

Presentation to Canterbury Active Transport Forum
Christchurch, Tuesday 2 December 2008

Staged Pedestrian Crossings

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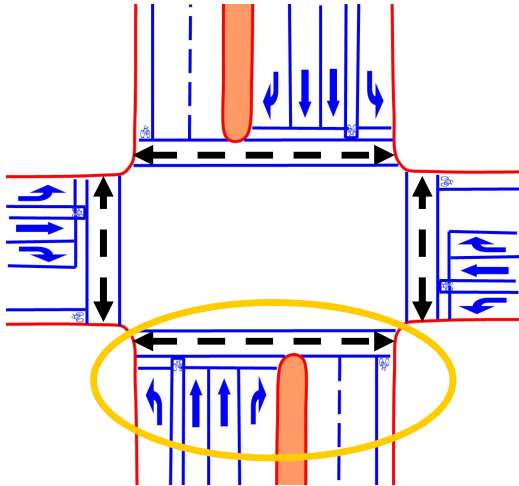
Presentation outline

- Introduction
- Components of staged pedestrian crossings
- Case study
- Discussions
- Conclusions



Introduction

- A typical pedestrian crosswalk operation in NZ:

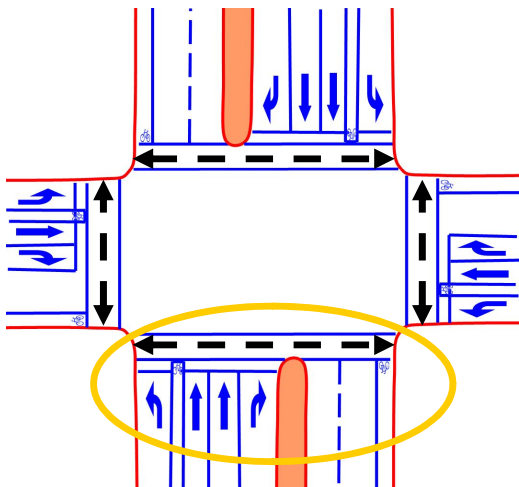


- Multi lane road
- Pedestrians cross in one go
- Different types of median refuges and call button provisions

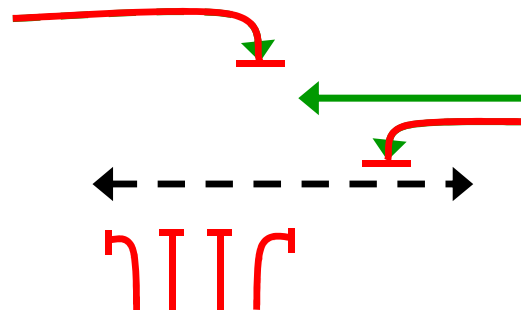
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Introduction

- A typical pedestrian crosswalk operation in NZ:



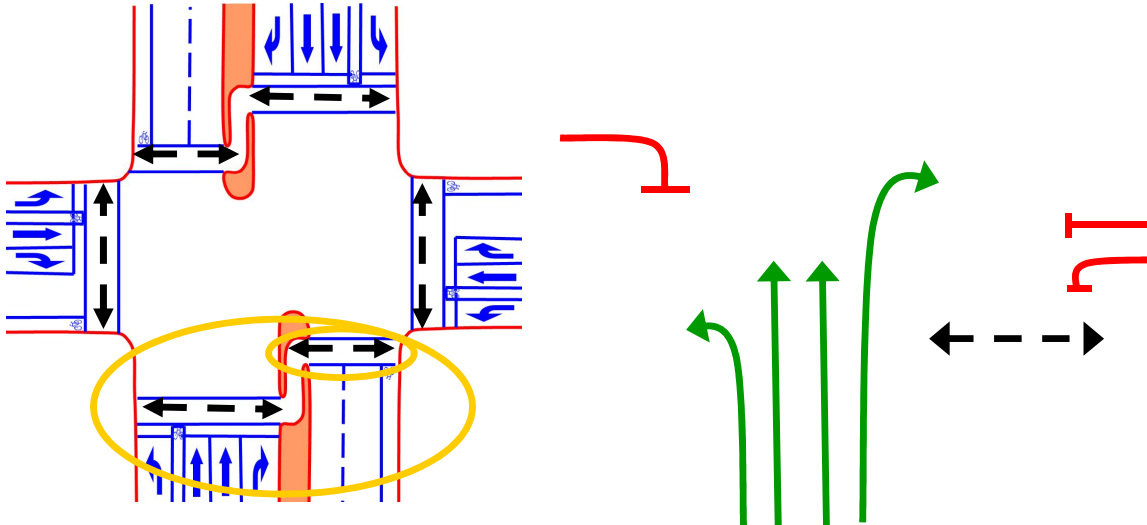
- Allowing filter turning vehicles significantly decreases pedestrian safety
- Exclusive pedestrian protection decreases efficiency



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Introduction

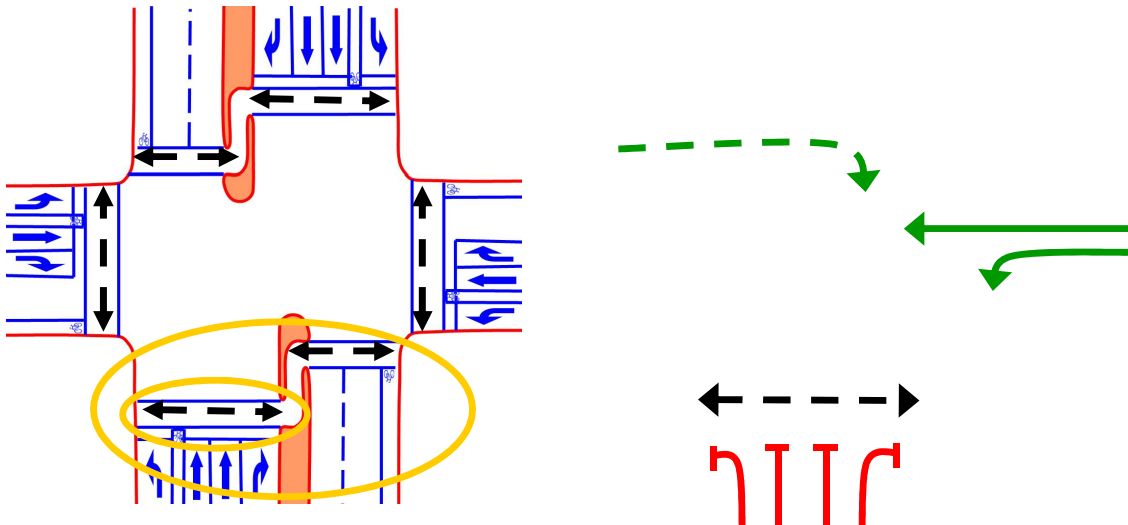
- Why not try a staged pedestrian crossing?



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Introduction

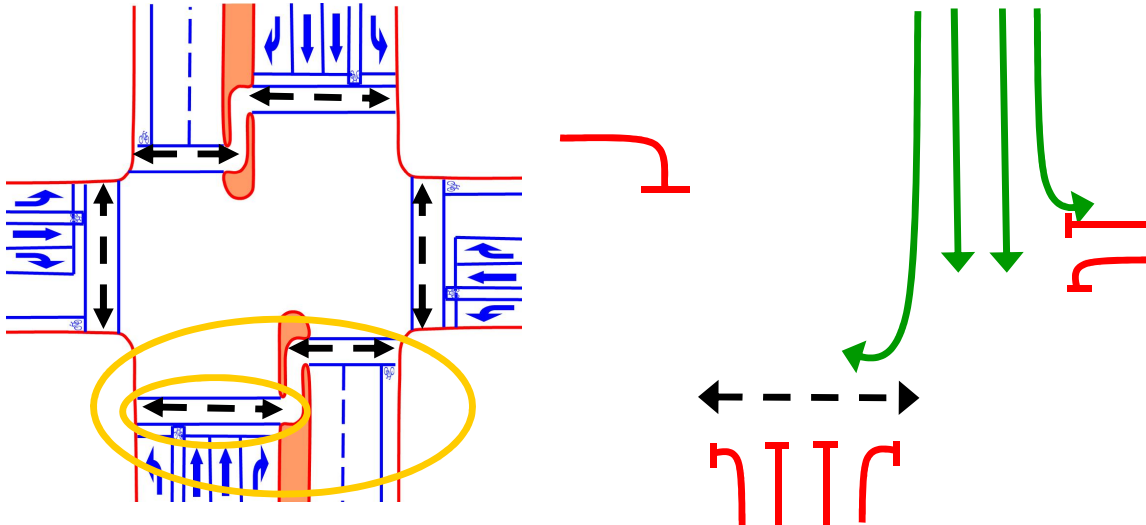
- Why not try a staged pedestrian crossing?



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Introduction

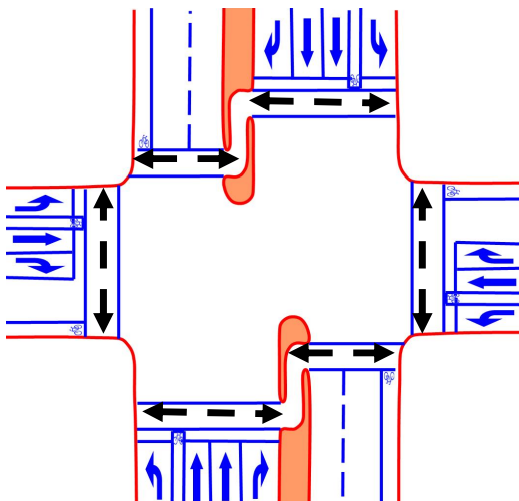
- Why not try a staged pedestrian crossing?



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Introduction

- Why not try a staged pedestrian crossing?

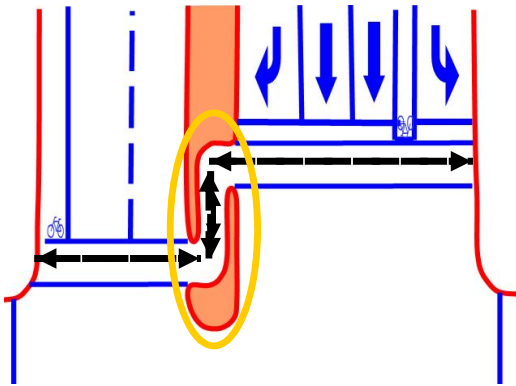


- Separates crossing tasks
- Allows for full (or increased) protection without (necessarily) decreasing motor vehicle efficiency
- Increases pedestrian walking distances (but may decrease waiting time)

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Components of SPCs

- Refuge island

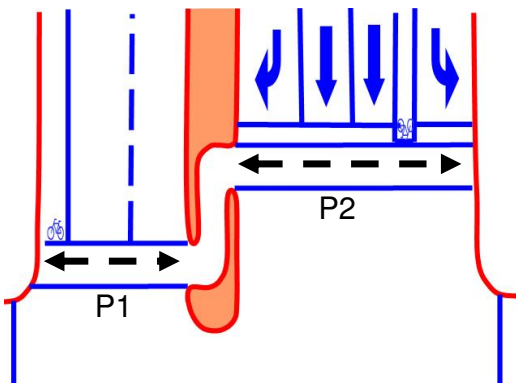


- Staggered
- Stagger ≥ 3 m
- Lefthand stagger preferred
 - ensures peds walk towards opposing traffic

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Components of SPCs

- Traffic signal phasing

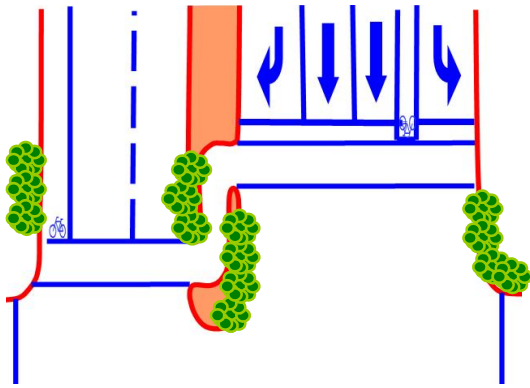


- Operates as two separate crosswalks
- Coordination depends on demand at intersection
- Different phasing possibilities depending on location of pedestrian demand

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Components of SPCs

- Assisting infrastructure



- Signal aspects
- Signage
- Low cover landscaping

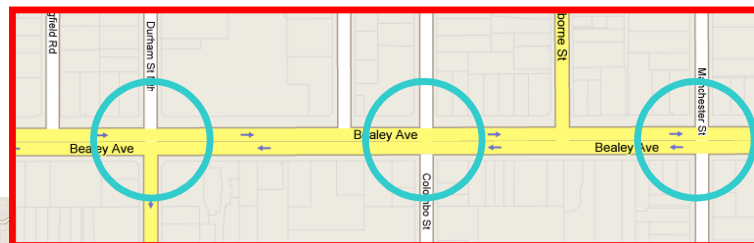
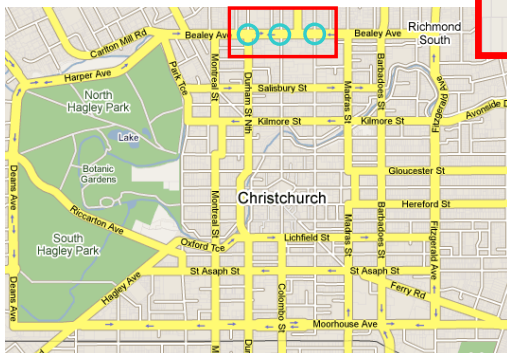


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Case study

- Bealey Avenue, Christchurch

- Manchester Street
- Colombo Street
- Durham Street



Case study

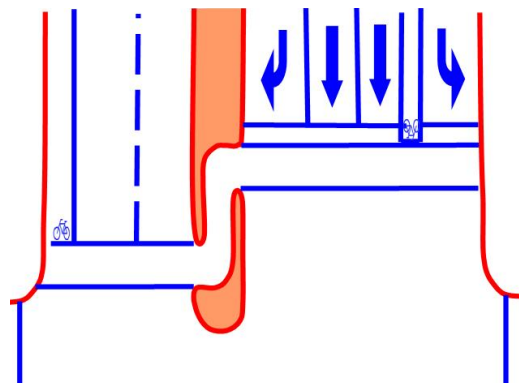
- Applying the modelling method:

Side road	Level of Service		Average delay (s/person)		Spare capacity	
	Base	SPC	Base	SPC	Base	SPC
Manchester	D	C	39.0	34.9	-14%	-10%
Colombo	D	D	49.1	45.7	-19%	-18%
Durham am Durham pm	D	D	51.4	50.4	-10%	-10%
	D	C	35.7	33.4	8%	10%

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Discussions

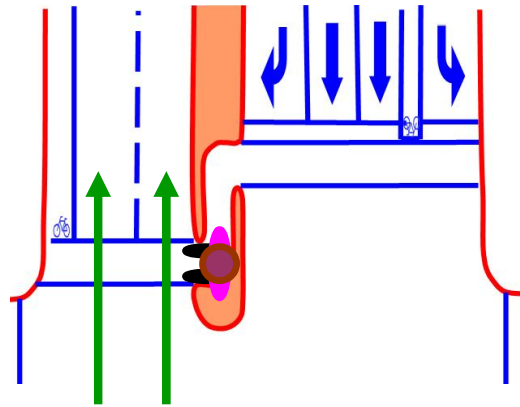
- Are staged pedestrian crossings unsafe because they require pedestrians to wait in the centre of the road?



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Discussions

- Are staged pedestrian crossings unsafe because they require pedestrians to wait in the centre of the road?



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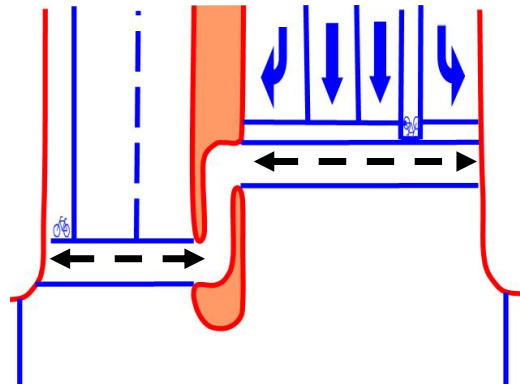
Discussions

- Are staged pedestrian crossings unsafe because they require pedestrians to wait in the centre of the road?
 - Phasing should be designed to minimise this occurrence
 - Refuge should be designed to offer actual and perceived safety
 - What about the current situation?

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Discussions

- Is it unsafe to have two separate crossings on the same leg of the road?



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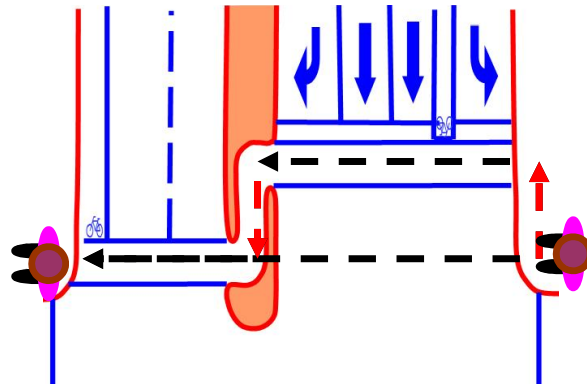
Discussions

- Is it unsafe to have two separate crossings on the same leg of the road?
 - Phasing must be carefully designed
 - Signal hardware and refuge layout must emphasise the two separate crossings

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Discussions

- Why should we increase the travel distance for pedestrians?



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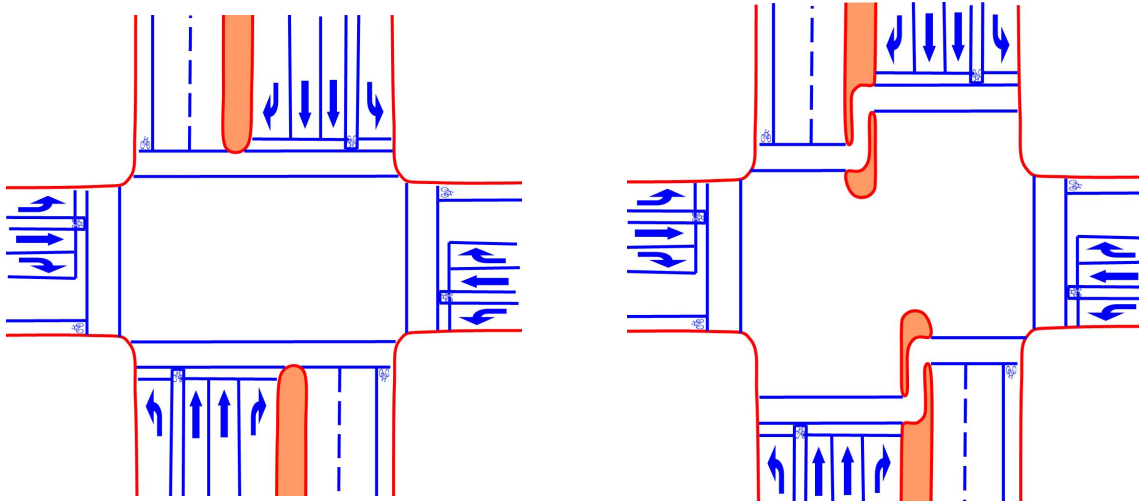
Discussions

- Why should we increase the travel distance for pedestrians?
 - SPCs should increase safety for pedestrians
 - The staggered island is required so the two crossings are separated
 - Separate crossings increase flexibility – pedestrians get more opportunity to cross per cycle
 - Walking distance increases but waiting time should decrease

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Discussions

- Will user-unfamiliarity make SPCs unsafe?



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Discussions

- Will user-unfamiliarity make SPCs unsafe?
 - Current intersections are vastly inconsistent
 - Current intersections not always self-explanatory
 - Improvement requires change

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Discussions

- What if a SPC installation decreases efficiency?



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Discussions

- What if a SPC installation decreases efficiency?
 - NZ Transport Strategy 2008 objectives:
 - Environmental sustainability
 - Economic development
 - Safety and personal security
 - Access and mobility
 - Public health
 - Staged pedestrian crossings satisfy all 5 objectives

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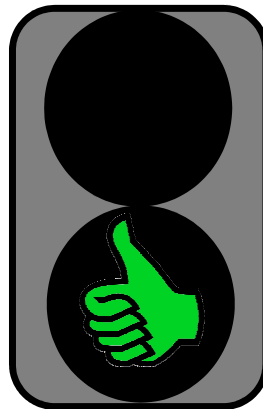
Conclusions

- British experience suggests staged pedestrian crossings will improve safety and quality of pedestrian provision at intersections
- Initial modelling suggests that intersection efficiency can be improved through proper introduction of staged pedestrian crossings
- Further investigations required
- Let's try it!

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Thank you

Questions and discussion



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