



Making traffic signals work for people cycling

New Plymouth Transport Choices

Axel Downard-Wilke
Megan Gregory

June 2024



TŪPUNA PONO
BEING GOOD
ANCESTORS

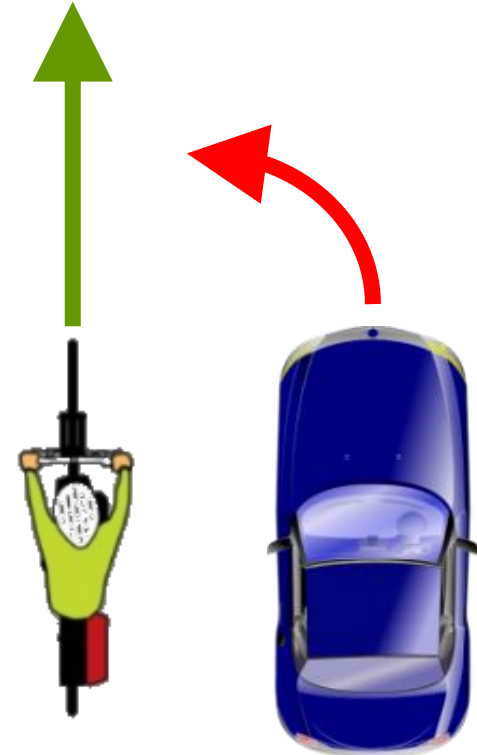
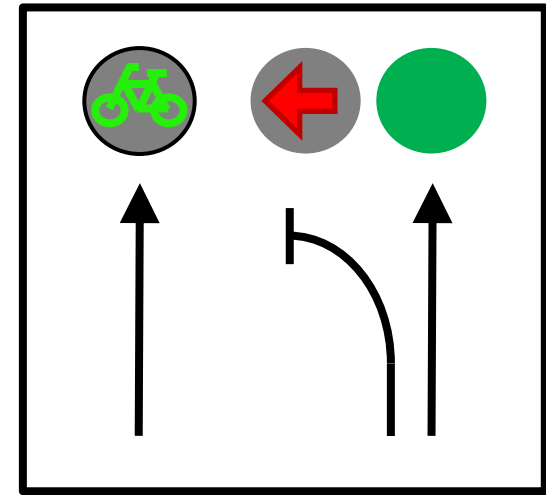
A TRANSPORT
NETWORK FOR
FUTURE GENERATIONS
WHAKATŪ/NELSON
9-12 JUNE 2024

Paint vs concrete

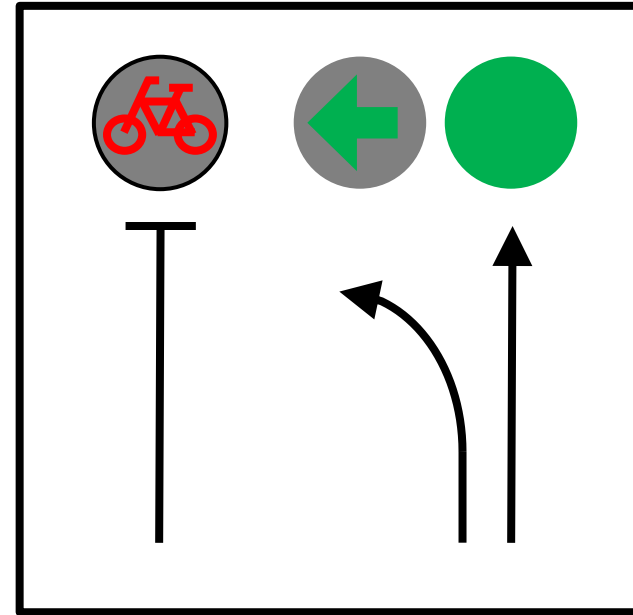
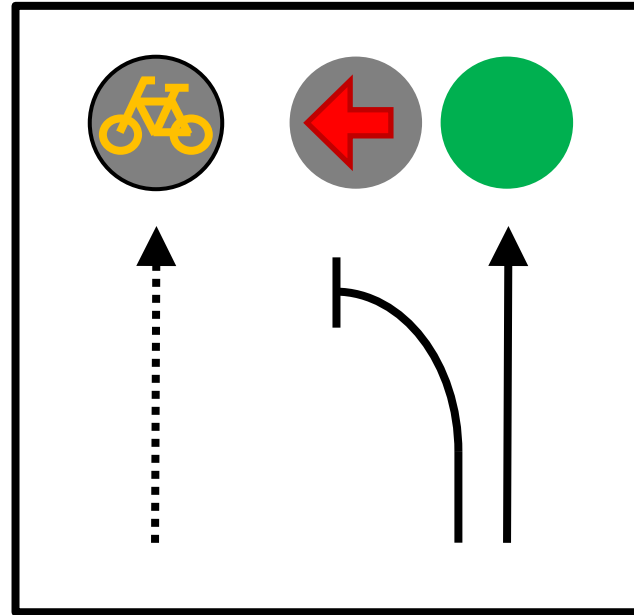
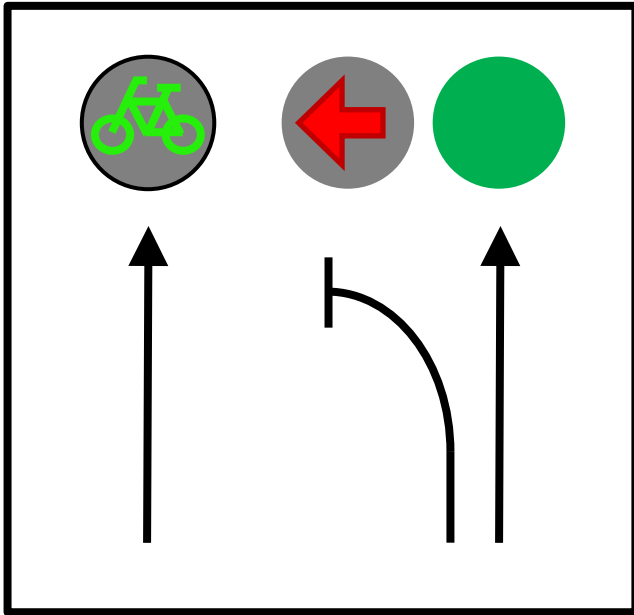


Setting the scene

- Separated cycleways at signalised intersections
 - left turning motorists vs through cyclists
- Typical treatment = “fully protected”
 - Is this *really* the safest option?
 - What else could we do?
- Let’s talk...



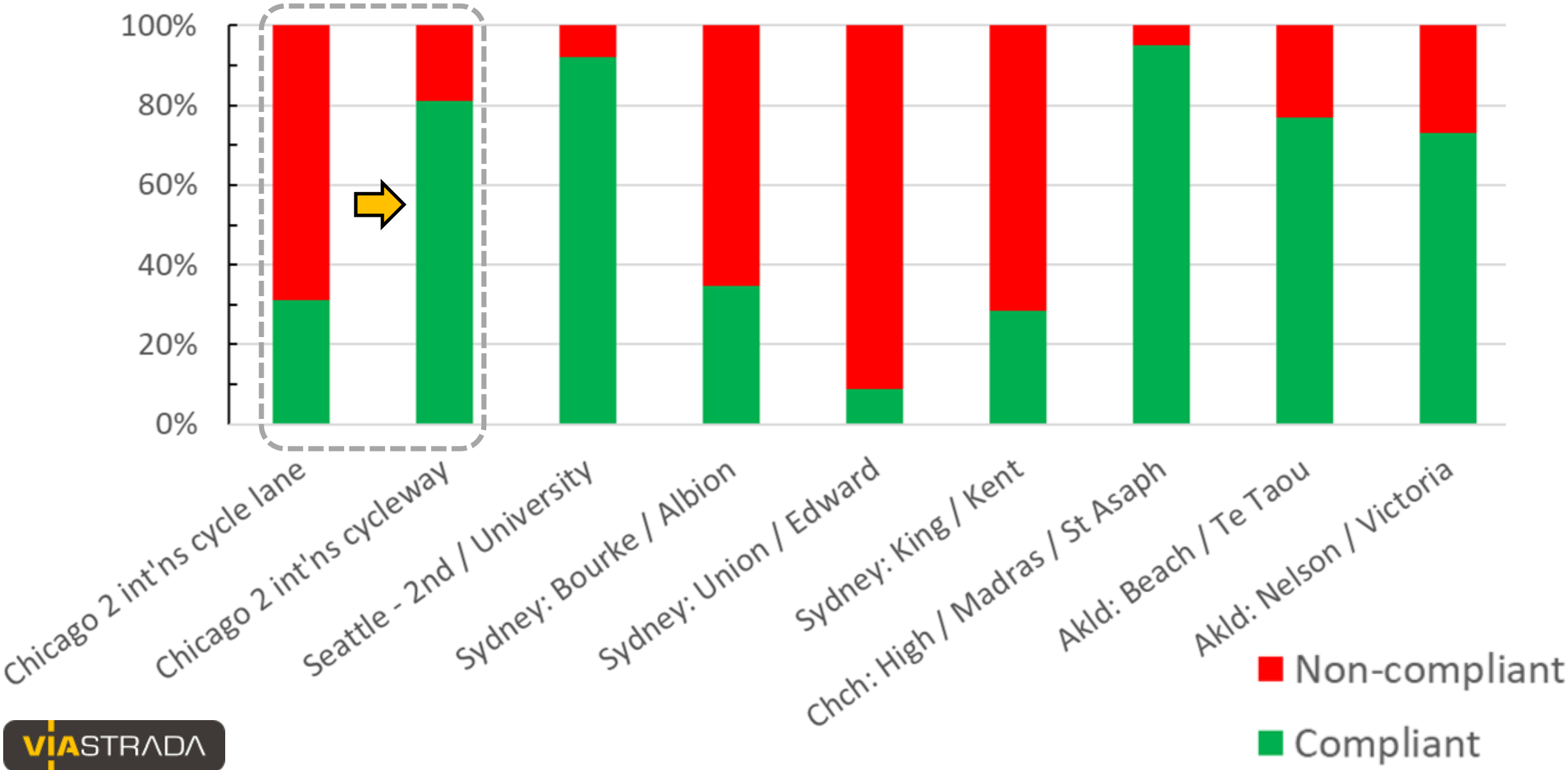
Fully protected cycleway at intersection



- Opposite to “full protection” is “filter turning”
 - the normal give way rules apply



Cycle compliance studies – full protection



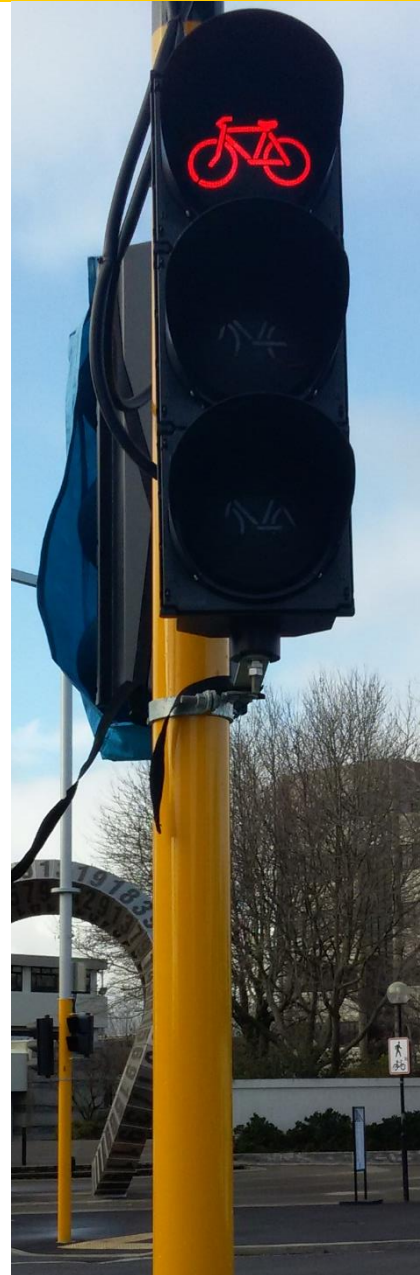
Factors in cyclist compliance at full protection

- Opportunity to infringe
 - Depends on cycle signal state on arrival



Factors in cyclist compliance at full protection

- Opportunity to infringe
 - Depends on cycle signal state on arrival
 - Timing of cycle movement within phase is important
 - Relates to coordination along corridor



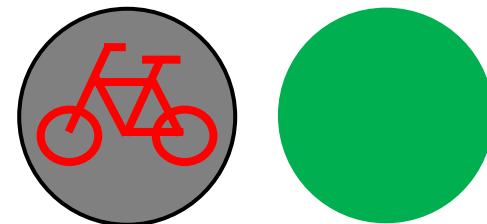
Factors in cyclist compliance at full protection

- Opportunity to infringe
 - Depends on cycle signal state on arrival
 - Timing of cycle movement within phase is important
 - Relates to coordination along corridor
- Risk of conflict



Factors in cyclist compliance at full protection

- Opportunity to infringe
 - Depends on proportion of people cycling arriving at the lights when it is red
- Risk of conflict
- Comparison with parallel through traffic



$$\text{Cyclist compliance} \sim \frac{\text{cyclist green time}}{\text{parallel traffic green time}}$$

$$\text{Cyclist compliance} \sim \frac{1}{\text{cyclist crashes}}$$



Legal situation

- Road User Rule (RUR)
 - establishes the rules under which traffic operates on roads
 - Ambiguous definition of “roadway”
- Accessible Streets Package was to address those issues
 - Consulted on in early 2020
 - Was supposed to be enacted during 2020/21



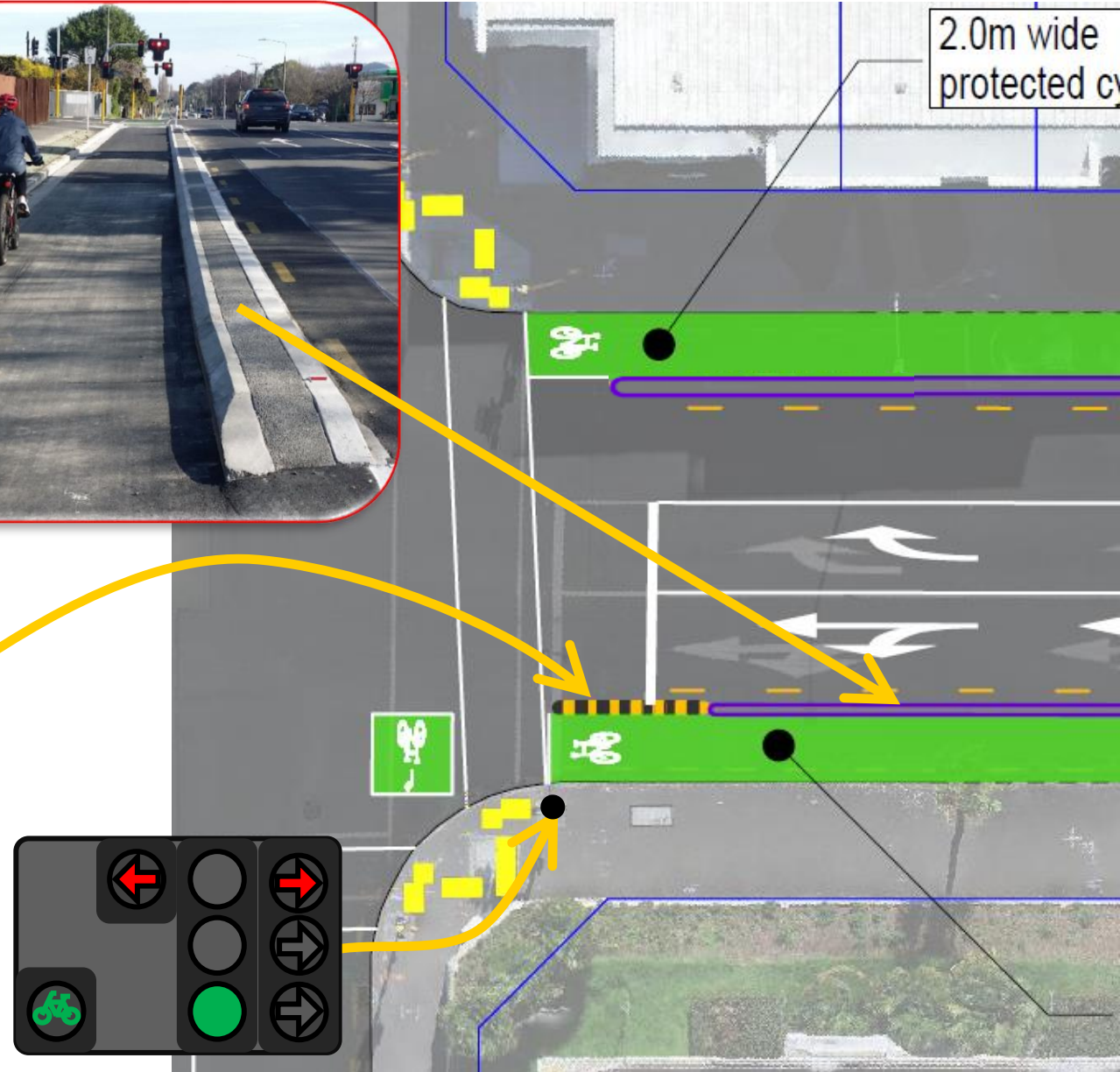
If legal implications weren't an issue...

- Other jurisdictions that allow filter turning do so for up to 150 cars per hour
 - That's a busy turn and whether it's the right number should be studied / observed
- In New Zealand, we do allow filter turning when it's a cycle lane
 - What is the real difference between paint and concrete as separators when it comes to filter turning?



New Plymouth proposal: layout

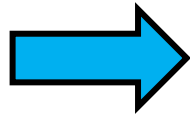
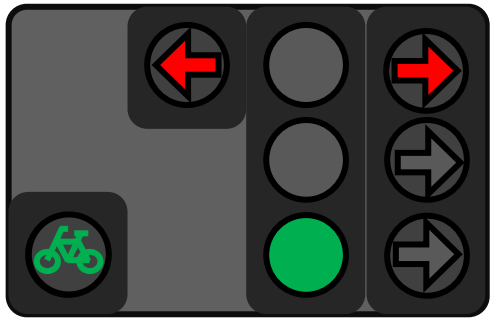
- Cycleway with physical separators (concrete)
- 5 m before limit line use commercial speed hump in lieu of separator
 - Cycleway now forms part of the roadway



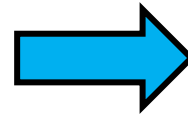
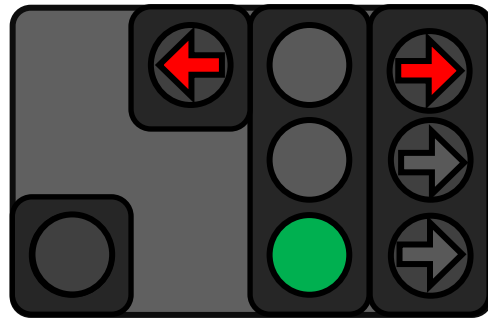
New Plymouth proposal: operation

1. Green cycle signal / red arrow for initial period of protection
2. Extinguish cycle signal (transition period 2–5 sec)
3. Turn off the left turn red arrow and allow 'filtering'

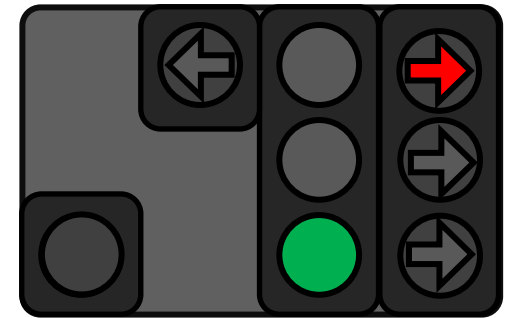
1.



2.



3.



Expected outcome

- Expected to function like filter turning through a (painted) cycle lane
 - Operationally more efficient for people cycling and driving
 - Cyclists can go whenever parallel drivers have a green light
- Expected to have much better compliance with traffic lights
- Expected to have improved safety outcomes
 - Because of the relationship between non-compliance and crashes

Next steps

- New Plymouth Transport Choices (TC) construction proceeding with reduced scope
 - NPDC did receive \$3.85m for construction before TC got nuked
- Other councils interested in trying out this concept
 - Hamilton City Council – commitment
 - Tauranga City Council – commitment
 - Christchurch City Council – investigation
 - Nelson City Council – I have an idea for a problem intersection
- Will gain experience from those sites

Thank you!

Questions and discussions



Consultant team

Axel Downard-Wilke

Axel@ViaStrada.nz

Megan Gregory

Megan@ViaStrada.nz

Project owner

Liz Beck

Liz.Beck@npdc.govt.nz