

The Value of Technical Peer Reviews



Axel Wilke – ViaStrada

Daniel Newcombe – Auckland City Council



Overview

- Background & Introduction
- Methodology
- 5 Peer Review Examples
 - Original design
 - Peer review changes
- Discussion
- Conclusions

Introduction

- Auckland City Council has dozens of cycle projects planned or underway
- Few experienced cycle facility designers & they have only limited resources
- Council saw value in using peer review process to increase knowledge sharing
- Opportunity to add value & identify innovative design solutions

Introduction cont'd

- Council promotes peer review process to design consultants as a way to up-skill staff & help them gain experience
- Not an indictment on their work
- Peer review assists inexperienced designers in future projects & raises quality of cycle projects
- Expected outcome is best practice facilities for Auckland city cyclists

Introduction cont'd

- Council engaged ViaStrada Ltd to peer review several cycling projects
 - from a range of designers
- ViaStrada identified innovative solutions to difficult problems & improved overall quality
- Collective peer review is more cost-effective than individual peer reviews
- Independent peer review reassures politicians & ratepayers that best project developed
 - important when limited support for cycling projects

Methodology

- Council gathered several draft cycle scheme plans prior to consultation phase
- ViaStrada was sent plans and undertook a desk-top review
- Reviewer and Council then visited each site
 - All sites were walked and driven through
 - Some sites were also cycled through
 - Road safety engineer and designer present at one site also

Methodology cont'd

- Peer reviewer produced written report with recommendations for each project
- Scope not limited original design, but also any other changes that would improve overall cycling environment
- Council used report to work with each designer to amend their plans

Peer review examples

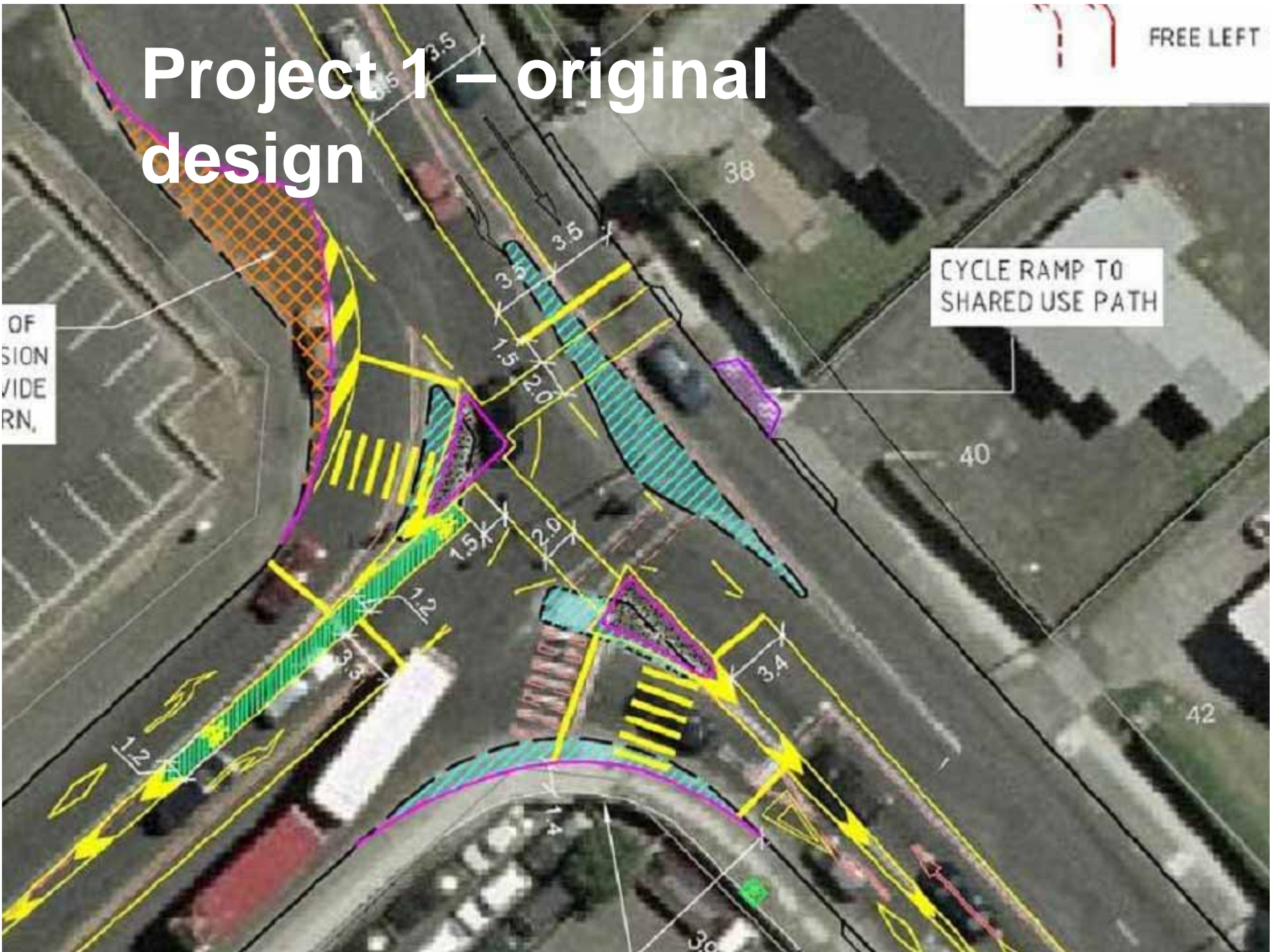
- Upgrade of Signalised T Intersection
- Arterial Road Corridor Improvements
- Upgrade of Signalised X Intersection
- Busy and complicated arterial road
- Cycle Lanes along Arterial Road

Project 1 – original design

Upgrade of Signalised T Intersection

- Unpleasant intersection on key cycle route
- Existing design substandard (for all users), poor maintenance, very high no. of heavy vehicles, slip lanes inadequate
- Poor pedestrian provision & no visibility for cyclists
- Original design had slight upgrade with additional cycle lanes in some places
- Designer had difficulty finding sufficient space & managing on- & off-road transition

Project 1 – original design



Project 1 – peer review changes

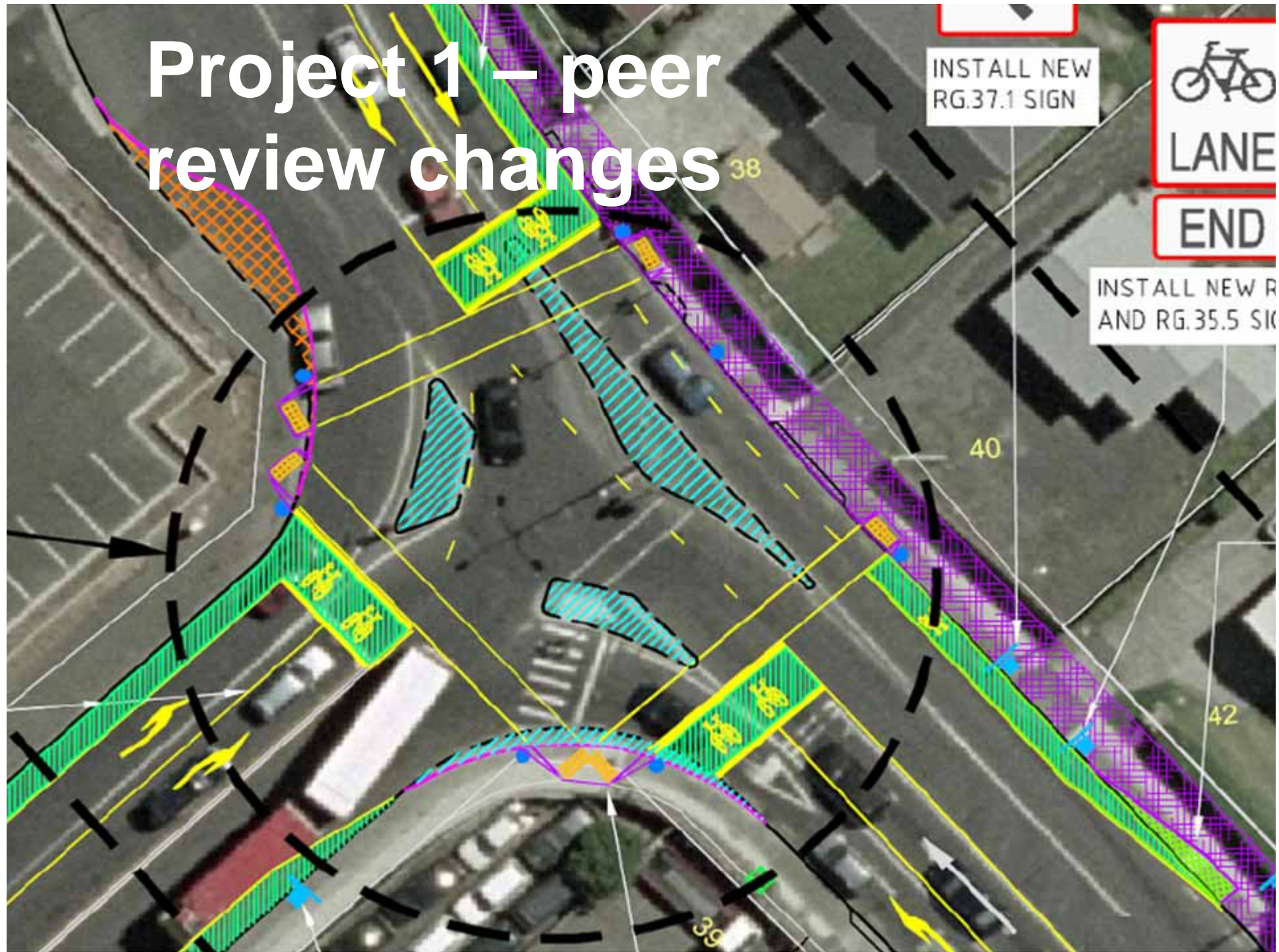
- Peer review identified potential new cycle facilities & deficiencies in current signal arrangement
- Recommended several additions to design to greatly increase safety for peds & cyclists
- Example of engineer without cycling design experience & difficult design environment
- Peer review was able to offer an alternative viewpoint
- Project has been changed along the lines of peer review recommendations
- Project due for implementation soon

Project 1 – peer review changes

INSTALL NEW
RG.37.1 SIGN



INSTALL NEW R
AND RG.35.5 SI



Project 2 – original design

Arterial Road Corridor Improvements

- Arterial road with mainly residential frontages
- Forms core part of cycle network
- On-road cycle lanes on both sides
- Links to key cycleway downstream

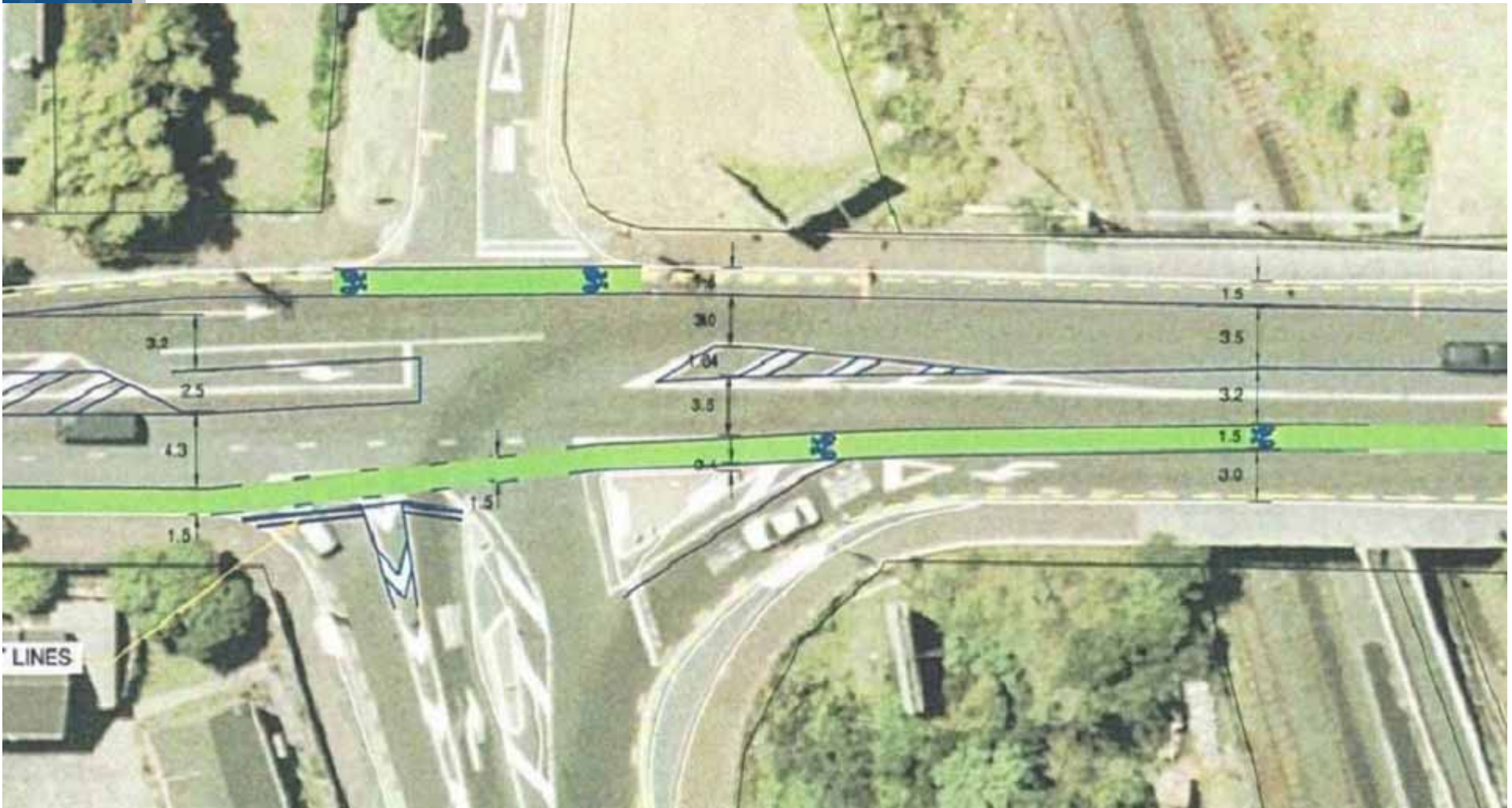
Project 2 – original design



Project 2 – peer review changes

- Peer review suggested different arrangement at major T intersection
- Suggested numerous changes to position of cycle lanes to improve safety
- Allowed retention of parking upstream
- Example of inexperienced designer not seeing alternative opportunities

Project 2 – peer review changes



The value of technical peer reviews

Project 3 – original design

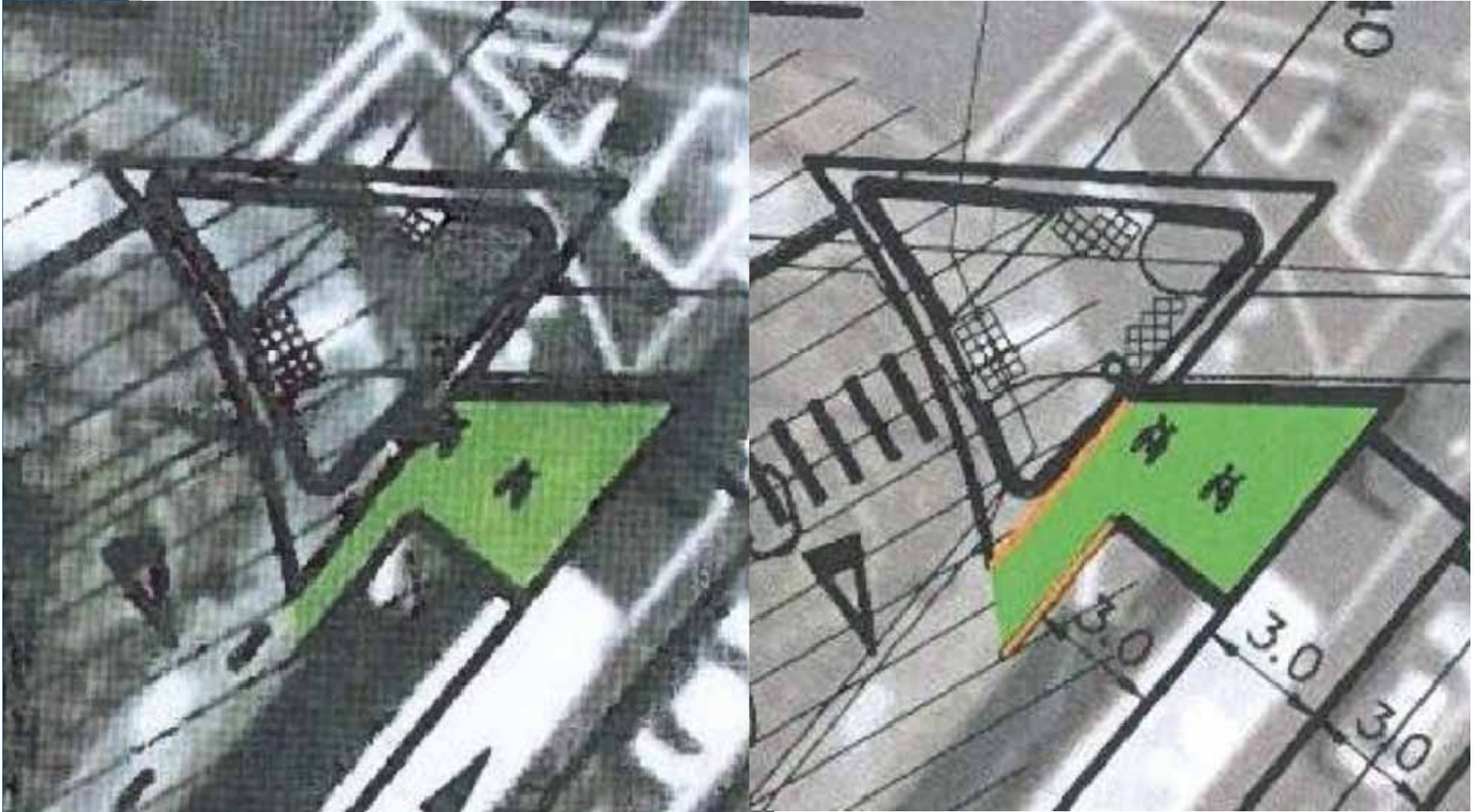
Upgrade of Signalised X Intersection

- Busy arterial intersection being upgraded for safety & capacity
- Adjoining cycle lane on one arm
- Original scheme plan did little to improve environment for cyclists, with below-standard width lead-in cycle lanes

Project 3 – peer review changes

- Peer review queried need for capacity increase, suggested alternative arrangement
- Road widening occurring regardless, so reallocation of lane width suggested to achieve guideline-complying cycle lanes
- Example of inexperienced cycle designer & numerous competing interests in complicated env.
- Peer review assisted in supporting need for minimum standards of cycle facilities
- Project currently at detailed design stage

Project 3 – design changes



Before

The value of technical peer reviews

After

Project 4 – original design

Busy and complicated arterial road

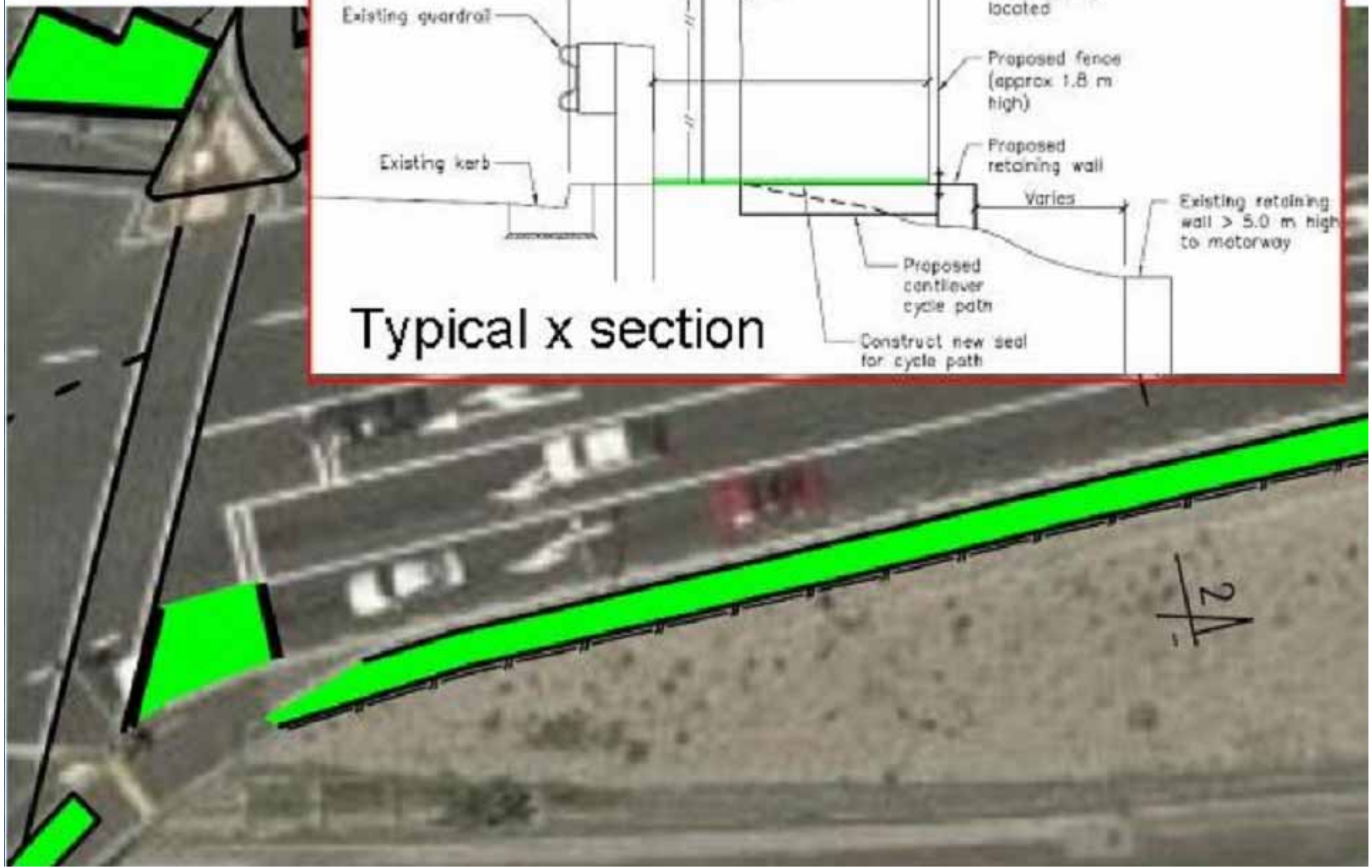
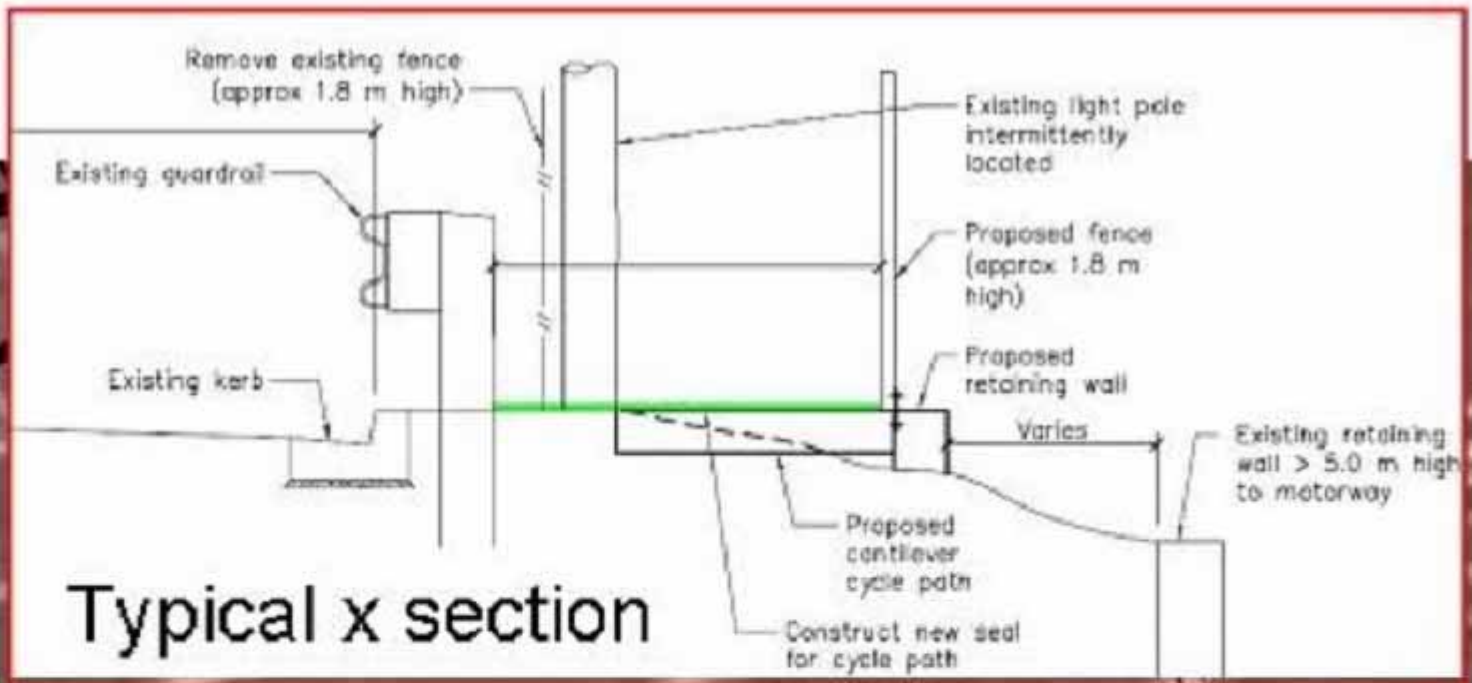
- Key CBD route
- Start of important cycleway route
- Historical ‘motorway-style’ layout is difficult for pedestrians or cyclists
- Original design limited to advanced stop box

Project 4 – original design



Project 4 – peer review changes

- Peer review suggested innovative cyclepath on steep uphill section using unused road berm
- Other suggestions improved cycle lane design around high speed flyover & improvements to off-and on-road transitions
- Example a project repeatedly revised already & benefited from peer reviewer's independent assessment of issues
- Project is currently out for consultation



Project 5 – no changes

Cycle Lanes along Arterial Road

- Controversial but key cycle lane project (due to parking removal), on busy arterial road
- Peer review suggested minor changes to cyclelane design to meet current marking stds
- Although no major changes recommended, this in itself was useful, as it gave Council confidence in the design
- Project due for implementation later this month

Discussion

- Peer review process found many deficiencies with original designs
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- Reasons for deficiencies tend to be
 - lack of cycling design experience
 - complex projects beyond designer expertise

Discussion cont'd

- Similar situation to signalised intersection design
- LTNZ report recommended:
 - *Engineers should make use of all the available relevant guidelines and standards, and*
 - *The most important advice, however, is to engage a competent signal engineer for the peer review of new designs. Note that this is not covered by the road safety audit process...*
- Could replace “signal” with “cycle design”

Discussion cont'd

- However, road safety audit can't replace peer review if fundamental design principles not applied correctly initially
- Safety audit will not redesign plan, only identify where proposals might fall short in terms of safety
- Cycle design is specialised discipline (like signal design) so safety auditors may not have expertise
- Safety audit not concerned with LOS issues

Discussion cont'd

- Appropriate guidelines for cycling design are in place
 - Austroads (1999)
 - Transit (2004)
- Documents often not applied fully
- Sharing of experience & getting different types of engineers talking to each other is major part of peer review process

Discussion cont'd

- May be useful to do similar process with advocate groups if they get involved in design, to 'skill them up' with broader experience
- Could also apply to urban design consultants
- Doesn't replace need for proper safety audit

Conclusions

- Peer review process across a range of cycling projects achieved positive outcomes for Auckland City Council
- Design consultants also gained from process
- Collective approach made better use of resources
- Auckland City Council would recommend peer review as useful for any council where limited cycling design experience is available

Questions or comments?

Or contact the authors later

Daniel Newcombe

(09) 367 6992

daniel.newcombe@aucklandcity.govt.nz

Axel Wilke

(03) 343 8221

axel@viastrada.co.nz