



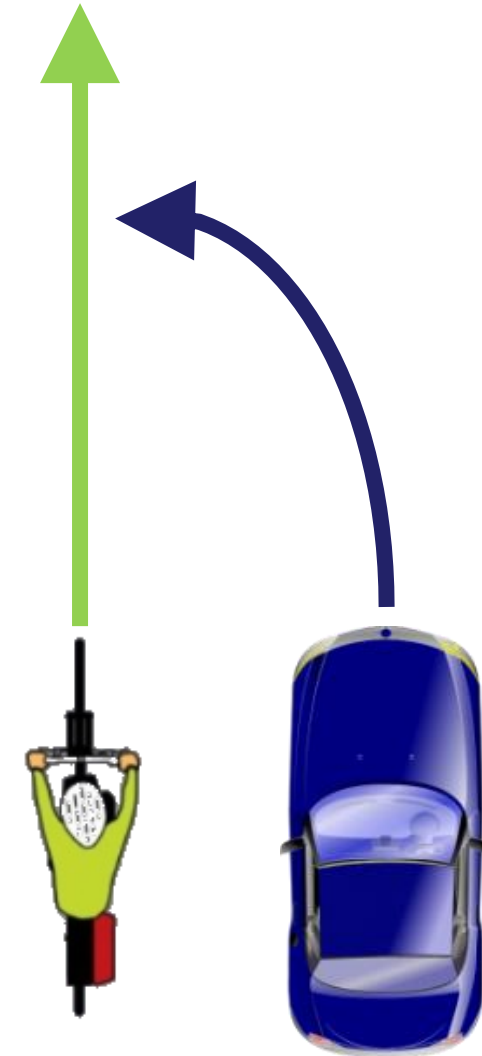
Filtering through protected cycleways

*New Plymouth
Transport Choices*

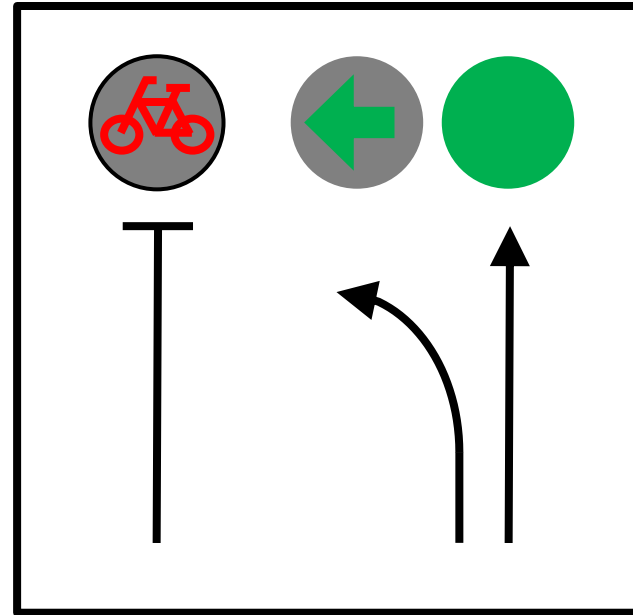
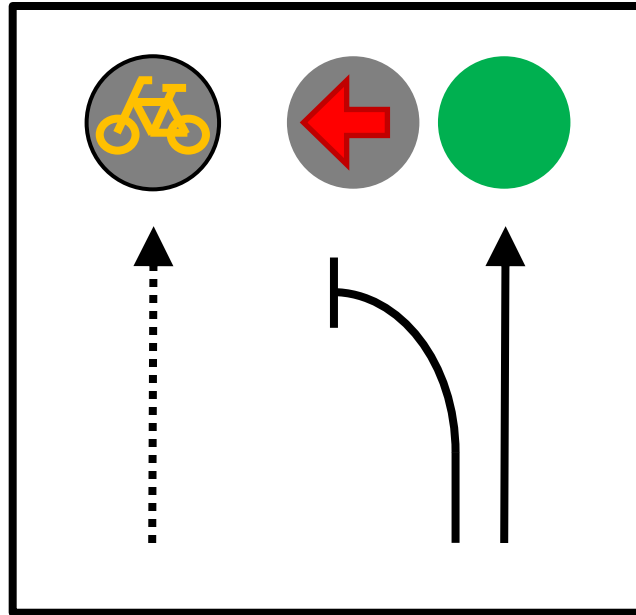
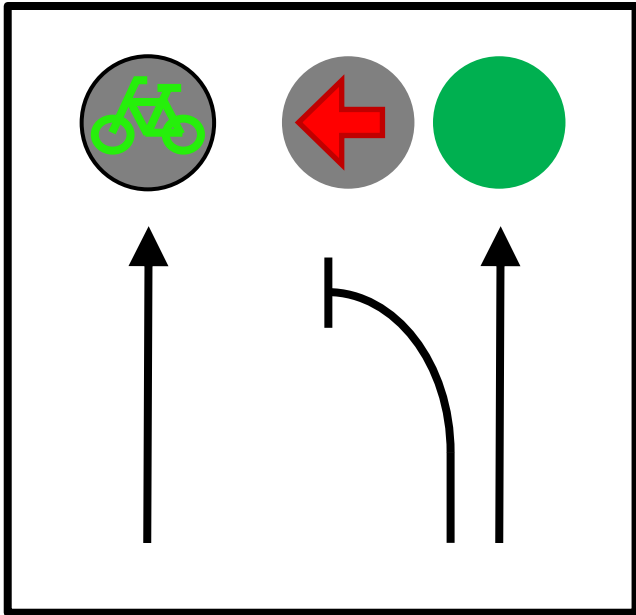
Axel Downard-Wilke
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Setting the scene

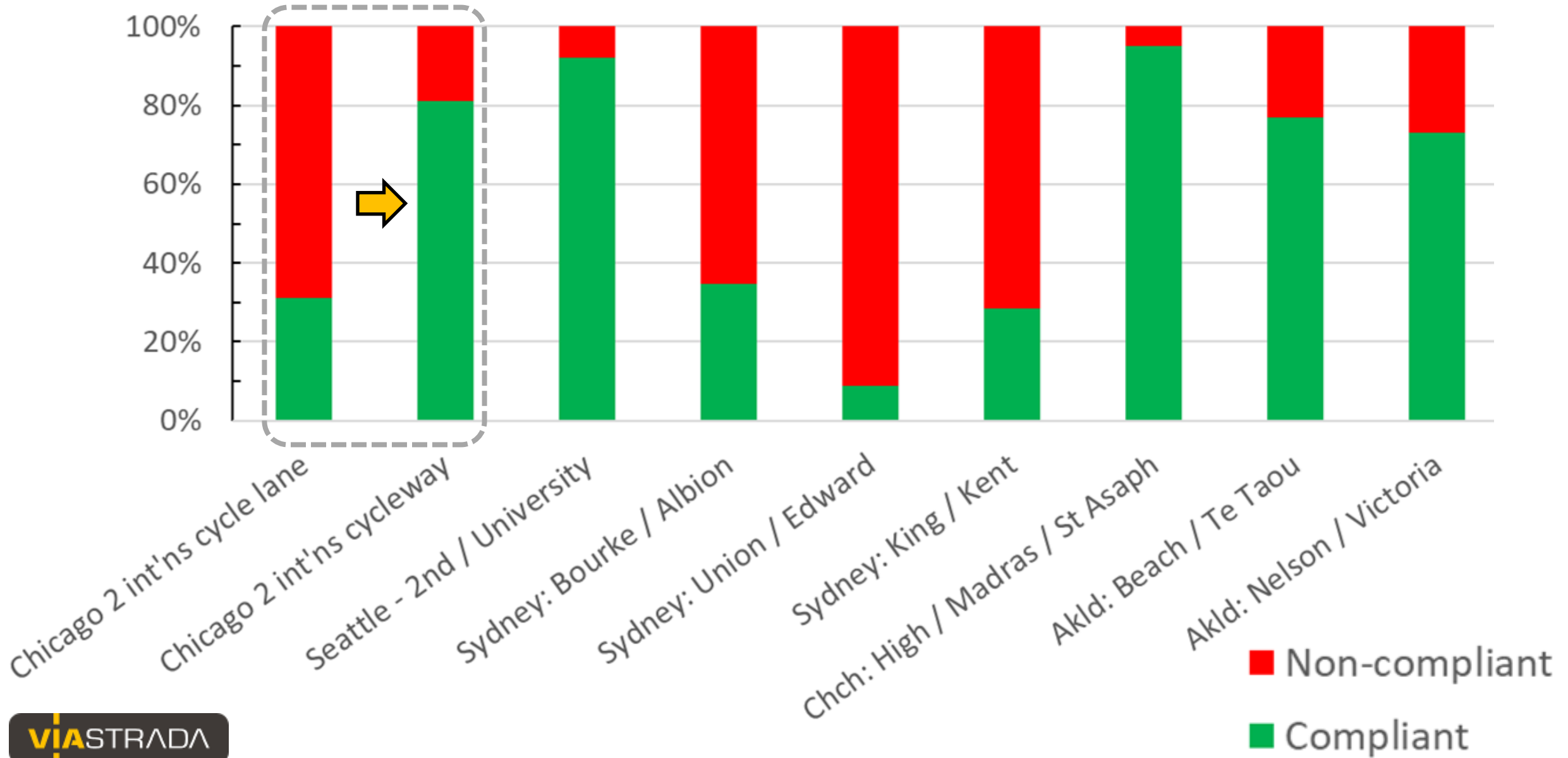
- Separated cycleways at signalised intersections
 - left turning motorists vs through cyclists
- Typical treatment = full protection
 - Is this *really* the most safe and efficient way?
 - Are there other options?
- Let's talk...



Fully protected cycleway at intersection



Cycle compliance studies – full protection



Factors in cyclist compliance at full protection

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



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



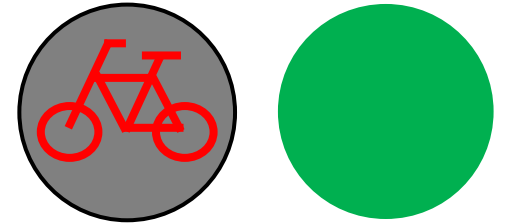
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Factors in cyclist compliance at full protection

- 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
- Comparison with parallel through traffic



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

LOS

- Exclusive phases for people cycling / drivers turning reduces LOS for both groups
- If left turn & through lane is shared, through traffic is also impacted
 - And if through traffic overtakes left turners held on red arrow in RT lane, there may be safety implications for drivers

Filter turning in NZ?

- Legal implications
 - Still a few grey areas (as presented at SNUG 2014)
 - **Ambiguous definition of “roadway” (Road User Rule)**
 - Limited definition of cycle aspect (Traffic Control Devices Rule)
 - Accessible Streets Package will address those issues
 - When will that happen?
- Concerns
 - Already have a problem with filter turning through pedestrians – why extend this to cyclists?

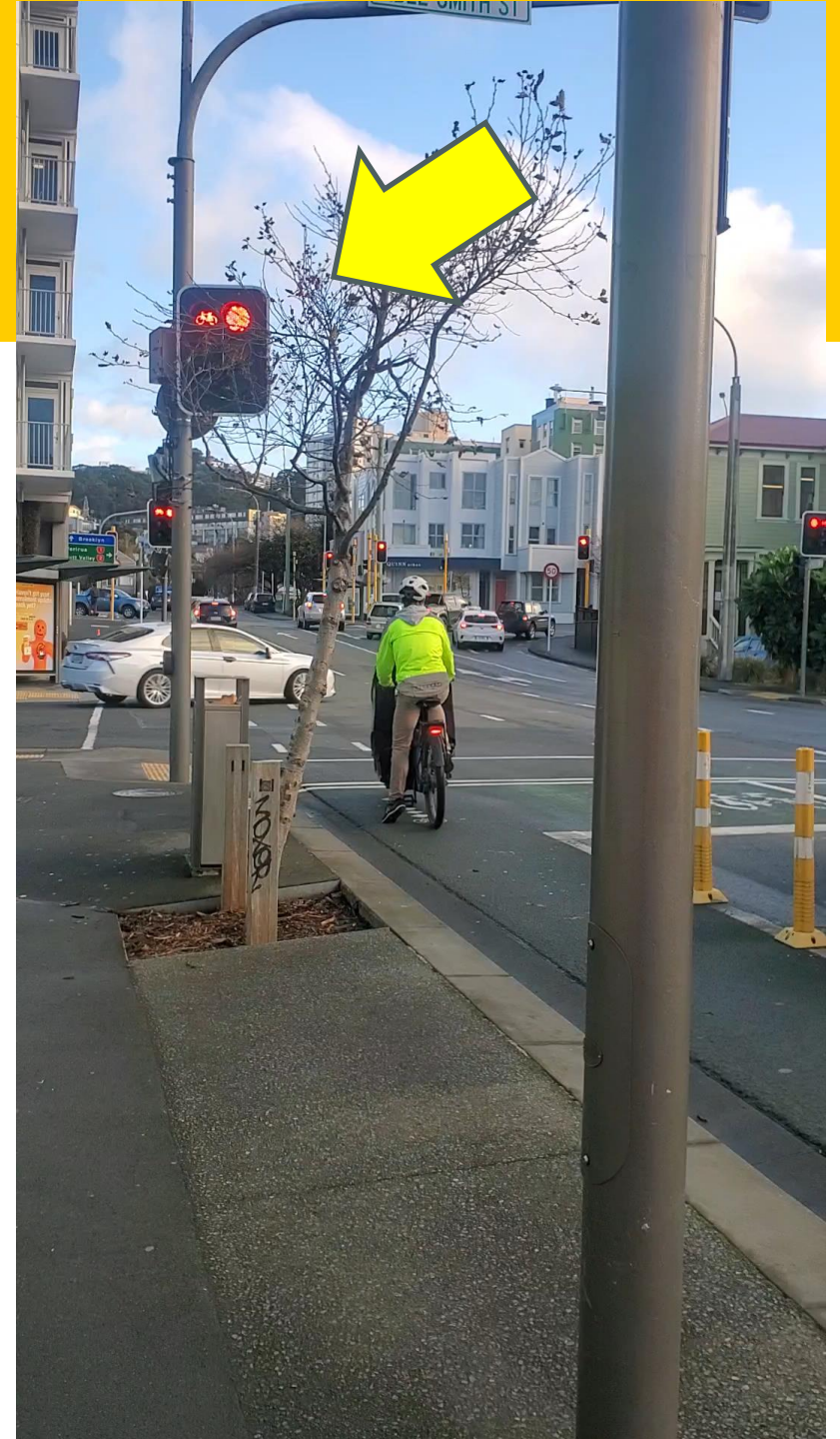
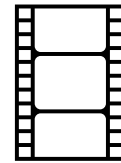
If legal implications weren't an issue...

- Other jurisdictions that allow filter turning do so for turning volumes of up to 150 veh/hr
 - This number can be traced back to the CROW manual
 - 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?



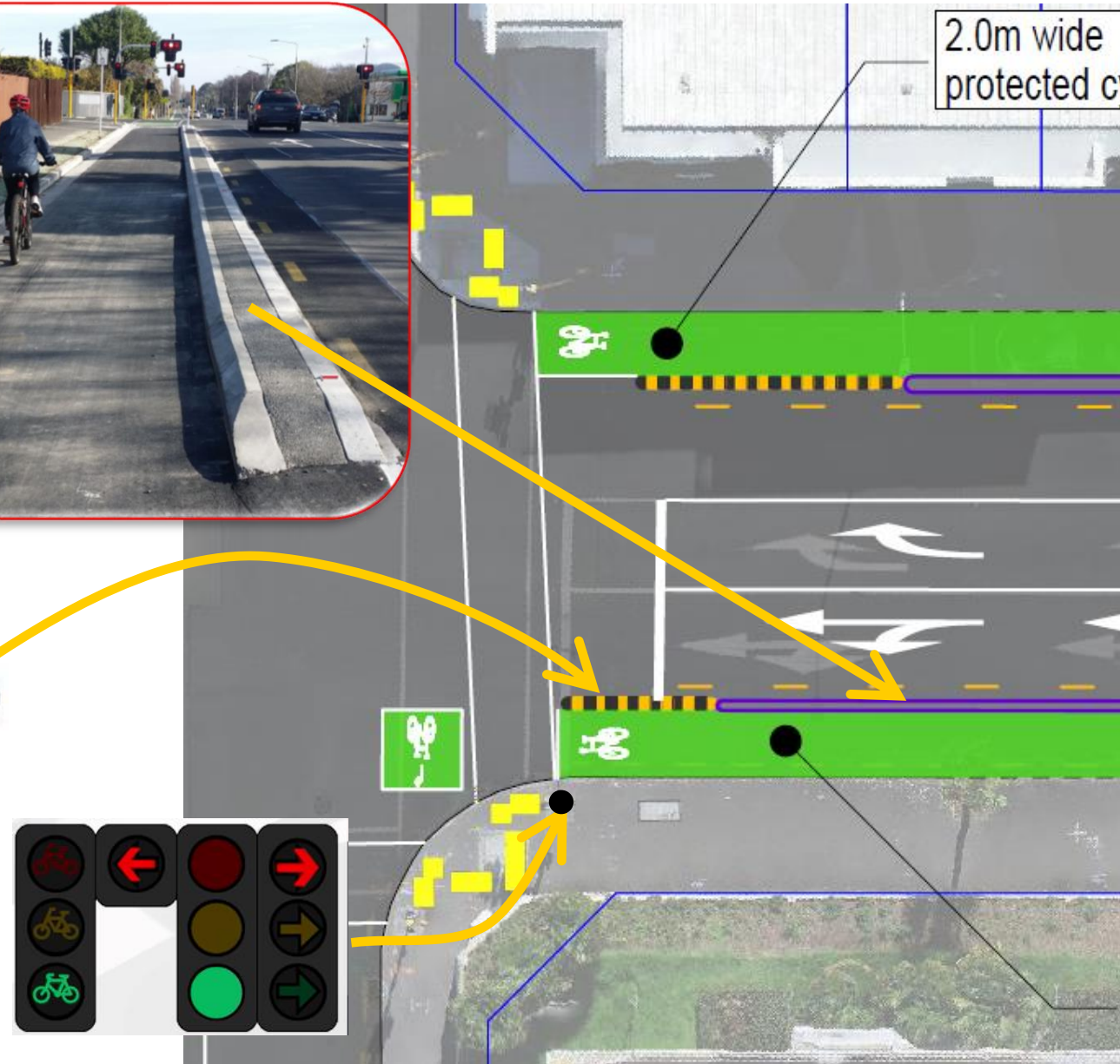
Filter turning through separated cycleways

- Technically not legal
- Know of just 2 NZ examples where filter turning happens
 - Clyde / Ilam (Christchurch)
 - Abel Smith / Victoria (Wellington)



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. Don't allow filter RT
2. LH red arrow protection and green cycle signal
3. Then show yellow cycle signal
4. Drop the LT red arrow and blank the cycle displays

1.



2.

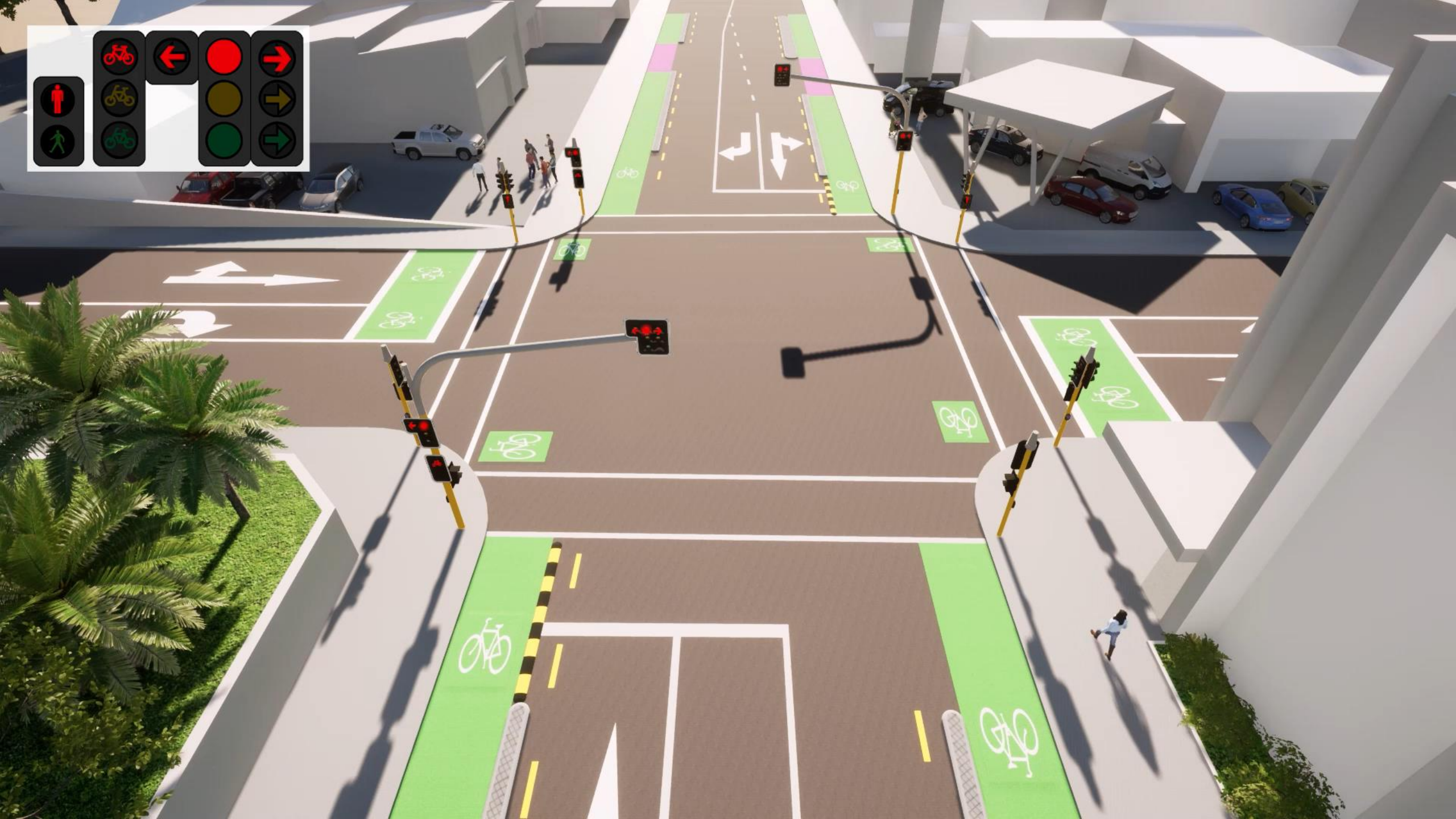


3.



4.





Expected outcome

- Expected to function like filter turning through a (painted) cycle lane
 - Operationally more efficient for people cycling and driving
- 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

- Elected members to decide upon the projects next month
- If approved, construction between Dec 2023 and June 2024
- Can report back at a subsequent SNUG workshop

Thank you!

Questions and discussions



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