STOPS and GOES: THE NEXT GENERATION

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SNUG workshop | September 2026

VIASTRADA

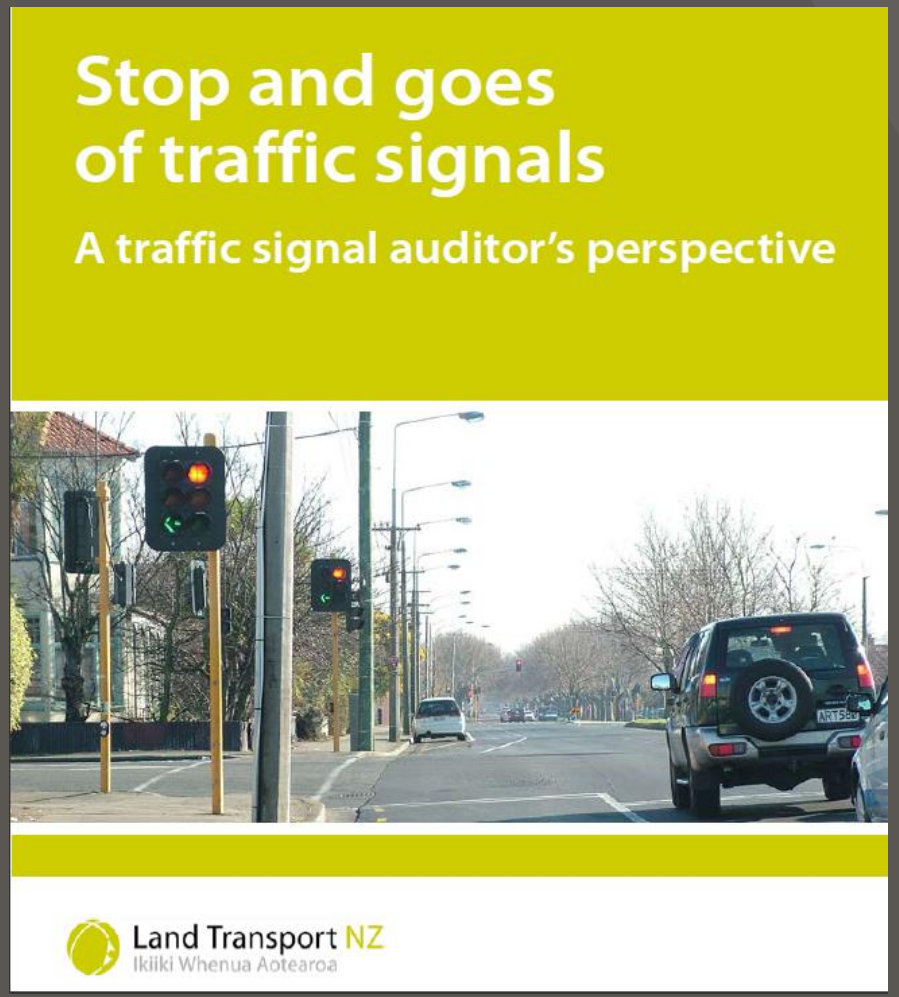
TRANSPORT PLANNING AND DESIGN

The OG *Stops and goes* (a quiz)

- Which group identified a need for consistency for traffic signals across the country? – SNUG!
- Audit methodology, commissioned by…?
  – Transfund (which soon became Land Transport NZ)
- Who is this project manager? – Ian Appleton
- How many NZ signalised intersections audited? – 123
- This guy – Axel Wilke – analysed the audits and documented the common trends and key learnings

The OG *Stops and goes* – coverage

- Crash review
  - Right-turn-against & red light running prominent
- Intersection and lane layout
  - Opposed RT lanes, captive turn lanes, slip lanes
- Signal post and display location
  - Conspicuity, sufficient displays
- Phasing and operational issues
  - Arrow operation and logic
- Pedestrian issues
  - Phasing and push button locations
- Cyclist issues
  - Provisions



Stops and goes: the next generation

- SNUG recognised that things have changed
- Commissioned ViaStrada for some updates
  - Now based on professional experience rather than audits
- Proposed to focus on:
  - Crash search / patterns refinement
  - Cyclist and pedestrian best practice
  - Bus priority
  - Checklist for future traffic signal review / audit
- Survey of SNUG committee
  - confirmed the focus areas
  - added a few extra bits to address in other sections

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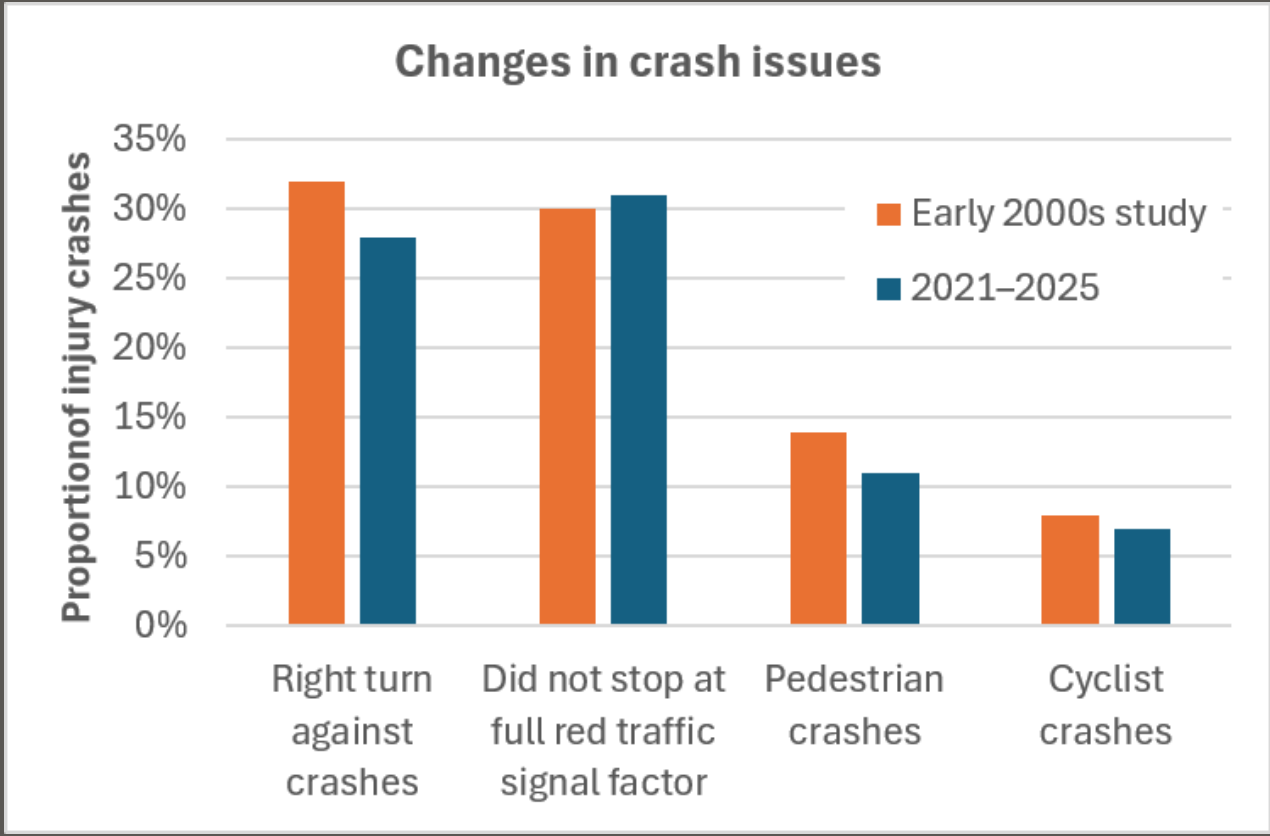
What’s changed?

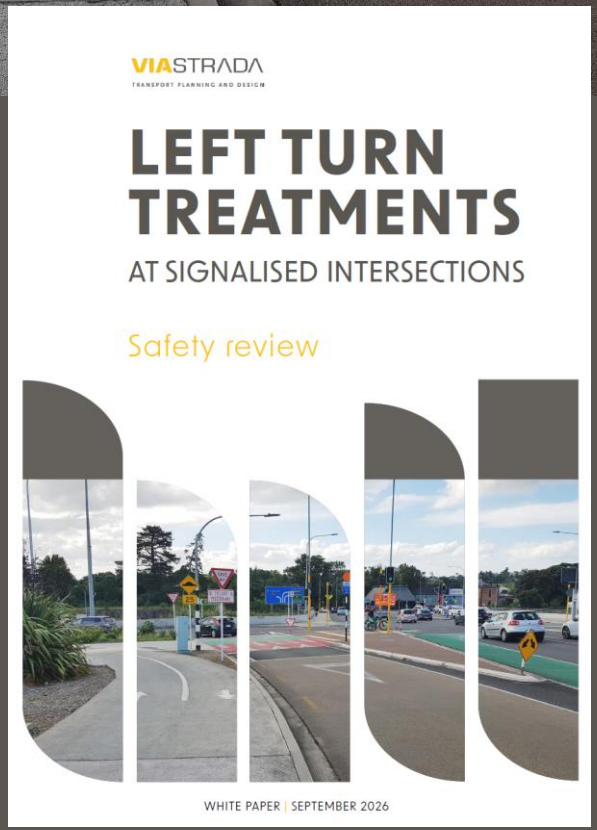
Crashes at traffic signals

- Main injury crash type and factor remain the same
- Crashes involving pedestrians & cyclists have decreased in proportion



Slip lanes

- Well-designed slip lanes
  - high entry angle,
  - raised safety platform crossing,
  - signalisation where appropriate
- can improve pedestrian safety
  - by separating conflict points (and managing speeds)
- and can reduce pedestrian delay
  - by providing a priority crossing across the slip lane and reducing the overall intersection cycle time
- See O'Brien (2019)
  - and Gregory *et al.* (2026)

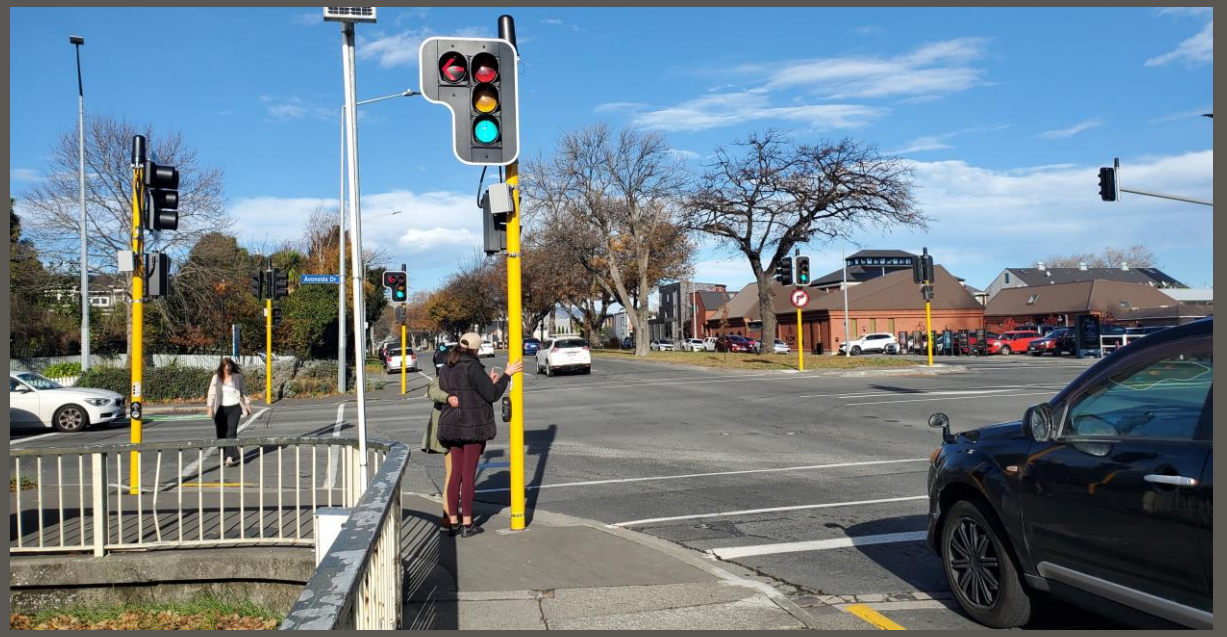


Phasing and operational issues

- More detail on use of arrow signals and protected phases
- New sub-section on filter turning
  - Including details previously included in the crash analysis section

Pedestrian issues and provision

- Recommended levels of protection
- Signals to use for pedestrians & their protection
- Detecting & calling pedestrian movements
- Updates re best practice for tactiles and push button placement (ref RTS 14)



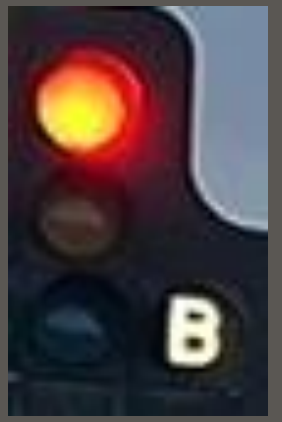
Cyclist issues and provision

- Signals for cyclists

General traffic signals

Standard cycle signals

Directional cycle signals



Bus signals

2-aspect cycle signals

*On-road cycle lanes **may** have a single green aspect cycle signal,*

*whereas separated cycleways **must** have green, yellow, and red cycle aspects (except in the anticipated specific cases where two-aspect cycle signals might apply).*

Cyclist issues and provision

- Signals for cyclists
- Intersection layouts

} When / where / how to use them

  - Whether / where conflict occurs

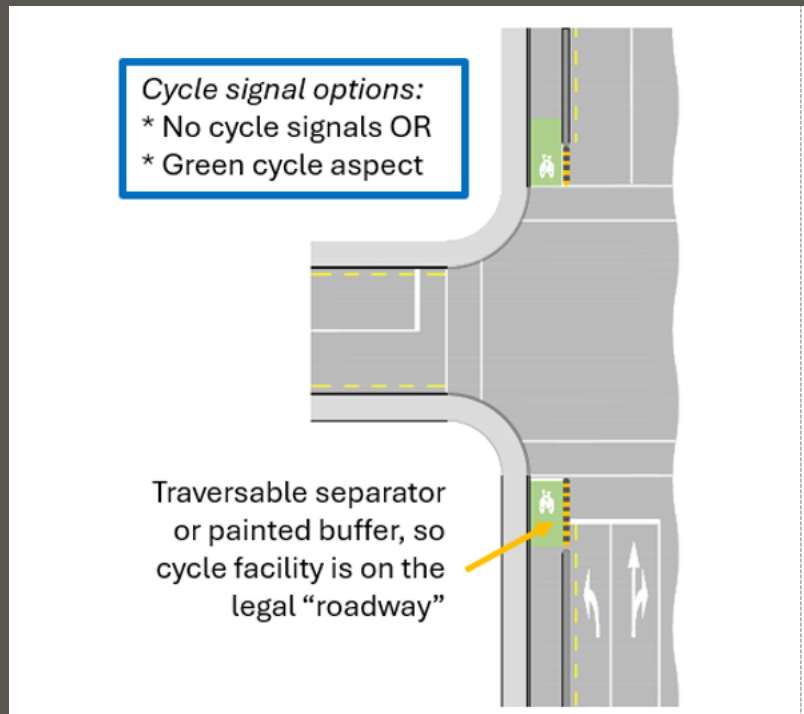


Figure 8-6: Separated cycleway layout to support filter turning

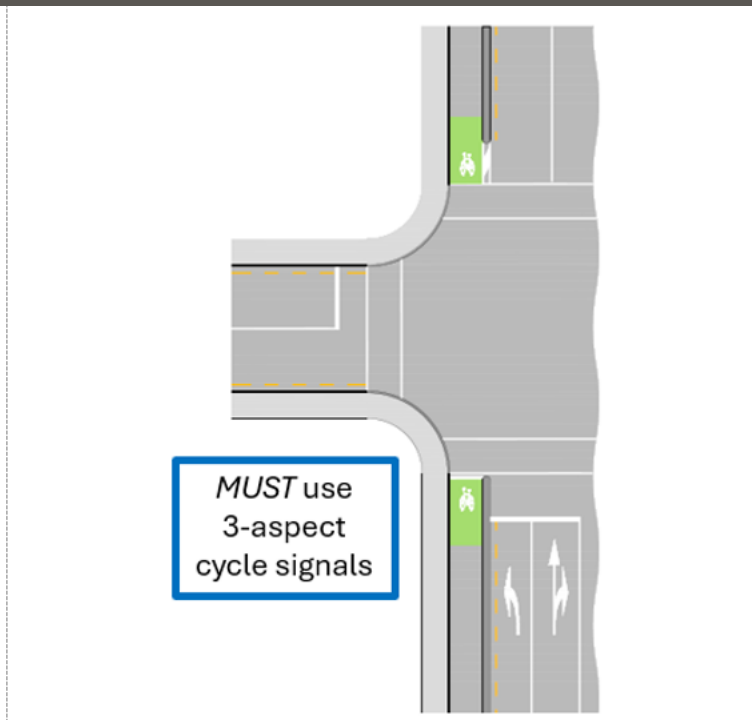


Figure 8-7: Separated cycleway layout to be operated with full protection

Cyclist issues and provision

- Signals for cyclists
- Intersection layouts

} When / where / how to use them

  - Whether / where conflict occurs
- Intersection waiting facilities
  - Advanced Stop Lines, Advanced Stop Boxes, hook turns
- Managing cycle trajectories through intersections
- Cyclist phasing and detection at intersections

Bus priority

- Forms of bus priority
  - Head starts / queue jumps
  - Active signal priority
  - Bus gates (modal filters)
- Integrating provisions for buses and cyclists

Checklist for traffic signal review

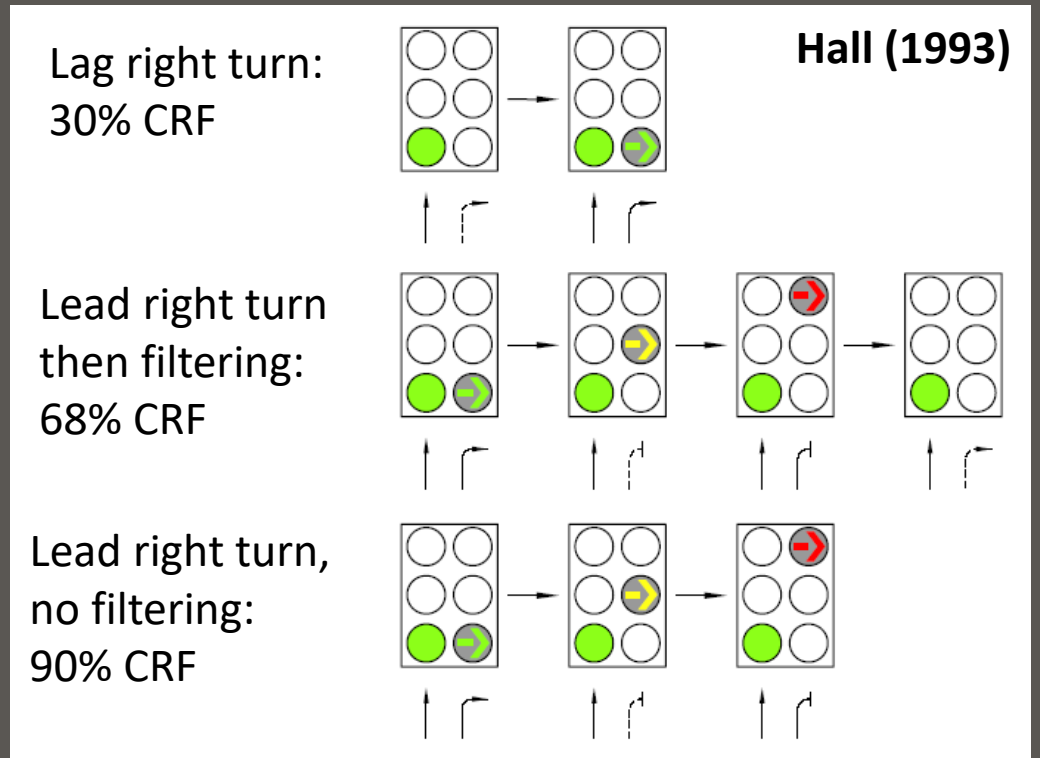
- A prompt regarding the key elements of the document
- Not a one-stop-shop
  - Because the *Stops and goes* doesn't cover everything included in Austroads, TCD Manual, local standards etc

Section / item	Y/N	Notes
Crashes and context (Section 3)		
Has the crash history been analysed to check for any trends in crash types or contributing factors?	✓	3 right-turn-against crashes in 5 years!
Intersection and lane layout (Section 4)		
Opposed right-turn lanes (Section 4.1)		
Are opposed right-turn lanes aligned and suitably narrow?	✗	Offset RT lanes
Do right-turners have sufficient forward visibility?	✗	Due to above
Where alignment cannot be achieved, is this mitigated by appropriate phasing?	~	Filter then lag RT
Captive turn lanes (Section 4.2)		
Are captive turn lanes avoided where possible?	✓	

What hasn’t changed?

Details we chose to keep

- Issues that no longer occur, but we don't want to resurface, e.g.
  - No signals visible on approach
  - Simultaneous walk and green left turn arrow
- Crash reductions from Hall (1993)



Things we'd like to have updated

- Photos!
  - Poor examples to help others learn

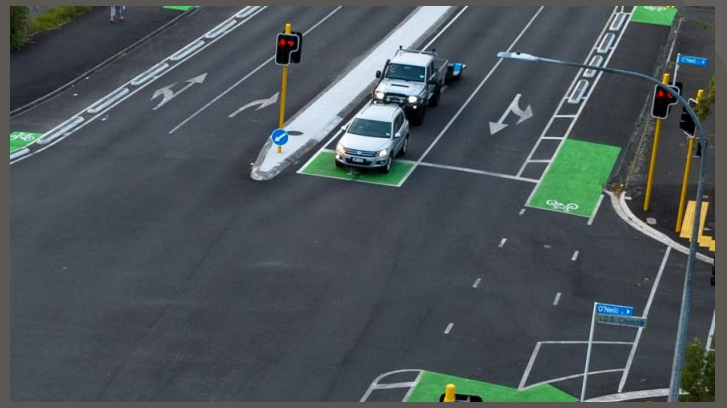

Offset right turn lanes


Captive lane


Non-complying display

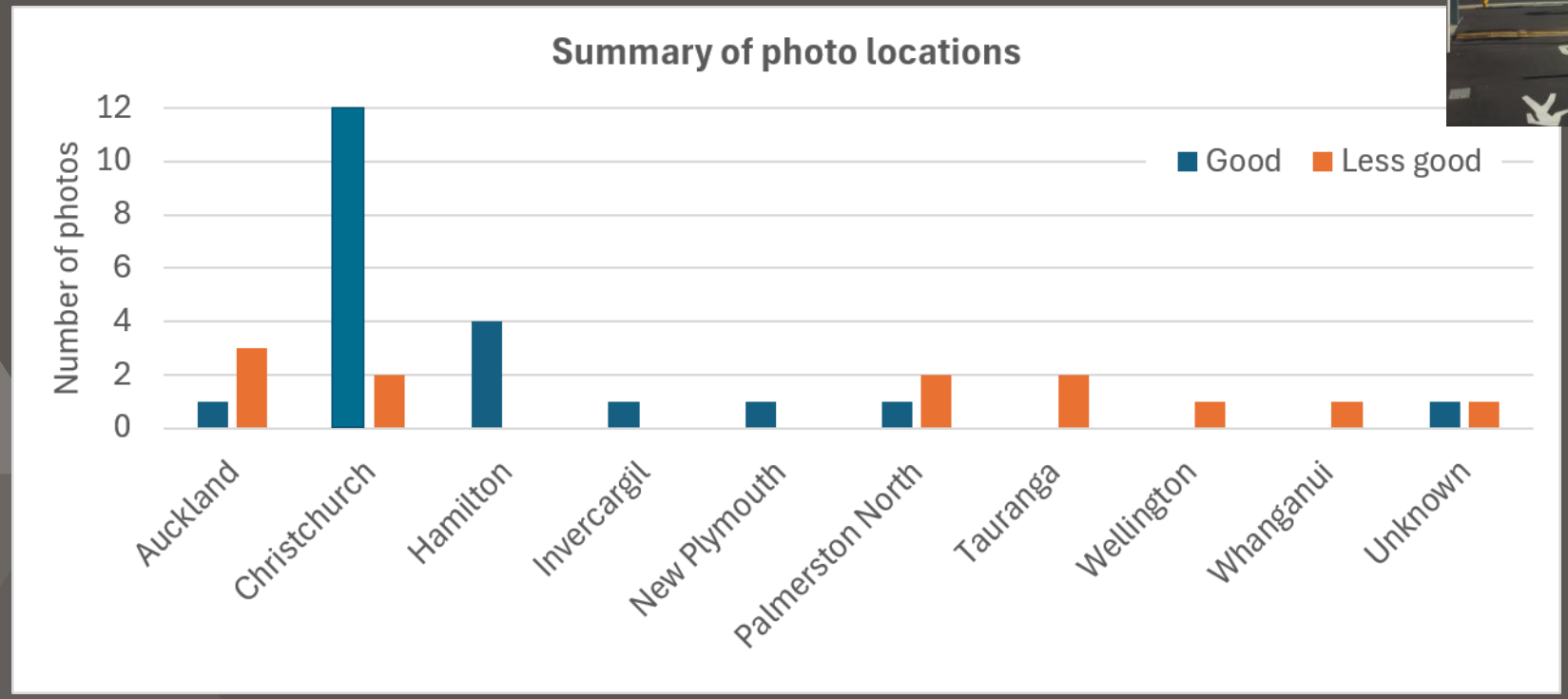
Things we'd like to have updated

- Photos!
  - Poor examples to help others learn
  - Good examples to show how it's done



Things we'd like to have updated

- Photos!
  - Poor examples to help others learn
  - Good examples to show how it's done
  - A better cross-section of NZ



Conclusions

- Great to see how far we've come as an industry in 20 years!
- Are we collaborating enough as an industry?
  - Let's use the SNUG forum more and share photos / examples.
- Thanks SNUG for letting us work further on this important document!
- Let's not leave it another 20 years until the next update?

Find out more

https://snug.org.nz/specifications/

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