



22 March 2018

ENZ Transportation Group – Annual
Conference

Right to the City

Applying Justice Tests to PT Investment

Outline

1. Background
2. Literature Review
3. Methodology and Case Study
4. Results and Discussion
5. Q&A

Note: *An extended version of the paper associated with this presentation has been accepted for publication in a forthcoming edition of the journal "Transport Policy".*

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Who benefits?

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Background

Cities are grappling with:

- Growing travel demands, and
- Persistent socioeconomic deprivation/inequality.

Major PT investments would ideally be *efficient*, i.e. their benefits exceed their costs, and *equitable*, i.e. benefits are distributed to favour the less well-off.

Research question: How are the accessibility benefits of PT investment distributed across the population?

Background

Auckland Plan: Identifies six transformational shifts.

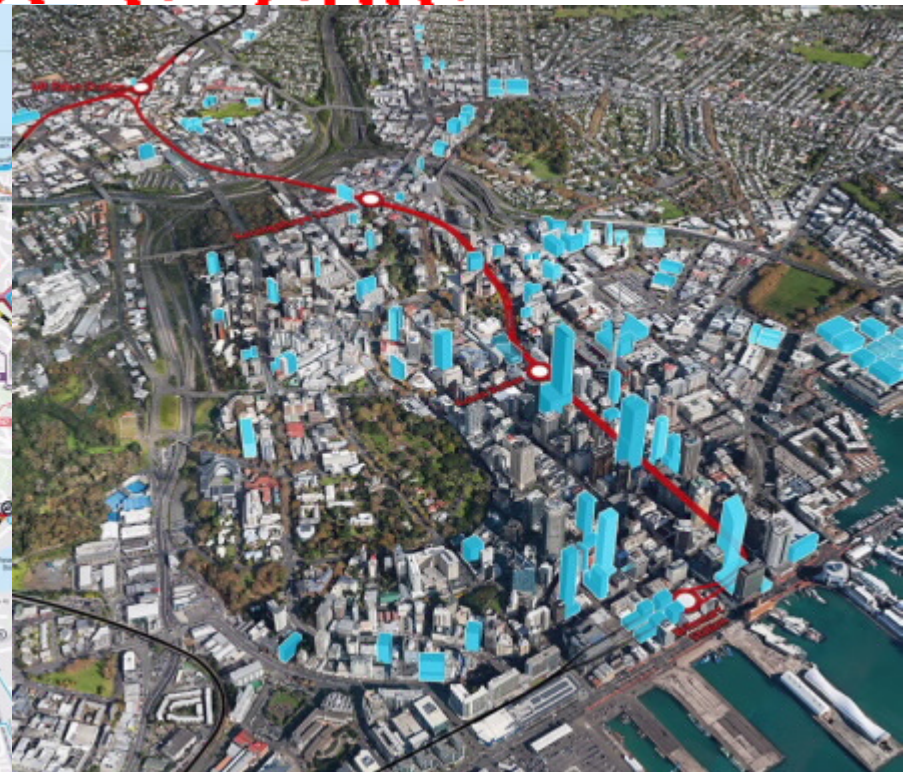
- 1 Dramatically accelerate the prospects of Auckland's children and young people.
- 2 Strongly commit to environmental action and green growth.
- 3 Move to outstanding public transport within one system.
- 4 Radically improve the quality of urban living.
- 5 Substantially raise living standards for all Aucklanders with a focus on those most in need.
- 6 Significantly lift Māori social and economic wellbeing.

Background

The New Network

City Rail Link

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Sources: Auckland Transport and Auckland Council

Literature Review

Rich and diverse body of literature:

- *Economics* – cities attract and segregate households.
- *Sociology* – theoretical concepts of spatial justice.
- *Geography* – methods for measuring accessibility.
- *Public policy* – many orgs. have policies on inequality.

Includes IMF, World Bank, and OECD. NZTA?

Moot point whether high-level support for addressing inequality influences transport investment priorities.

Literature Review

Åslund et al. 2009 (Journal of Econ. Geog.):

- Consider impact of accessibility to jobs on long-term employment outcomes for *refugees* in Sweden.
- Being placed in a location with poor job access in 1990–1991 adversely affected employment in 1999.
- Doubling initial accessibility → 2.9% points increase in employment probability a decade later. Large effect!

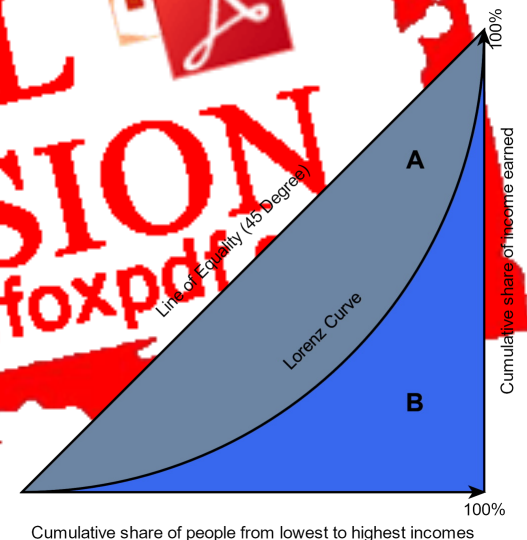
Many other studies find that accessibility has a positive effect on a wide range of socioeconomic outcomes.

Literature Review

Various justice tests:

- *Martens (2012)* – range in accessibility between areas with highest and lowest socioeconomic status

- *Lucas et al. (2015)* – Gini coefficient (measures the degree to which accessibility is equally distributed)



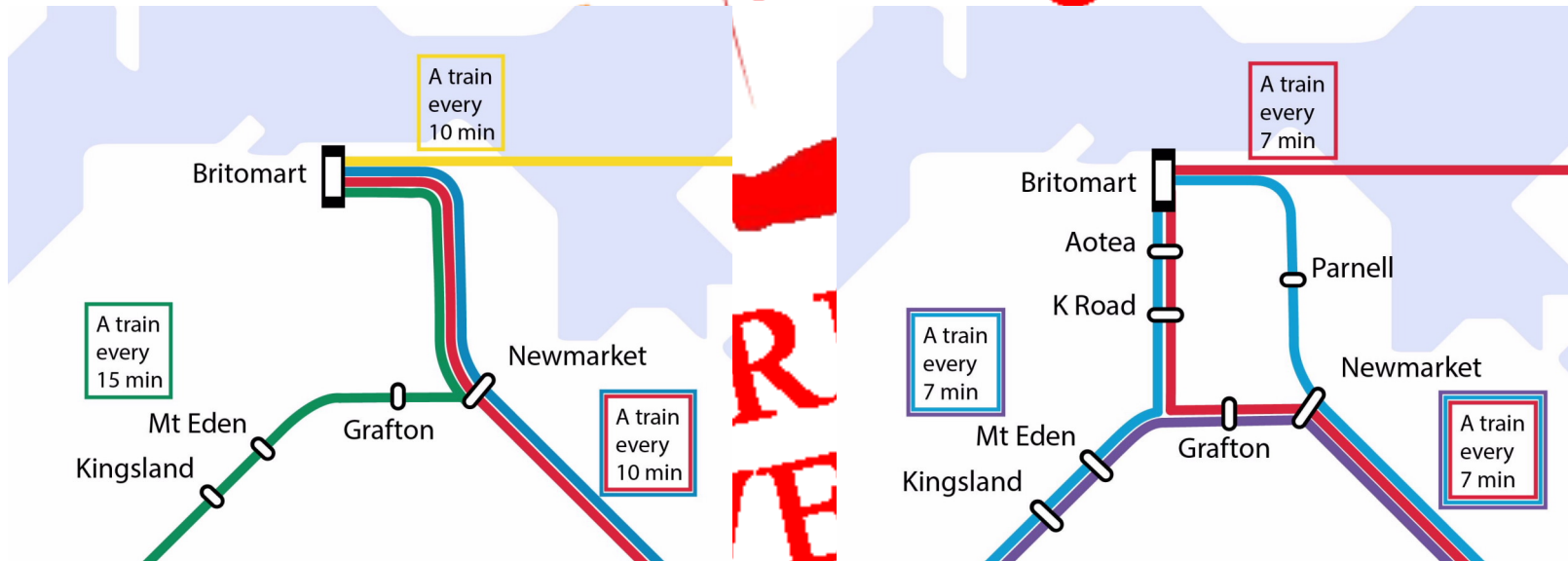
Methodology



Case Study

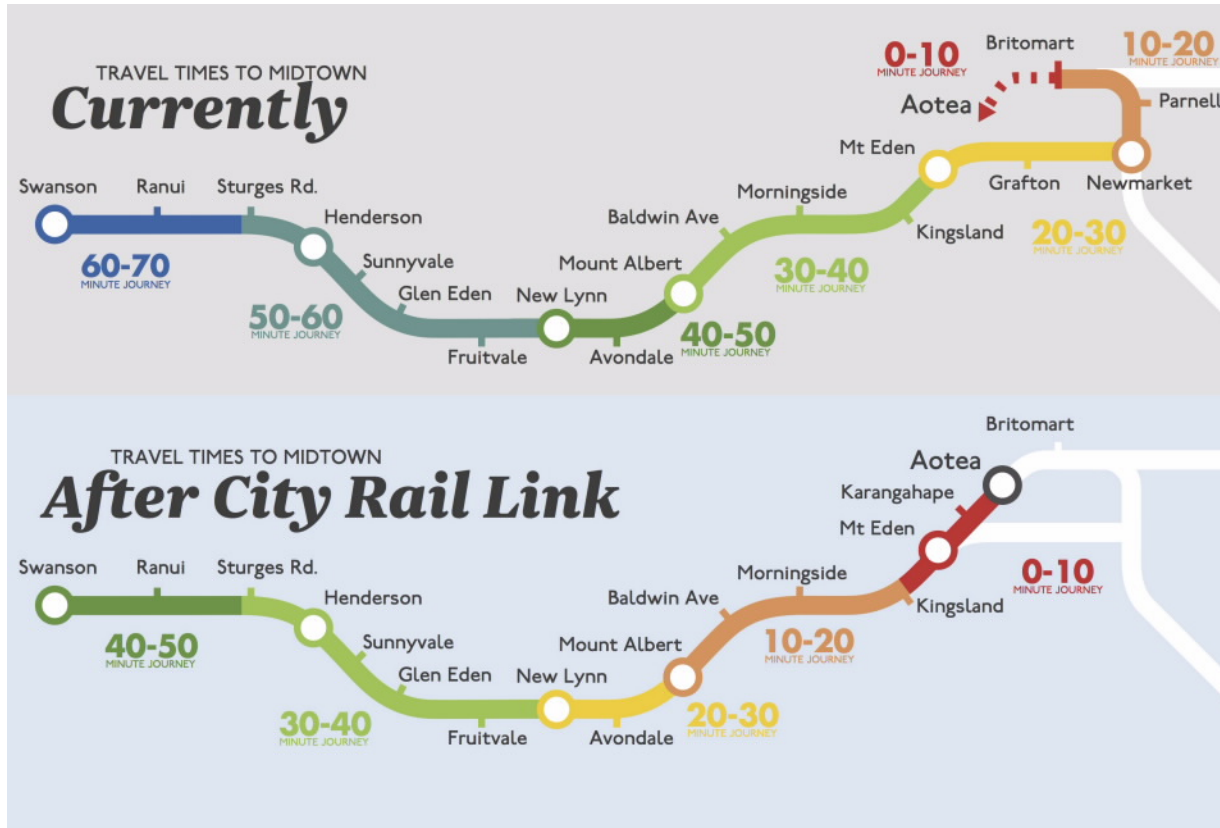
Auckland's City Rail Link:

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Case Study



More direct alignment +
More frequent services +
Shorter walk to city centre =
Much faster journey-times.

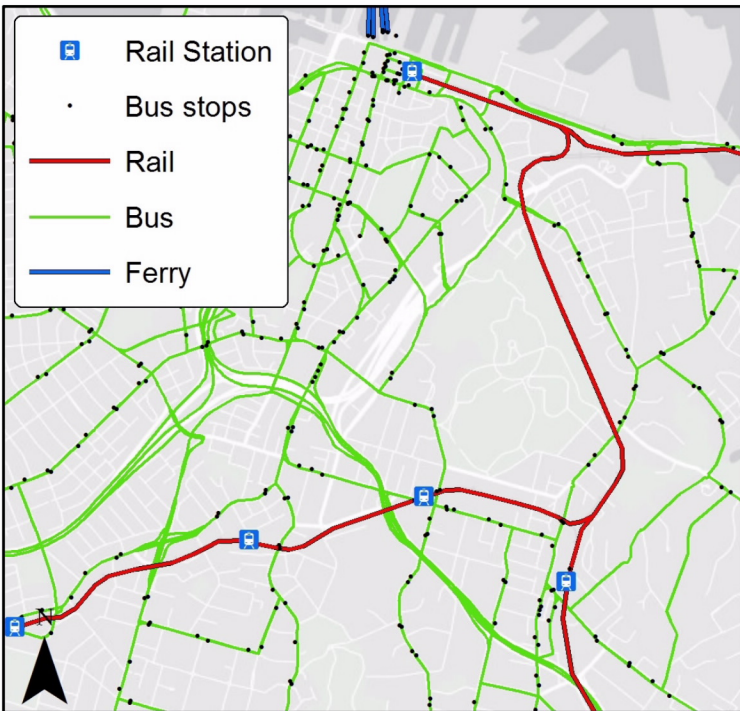
The link for all of Auckland.

transportblog  Generation Zero 

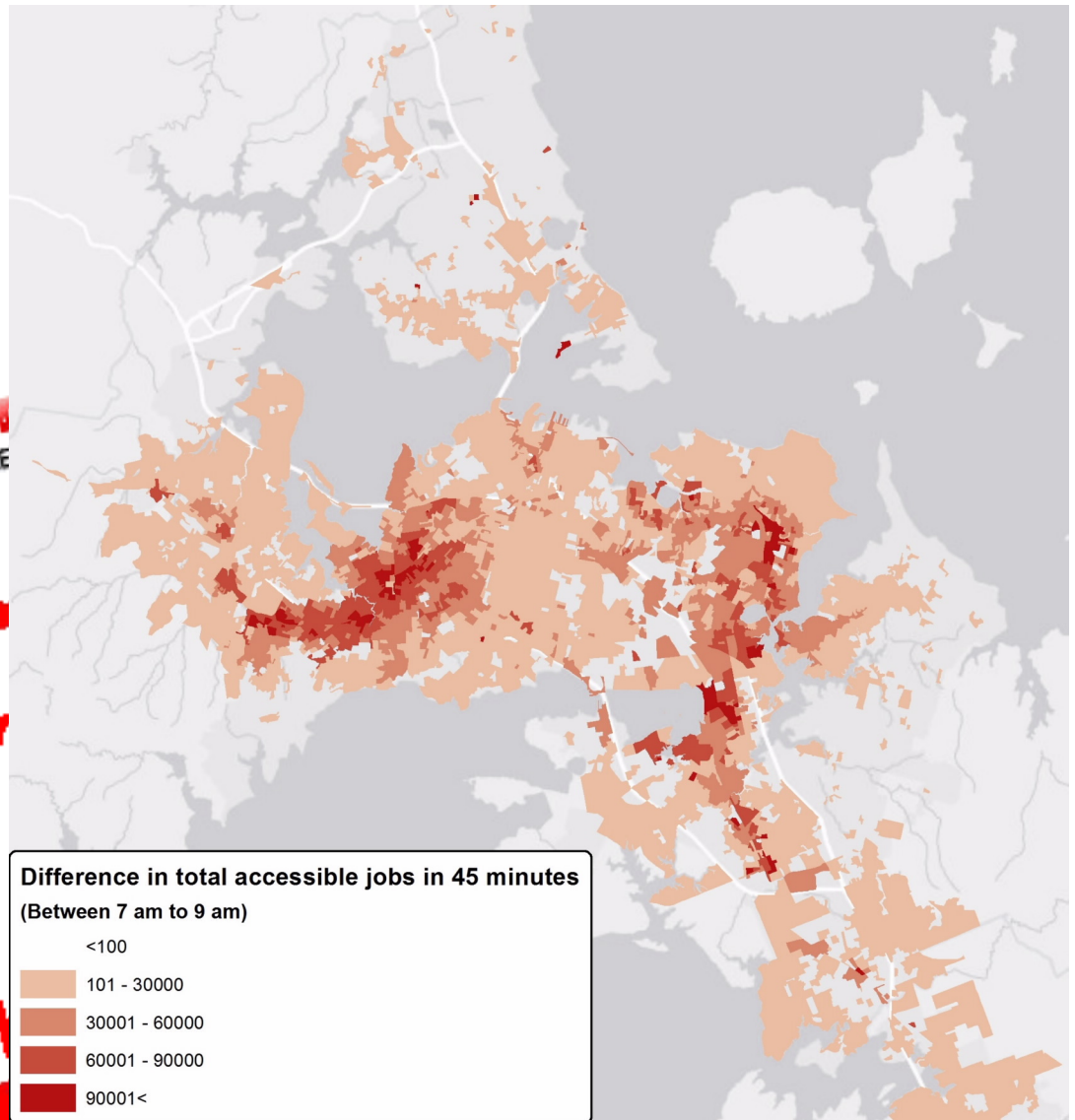
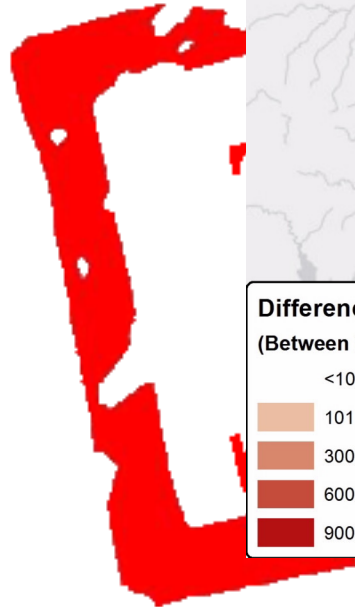
Case Study

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Results

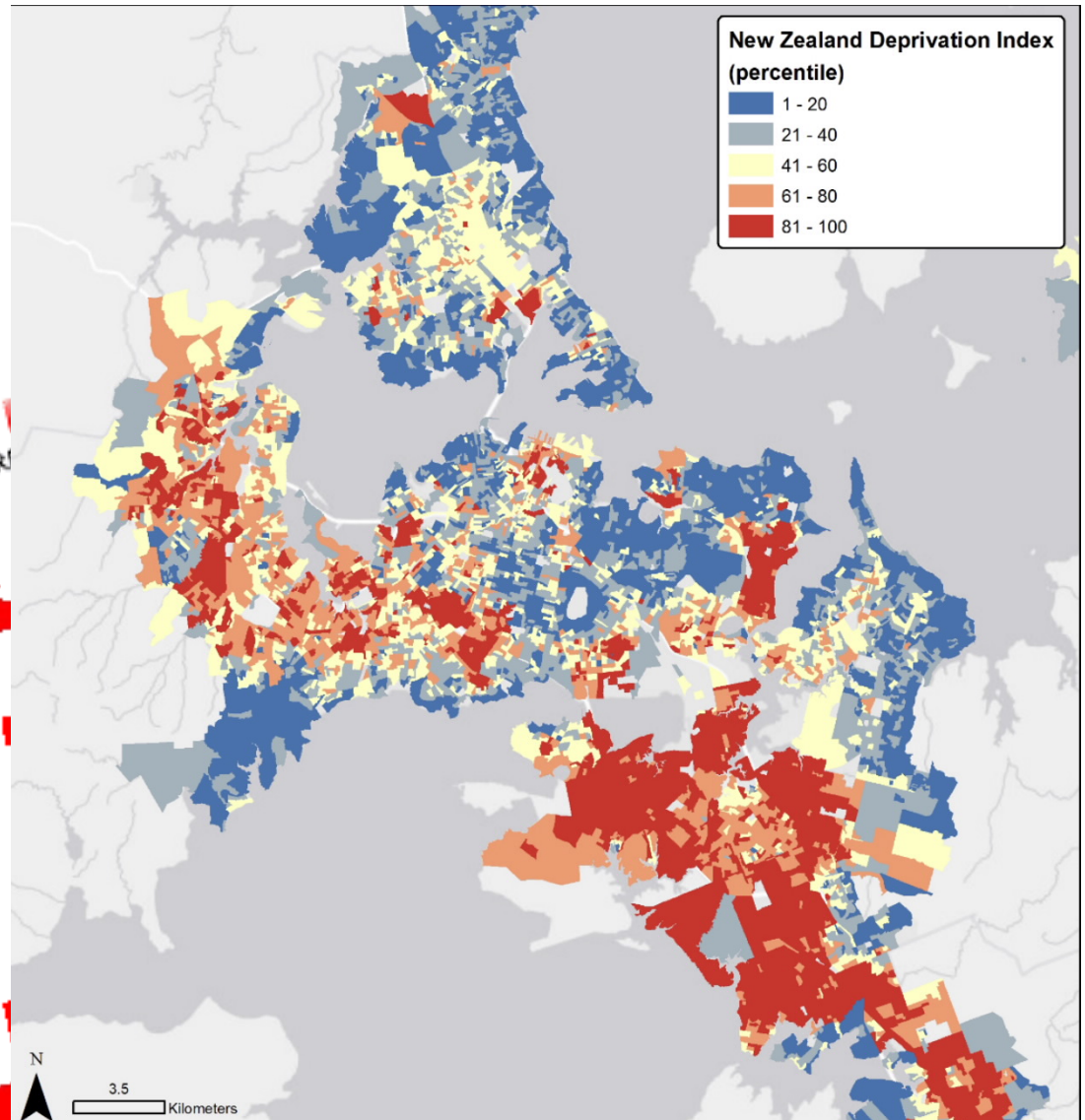


Results

NZDep measures relative deprivation.

High percentile == high deprivation.

Spatial clusters, e.g. west & south.



Results

Key findings:

- CRL disproportionately benefits less well-off areas.
- Correlation coefficient robust to specification.

Other findings – More stable results when using:

- Distance-decay accessibility function (smooth)
- Many spatial units, e.g. meshblocks (detail)
- Tailored deprivation indicator, e.g. NZDep (nuanced)

Discussion

Limitations of approach:

- Measure potential rather than actual demand
- Analyse walk-up access only, not multi-modal
- Second-order land use and transport changes

Data didn't indicate presence of outliers or non-linearities.

Summary

Many cities are grappling with growing travel demands and persistent socioeconomic deprivation/inequality. Major PT investments would ideally be *efficient* and *equitable*.

Q. Who benefits from transport investments?

A. Ex ante accessibility-based “justice tests”.

Our contribution: Propose a simple, new “justice test” (correlation coefficient), which seems stable/reliable.

Postscript

Our paper reviews policies in U.K., Australia, and NZ:

- NZ provides least guidance on equity related issues
- Only 1 out of 400 pages in the EEM considers equity
- Discussion is extremely limited (pointless?).

Should transport investment priorities in New Zealand be informed by analysis of distributional impacts?

Thank you and Questions?

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Please send feedback to stuart.donovan@veitchlister.com.au

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BRISBANE	Level 5, 200 Mary Street Brisbane QLD 4000	TEL +61 7 3870 4888
MELBOURNE	Level 14, 190 Queen St Melbourne VIC 3000	TEL +61 3 9602 5200
SYDNEY	Suite 6.10, 46 Kippax St Surry Hills NSW 2010	TEL +61 2 9051 2423

POSTAL PO Box 15080 City East QLD 4002 **EMAIL** vlc@veitchlister.com.au **ABN** 54 010 655 973 **www.veitchlister.com.au**

