

New Approaches to Managing Road Space for Bus and Tram Priority

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Monash University, Australia



**PUBLIC TRANSPORT
RESEARCH GROUP**



MONASH
INSTITUTE OF
TRANSPORT
STUDIES





MONASH
University

Introduction

Perspectives

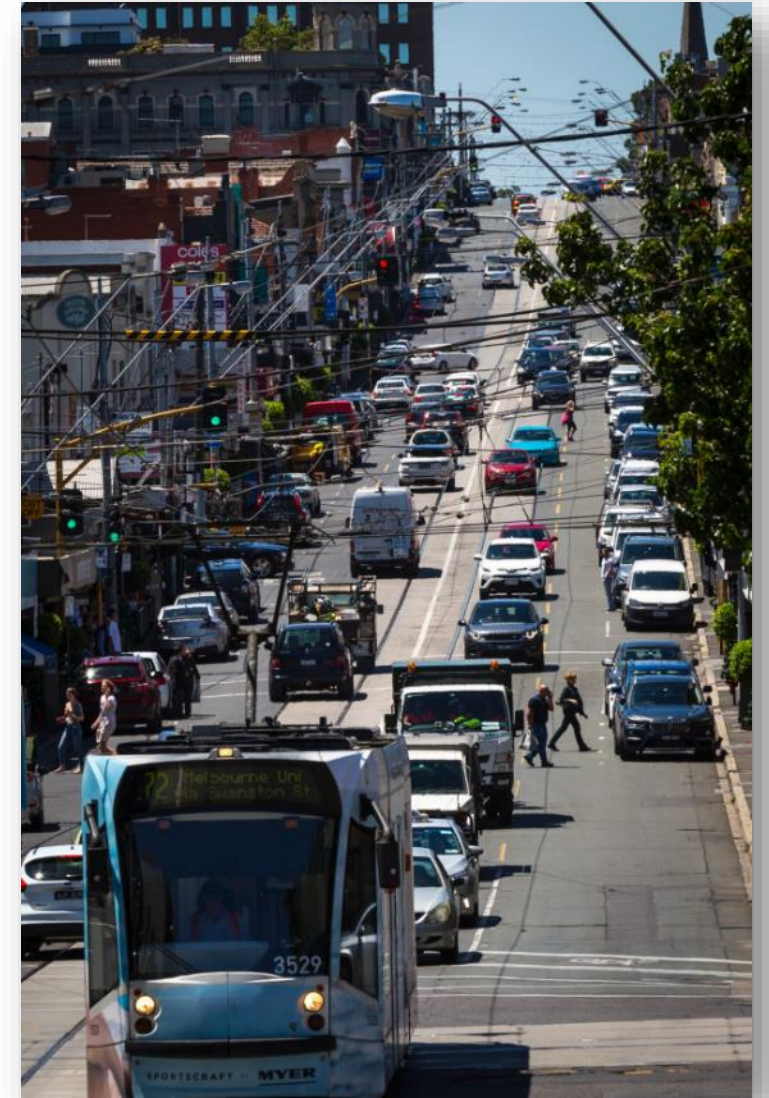
Movement and Place – for Trams

Pragmatic Priority



This presentation outlines the results of two major research programs aimed at progressing public transport priority in Australasian and International Cities...

- The aim is to focus the workshop on the ‘real problem’ we have in cities:
 - we cannot implement priority because its too politically difficult to get the decisions to be made to do that;
 - we are constrained by not harming the private car (roadspace or parking) because its politically hard to do anything about that
 - The problem is not technical, technology or engineering;
 - its about the political context and how we address this to make progress

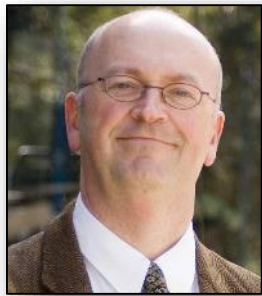


CONNECTING CITIES

PTRG is the name for researchers at Monash University who are engaged in research on public transport systems, users, planning and policy.

[DISCOVER MORE](#)

...PTRG has about 70 researchers and has had high international impact...



Prof Graham Currie
Chair of Public Transport



Nicholas Fournier
Research Fellow



Dr Alexa Delbosc
Senior Lecturer
DECRA Fellow



James Reynolds
Research Fellow



Katerina Pavkova
Research Fellow



Wendy Walker
Website Manager



Laura McCarthy
Research Fellow



Dr Mike Ma
Lecturer



Dr Kun An
Lecturer

- 27 PhD students
- 52 Research associates across Monash University (e.g. ITS, MADA, MUARC), International Universities, and external experts
- 48 Masters Students; most in China
- 10+ final year civil engineering undergraduate research students per year

International Awards

US Transportation Research Board Annual Meeting - Largest Transport Conference in the World (13,000 delegates)

- Best Paper in Public Transport (William M Millar Award)
 - 2012
 - 2017

World Conference on Transport Research

- Best research paper in Transport Policy 2016
- Research Impact Award 2017

World Review of Public Transport Research (2009-2013)

Heilig L and Vos S (2015) 'A Scientometric Analysis of Public Transport Research' *Journal of Public Transportation* Vol 18 No 2

Top 3rd world Universities in Public Transport Research

...PTRG runs the largest PhD research group in the world focusing on transit – 18 research programs...

1. TOD & Transit
Laura Aston



2. Big Data & Visualisation
Homayoun Rafati




9. Future Train
Lisa Fu



10. Designing Urban Rail to Reduce Vandalism
Amy Killen




3. Network Synchronisation
Rejitha Ravindra




4. Shared Mobility
Taru Jain



11. Bus & Tram Priority Implementation
James Reynolds




12. Simulating Bus & Tram Priority
Samithree Rajapaksha




5. Changing Travel Behaviour
Laura McCarthy




6. Tourism & Public Transport
Victoria Radnell



13. Placemaking & Street Redesign
Matthew Diemer




14. Passenger Falls in Trams
Luke Valenza



7. Reliability Engineering Approaches in Best Practice Railways
Maryam Nawaz



8. Improving Gender Diversity in the Public Transport Workforce
Rachel Mence




15. Transit Network Design
Nora Estgfäller



16. Future Bus
Sarah Roberts



17. The New Bus Rider
Prudence Blake



18. Road Safety Impacts of Bus Safety Inspections
Jianrong Qiu



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TRANSPORT FOR VICTORIA

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...including 2 projects im going to highlight today...

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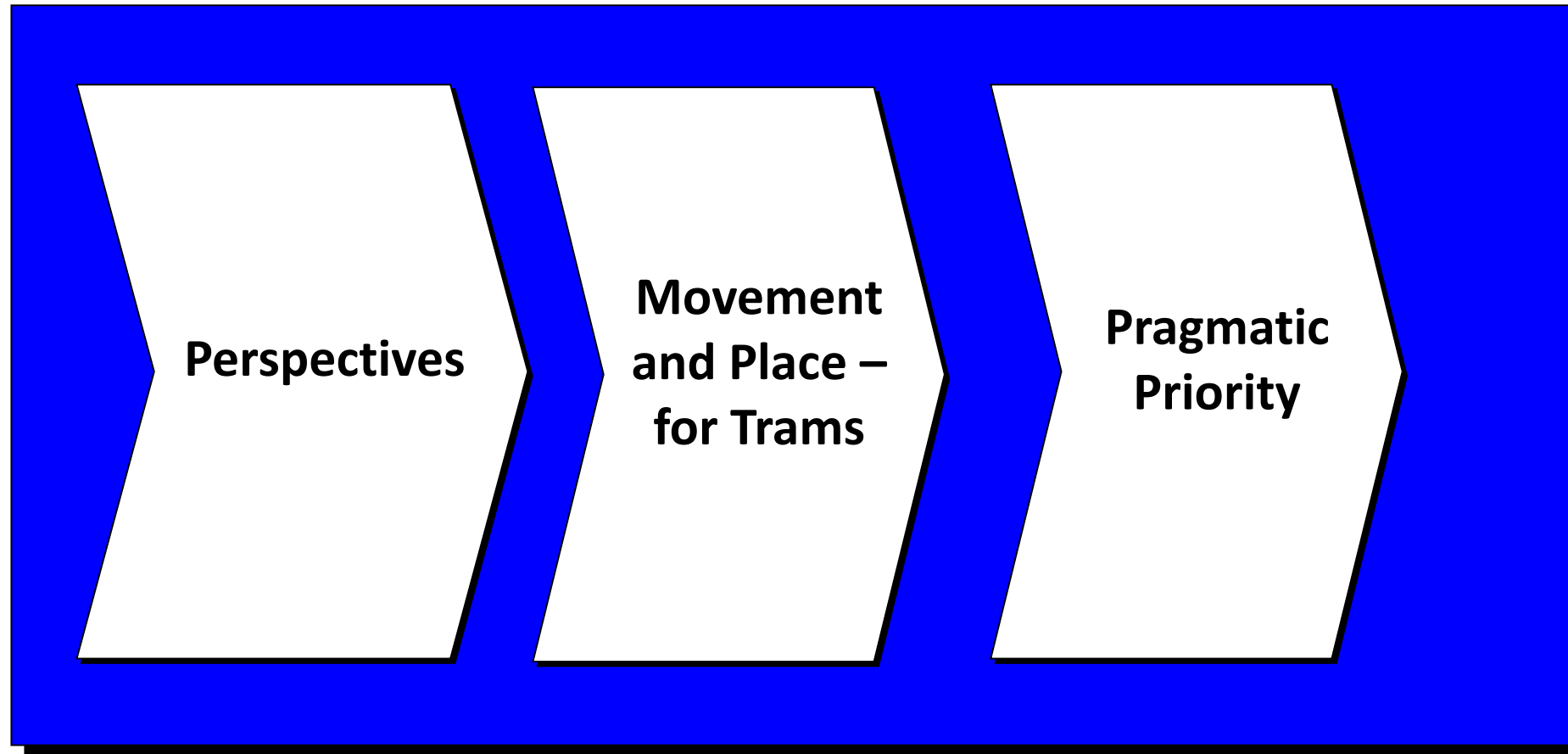
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...and is structured as follows





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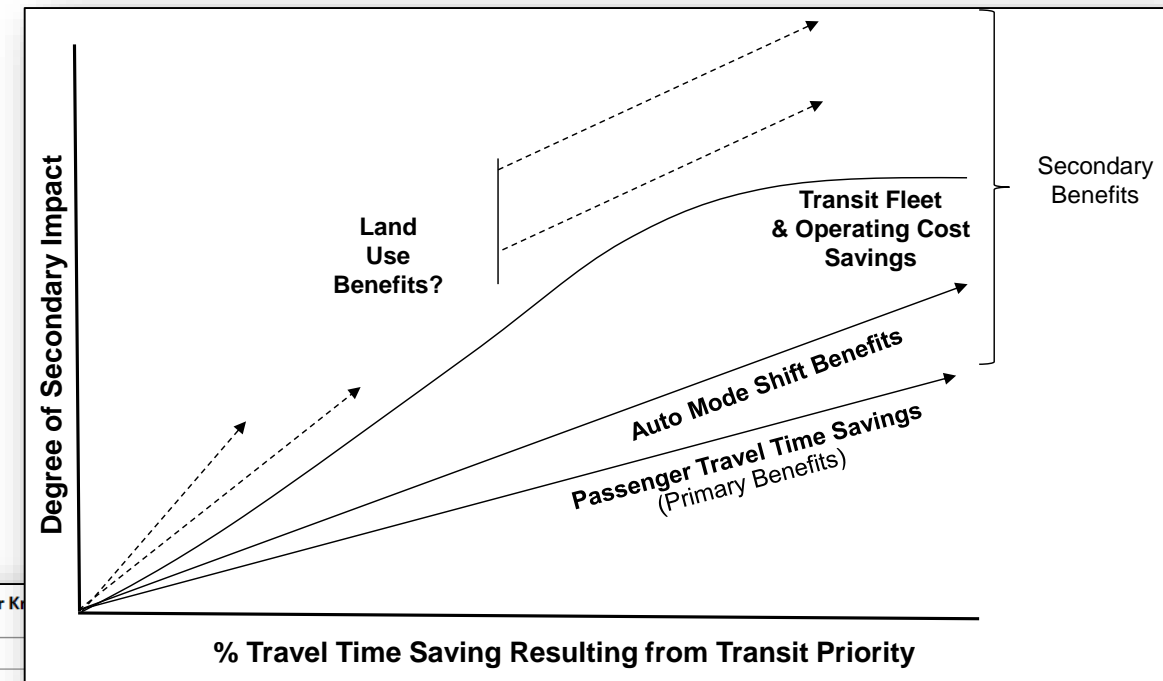
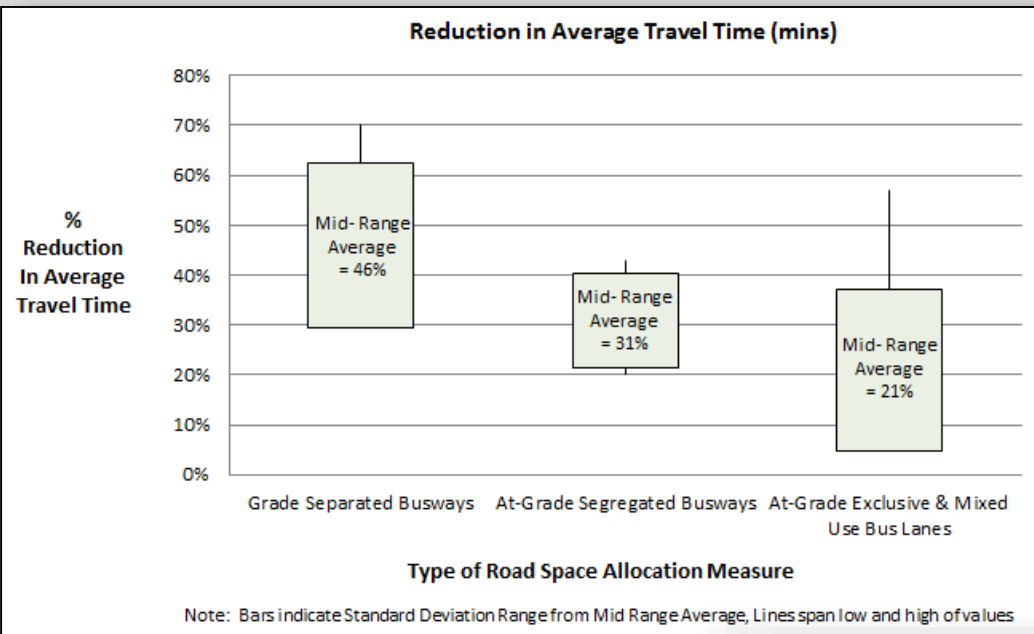
Pragmatic Priority



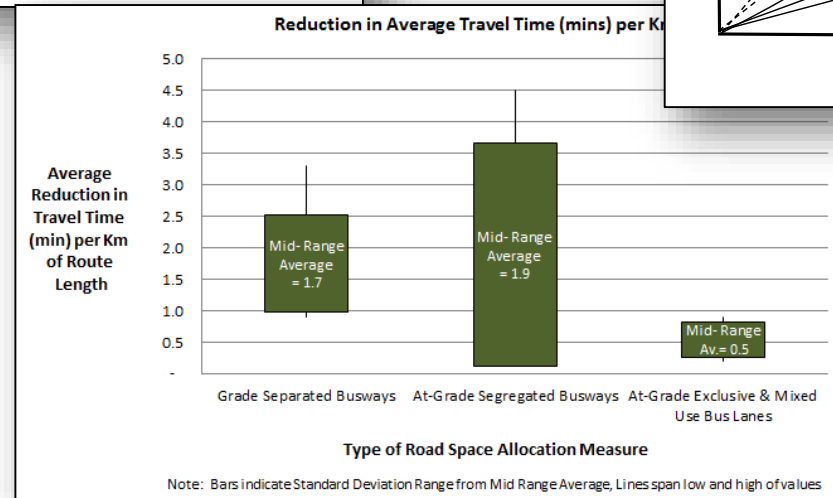
We all know PT is more efficient on roads due to people carrying ability



We know that substantial benefits will result from implementing priority...



Source: Goh and Currie (2013) Before and After Studies of the Operational Performance of Transit Priority Initiatives ITS Report Feb 2013



Source: Currie G and Sarvi M (2012) 'A New Model for the Secondary Benefits of Transit Priority' TRANSPORTATION RESEARCH RECORD No. 2276, Journal of the Transportation Research Board pp 63–71

..but very little gets implemented.



Questions of Governance: Rethinking the Study of Transportation Policy

[Transportation Research Part A Policy and Practice](#) 101 · May 2017

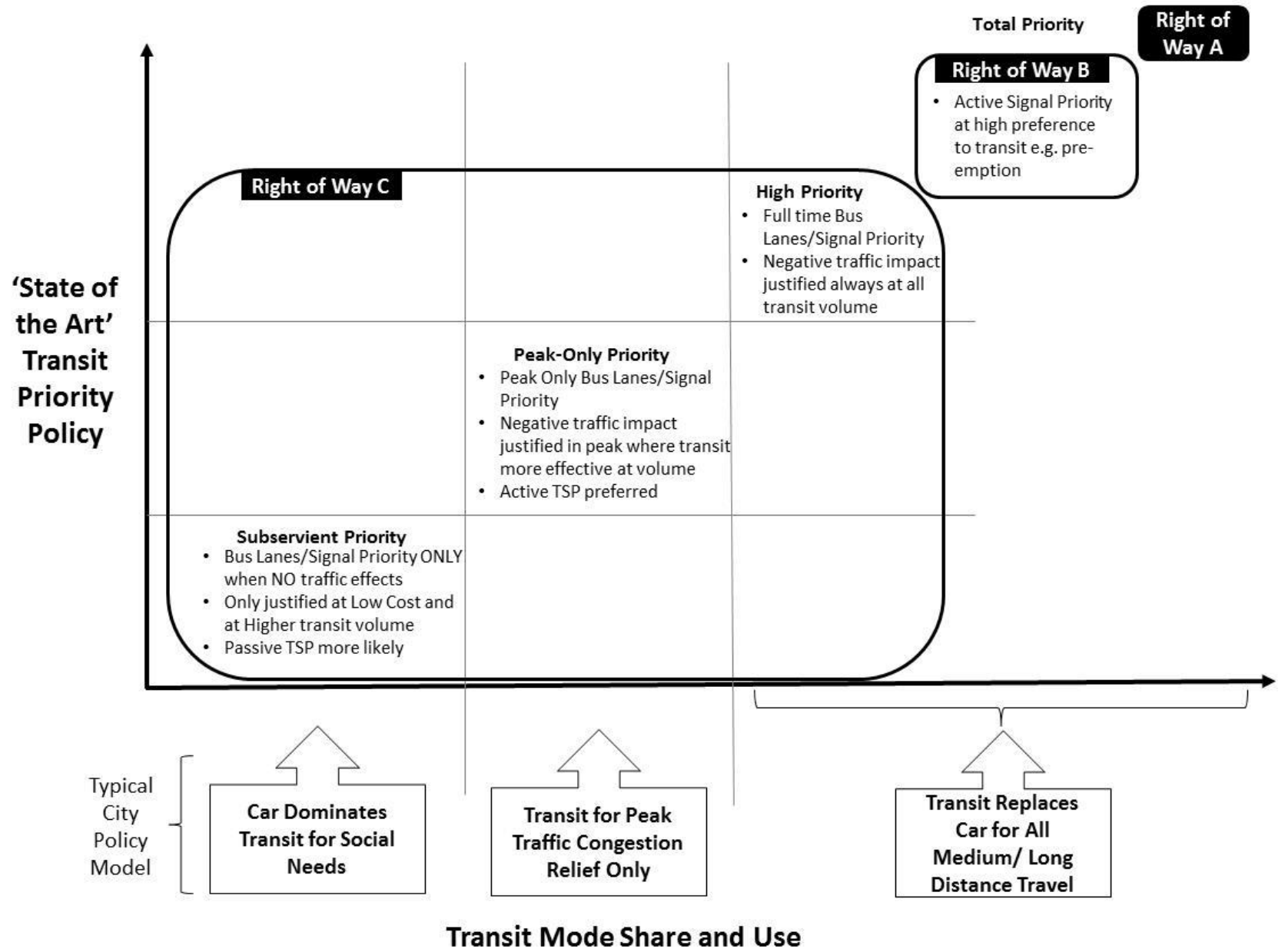
“...there is a need to ... pay greater
attention to context, politics,
power, resources and
legitimacy”

(Marsden and Reardon 2017)

.. WHY?

State of the Art – Priority Design

Source: Currie G (2016) 'Managing On-Road Public Transport in Traffic' in Bliemer M Mulley C and Moutou C Handbook on Transport and Urban Planning in the Developed World, Edward Elgar Publishing Ltd UK



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Movement and Place – for Trams

Pragmatic Priority



Topic 13 Matt Diemer – Placemaking and Trams

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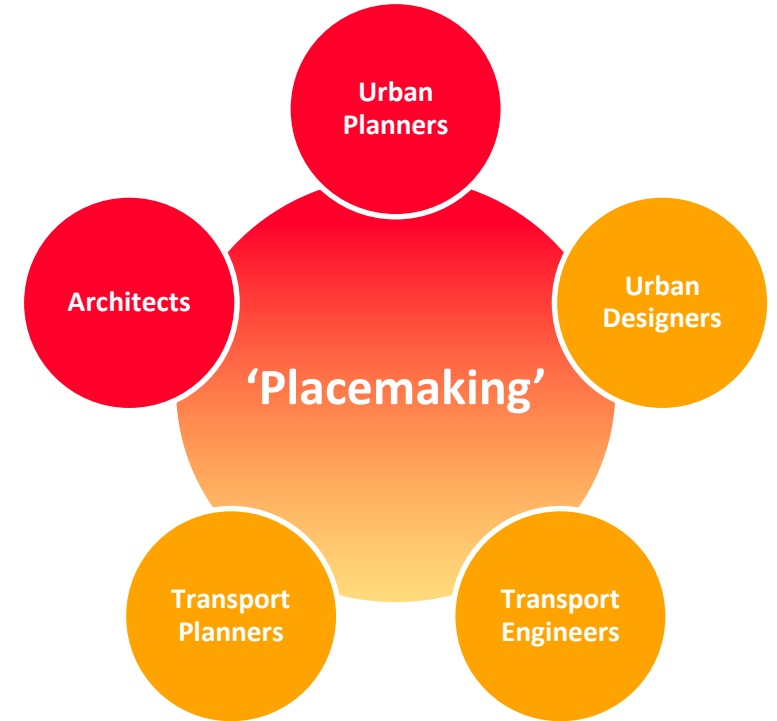


18. Road Safety Impacts of Bus Safety Inspections

Jianrong Qiu

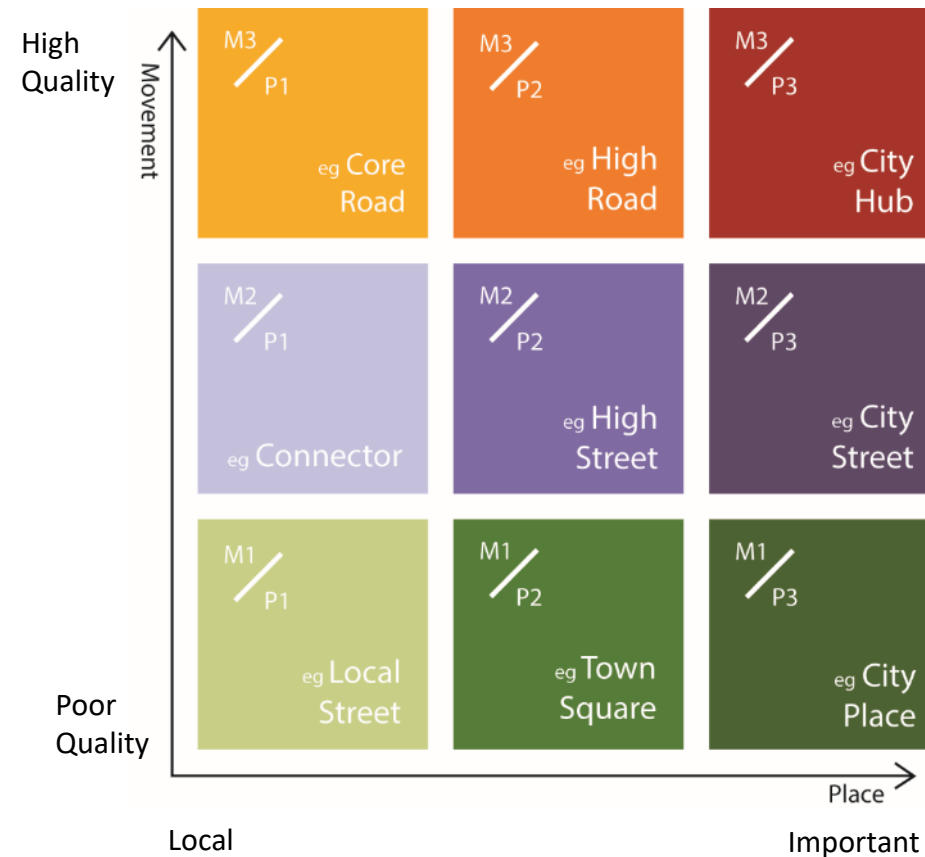


Yarra Trams need to modernise/retrofit most of inner Melbourne streets considering place as well as travel



Research therefore adopted the Link (Movement) and Place framework to understand policy impacts

- Developed by Jones et al (2007) as 'Link & Place'
- Street segments classified by movement importance and place significance (i.e. M2 / P3)
- Grouped into categories of 'Street Types' based on placement along the matrix



Movement and Place categories were therefore defined...

Movement Classifications



Smallest Visitor Catchment Area

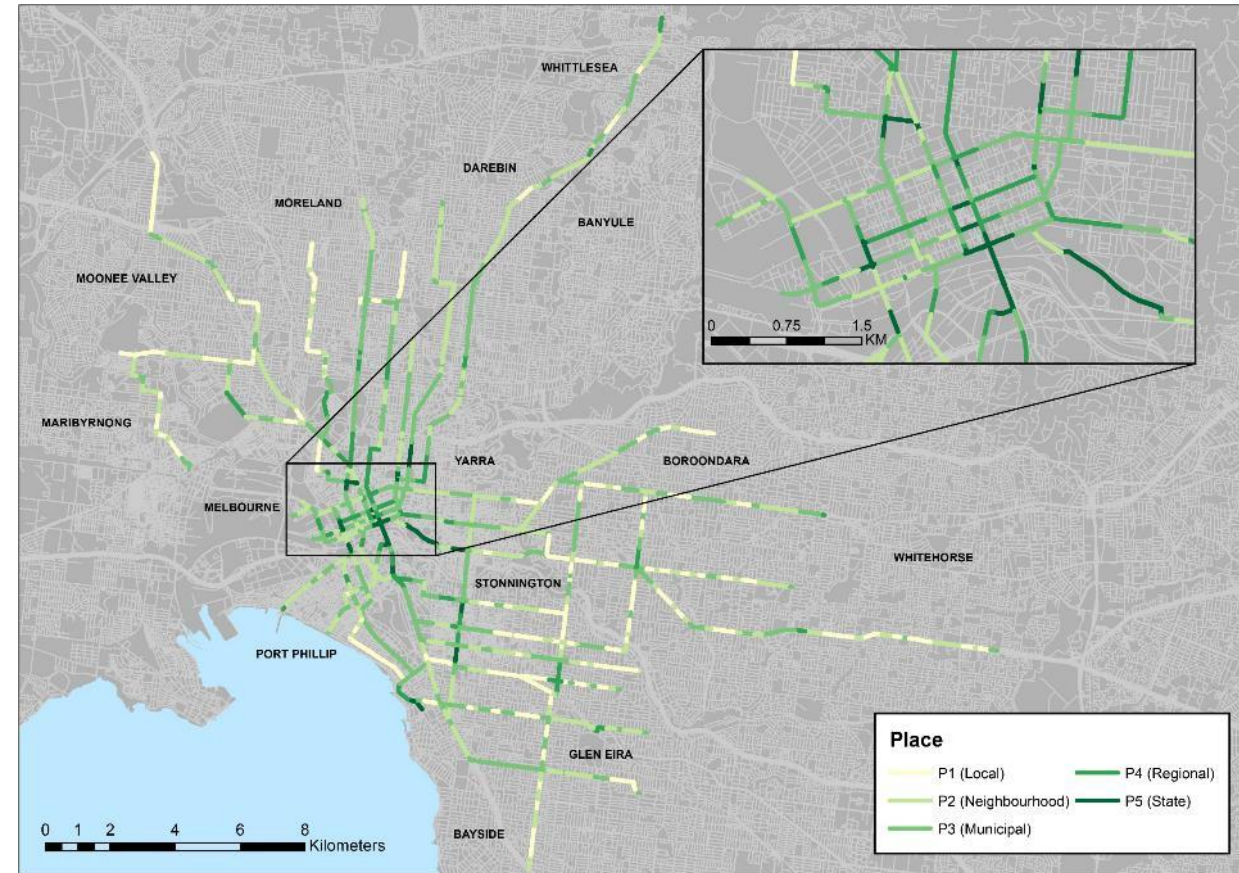
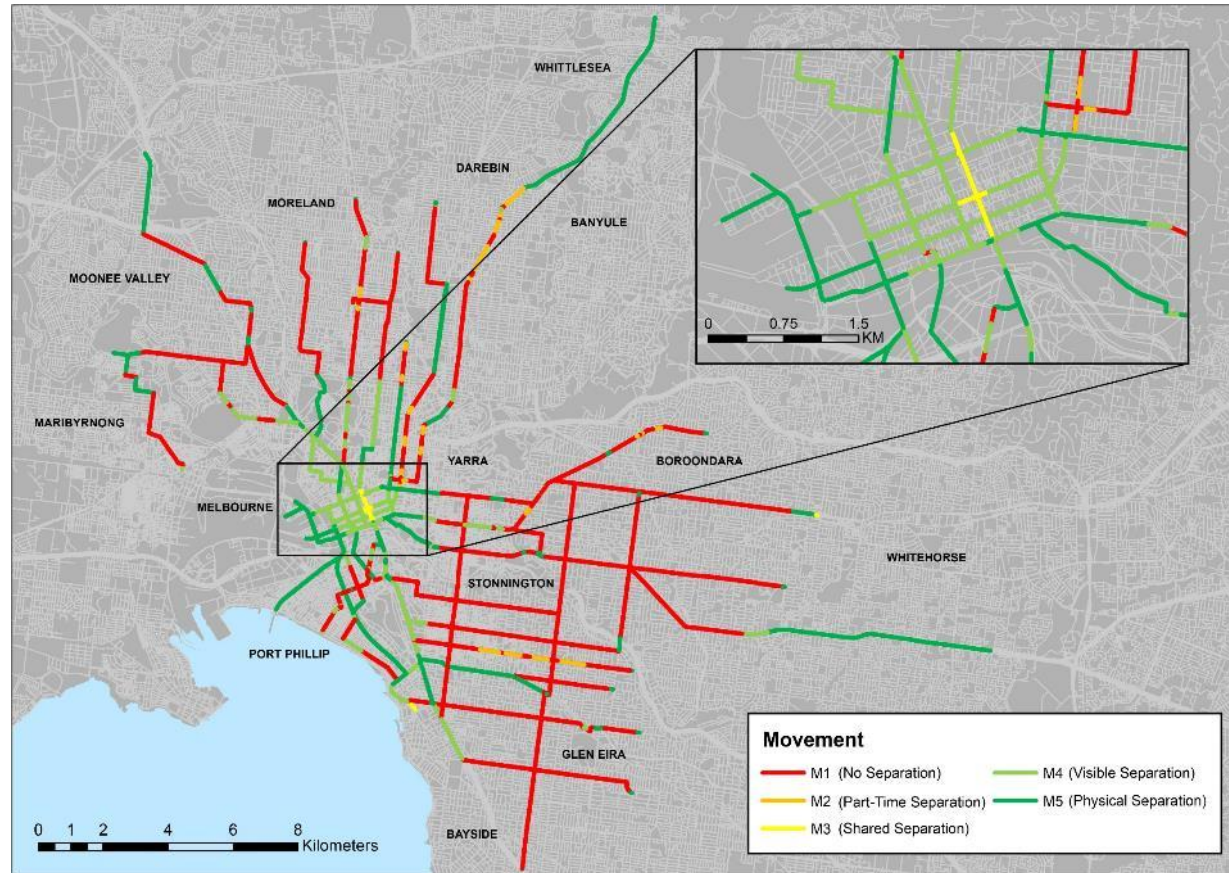
- P1 – Local
- P2 – Neighbourhood
- P3 – Municipal
- P4 – Regional
- P5 – State



Largest Visitor Catchment Area

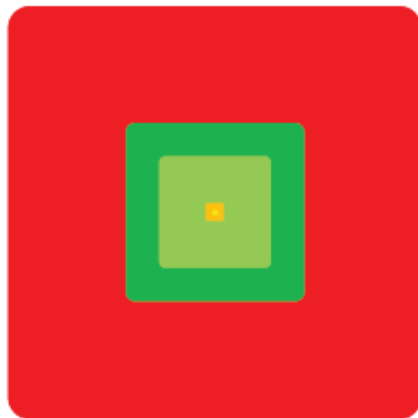
Place Classifications

...and Tram links classified



M1 No Separation movement and P3/P2 Municipal/Neighbourhood places dominate..

Movement



Movement Classifications:

- M1 - No Separation (57%)
- M5 - Physical Separation (24.6%)
- M4 - Visible Separation (15.4%)
- M2 - Part-Time Separation (2.4%)
- M3 - Shared Separation (0.6%)

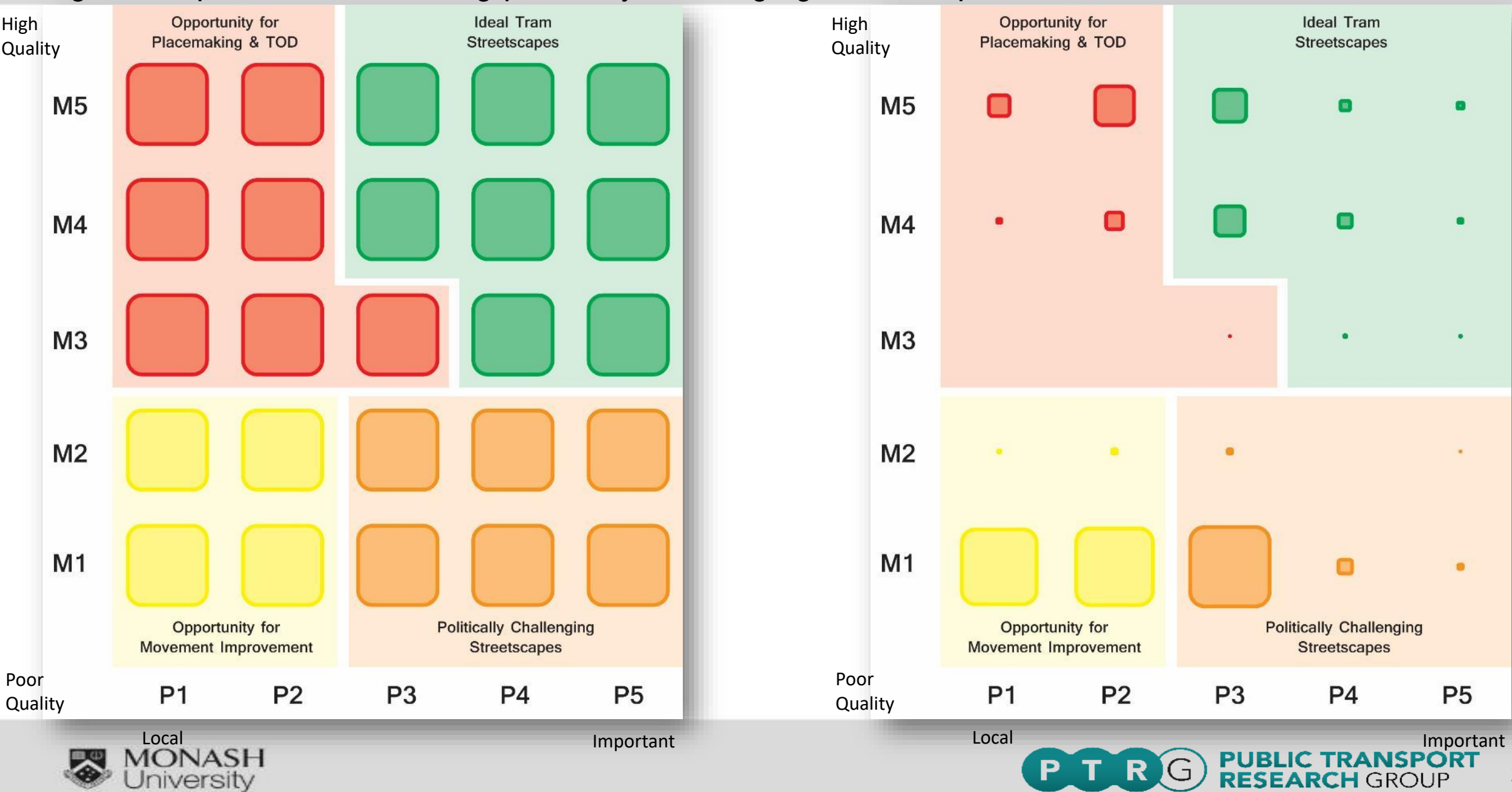
Place



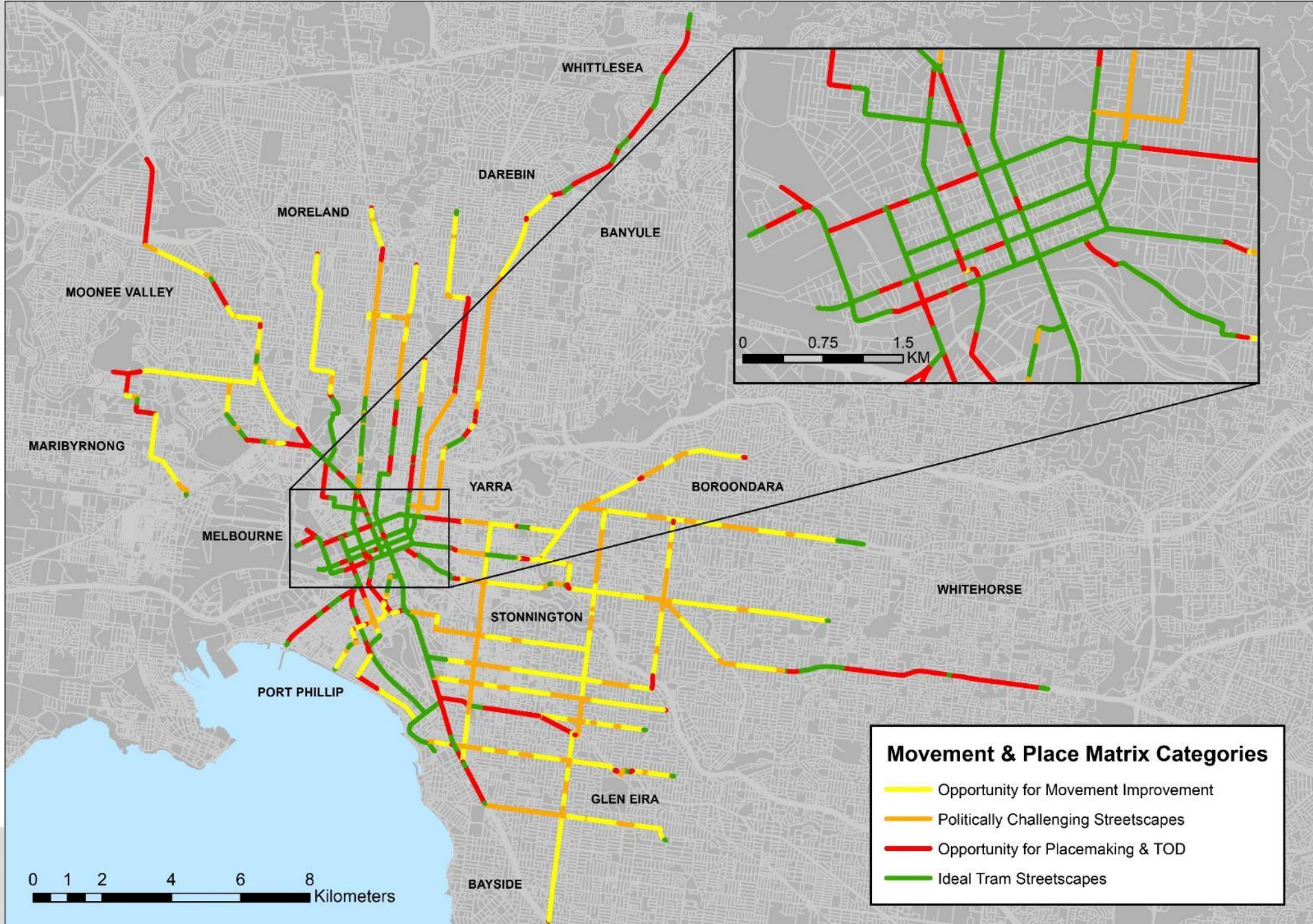
Place Classifications:

- P3 - Municipal (33.3%)
- P2 - Neighbourhood (31.3%)
- P1 - Local (23.3%)
- P4 - Regional (8.6%)
- P5 - State (3.5%)

A M&P framework identified 4 categories of place type based on planning opportunities - Much room for targeted improvement, avoiding politically challenging streetscapes....



....here are
where the
opportunities
are



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Topic 11. James Reynolds – Pragmatic Transit Priority

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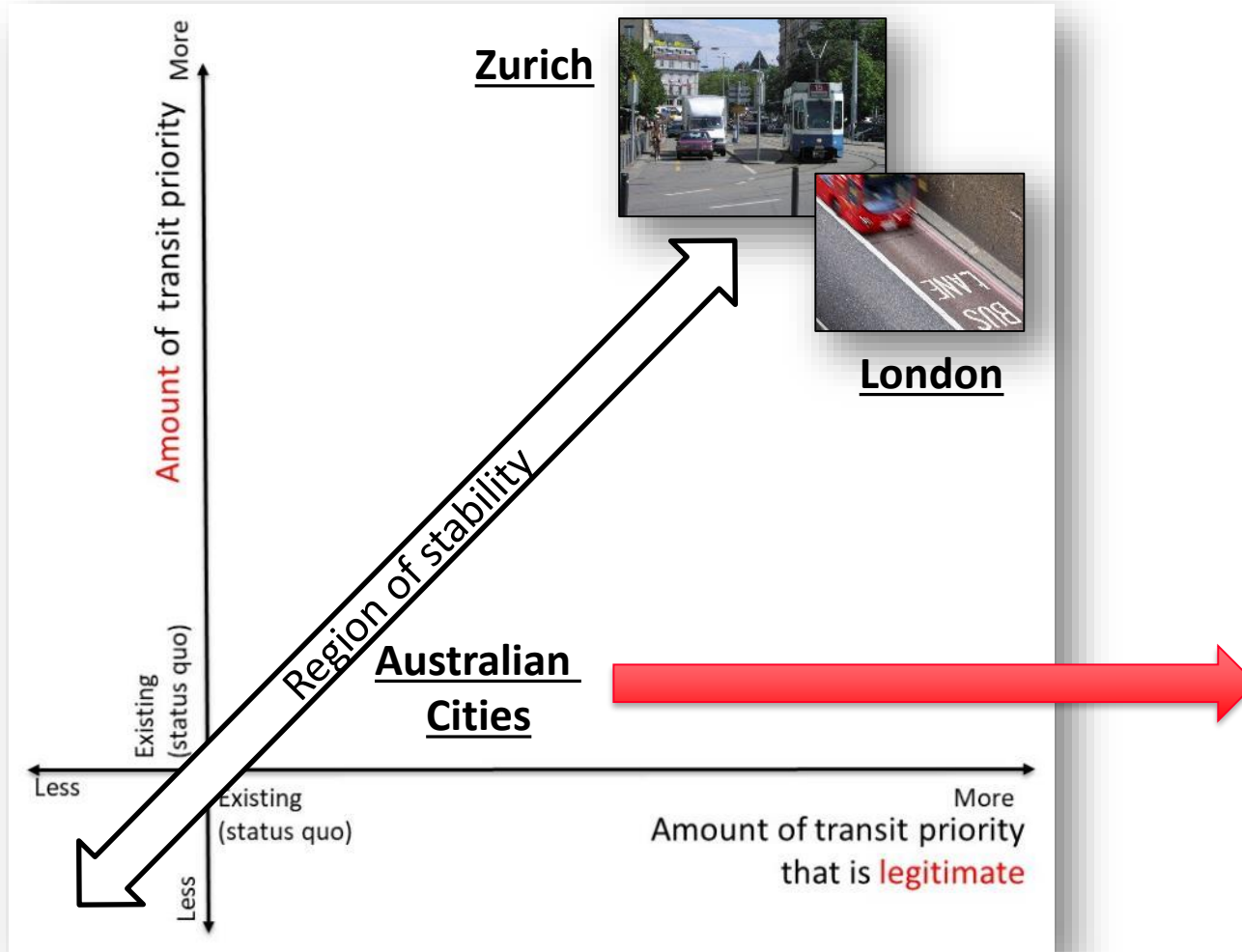


Why can London and Zurich have top quality priority, yet we cant?....



...because they have LEGITIMACY and we dont

Legitimacy Framework



How did they get LEGITIMACY for Transit Priority? How can we get it?

Legitimacy Theory

- Regulatory
- Sociological
- Legitimacy by consent
- Legitimacy by reasonableness
- Unconditional duty
- Legitimacy as conditional normative support

The law **requires** a bus lane

We **should** have a bus lane

We voted for a bus lane

The bus is slow and unreliable, a bus lane is **a reasonable solution**

Buses **must always** have bus lanes!

We should have a bus lane, **as long as** there's enough space for a bike lane/ onstreet parking

Zurich



London



How can we get priority when we don't have LEGITIMACY? We identified THREE APPROACHES AND EIGHT PRAGMATIC STRATEGIES

Build legitimacy BEFORE implementation

AVOID IMPACTS on other road users

Build legitimacy THROUGH IMPLEMENTATION

How can we get priority when we don't have LEGITIMACY? We identified **THREE APPROACHES AND EIGHT PRAGMATIC STRATEGIES**

Build legitimacy BEFORE implementation

1. **Technical enquiry**
2. **Transport planning, and/or**
3. **Public processes or hearings**

AVOID IMPACTS on other road users

4. **Grade separation**
5. **Subservient priority**

Build legitimacy THROUGH IMPLEMENTATION

6. **Bottom-up and incremental**
7. **Pop-ups**
8. **Trials**

Build legitimacy BEFORE implementation

1. Technical enquiry
2. Transport planning, and/or
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Mediate, arbitrate or resolve issues & build legitimacy

- Transport study
- Environmental effects statement process
- Planning processes
- Independent study
- Public enquiry
- Plebiscite (Switzerland only)

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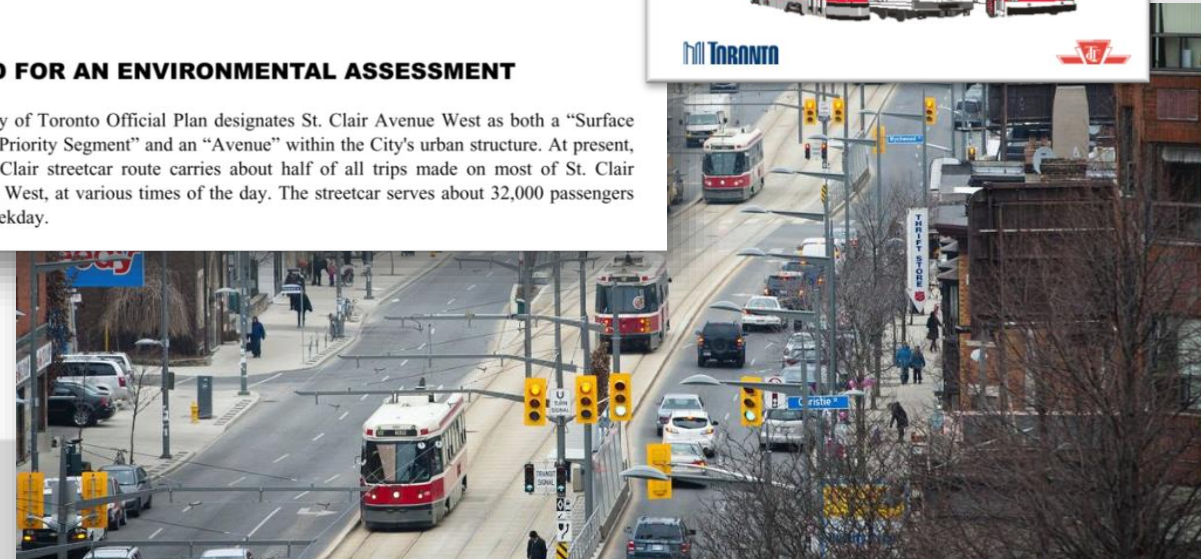
Executive Summary
St. Clair Avenue West Transit Improvements
Class Environmental Assessment



1. NEED FOR AN ENVIRONMENTAL ASSESSMENT

The City of Toronto Official Plan designates St. Clair Avenue West as both a “Surface Transit Priority Segment” and an “Avenue” within the City’s urban structure. At present, the St. Clair streetcar route carries about half of all trips made on most of St. Clair Avenue West, at various times of the day. The streetcar serves about 32,000 passengers on a weekday.

BUILDING A TRANSIT CITY



4. Grade Separation; Adelaide and Brisbane Busways

Build legitimacy BEFORE implementation

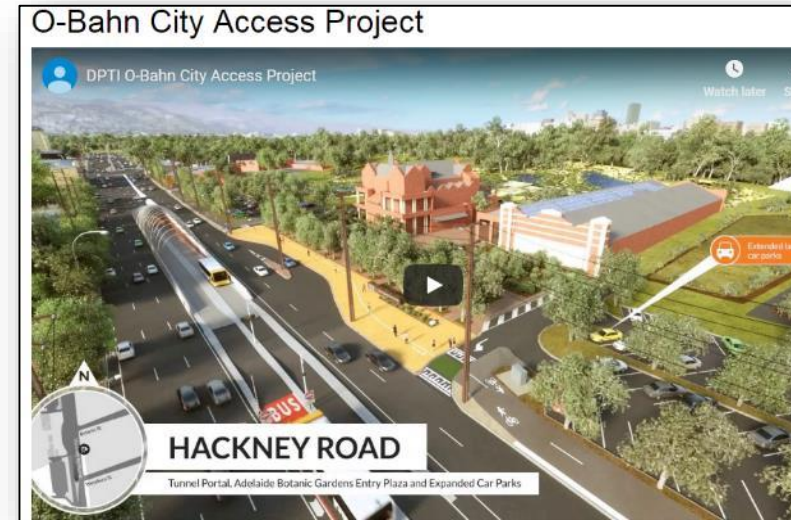
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5. Subservient Priority; Melbourne; Eastern Freeway emergency lanes, Smartbus Road Widening and Tokyo Bus Tubes

Build legitimacy BEFORE implementation

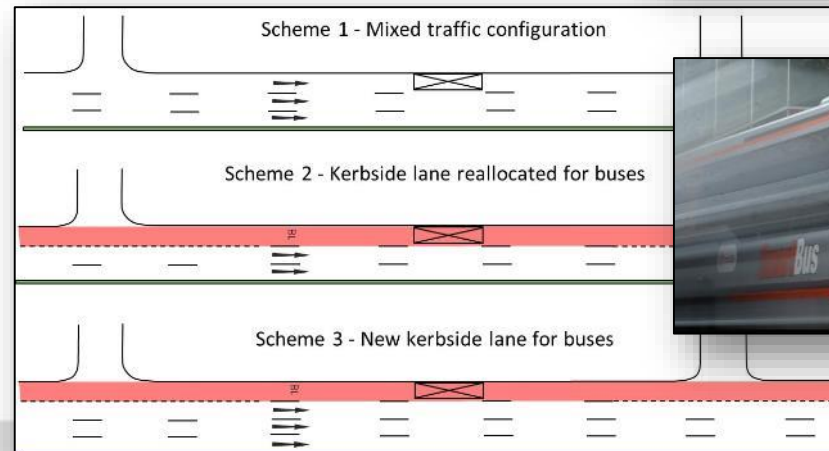
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6. Bottom-up & Incremental; Melbourne's vanishing streetcar secret

Build legitimacy BEFORE implementation

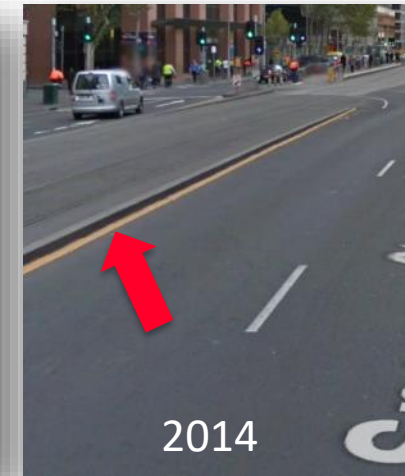
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7. Pop-ups; do priority tomorrow; with traffic cones – Boston, USA

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Boston Tests Faster Bus Service Simply By Laying Out Orange Cones

The same low-cost approach that cities have used to quickly reallocate street space to walking and biking can also be used to try out transit improvements.

By Angie Schmitt | Dec 12, 2017 | 77



Boston set up a bus lane using orange cones. Photo: Jacqueline Goddard

8. Trials; Toronto King Street Trail; and the great Melbourne Clarendon Street Trial Failure; or was it Success?

Build legitimacy BEFORE implementation

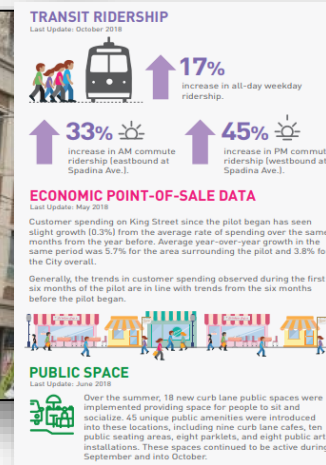
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vic roads

Clarendon Street Tram Stop Works

Following a trial of traffic treatments along Clarendon Street, the State Government, City of Port Phillip, Yarra Trams and business representatives have agreed on some changes to the

CITY OF PORT PHILLIP REPORT

STRATEGY AND POLICY REVIEW COMMITTEE
6 JUNE 2005
POLICY AND PLANNING

A3 CLARENDON STREET THINK TRAM TRIAL PROJECT
LOCATION/ADDRESS: CLARENDON STREET, SOUTH MELBOURNE
RESPONSIBLE EXECUTIVE DIRECTOR: GEOFF OULTON, EXECUTIVE DIRECTOR CITY DEVELOPMENT
AUTHOR: PAUL SMITH, COORDINATOR SUSTAINABLE TRANSPORT
FILE NO.: 70/04/12
ATTACHMENTS: 13

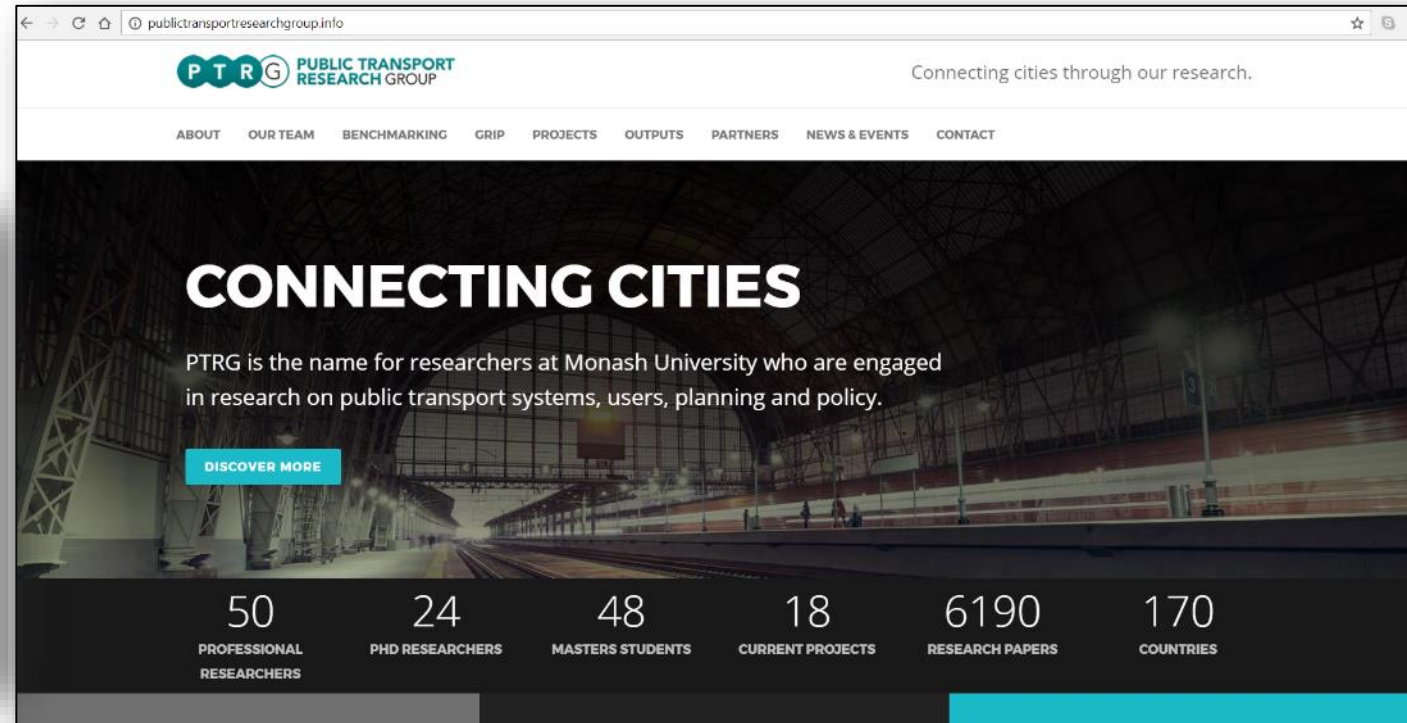
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