



The value of footpath improvements

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2 Walk and Cycle Conference 2021

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Context

NZTA now funds walking improvements

Projects over \$2 million require cost benefit analysis

Research commissioned by Waka Kotahi to develop procedures to monetise amenity value of footpath improvements

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Scope of research

Scope of existing procedures

Scope of this project



What makes a high quality pedestrian experience?

How do we quantify the benefits?



Overview

Stage 1



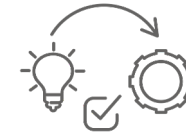
Systematic review
of the
international
literature

Stage 2



Primary research
to estimate NZ-
specific
parameter values

Valuation procedures

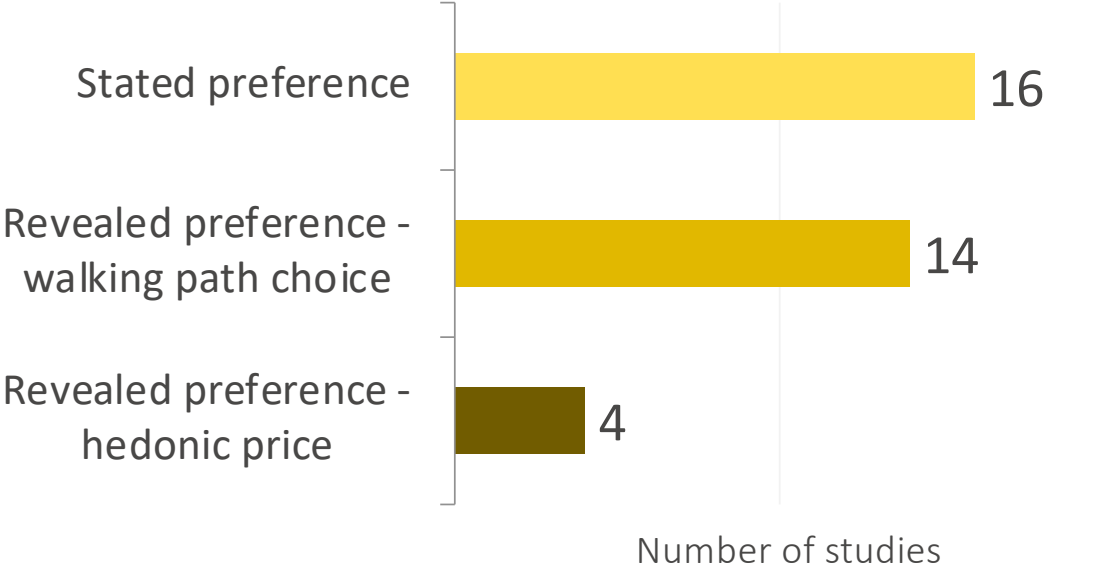


Application of
draft guidance to
walking
investments

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Stage 1: Summary of studies



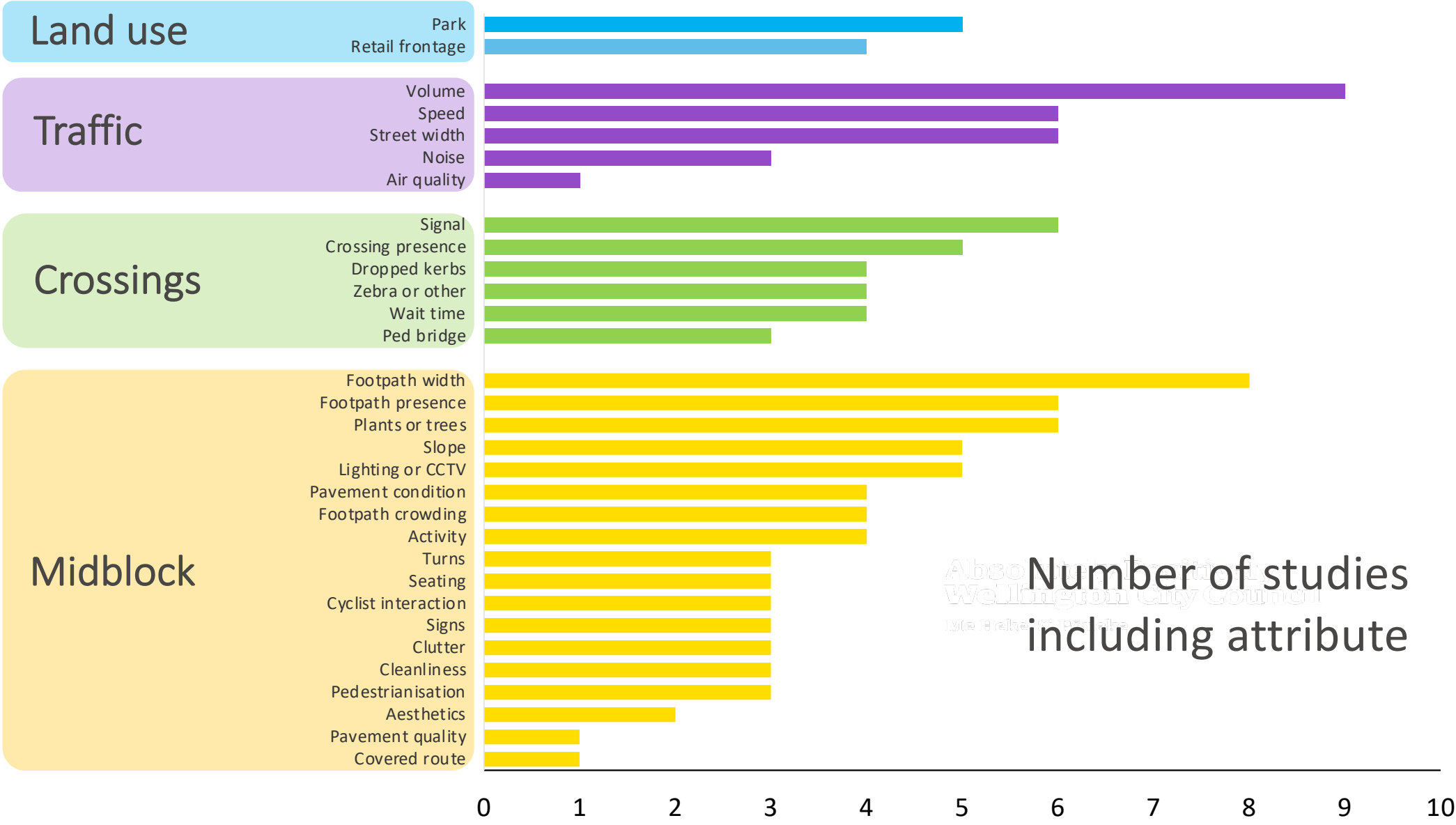
34 studies met inclusion criteria

13 countries represented

31 separate attributes identified

Meta-analysis using regression models

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Abstract by
Wellington City Council
10th February 2015

Number of studies including attribute

Stage 2: Study design



Stated choice survey of
~800 **Wellington City**
residents through WCC
survey panel

Route 1  Route 2

Respondents were
asked to **choose**
between two
alternative routes with
different attributes, or
the alternative of not
walking



Results were weighted
to be demographically
representative and
analysed to identify
trade-offs between walk
time and quality
attributes

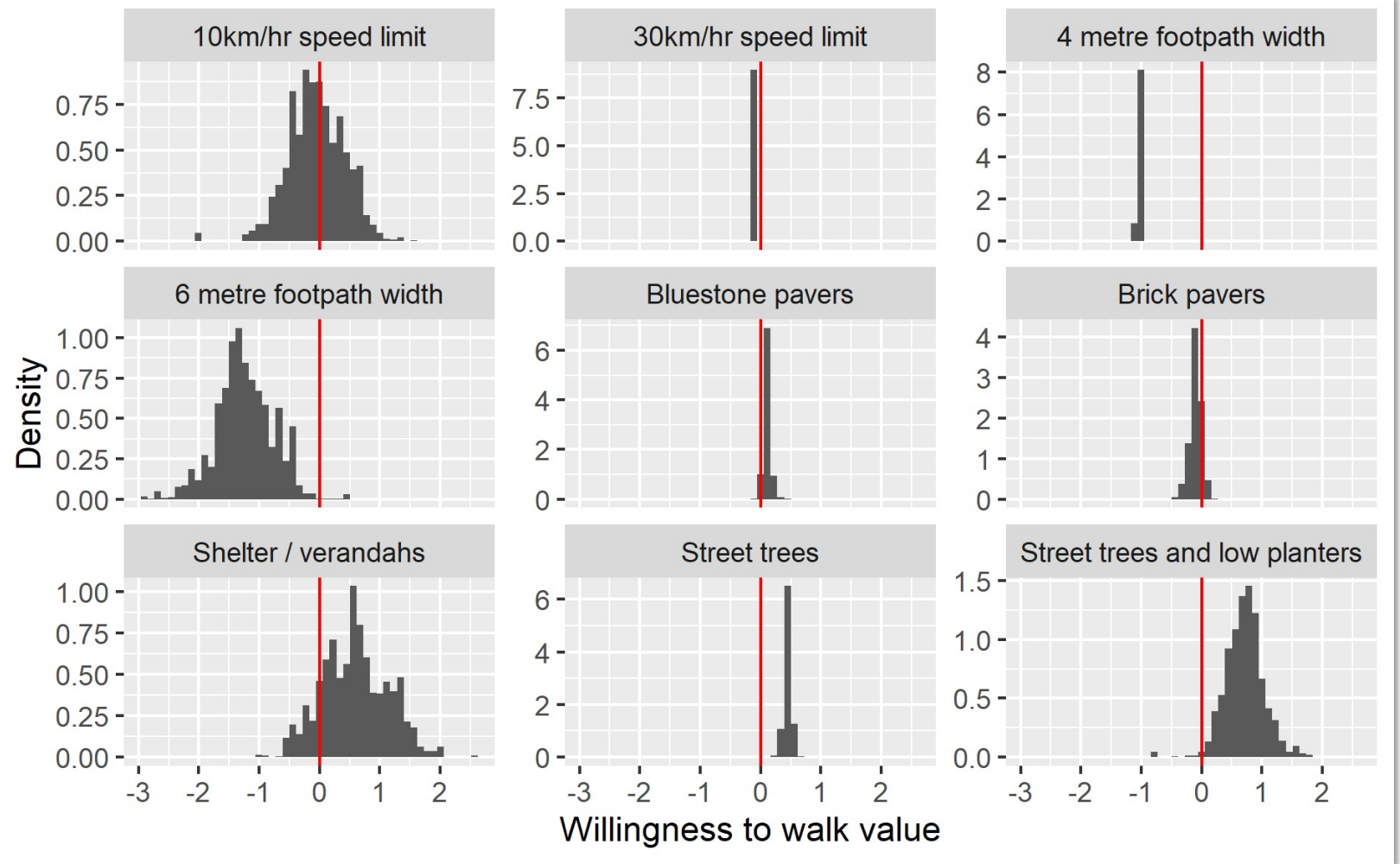
Stage 2
**Study
 design**

Scenario 3 of 12



Walk time	20 minutes	10 minutes
Footpath width	4 metres	4 metres
Footpath material	Bluestone pavers	Asphalt
Shade/shelter	Continuous verandahs	None
Separation from traffic	Street trees	None
Speed limit	10 km/h	50 km/h
Your choice:	<input type="radio"/>	<input type="radio"/>
	Neither of these options	<input type="radio"/>

Stage 2 Results

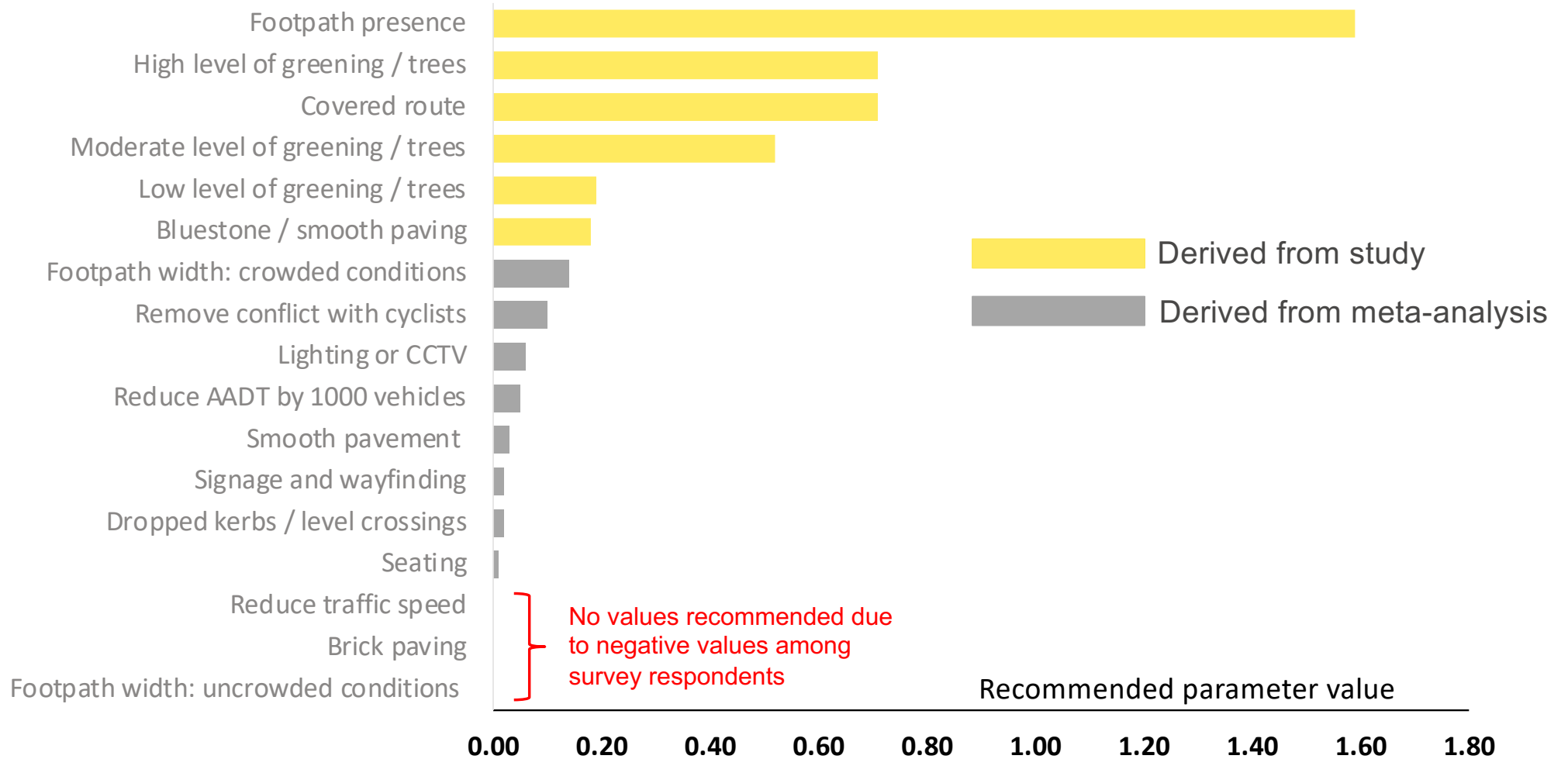


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Stage 2

Recommended parameters



Valuation procedures

$$\text{Benefits} = \text{\$} \times (\text{Existing users} + \text{New users}) \times (\text{Willingness to pay} * \text{New travel time}) \times \frac{1}{2}$$

The equation is represented by icons: a dollar sign in a circle for 'Value of time', a group of people for 'Existing users', a plus sign and a smaller group of people for 'New users', a money bag for 'Willingness to pay', and an alarm clock for 'New travel time'. The terms are multiplied together, with a final multiplier of 1/2.

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Parameters developed by
this research

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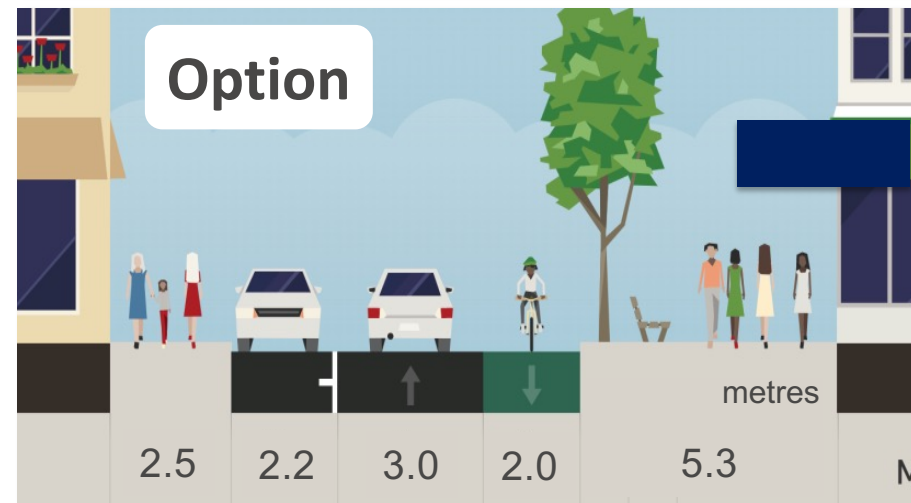
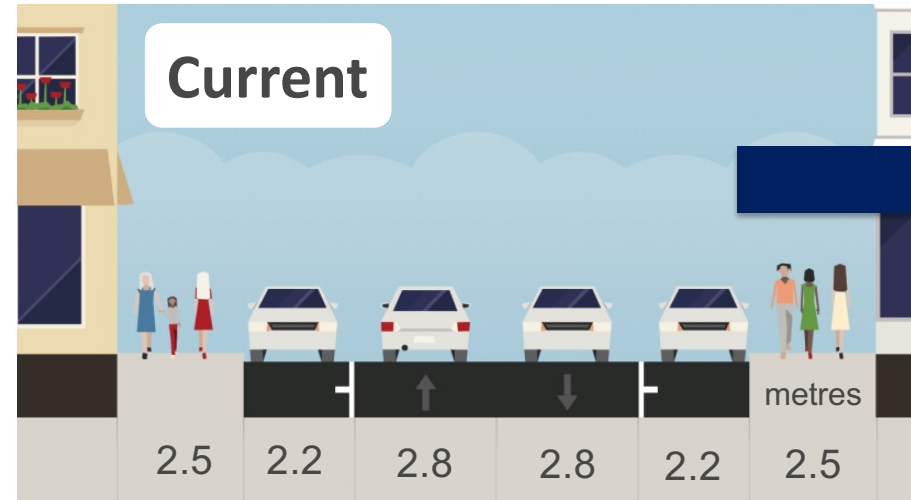
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Case study

Widen footpath

WTP Parameters	
Reduction in crowding	0.28
ADT: 1500 reduction	0.08
Street trees or plantings	0.52
Improved lighting	0.06
Seating	0.01
Total	0.95

Benefits calculation	
Daily users (current)	5000
Travel time (minutes)	2.3
WTP parameter	1.09
Annual benefits (\$)	0.3 million
Total benefits (\$)	7 million



Using the guidance

Draft guidance available on Waka Kotahi website

Final guidance to be incorporated into Monetised Benefits and Costs Manual (MBCM)

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