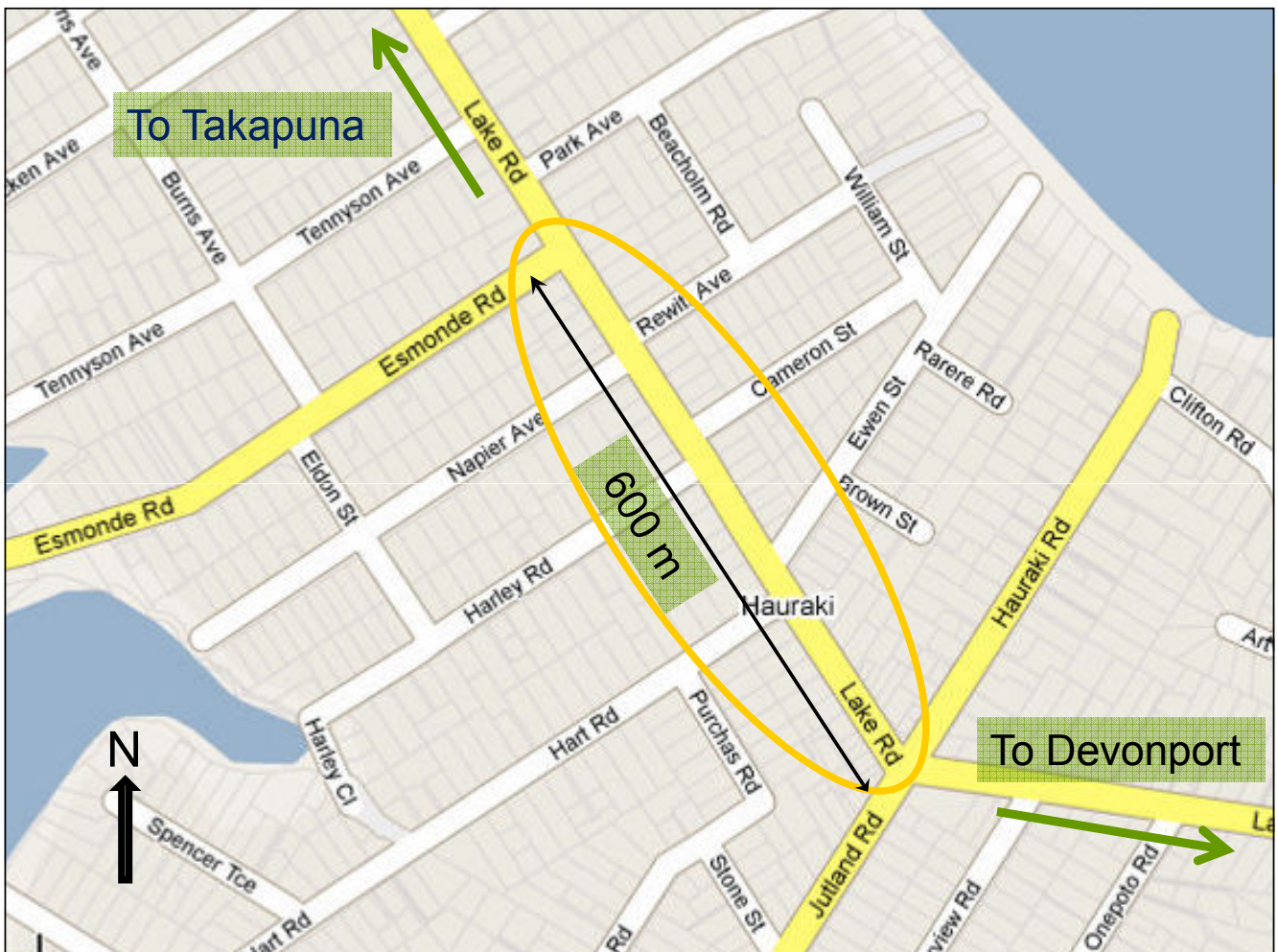


Outline

- Lake Road background
- Options considered
 - Cycle lanes
 - Cycle paths
 - Other on-road treatments
- ViaStrada recommendations
- NSCC decision
- Lessons learned and conclusions



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Lake Rd background (1)

- 23 m wide (to boundary)
- 40,000 motor vehicles per day; speed limit 50 km/h
- Operating speeds:
 - ~ 60 km/h off-peak
 - stop-start during peaks
- Four lanes with flush median
- Existing cycle lanes to south; only route to Devonport



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Lake Rd background (2)

- Cycle counts near Takapuna Grammar:
 - 300 cyclists per day
 - $\frac{2}{3}$ adult commuters; $\frac{1}{3}$ school students
 - $\frac{3}{4}$ cycle on road; $\frac{1}{4}$ on footpaths



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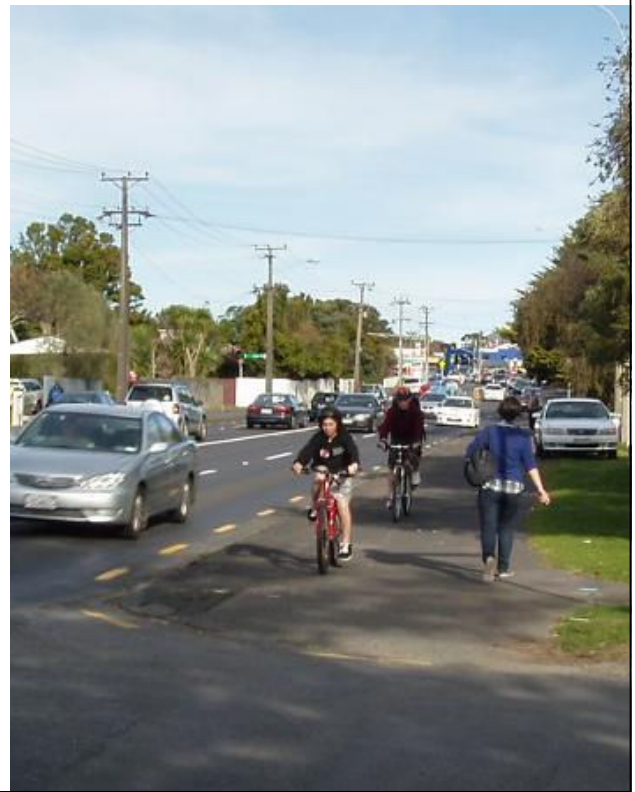
Lake Rd background (3)

- Initially approved option had 1.5 m cycle lanes (footpaths and median vary in width)
- Design reviewed in several safety audits
- NSCC sought external peer review; 18 options developed by ViaStrada
- Published paper shows all options but covered only a few in detail
- This presentation shows most options

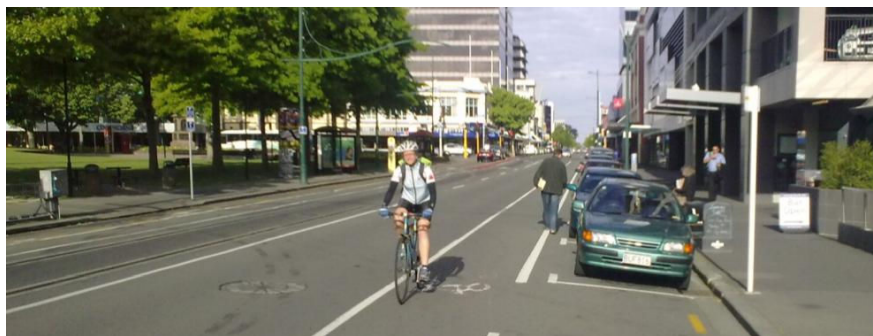
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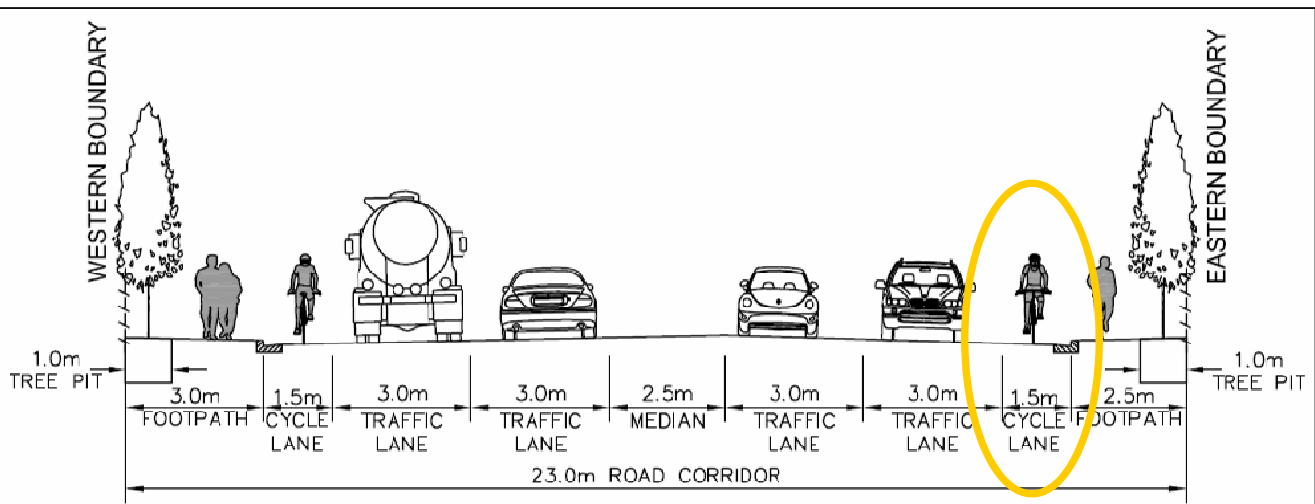


Some choose road, some footpath



Cycle Lane Options



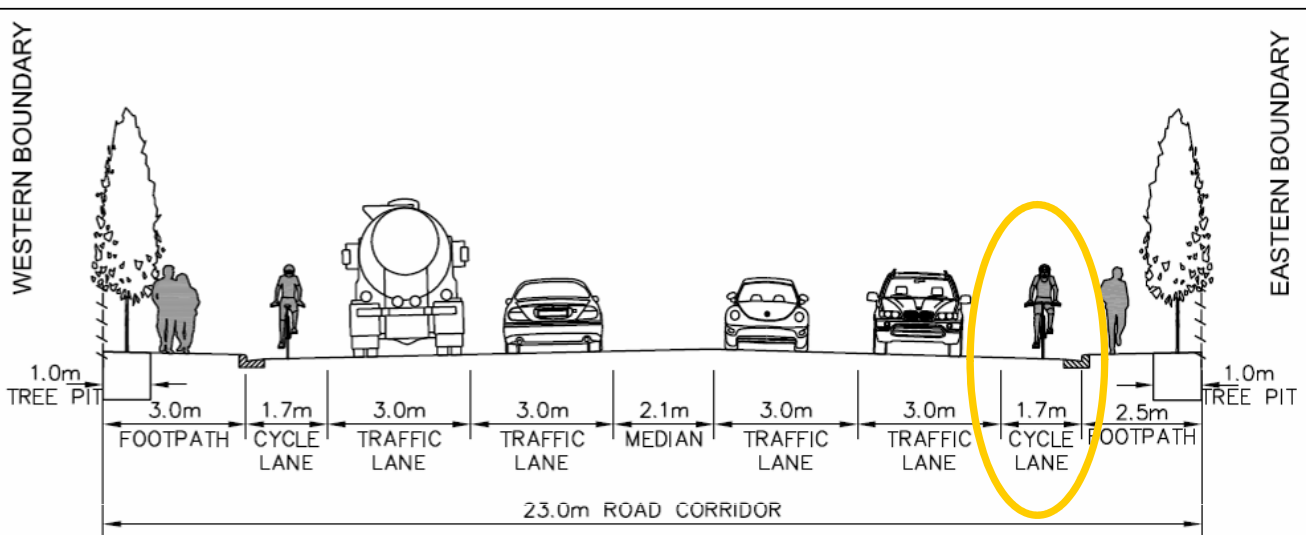


BASE CASE CYCLE LANES

- 1.5 m lanes “desirable minimum” at 50 km/h
- 1.7 m appropriate for 60 km/h*
- Need wider cycle lanes next to narrow motor vehicle lanes

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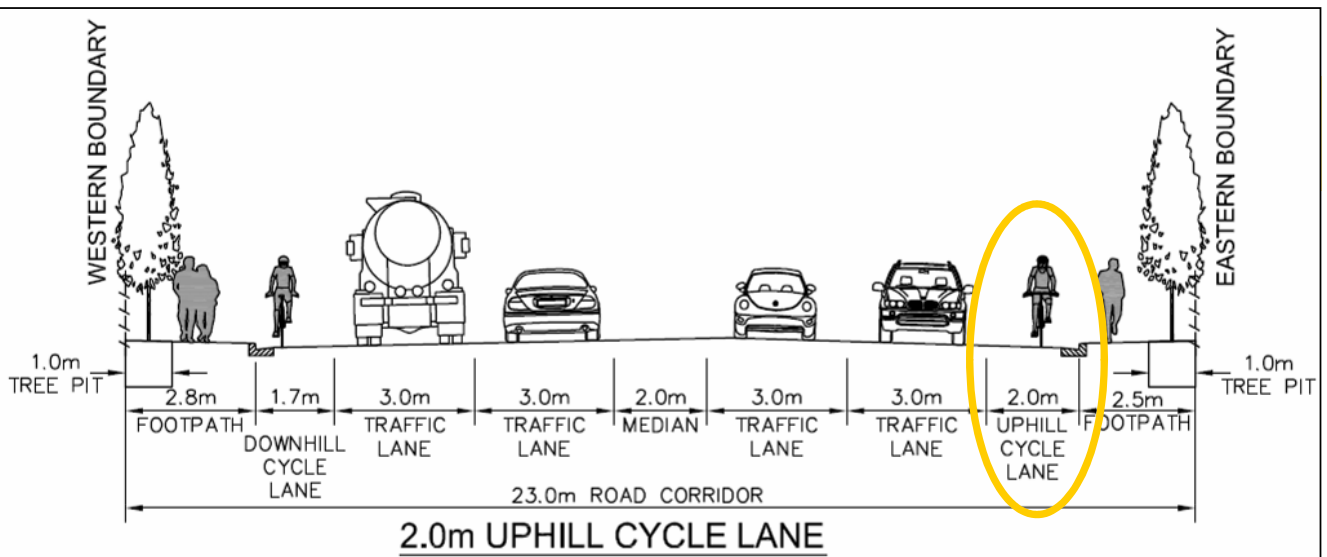
* NZ Supplement to Austroads Part 14: Bicycles



1.7m CYCLE LANES

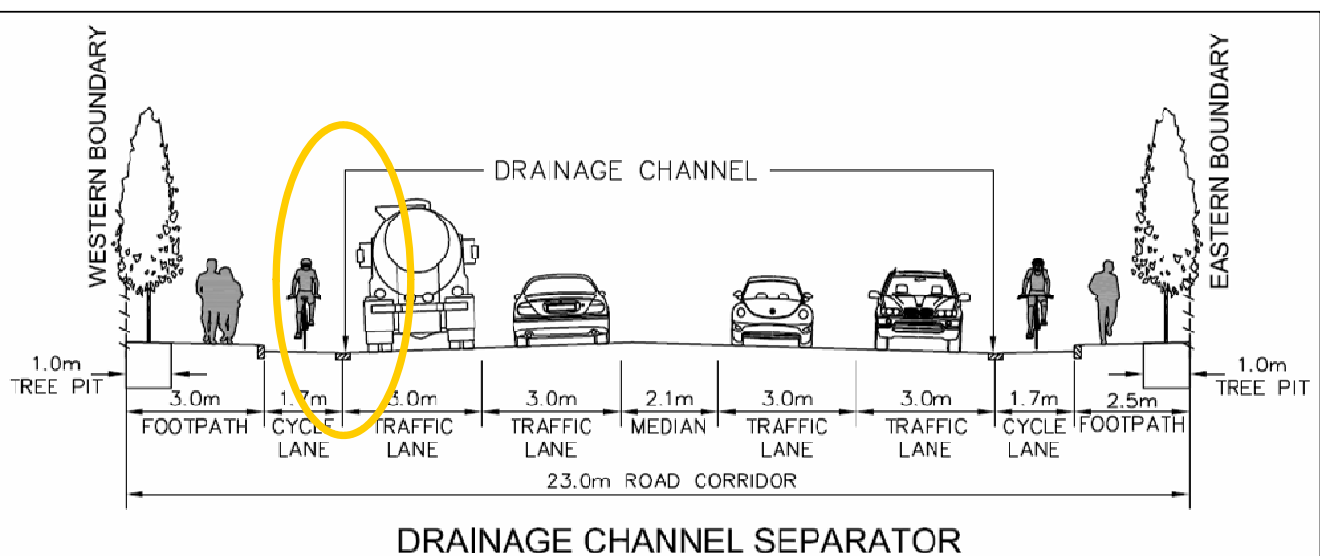
- 1.7 m cycle lanes improve cyclist safety and comfort
- Accomplished by narrowing median

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- 1.7 m downhill cycle lane
- 2.0 m uphill cycle lane to accommodate “wobble” and greater speed differential
- Accomplished by narrowing median and western footpath

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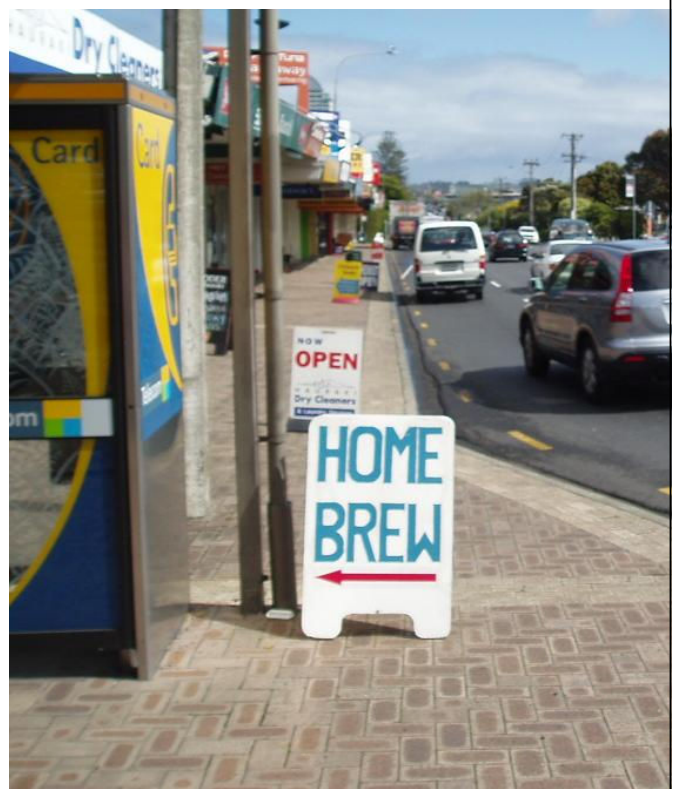
- Potential drainage and splashing issues
- Increased cost anticipated
- Accomplished by narrowing median

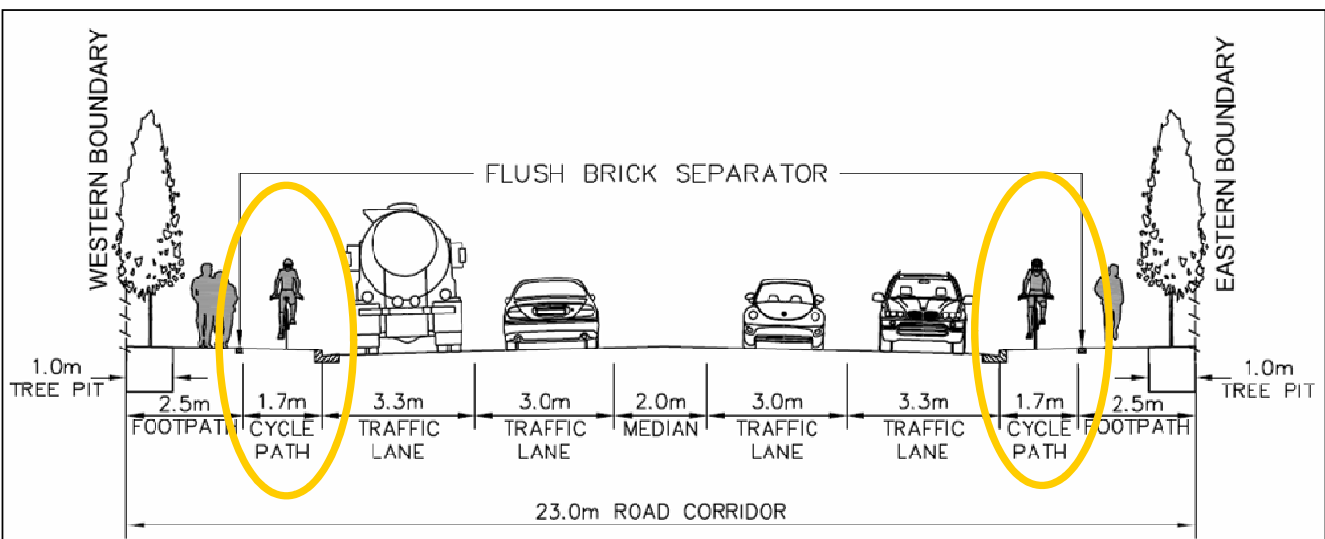
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Cycle path options



Footpaths not ideal

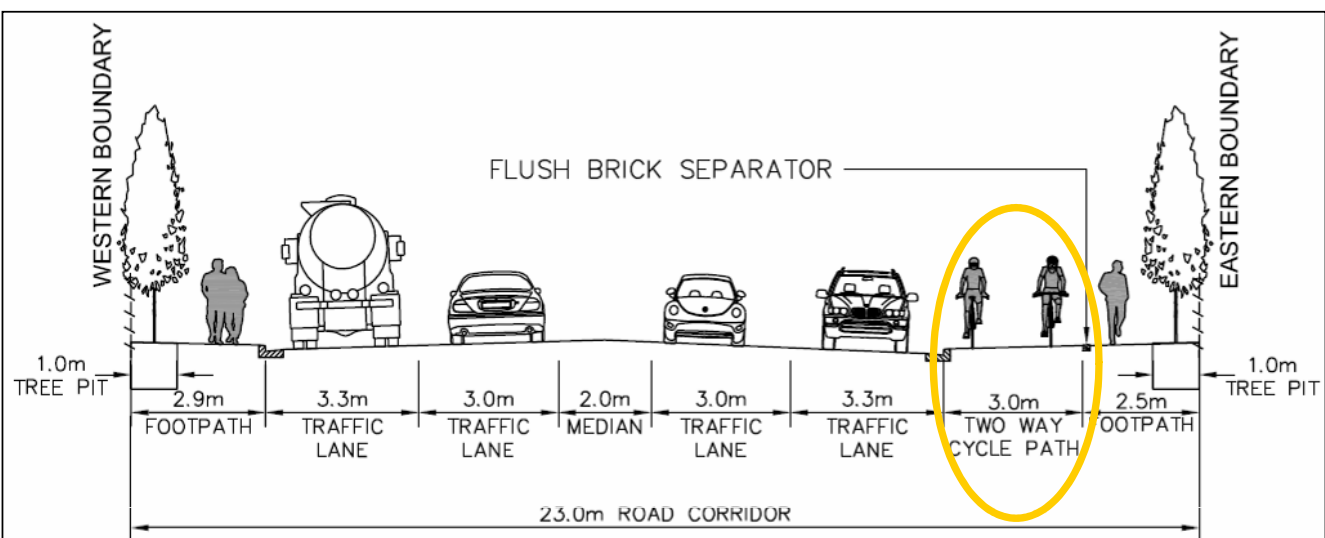




CONVENTIONAL CYCLE PATH

- Driveway and side road safety concerns
- Poor level of service (speed) for cyclists
- Pedestrian safety concerns
- Still have some cyclists on road

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TWO WAY OFF-ROAD CYCLE PATH

- Driveway and side road safety concerns
- Poor level of service (speed) for cyclists
- Pedestrian safety concerns
- Still have some cyclists on road

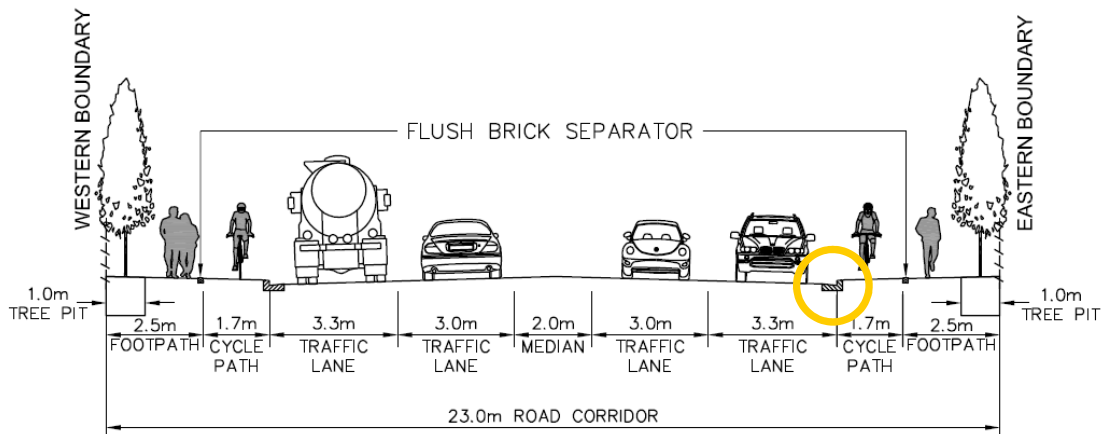
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Hybrid cycle paths / cycle lanes

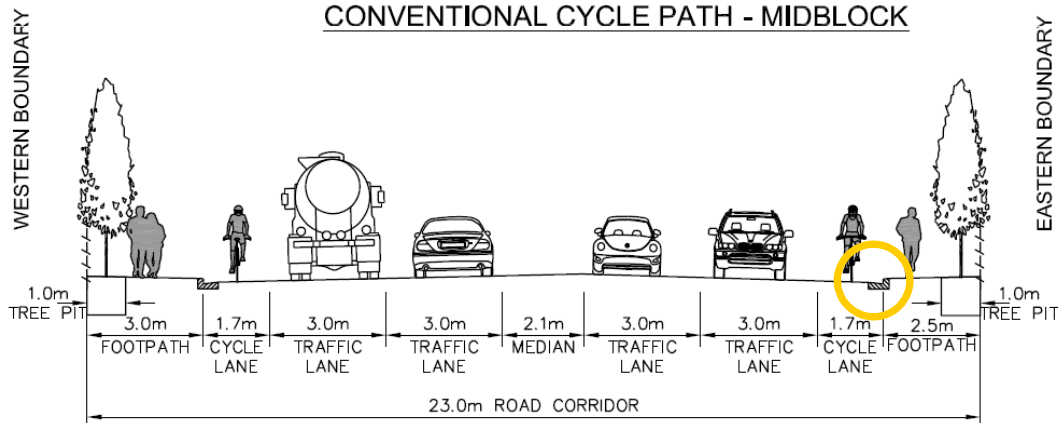


- Path reverts to cycle lane at intersections
- Path gets cluttered with rubbish and recycling bins
- Suits less experienced and slower cyclists

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CONVENTIONAL CYCLE PATH - MIDBLOCK



1.7m CYCLE LANES - AT INTERSECTIONS

HYBRID CYCLE PATHS - CYCLE LANES

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Danish-style cycle paths



- Cycle paths at intermediate level
- Should be about 2 m wide for overtaking
- Difficult with frequent driveways
- Low kerbs may be pedestrian trip hazards

Other on-road treatments

- ATP lane markings
- Coloured cycle lanes
- Raised separators
- Flexible bollards
- Intersection island separators

ATP lane markings

- Audio tactile profiled (ATP) markings don't provide extra space or protection for cyclists
- Cycle lanes need to be wider for overtaking
- May discourage cars from encroaching on inside bends



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Coloured cycle lanes

- Useful at “stress points”:
 - insides of bends
 - across intersections
- Increase visibility of cycle lane
- No additional space for cyclists
- Reasonably expensive



Raised separators (Melbourne)



- Potentially hazardous to cyclists
- Need more width in adjacent lanes
- Difficult to operate with multiple driveways
- Street sweeping and maintenance issues

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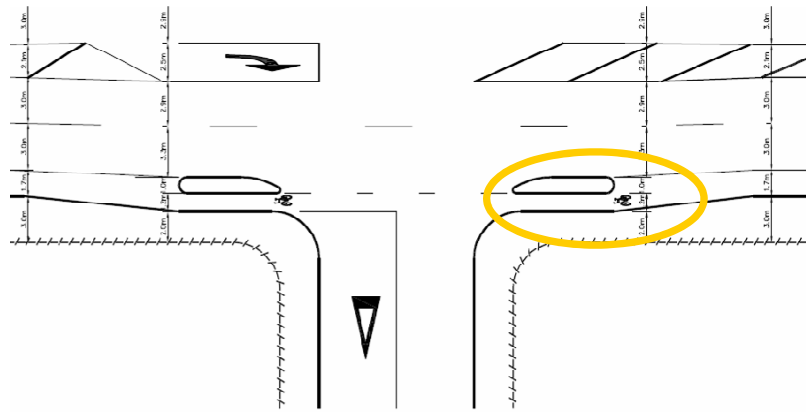
Flexible bollard separators



- Need more width in adjacent lanes
- Street sweeping and maintenance issues
- Driving over bollards might become a nocturnal “recreational pursuit”

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Intersection island separators



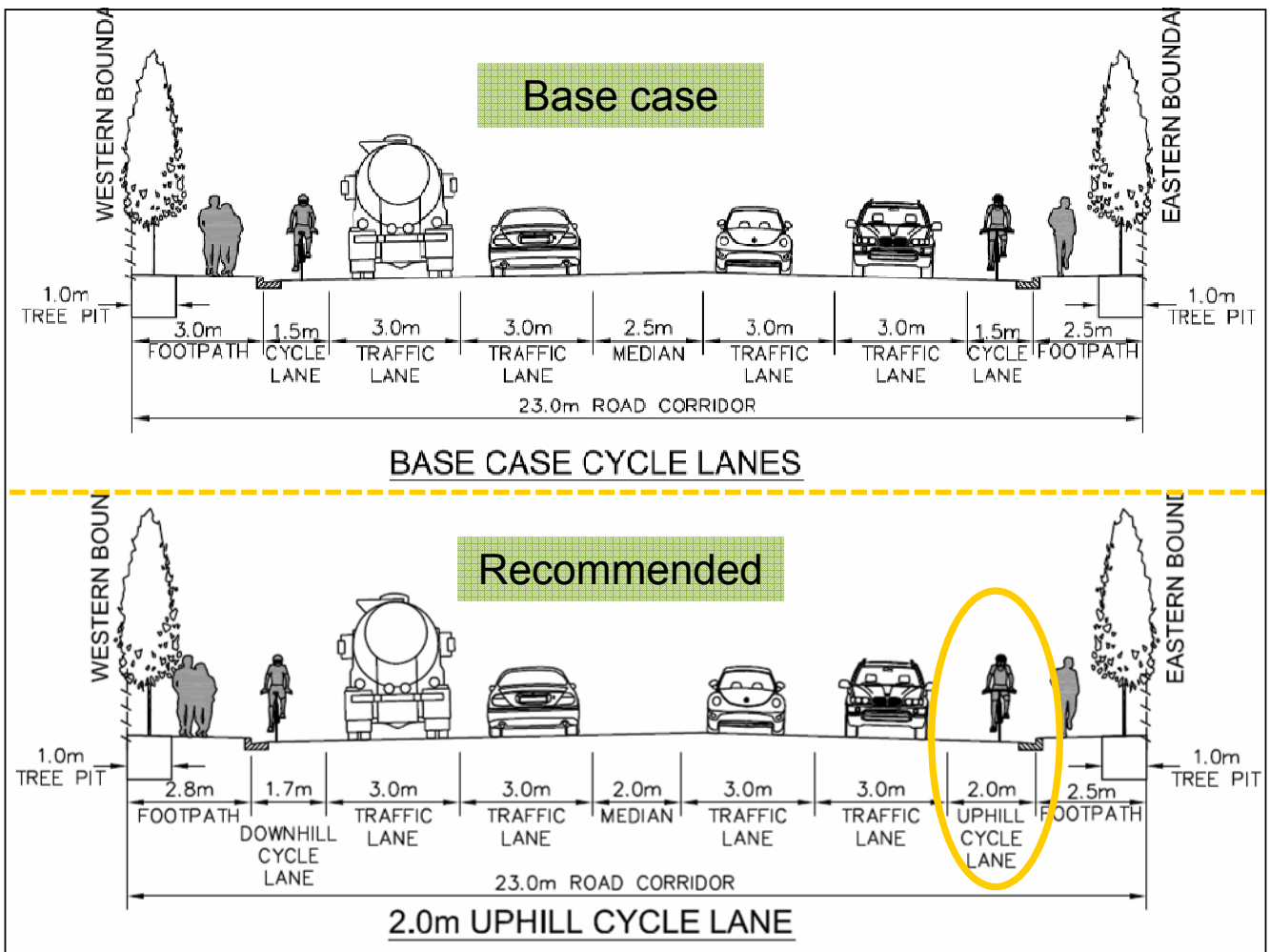
- Potential hazards to motorists and cyclists
- May encourage pedestrians to cross into turn lanes or flush medians
- Street sweeping and drainage issues

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ViaStrada recommendations

- First preference:
 - 1.7 m downhill & 2.0 m uphill cycle lanes
- Second preference:
 - 1.7 m cycle lanes each side
- Also recommended textured lane markings and coloured surfaces at stress points

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NSCC decision

- Coloured cycle lanes throughout; and
- Wide textured lane markings



- However, cycle lanes remain 1.5 m wide

Lessons learned

- NZ Supplement subtleties need consideration:
 - desirable minimum width (aim for more);
 - consider operating speeds (not just speed limit);
 - consider adjacent lane widths
- We're trying to induce non-cyclists to cycle
- These 18 options and the logic underlying them are transferable elsewhere

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Conclusions

- Compromises balance stakeholders' needs
- Different solutions possible if more width had been available
- Lake Road will be better for cyclists



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andrew@viastrada.co.nz 027 2929 888