Transport Knowledge Hub Webinar Series 2020
30 November – 4 December 2020

The value of footpath improvements

Results from meta-analysis and stated choice research

Peter Nunns
Nadine Dodge
Wellington City Council

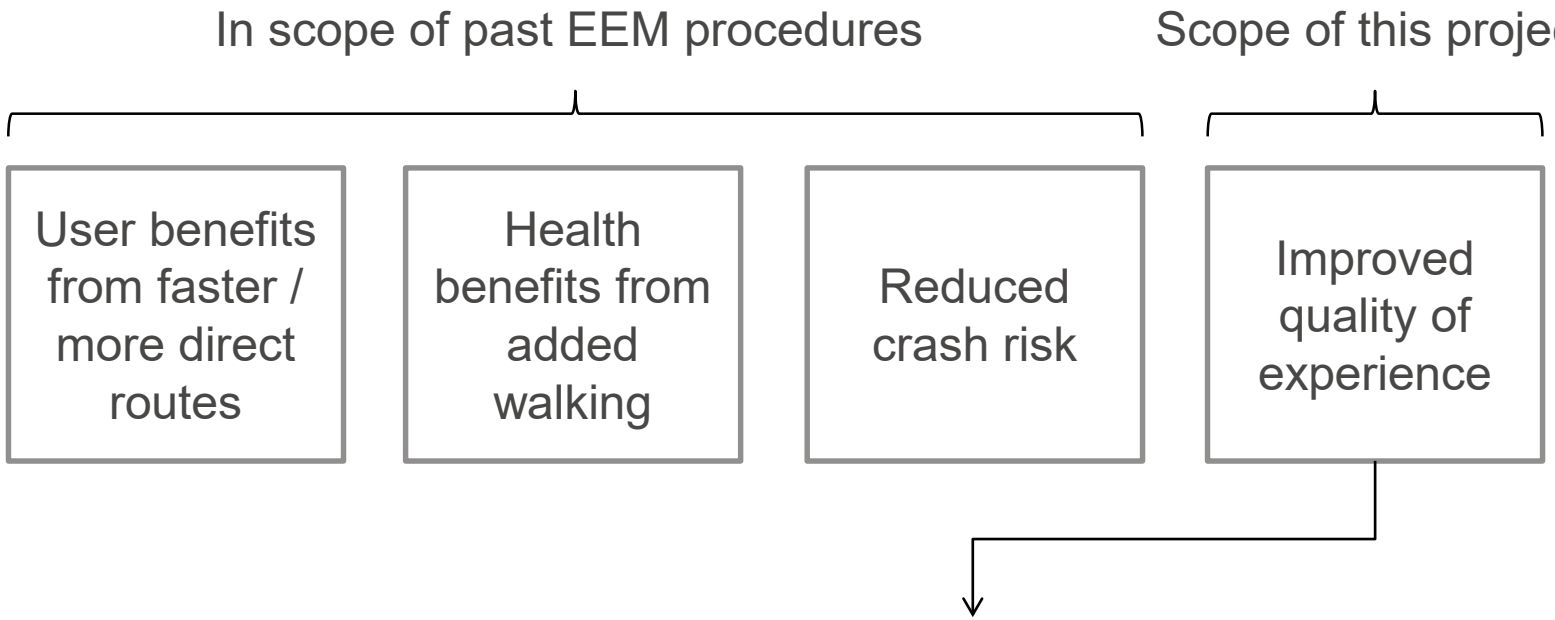
Transport Knowledge Hub

AVIATION & FORECASTING | DATA | ECONOMICS | ENVIRONMENT | HEALTH | MĀORI | SAFETY | TECHNOLOGY & INNOVATION | URBAN

Context

- NZTA now funds walking improvements, both as part of multi-modal projects and as standalone improvements
- As an input to investment prioritisation, it is seeking to better understand the value that users derive from alternative projects or designs
- This research project helps to fill this gap by identifying a valuation procedure that fits into existing economic evaluation practices and recommending interim parameter values for quality improvements to the walking environment

Current economic evaluation procedures



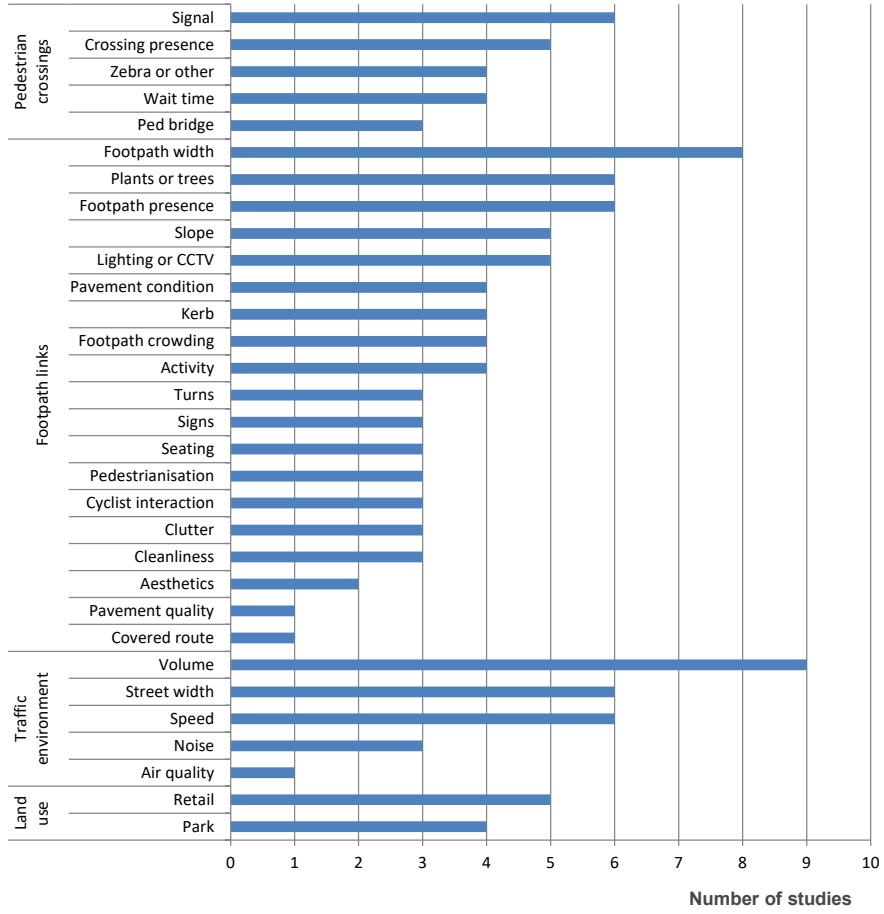
The EEM already provides quality of experience factors for PT users (Appendix A18.7), road users (Appendix A4.4), and cyclists (Appendix A20.2)

Research approach

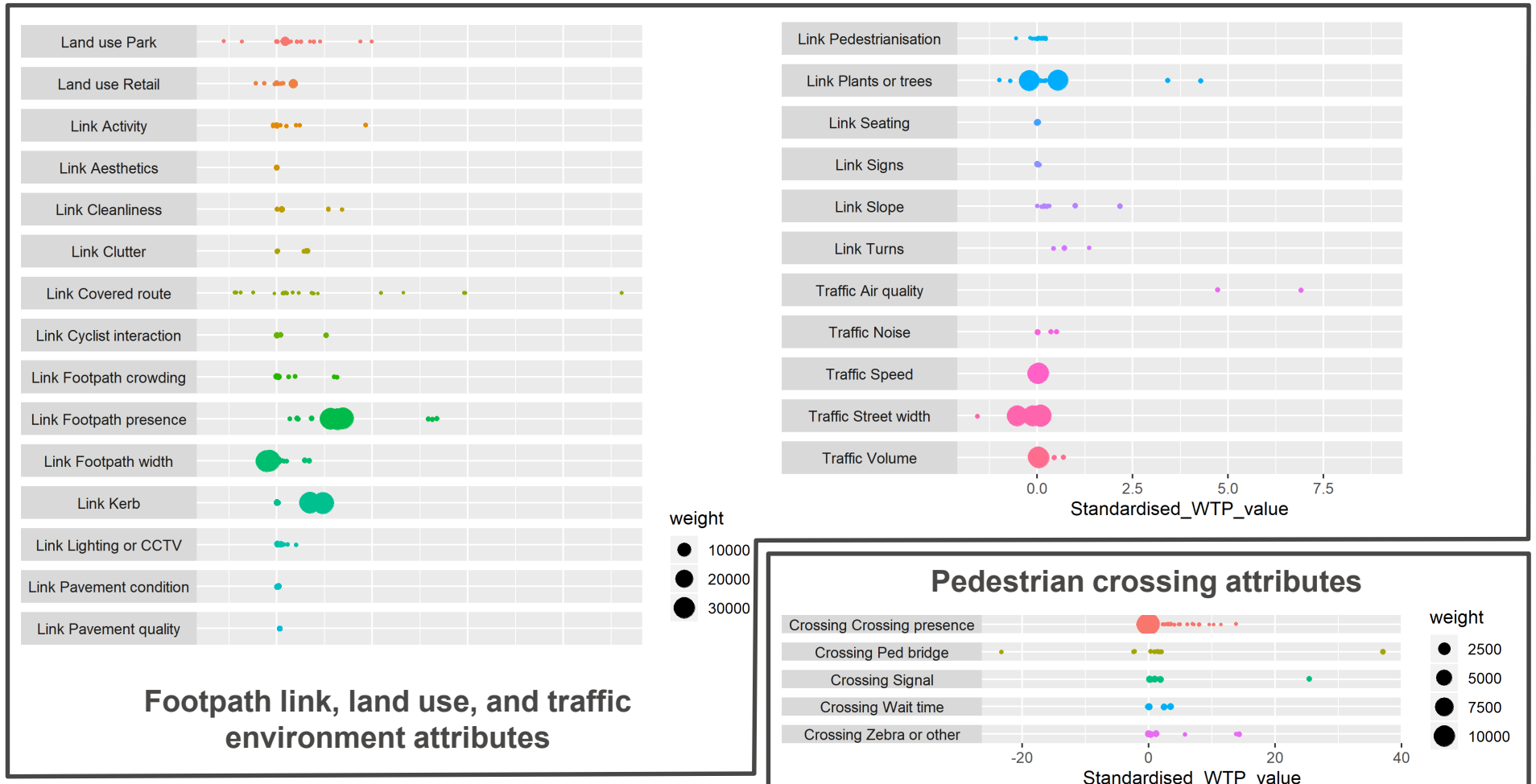
- Stage 1: Develop interim guidance on valuing pedestrian and footpath improvements based on a systematic review of the international literature
  - Timeframe: September-November 2019
  - Outcome: Draft interim guidance and supporting research
  - **Completed – interim guidance published on NZTA website**
- Stage 2: Undertake primary research to estimate NZ-specific parameter values for valuing pedestrian and footpath improvements
  - Timeframe: November 2019-March 2020
  - Outcome: Research report with recommended parameter values
  - **Completed in draft form but not published**

Stage 1 methodology

- Systematic review of international research on valuing pedestrian environment attributes
- 25 studies included in final dataset, providing values for 31 separate attributes



Underlying attribute values

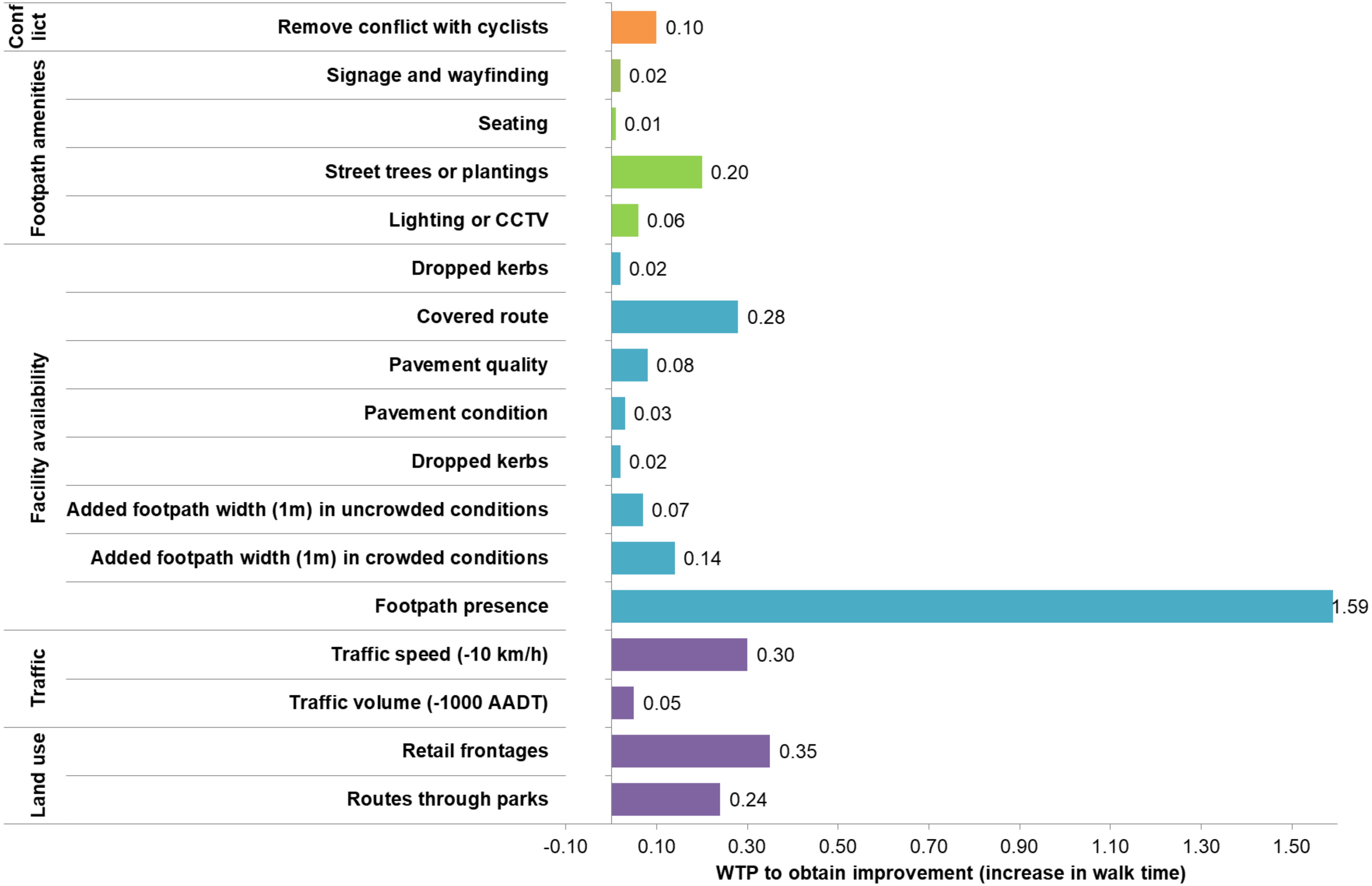


Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Key findings

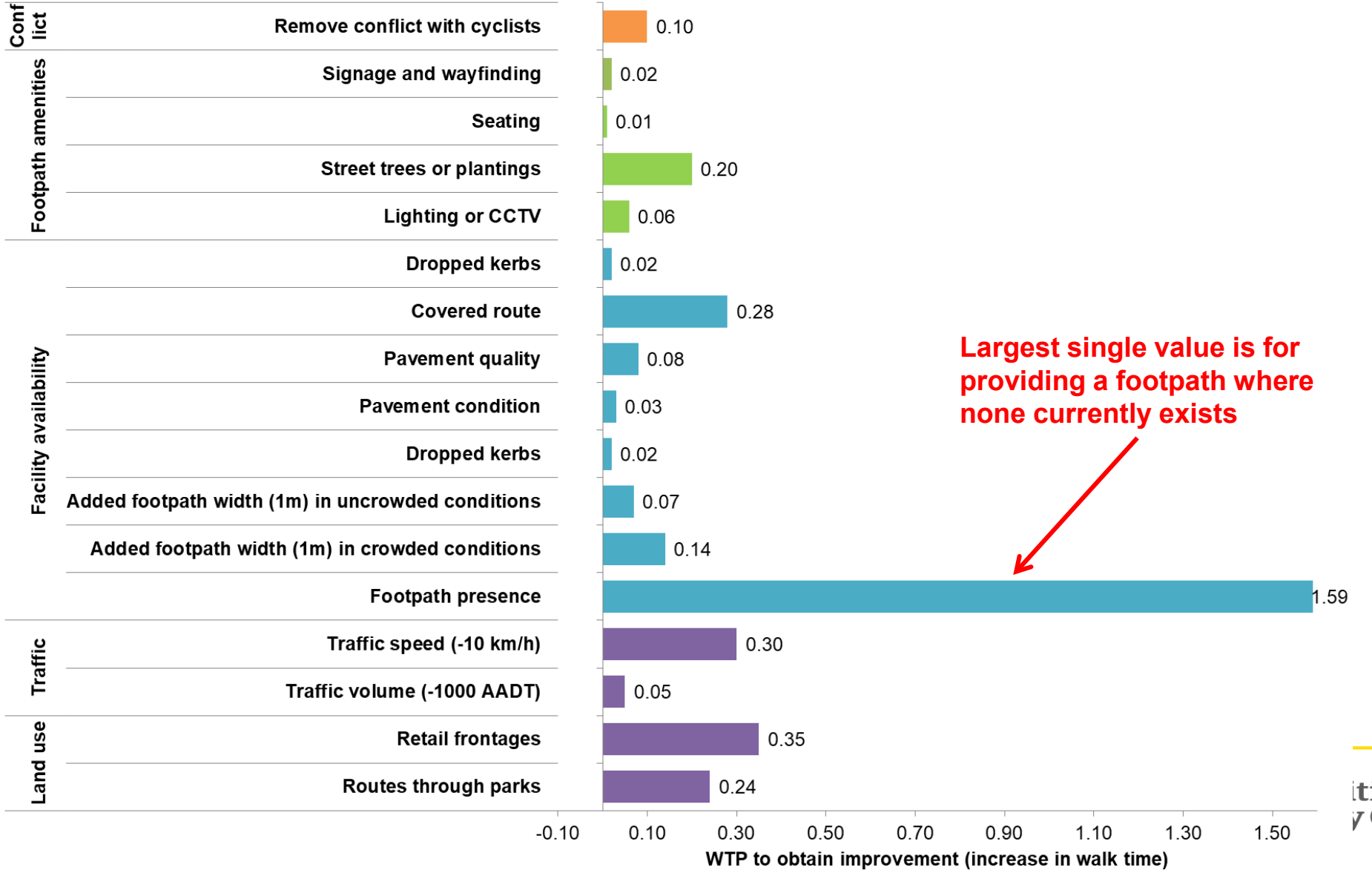
1. There is not enough evidence to support parameter values for pedestrian crossings
   - Values from individual studies were hard to standardise and compare
2. We recommend interim parameter values for attributes of footpath links, traffic environment, and surrounding land uses
   - We have varying levels of confidence in these values, and note that some are based on few studies
   - We also outline a procedure for applying these values

Interim parameter values

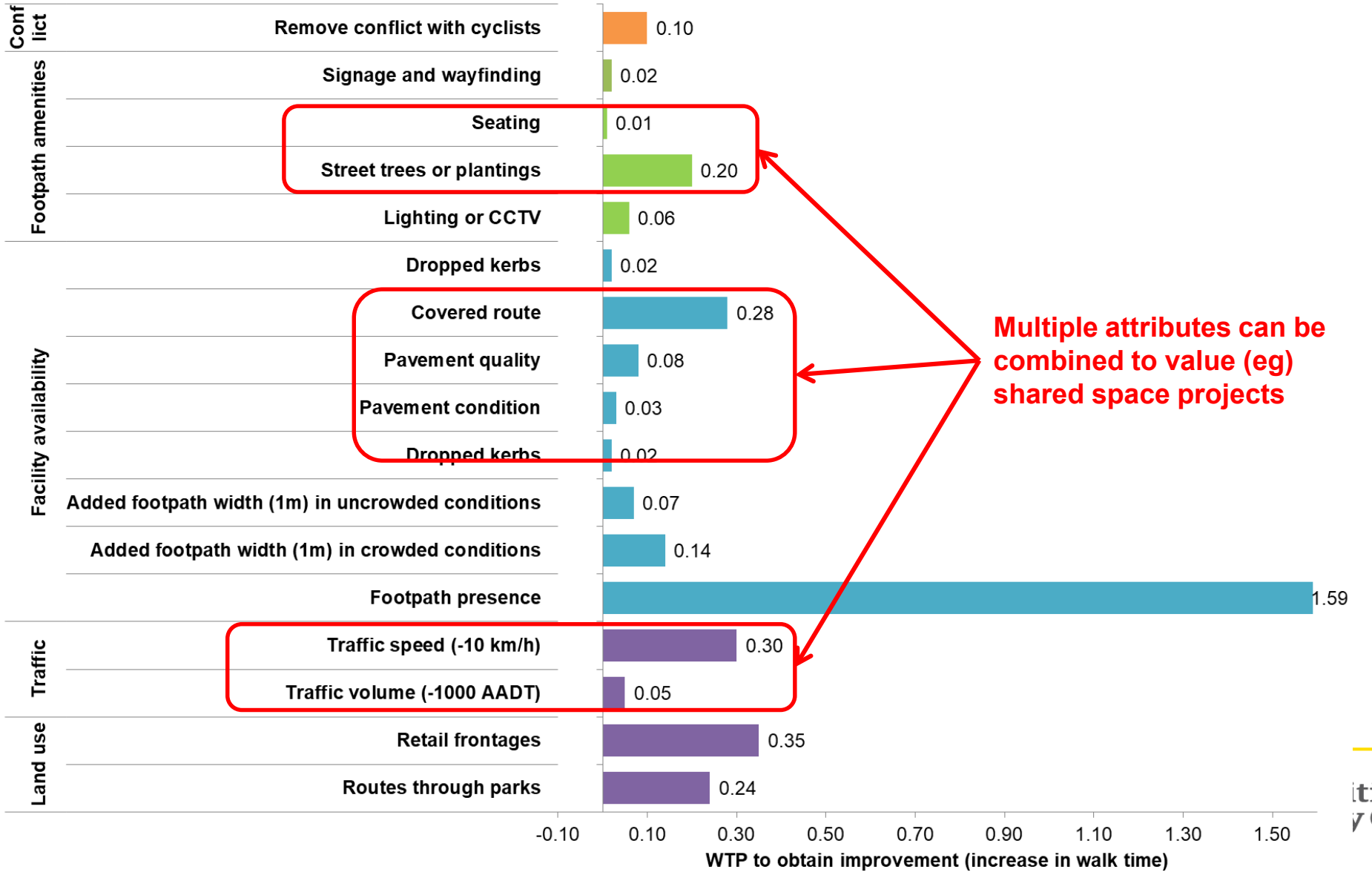


itively
y Council

Interim parameter values



Interim parameter values



Stage 2 methodology

- Stated choice survey of ~800 Wellington City residents thru WCC survey panel
- 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 methodology

Scenario 1 of 12

	Route 1	Route 2
		
Walk time	15 minutes	10 minutes
Footpath width	2 metres	2 metres
Footpath material	Brick	Bluestone pavers
Shade/shelter	Continuous verandahs	None
Separation from traffic	Bollards	None
Speed limit	50 km/h	30 km/h

* 4. My preferred option is....

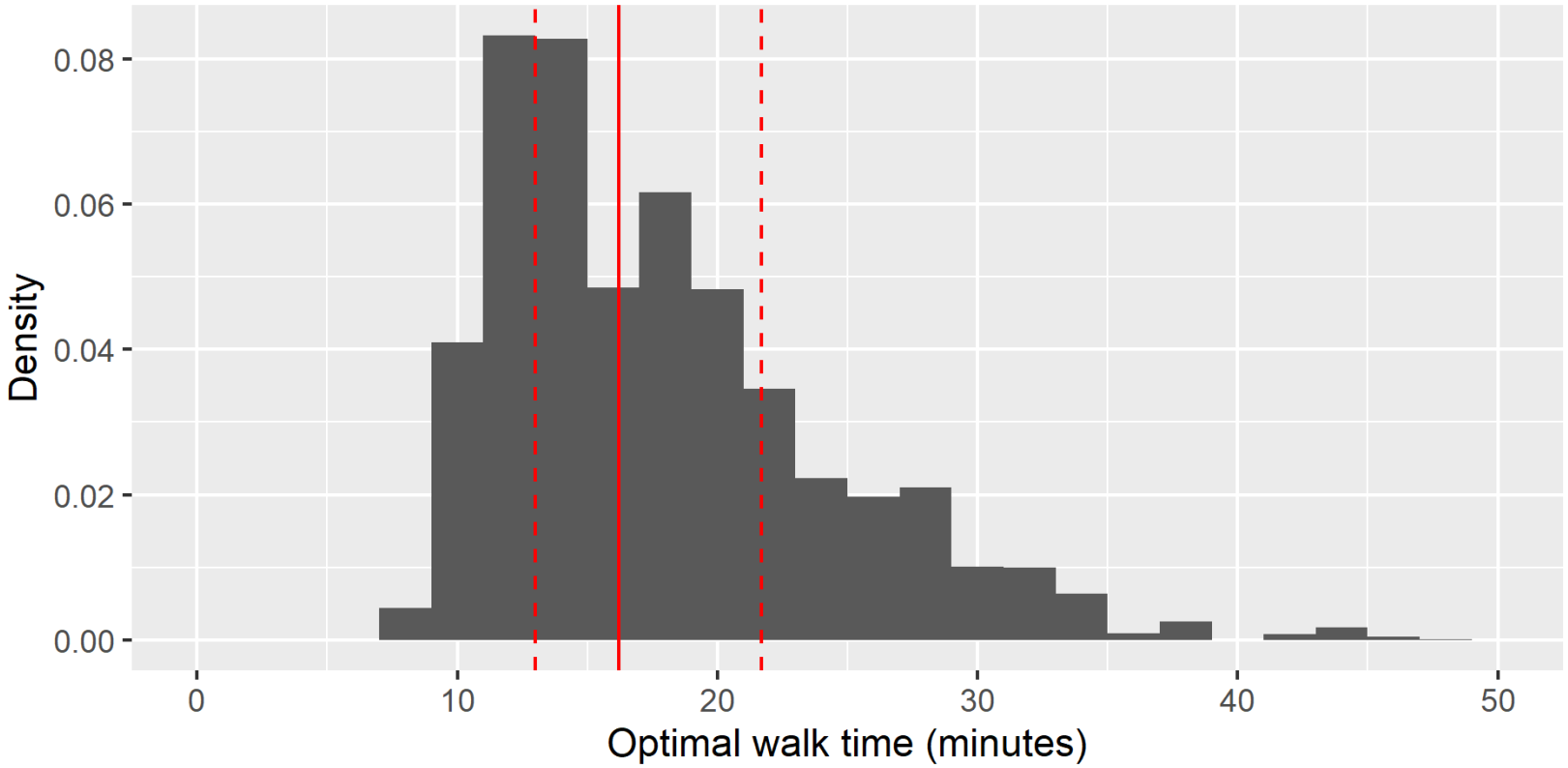
- ◯ Route 1
- ◯ Route 2
- ◯ Neither of these options

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

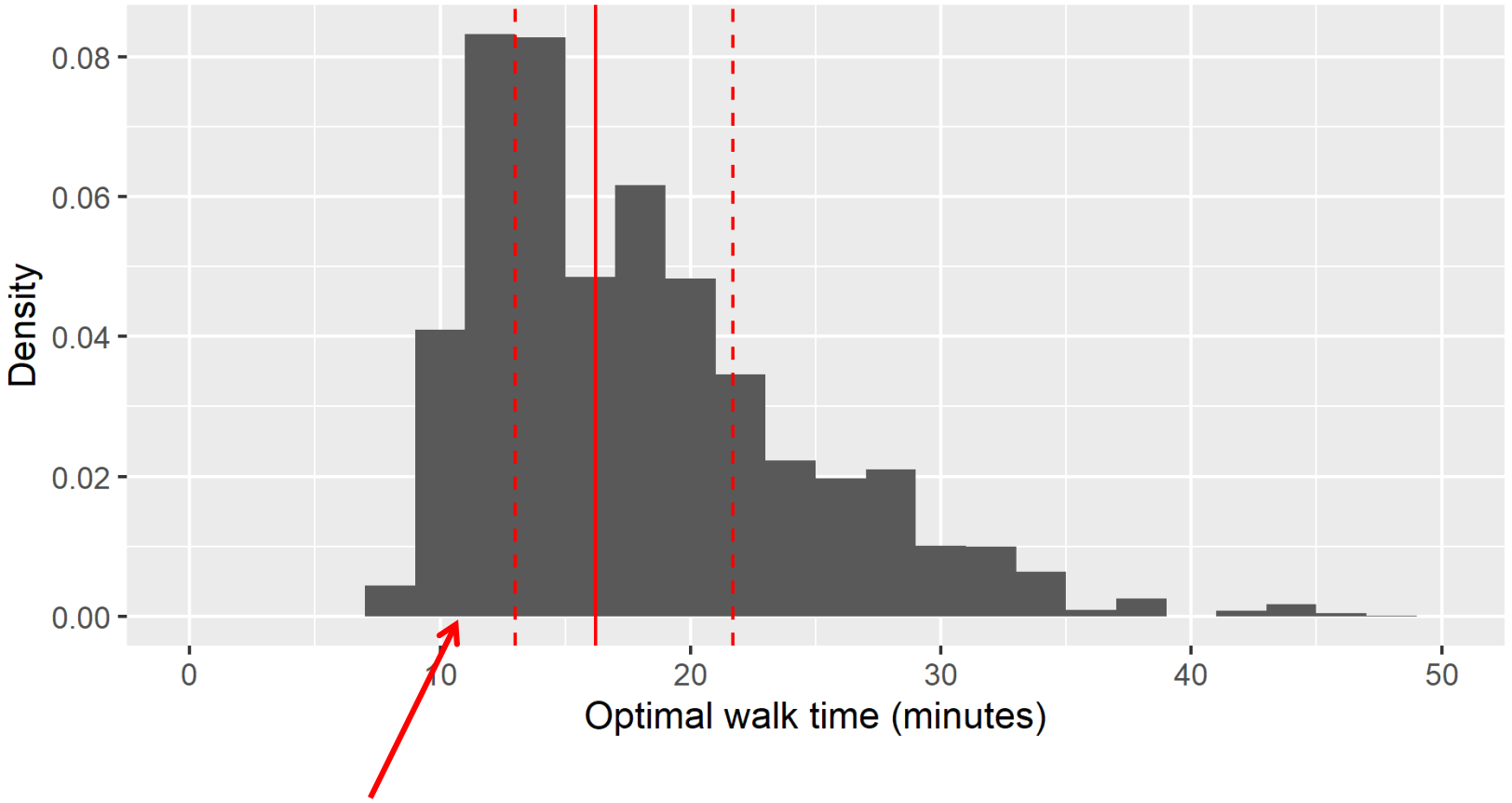
Key findings

1. Many respondents seemed to prefer slightly longer walk times, at least within the 10-20 minute range
   - Evidence that people value health benefits of walking?
2. Results generally validated findings from the Stage 1 literature review
   - The exception was wider footpaths, which do not seem to be positively valued in low-volume environments
3. There was significant variation in preferences for many attributes, especially slower traffic speeds and brick pavers
   - Open-ended responses highlighted trip/slip hazards from pavers
   - Everyone likes street trees!

Preferences for longer walk trips?



Preferences for longer walk trips?

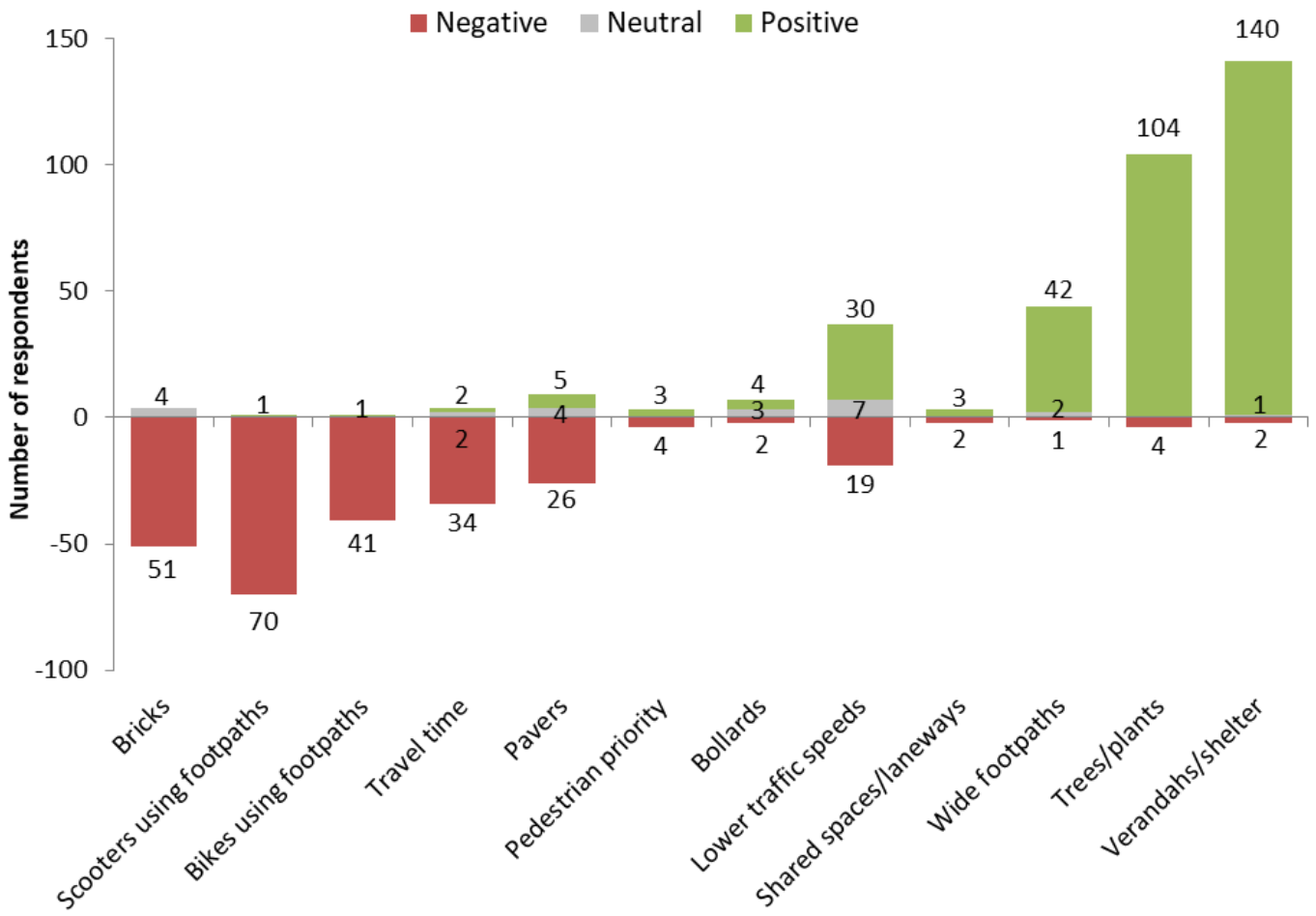


Household Travel Survey data suggests average walk trip is 11 minutes long

Average quality feature values

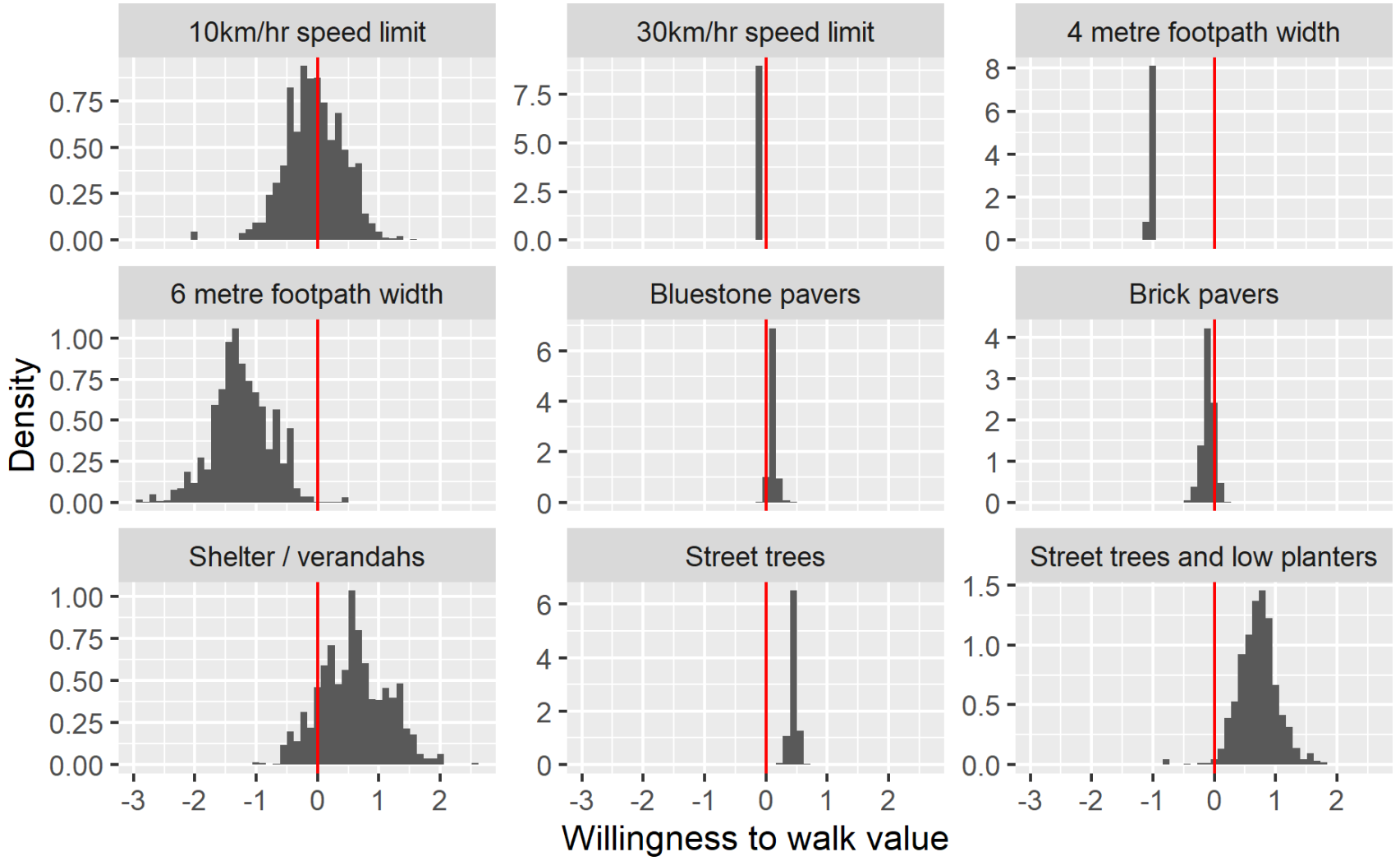
Attribute	Value from preferred econometric model	Average value from systematic review
4 metre footpath width	-1.29	Footpath width: -0.19 per added metre width +0.14 if hedonic studies are excluded
6 metre footpath width	-1.53	
Brick pavers	-0.10	Pavement quality: +0.08 Pavement condition: +0.03
Bluestone pavers	+0.18	
Separation via bollards	-0.46	N/A
Street trees	+0.52	Plants or trees: +0.20 +1.27 if hedonic studies are excluded
Street trees and low planters	+0.91	
Shelter / verandahs	+0.71	Covered route: +1.10
10km/hr speed limit	-0.01	Traffic speed: +0.03 per 1km/hr reduction +0.01 if hedonic studies are excluded
30km/hr speed limit	-0.08	

Views from open-ended questions



Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Share of people who preferred attributes



Application of research

- Project teams are starting to trial guidance on proposed pedestrian improvement projects, eg:
  - Wellington Golden Mile improvements
  - New footpath investment proposals in suburban areas
  - Queenstown town centre upgrade
- Guidance sometimes implemented alongside other methods, eg TfL Valuing the Urban Realm Toolkit
- Resulting benefits can be large, especially in areas with high walking volumes

Questions? Comments?

peter.nunns@wcc.govt.nz

nadine.dodge@wcc.govt.nz