MONASH University

AITM Tech Forum – Transport Research in Victoria

Wednesday 22nd August 2018

DEDJTR Theatrette, Lvl 5 121 Exhibition Street Melbourne

Public Transport Research @ Monash

Prof Graham Currie FTSE, Director SEPT-GRIP

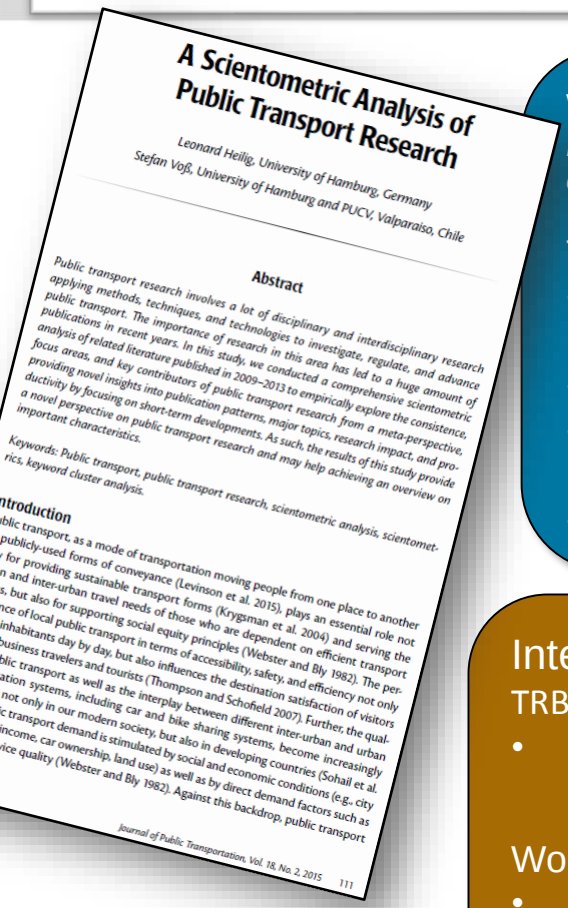
Public Transport Research Group (PTRG)

Monash University, Australia

PTRG PUBLIC TRANSPORT RESEARCH GROUP

GROUP OF EIGHT AUSTRALIA


PTRG
PUBLIC TRANSPORT RESEARCH GROUP
MONASH University
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



A Scientometric Analysis of Public Transport Research

Leonard Heilig, University of Hamburg, Germany
Stefan Voß, University of Hamburg and PUCV, Valparaiso, Chile

Abstract

Public transport research involves a lot of disciplinary and interdisciplinary research applying methods, techniques, and technologies to investigate, regulate, and advance public transport. The importance of research in this area has led to a huge amount of publications in recent years. In this study, we conducted a comprehensive scientometric analysis of related literature published in 2009–2013 to empirically explore the consistence, focus areas, and key contributors of public transport research from a meta-perspective, providing novel insights into publication patterns, major topics, research impact, and productivity by focusing on short-term developments. As such, the results of this study provide a novel perspective on public transport research and may help achieving an overview on important characteristics.

Keywords: Public transport, public transport research, scientometric analysis, scientometrics, keyword cluster analysis.

ntroduction

ublic transport, as a mode of transportation moving people from one place to another publicly-used forms of conveyance (Levinson et al. 2015), plays an essential role not for providing sustainable transport forms (Krygsman et al. 2004) and serving the n and inter-urban travel needs of those who are dependent on efficient transport s, but also for supporting social equity principles (Webster and Bly 1982). The perce of local public transport in terms of accessibility, safety, and efficiency not only inhabitants day by day, but also influences the destination satisfaction of visitors business travelers and tourists (Thompson and Schofield 2007). Further, the qualblic transport as well as the interplay between different inter-urban and urban ation systems, including car and bike sharing systems, become increasingly not only in our modern society, but also in developing countries (Sohail et al. c transport demand is stimulated by social and economic conditions (e.g., city ncome, car ownership, land use) as well as by direct demand factors such as vice quality (Webster and Bly 1982). Against this backdrop, public transport

Journal of Public Transportation, Vol. 18, No. 2, 2015 111

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 3 world Universities in Public Transport Research
- Uni of Toronto, UCal Berkeley, MONASH UNIVERSITY

Most Productive Authors (World Ranking)
- PTRG Staff - Graham Currie 2nd, Alexa Delbosc 11th
- PTRG Associates – Avi Ceder 3rd, John Nelson 10th)

Most Cited World Authors
- Graham Currie 5th

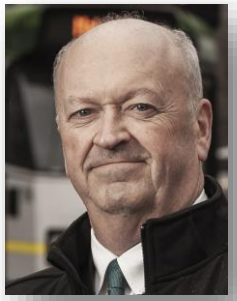
International Awards

TRB 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

ARRB Transport Research
- Research Impact Award 2017

Key PTRG staff, the associate team & students



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

Dr Farhana Naznin
Research Fellow

- 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

Laura McCarthy
Research Fellow

Dr Kun An
Lecturer

PTRG is part of a wider collaborative framework in transport research across multiple groups/ faculties @ Monash University

Key Research Groups

PTRG PUBLIC TRANSPORT RESEARCH GROUP

ITS (Monash) Institute of Transport Studies

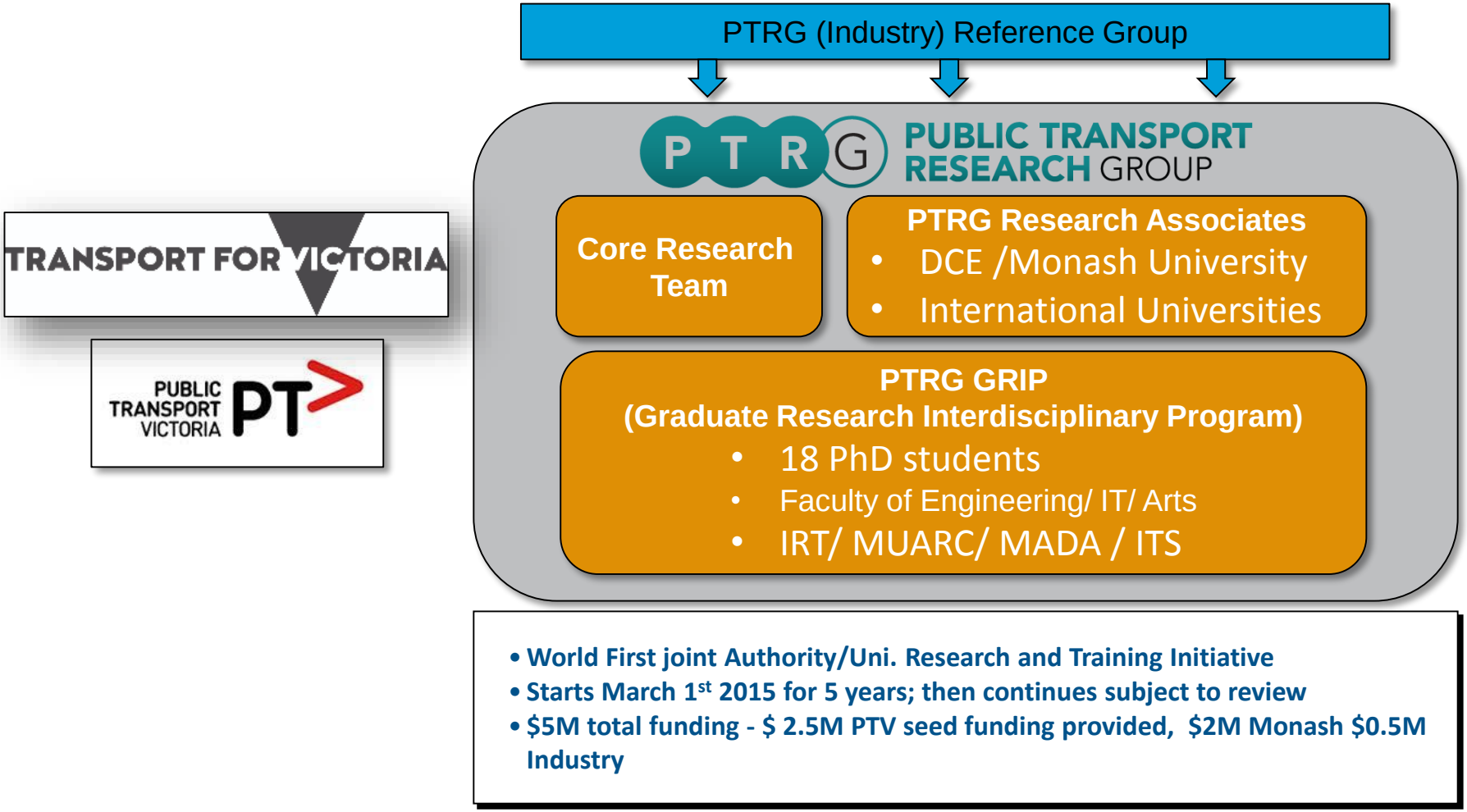
IRT Institute of Railway Technology

MADA MONASH ART DESIGN & ARCHITECTURE

Key Research Themes

- Railway Engineering & Technology
- Public Transport Policy & Operations
- Traffic & Transport Systems
- Intelligent Transport Systems
- Design in Public Transport
- Model Data Fusion
- Light Weight Vehicles
- Aerodynamics
- Transport Safety

The Chair started in 2003; in 2015 a new PTV/TFV - Monash Public Transport Research Group (PTRG) commenced



- **World First joint Authority/Uni. Research and Training Initiative**
- **Starts March 1st 2015 for 5 years; then continues subject to review**
- **$5M total funding - $ 2.5M PTV seed funding provided, $2M Monash $0.5M Industry**

Its aim is “to enhance PTV/TfV Planning and Management Using Applied Research and Training” through:

- University Research
- Contract Research
- Joint PTV/Monash Research
- Training/Masterclass Programs
- Public Engagement

TRANSPORT FOR VICTORIA

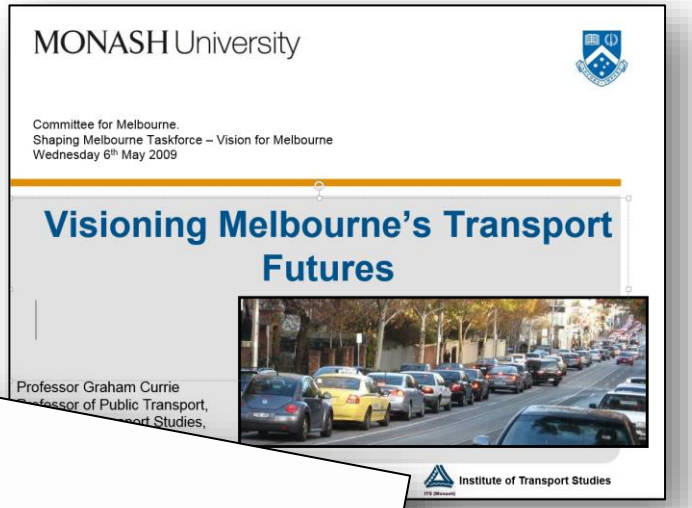
PUBLIC TRANSPORT VICTORIA PT

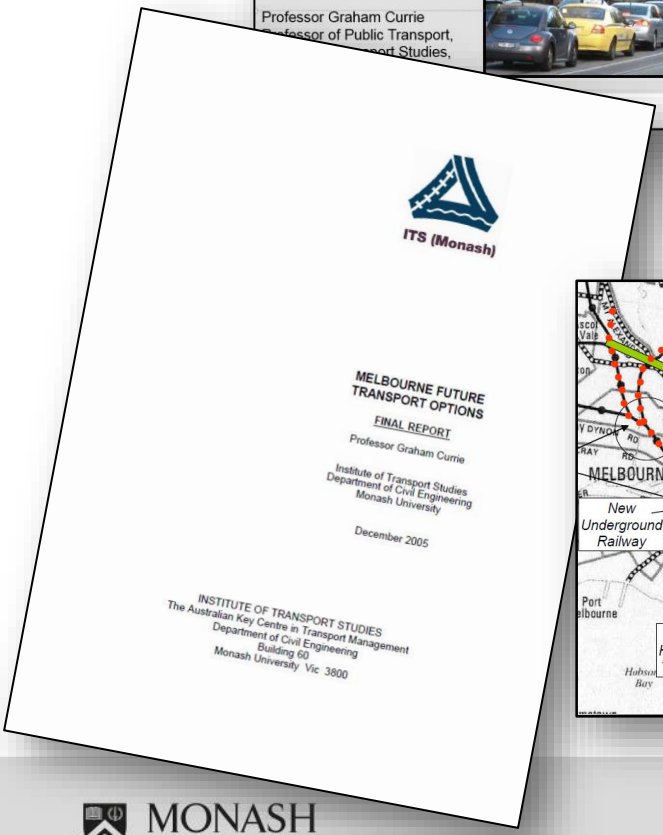
Topic focus is highly varied and inter-disciplinary:

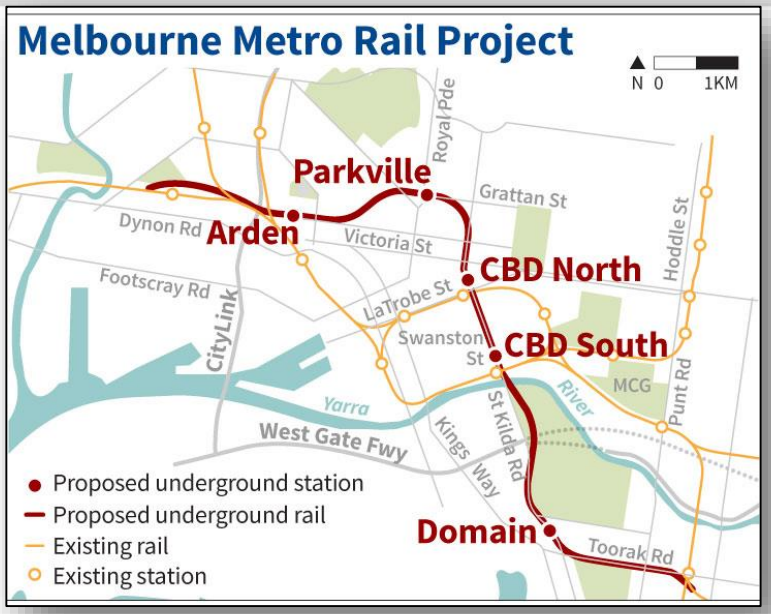
PTRG PUBLIC TRANSPORT RESEARCH GROUP

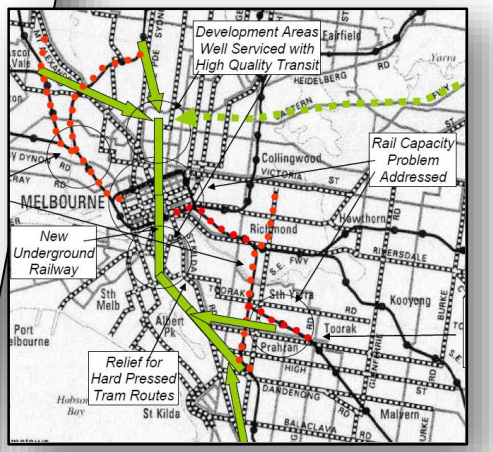
- Rail Maintenance & Service Reliability
- Timetable Synchronisation
- Social Changes and Travel
- ICT-Social Media & Pax Information
- Ridership Drivers
- Regulation Management
- Infrastructure Funding, Design, Management
- Industry Best Practices
- Best Practice Transit Authorities
- Understanding/ Improving Customer Experiences
- Improving Planning Methods
- Integrated Planning & Marketing
- System Design & Users Experience
- Managing Overcrowding
- Reliability Management
- Big Data Methods
- Tourism & Public Transport

Example Projects: Melbourne Metro – Concept Development (City of Melbourne, 2005)







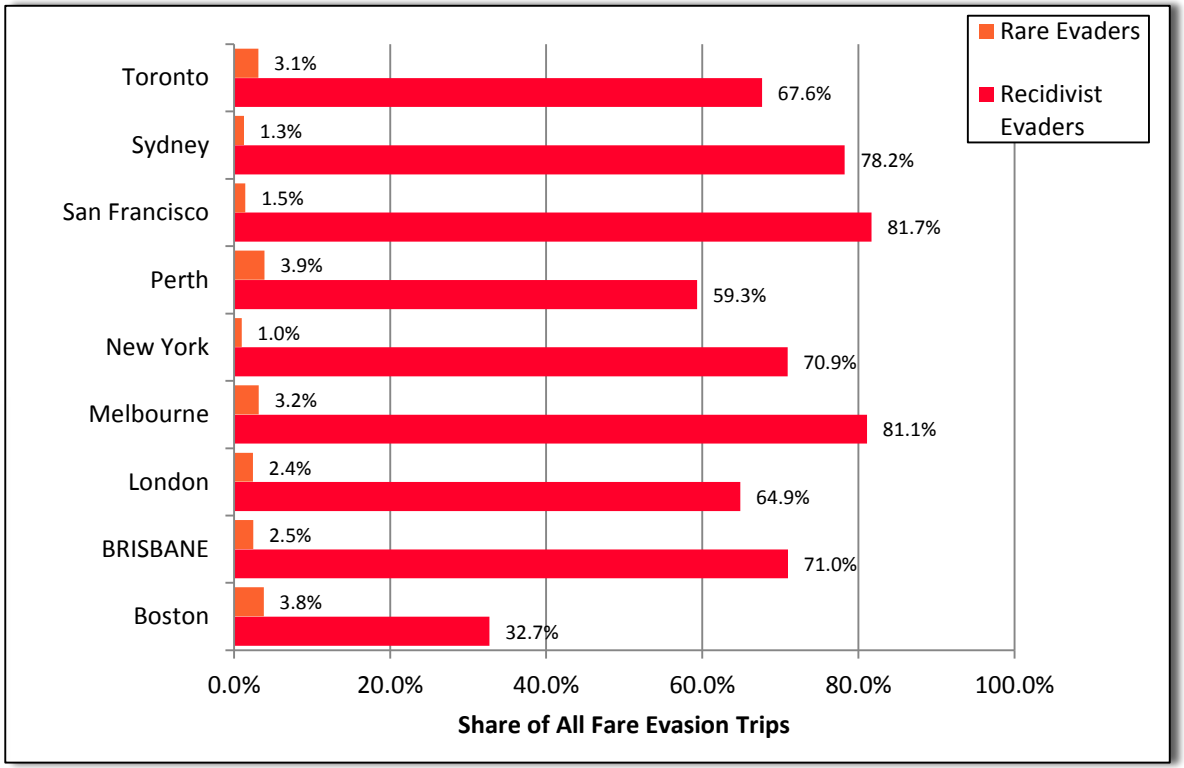


Example Projects: Understanding the Psychology of Fare Evasion Behaviour

"a waste of public transport funds as it was unlikely to reveal anything startling."
PTUA

"[The Minister] **has made a lot of dopey and bizarre decisions, but spending over $100,000 of taxpayers' money to 'understand the psychology a fare evaders' has got to be close to the top of the list,"**
OPPOSITION TRANSPORT SPOKESPERSON

IMPACT – Over $105mp.a. in savings in Australia ; much larger in overseas cities

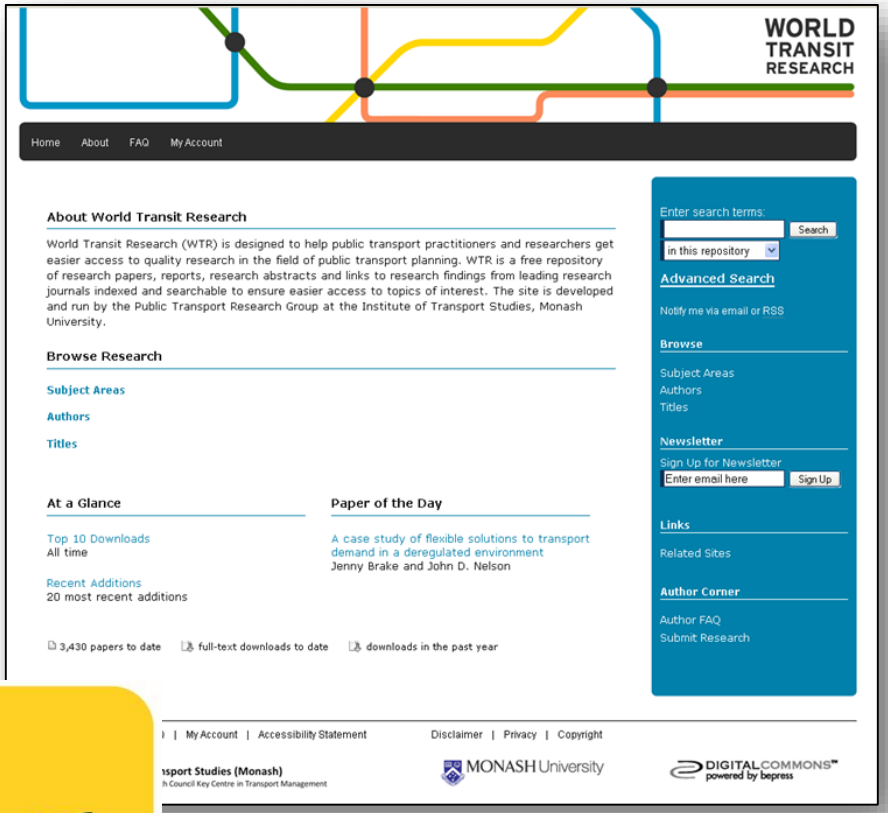


IMPACT - Large improvement in revenue protection ~$105M p.a. savings in Melbourne and Sydney since 2015; more reductions internationally

Research Awards:

- **2016 - Best Research Paper – World Conference on Transport Research**
- **2017 - ARRB Inaugural Research Impact Award**
- **2017 - Vice Chancellors Award for Research Impact**

PTRG runs World Transit Research; the global research clearinghouse for public transport research



World Transit Research

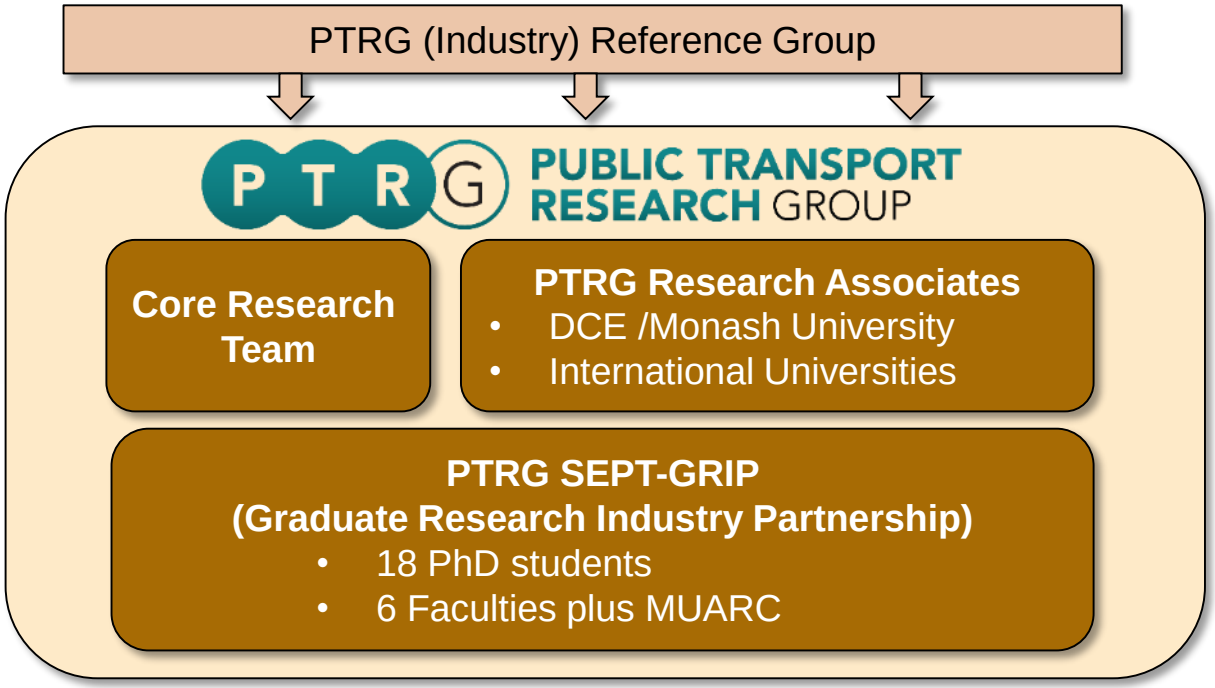
- Commenced 2010
- 256,639 site users
- 8,000 towns and cities from 170 countries
- 6,896 journal papers
- World index of authors and topics

2025=PTx2

UITP Showcase Award Winner

www.worldtransitresearch.info

SEPT-GRIP is an initiative of the Public Transport Research Group (PTRG) at Monash…



TRANSPORT FOR VICTORIA

PUBLIC TRANSPORT VICTORIA PT

Sustainable and Effective Public Transport - Graduate Research Industry Partnership

…it aims to encourage cross-disciplinary research and industry engagement

- Monash GRIPs aim to encourage cross-disciplinary collaboration and the development of transferable skills, leading to cutting edge outcomes for both research and industry leaders
  - **The <u>Sustainable and Effective Public Transport</u> (SEPT) GRIP aims to break down barriers between disciplines to further understanding and generate innovative solutions in the field of public transport**

MONASH University

There are 18 PhD researchers and topics…

1. TOD & Transit
Laura Aston

2. Big Data & Visualisation
Homayoun Rafati

3. Network Synchronisation
Rejitha Ravindra

4. Shared Mobility
Taru Jain

5. Changing Travel Behaviour
Laura McCarthy

6. Tourism & Public Transport
Victoria Radnell

7. Reliability Engineering Approaches in Best Practice Railways
Maryam Nawaz

8. Improving Gender Diversity in the Public Transport Workforce
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10. Designing Urban Rail to Reduce Vandalism
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Sarah Roberts

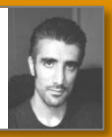
17. The New Bus Rider
Prudence Blake

18. Road Safety Impacts of Bus Safety Inspections
Jianrong Qiu

…with 6 industry partners…

1. TOD & Transit
Laura Aston

2. Big Data & Visualisation
Homayoun Rafati



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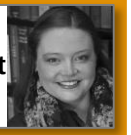

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TRANSPORT FOR VICTORIA

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METRO

vicroads

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yarra trams

transdev

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BusVic

…in several theme sub-clusters…

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…T1 - Planning, Implementation, Land Use and Place

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…T2 – People, Behavior and Diversity

1. TOD & Transit
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…T3 – Data, Operations, Modelling and Analysis

1. TOD & Transit
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…T4 – Design, User Experience and Safety

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Example Projects – Amy Killen – Rail Design & Vandalism

10. Designing Urban Rail to Reduce Vandalism

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Example Projects – Matt Diemer – Placemaking and Trams

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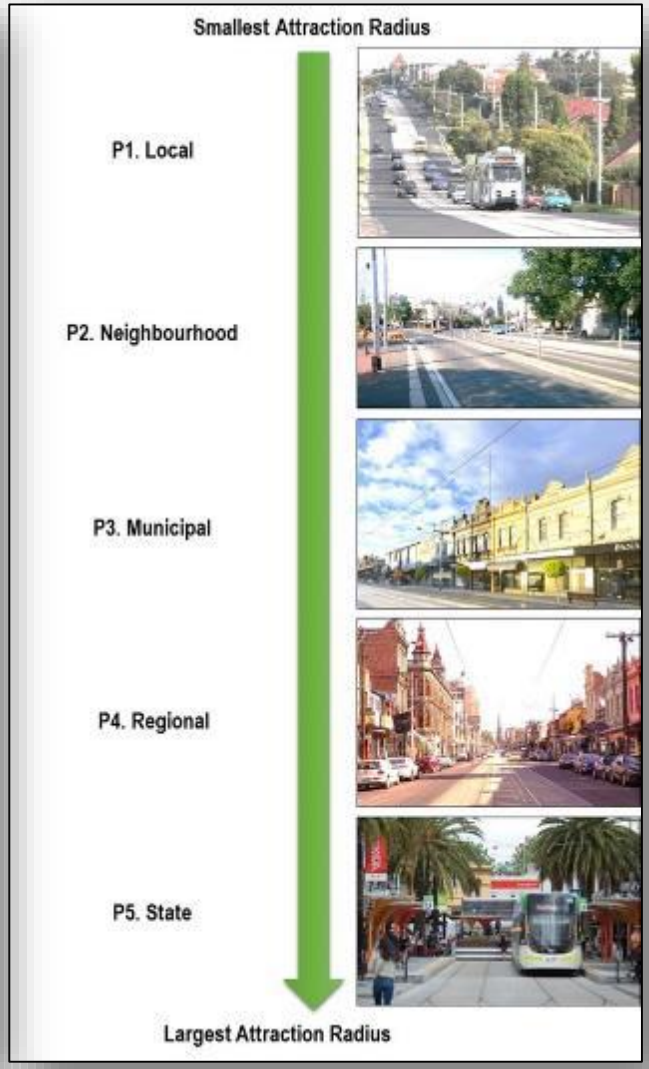
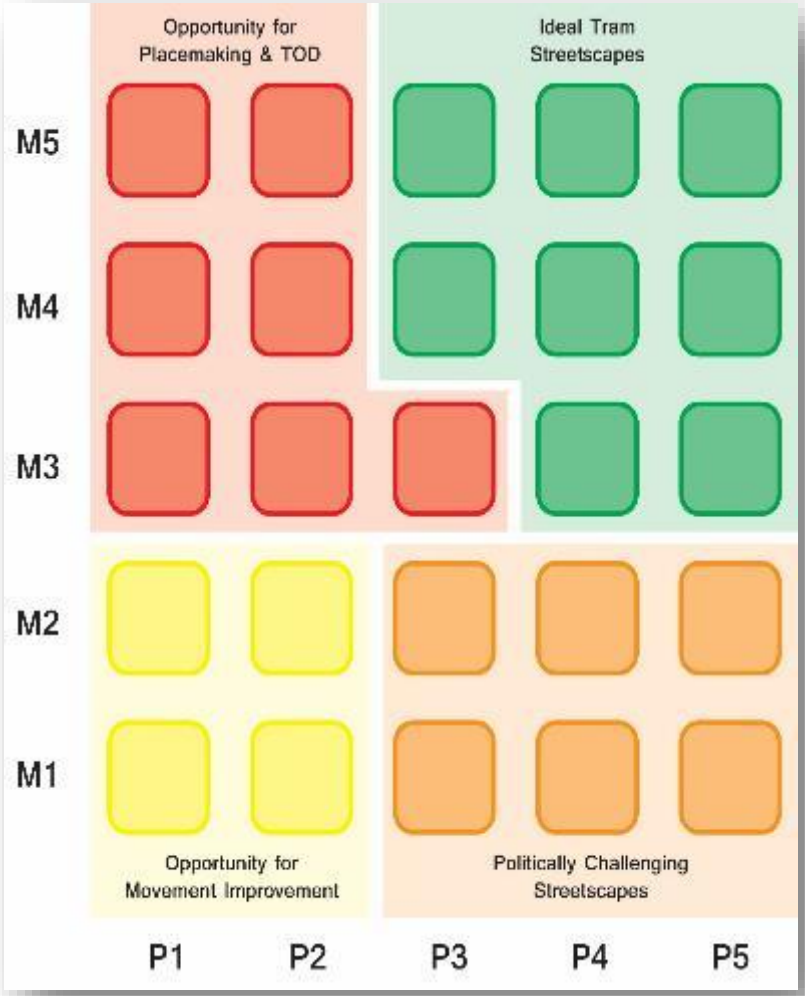
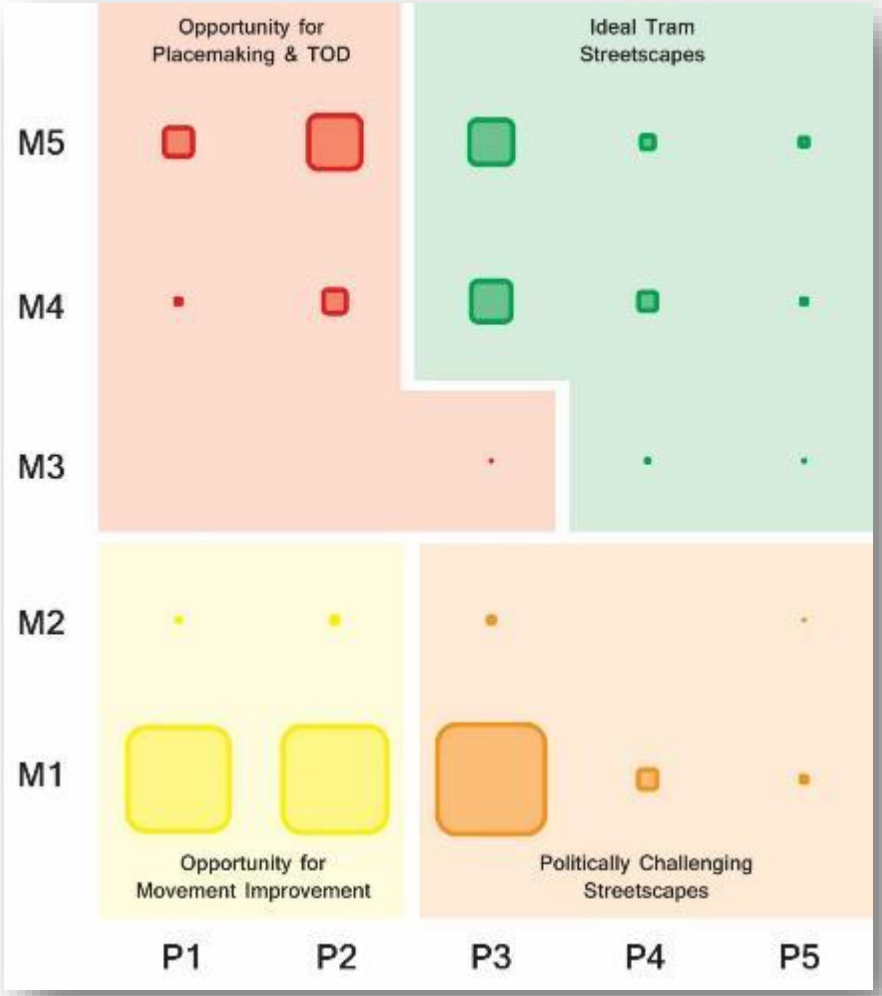


Source: Diemer MJ, Currie G, De Gruyter C and Hopkins I (2018) 'Filling the Space between Trams, Transport and Place: Adapting the 'Movement & Place' Framework to Melbourne's Tram Network' JOURNAL OF TRANSPORT GEOGRAPHY Volume 70, June 2018, Pages 215–227

Movement Place Framework for Tram Development Actions





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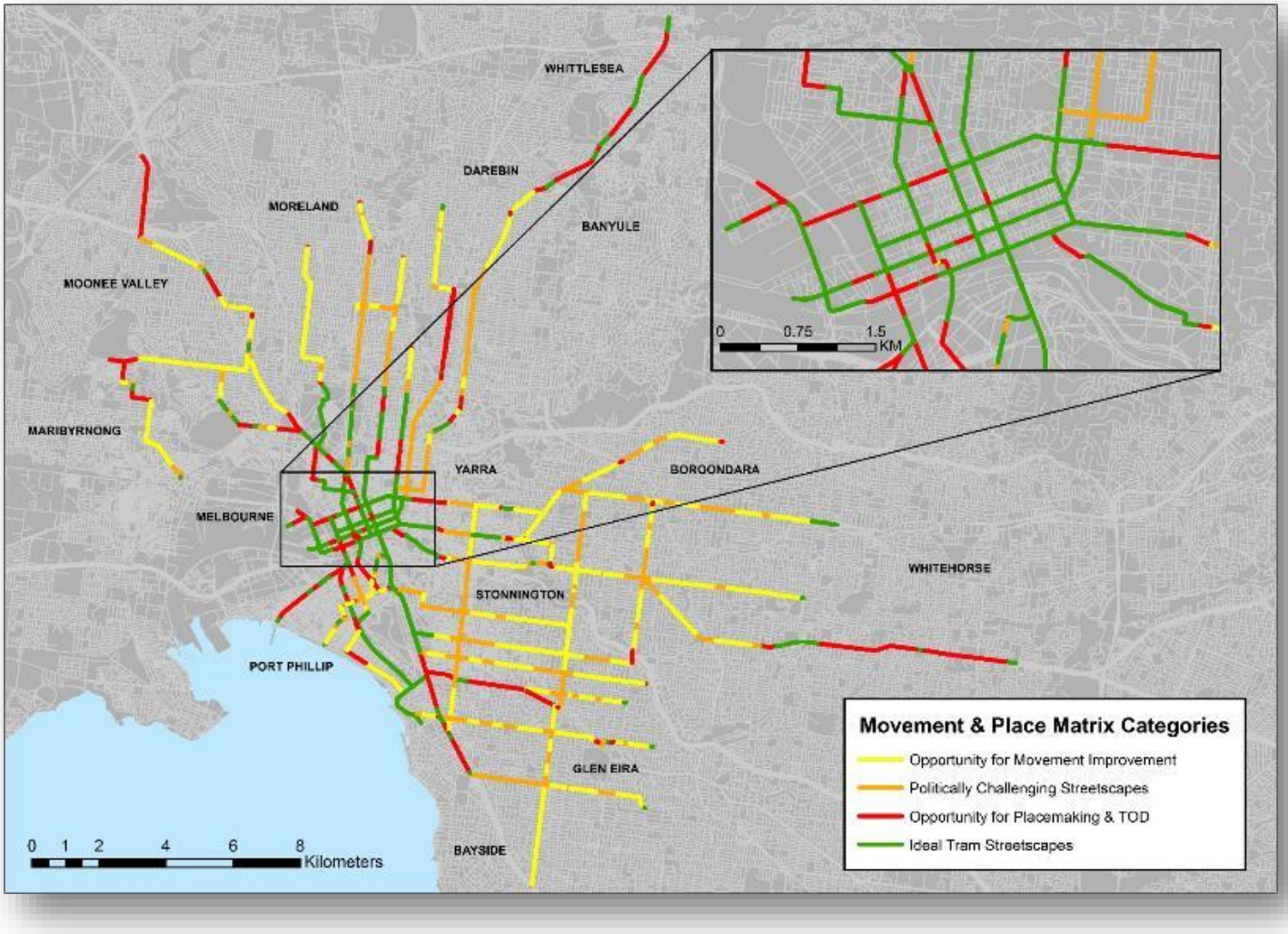
M&P Tram Framework – Key Target Areas and Strategies



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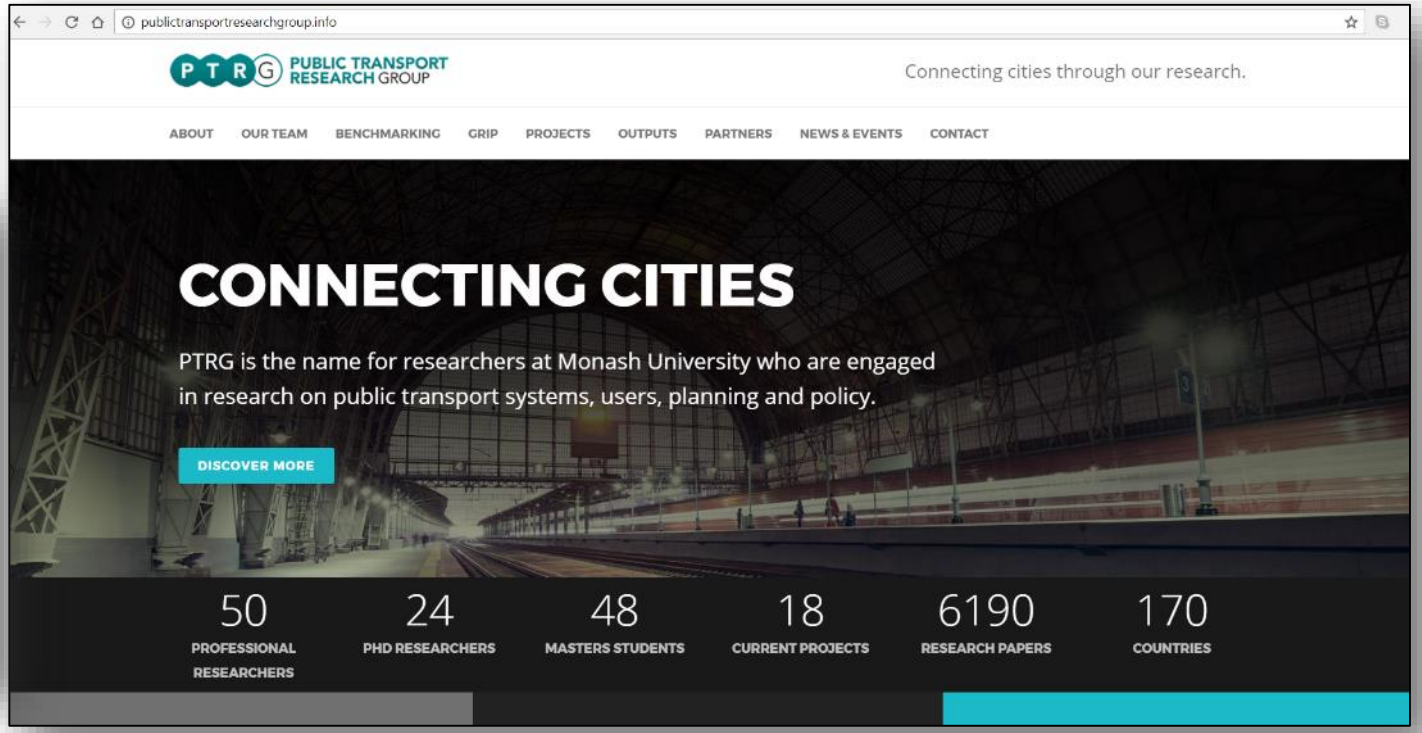
Contact us via our website PTRG.INFO, LinkedIn or Twitter

Professor Graham Currie FTSE

Director, SEPT-GRIP, PTRG



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