

Smarter Connections:

Modelling Bicycle Route Choice in New Zealand

IPENZ Transportation Group Conference
Rotorua, New Zealand, Monday 19th of March 2012

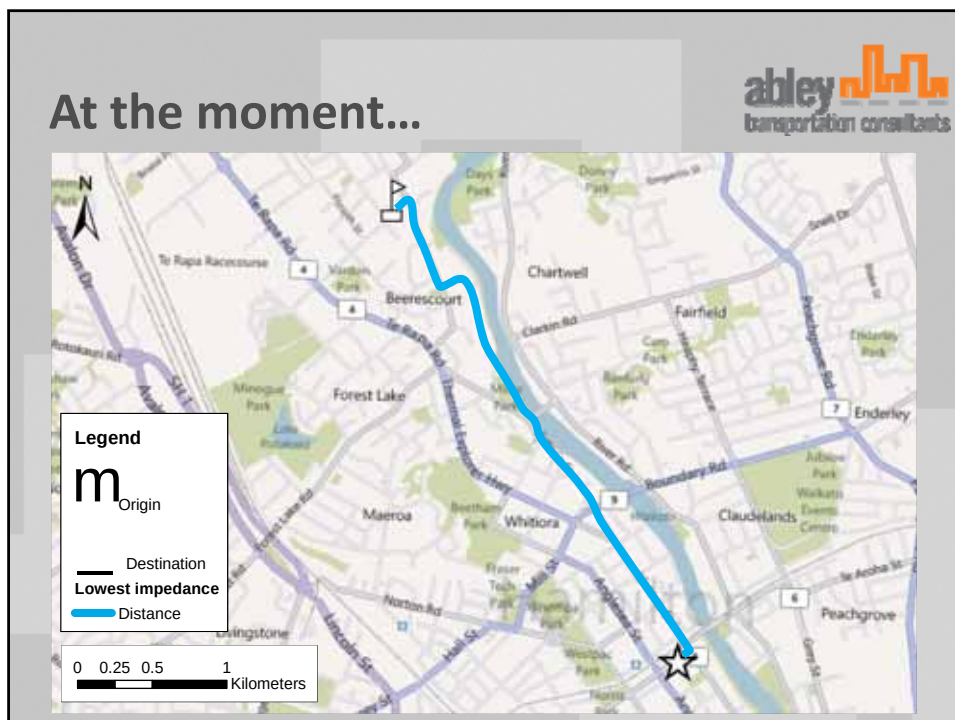
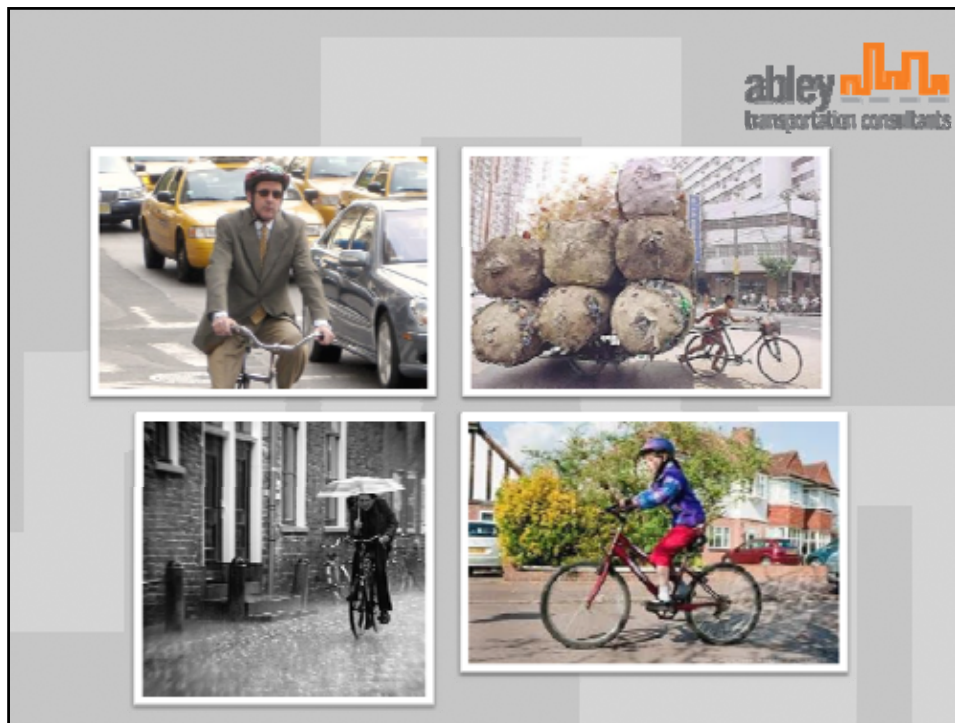
Stacy Rendall, Peter Rose, Kurt Janssen



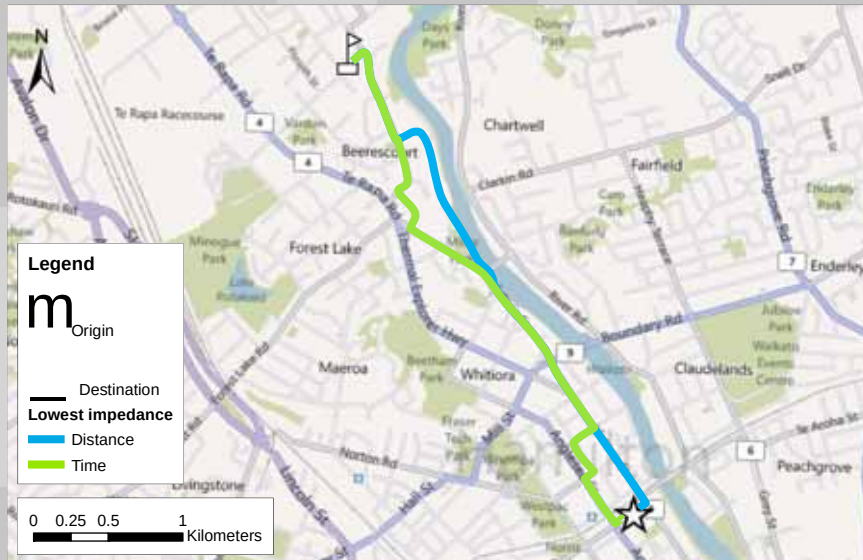
Outline

- Context
- At the moment...
- Review
- Applying to New Zealand
- Comparison
- Building GIS model
- Applications





At the moment...



“Improve upon existing methods of calculating cyclist routes in New Zealand, by taking cyclist preference into account”



Review



Level of Service (LOS) Models

- Stated preference
- High data requirement
- Qualitative

NZ applications:

- NZTA Economic Evaluation Manual
- Hastings Area Transport model



Review



Revealed Preference Models

- Data available
- Quantitative



Review

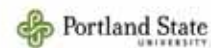


Bicycle Route Choice Model Developed from Revealed- Preference GPS Data



By Joseph Broach*, John Gliebe and Jennifer Dill

TRB 90th Annual Meeting, Paper 11-3901
Washington, DC, January 23-27, 2011



Terminology



- No bike lane

Terminology



■ No bike lane

■ **Bike lane**

Terminology



■ No bike lane

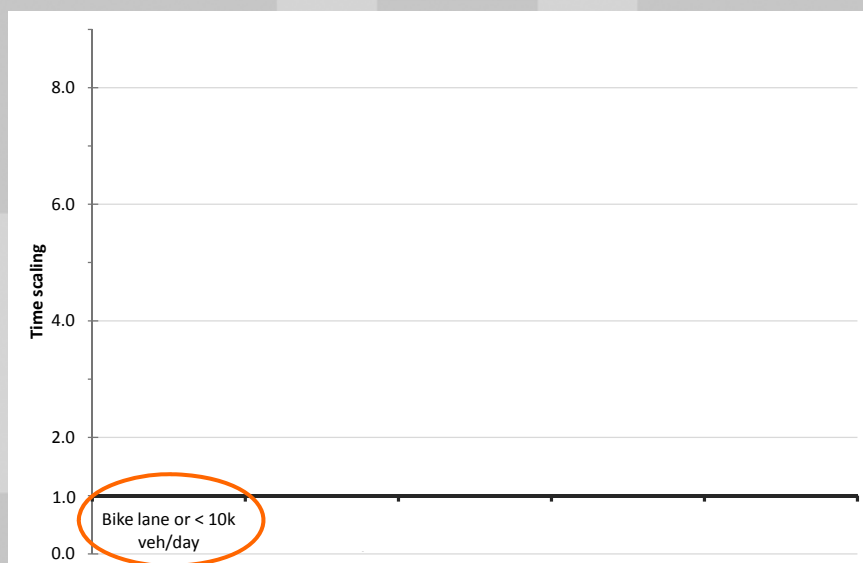
■ **Bike lane**

Terminology



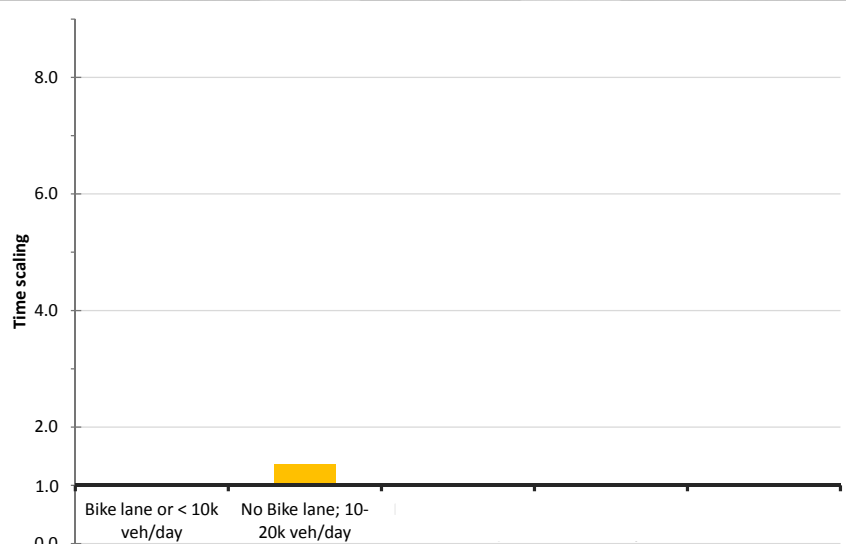
- No bike lane
- Bike lane
- **Bike path**

Portland – results



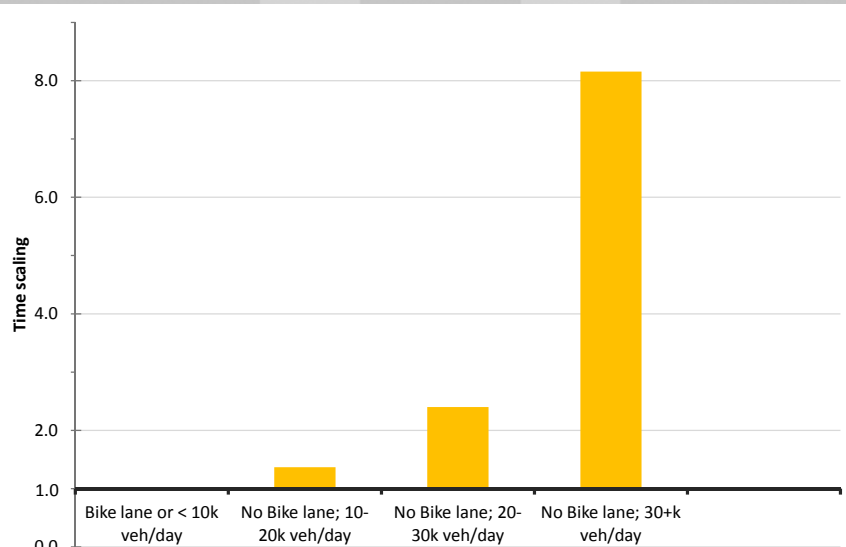
Portland – results

abley 
transportation consultants

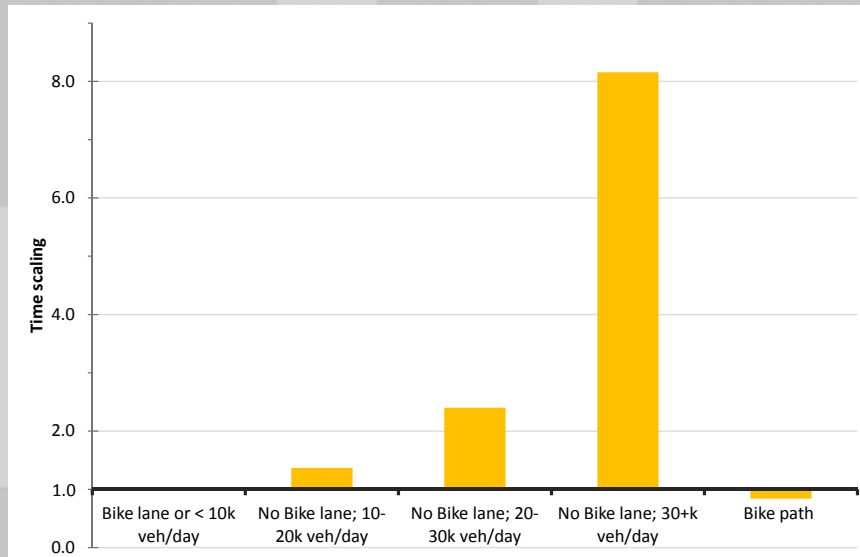


Portland – results

abley 
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Portland – results



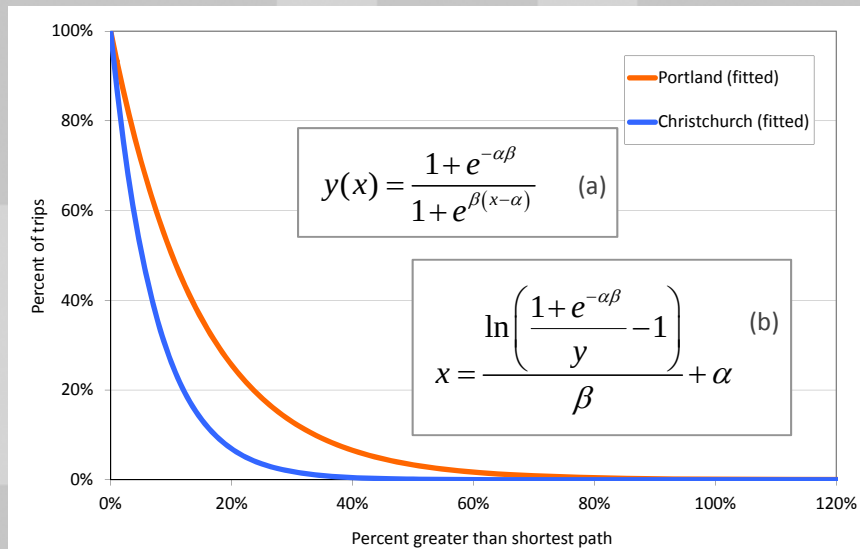
Applying to New Zealand



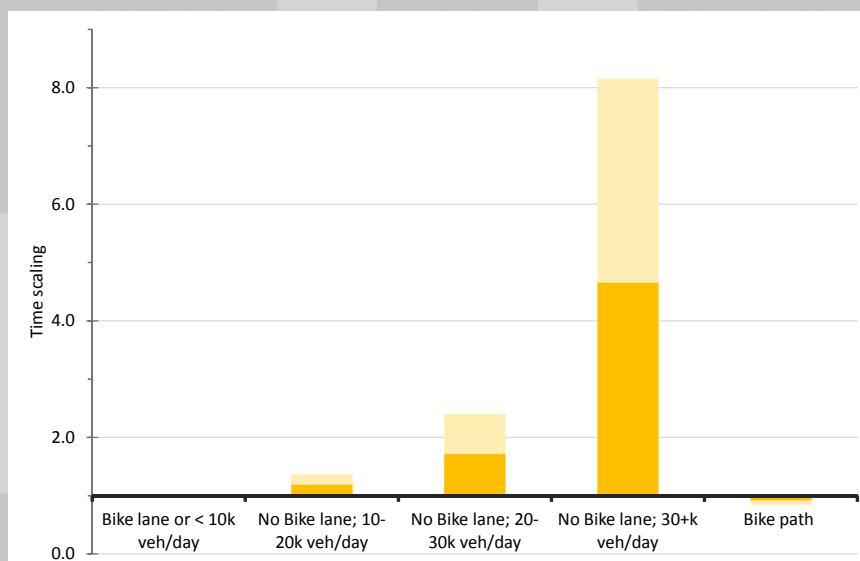
- Mathematically 'map' Portland values
- Christchurch Cyclist Survey
 - 400 participants
 - Routes drawn by hand on map



Applying to New Zealand



Christchurch – results



Comparison

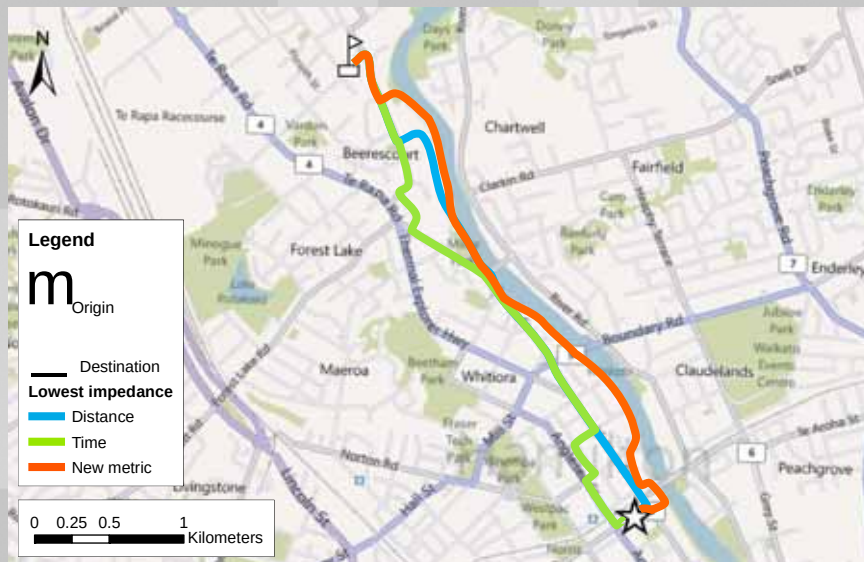


Facility description	Time scaling factor		NZTA EEM
	Commute	Non-commute	
Bike lane	1.00	1.00	1.00
No bike lane; 10,000-20,000 vpd	1.19	1.11	
No bike lane; 20,000-30,000 vpd	1.71	1.70	1.44
No bike lane; 30,000+ vpd	4.65	4.16	
Bike path	0.92	0.87	0.89

Applying the results



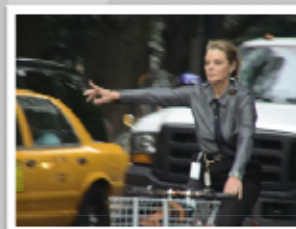
Example



Applications



- Accessibility modelling
- Improving economic analysis
- Decision making tool
- Prioritisation of investments
- Designing cyclist-friendly intersections



To find out more



- Contact me:
stacy@abley.com
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