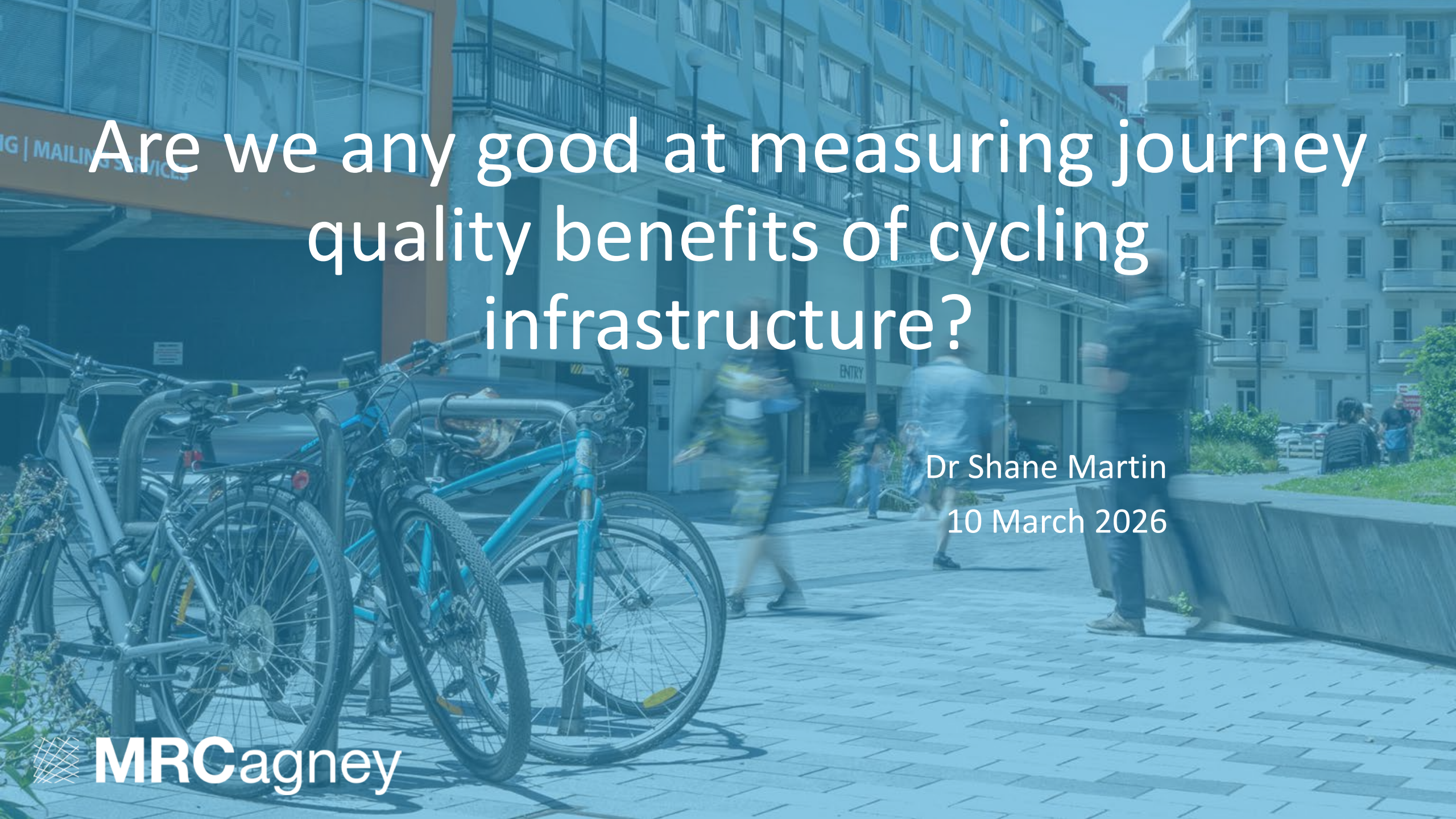

Are we any good at measuring journey quality benefits of cycling infrastructure?

Dr Shane Martin

10 March 2026

MRCagney

What's in the MBCM

Different types of pedestrian and cycling facilities

Where a quality improvement (amenity, comfort or security) is proposed to existing walking and cycling facilities, or where new walking and cycling facilities are proposed, the value of different levels of quality must be assessed. The valuation should be based on a stated preference (SP) survey or information from similar improvements to facilities in other areas.

The *Pedestrian planning and design guide* describes a SP methodology and study to identify preferences for different types of cycling facilities. The study determined the additional time that cyclists would spend travelling on each type of facility (the incremental attractiveness of that type of facility) compared with a base case of 20 minutes of travel in traffic with road-side parking. The study gave the values in Table 35. The relative benefit values should be used in an incremental analysis.

Pedestrian planning and design guide

Table 35: relative benefit for different types of cycle facilities

Type of cycle facility	Relative benefit
On-street with parking (no marked cycle lane)	1.0
On-street with parking (marked cycle lane)	1.8
On-street without parking (marked cycle lane)	1.9
Off-street cycle path	2.0

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But if we go back to the 2013 EEM

Reference 4 describes a SP methodology and study to identify preferences for different types of cycling facilities. The study determined the additional time that cyclists would spend travelling on each type of facility (the incremental attractiveness of that type of facility) compared with a base case of 20 minutes of travel in traffic with road-side parking. The study gave the values in table A20.2.

Table A20.2 Relative benefit for different types of cycle facilities

Type of cycle facility	
On-street with parking (no marked cycle lane)	
On-street with parking (marked cycle lane)	
On-street without parking (marked cycle lane)	
Off-street cycle path	

1. Barnes G, Krizek KJ, Mogush P and Poindexter G (2005) *Guidelines for analysing the benefits and costs of bicycle facilities.*
2. Francis T, Roozenburg AP and Turner SA (2006) *Predicting accident rates for cyclists and pedestrians*. Land Transport New Zealand research report 289.
3. Land Transport Safety Authority (2004) *Cycle network and route planning guide*.
4. Land Transport New Zealand (2006) *Pedestrian planning and design guide*.
5. Ministry of Transport (2005) *Getting there – on foot, by cycle*.
6. Transportation Research Board (2006) *Guidelines for analysis of investments in bicycle facilities*. NCHRP report 552.
7. O'Fallon C and Sullivan C (2006) *Increasing cycling and walking: An analysis of readiness to change*. Land Transport New Zealand research report 294.

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2010 EEM

Reference 4 describes a SP methodology and study to identify preferences for different types of cycling facilities. The study determined the additional time that cyclists would spend travelling on each type of facility (the i attractiveness of that type of facility) compared with a base of travel in-traffic with road-side parking. The study gave th

Table 8.1: Relative benefit for different types of cycle facilities

Type of cycle facility
On-street with parking (no marked cycle lane)
On-street with parking (marked cycle lane)
On-street without parking (marked cycle lane)
Off-street cycle path

1. Barnes G, Krizek KJ, Mogush P and Poindexter G (2005) *Guidelines for analyzing the benefits and costs of bicycle facilities.*
2. Fallon CO and Sullivan C (2006) *Increasing cycling and walking: An analysis of readiness to change*. Land Transport New Zealand research report 294.
3. Francis T, Roozenburg AP and Turner SA (2006) *Predicting accident rates for cyclists and pedestrians*. Land Transport New Zealand research report 289.
4. Land Transport Safety Authority (2004) *Cycle network and route planning guide.*
5. Land Transport New Zealand (2006) *Pedestrian planning and design guide.*
6. Ministry of Transport (2005) *Getting there – on foot, by cycle.*
7. Transportation Research Board (2006) *Guidelines for analysis of investments in bicycle facilities.* NCHRP report 552.

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2009 EEM…

Reference 4 describes a stated preference methodology and study to identify preferences for different types of cycling facilities. The study determined the additional time that cyclists would spend travelling on each type of facility (the incremental attractiveness of that type of facility) compared 20 minutes of travel in-traffic with road-side parking. The st in Table 8.1.

Table 8.1 Relative benefit for different types of cycle

Type of cycle facility	
On-street with parking, no marked cycle lane	
On-street with parking, marked cycle lane	
On-street without parking, marked cycle lane	
Off-street cycle path	

The relative benefit values should be used in an incremental 8.13 to chose an appropriate quality of facility.

1. Ministry of Transport, Getting there – on foot, by cycle. A strategy to advance walking and cycling in New Zealand transport, February 2005.
2. Land Transport Safety Authority, *Cycle network and route planning guide*, 2004.
3. Land Transport New Zealand, *Pedestrian planning and design guide*, October 2006.
4. Transportation Research Board, *Guidelines for analysis of investments in bicycle facilities* – NCHRP report 552, 2006.
5. Krizek K.J., Poindexter G, Barnes G, Mogush P, *Guidelines for analyzing the Benefits and Costs of Bicycle Facilities*, August 2005.
6. Turner S.A., Roozenburg A.P., Francis T, *Predicting Accident Rates for Cyclists and Pedestrians*, Land Transport New Zealand Research Report 289, 2006.
7. Sullivan C, Fallon C.O., *Increasing cycling and walking: An analysis of readiness to change*, Land Transport New Zealand Research Report 294, 2006.

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Let’s pull that string…

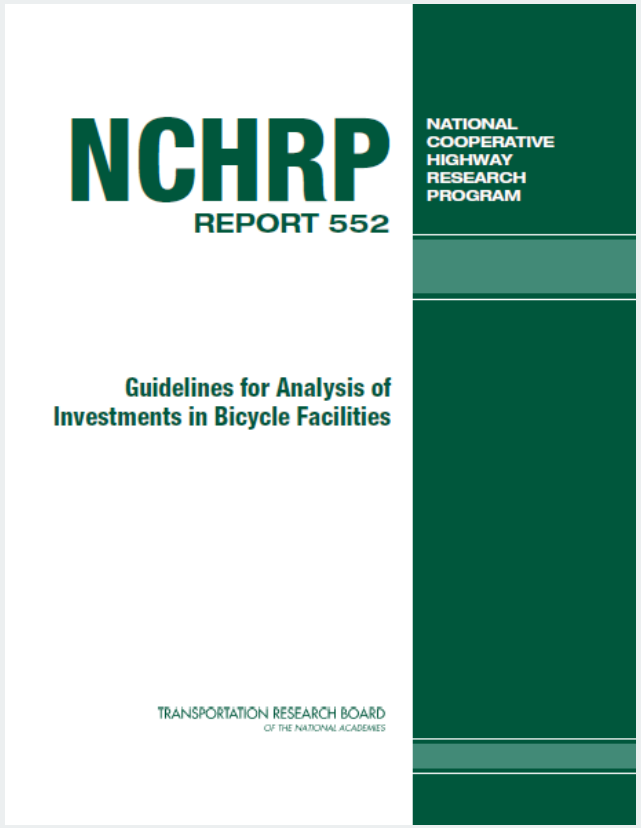

TABLE 24 Comparison of travel time values between facilities using the linear model and the logit model

Comparison	Facility 1	Facility 2	Logit	Linear	Mean (raw data)
1	A	B	5.2	9.6	13.0
2	A	C	14.2	13.1	18.4
3	A	D	21.6	15.6	19.4
4	A	E	30.5	19.1	25.7
5	B	C	9.0	10.7	14.3
6	B	D	16.4	13.2	16.7
7	B	E	25.3	16.7	24.5
8	C	E	16.4	13.2	22.0
9	D	E	9.0	13.2	20.9

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Convert to ratios…

TABLE 24 Comparison of travel time values between facilities using the linear model and the logit model

Comparison	Facility 1	Facility 2	Logit	Linear	Mean (raw data)
1	A	B	5.2	9.6	13.0
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5	B	C	9.0	10.7	14.3
6	B	D	16.4	13.2	16.7
7	B	E	25.3	16.7	24.5
8	C	E	16.4	13.2	22.0
9	D	E	9.0	13.2	20.9

E – no facility, on street parking

A – Off road facility

B – Bike lane on road, no parking

C – Bike lane on road w/parking

	A	B	C
Logit	2.525	2.265	1.82
Linear	1.955	1.835	1.66
Mean	2.285	2.225	2.1
MBCM	2	1.9	1.8

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So, what's this based on?

- Stated preference study
- Published in 2006 – no indication when data was gathered
- Survey of 168 employees from University of Minnesota (no faculty, no students)
  - 68 cycled to work at least 1x per year
  - 38 regular cyclists
  - 58 male, 105 female respondents

To summarise: 20+ year old study of 68 (kind of) cyclists and 100 non-cyclists in Minnesota is used to show value to cyclists of improving infrastructure.

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What do they do elsewhere?

In California, they lump together bike lanes and separated bikeways and assume they have the same value (~2 – put in the same scale as NZ'S)

In Ireland and the UK, it's based on value/minute of ambience on cycling facilities

	p/min	
Off-road segregated cycle track	16.28	Hopkinson & Wardman (1996)
On-road segregated cycle lane	5.71	Hopkinson & Wardman (1996)
On-road non-segregated cycle lane	5.22	Wardman et al. (1997)
Wider lane	3.47	Hopkinson & Wardman (1996)
Shared bus lane	1.28	Hopkinson & Wardman (1996)

Are we any good at measuring journey quality benefits of cycling infrastructure?

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