Populate or Perish – Is a Big Australia Better?
Infrastructure demand, population and the future of Melbourne
Burwood Electorate Conference for the Liberal Party
8th August 2017

Smart Management of Infrastructure Demand

Populate or Perish – Is a Big Australia Better?

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Monash Institute of Transport Studies
Monash University

Introduction

The Problem

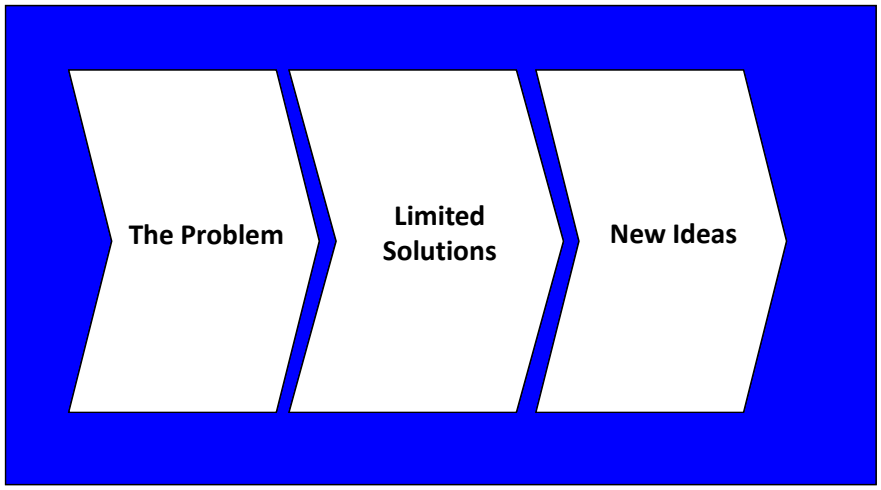
Limited Solutions

New Ideas

This session considers Smarter ways to manage future (transport) infrastructure demands in Melbourne

- Considering:
  - Infrastructure Demand
  - Conventional approaches to meeting demand
  - Alternative and smarter approaches

...and is structured as follows



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2007

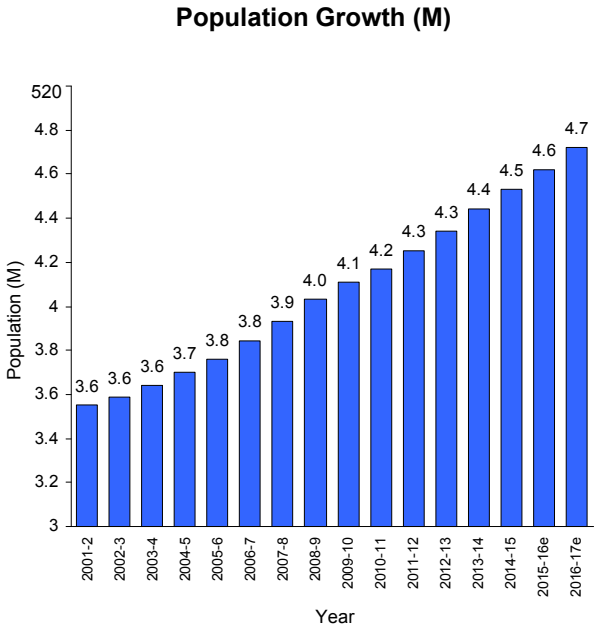
PTRG PUBLIC TRANSPORT RESEARCH GROUP

GROUP OF EIGHT AUSTRALIA

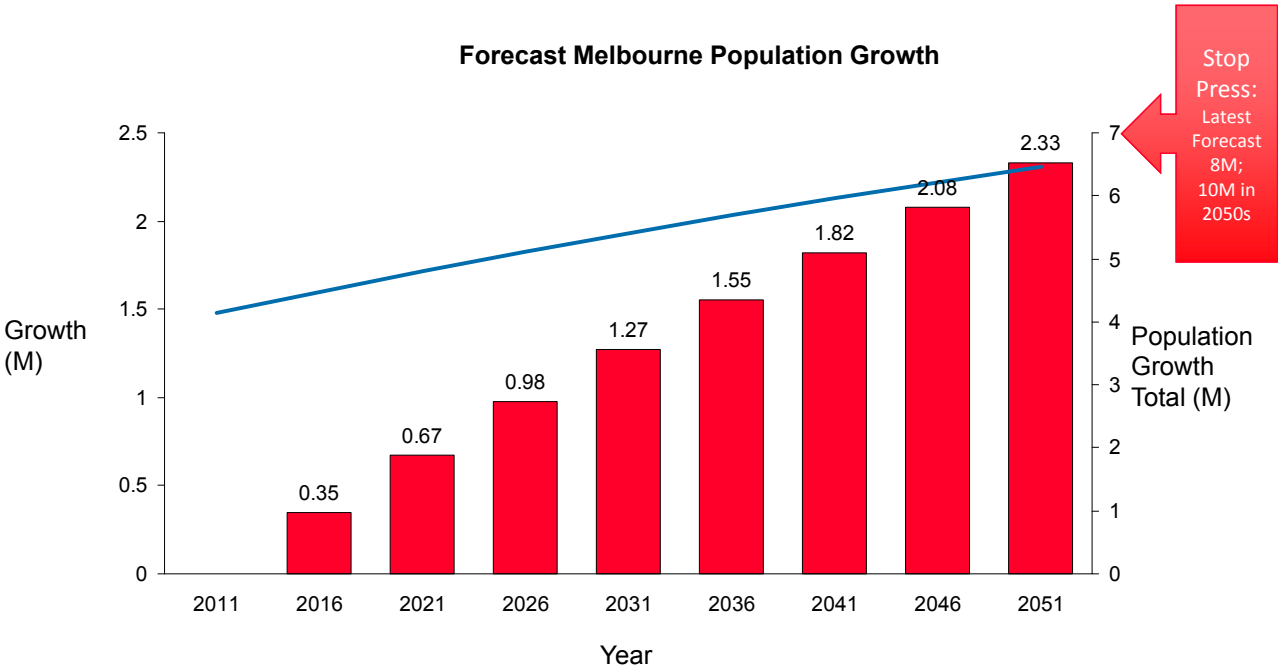
MONASH INSTITUTE OF TRANSPORT STUDIES

The future is high density cities

Since 2001 Melbourne population has grown by 1.1M (30%); we added Adelaide to Melbourne in the last 15 years

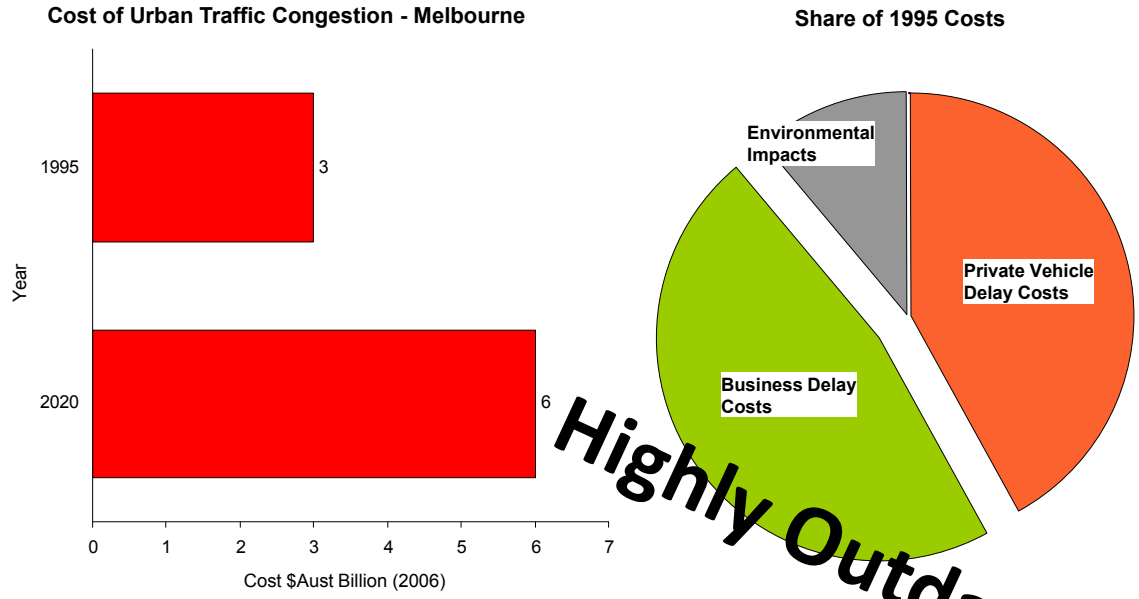


Melbourne is expected to increase in size by another 1-2M people in 20-30 years



Source: Victoria in Future (2012)

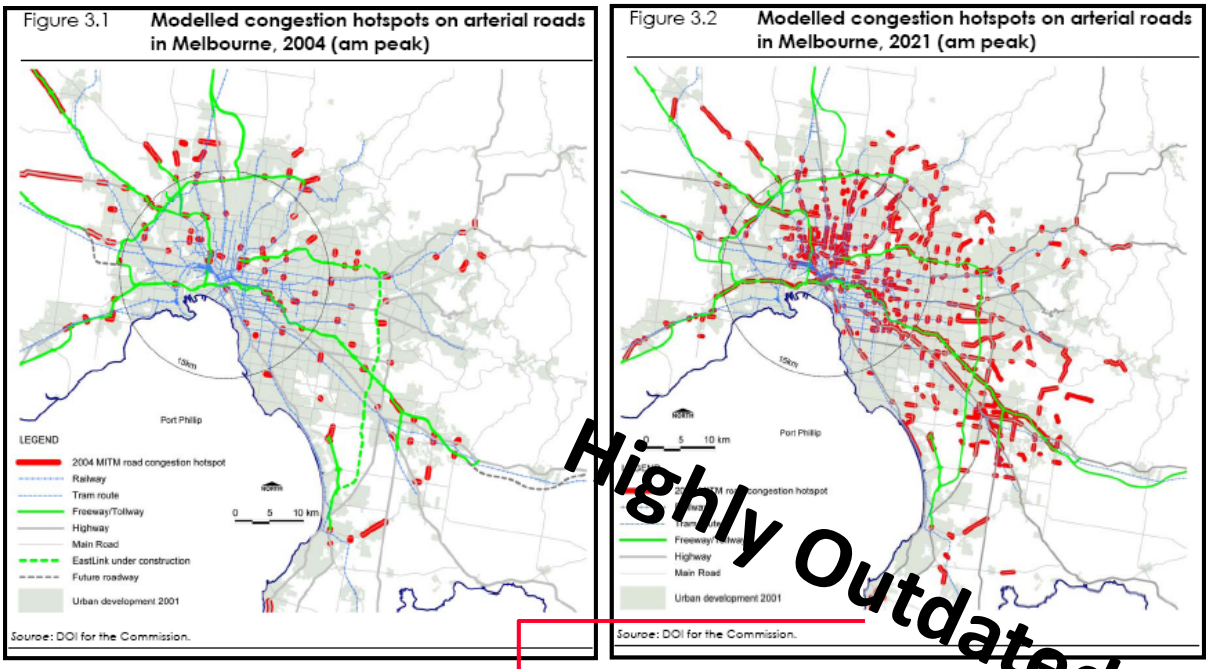
Urban traffic congestion in Melbourne costs $3B p.a. (2005) and will double by 2020



Source: BTRE (2006)

Highly Outdated

Congestion 'hotspots' are expected to spread spatially….

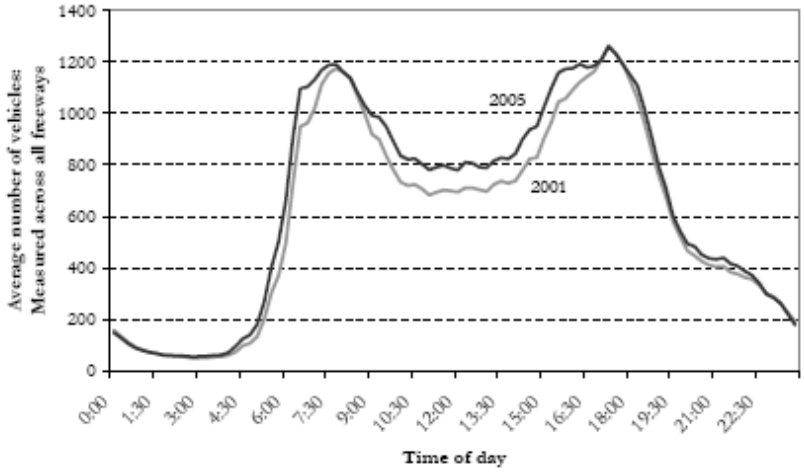


Source: VCEC (2006) Inquiry into Managing Transport Congestion

Highly Outdated

….and in Time

Figure 3.3 **Peak spreading on Melbourne's freeways**



Source: VicRoads.

Source: VCEC (2006) Inquiry into Managing Transport Congestion

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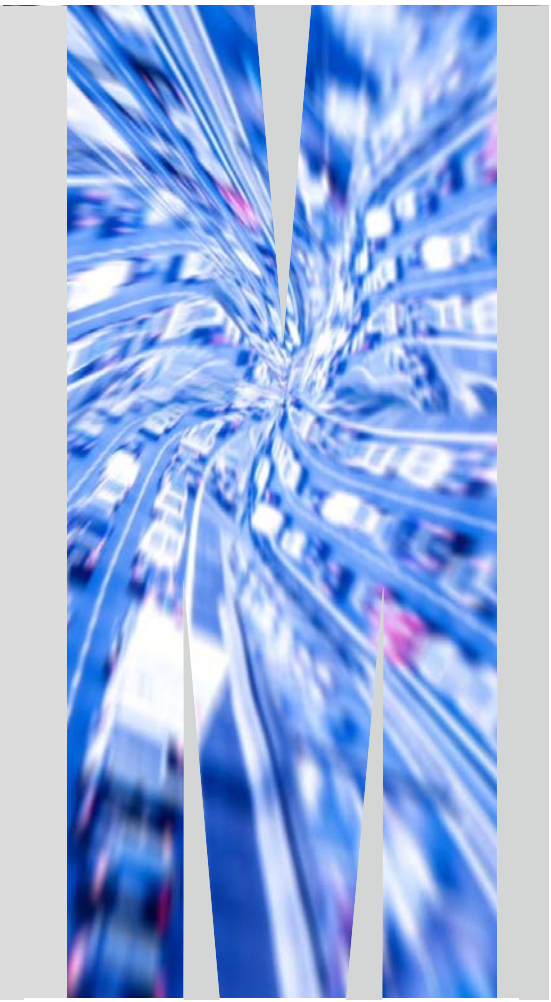
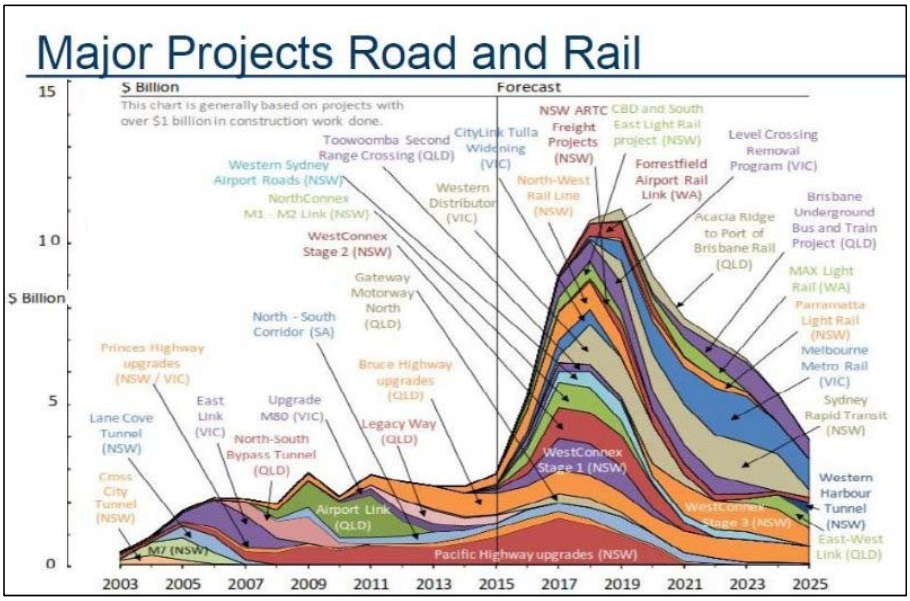
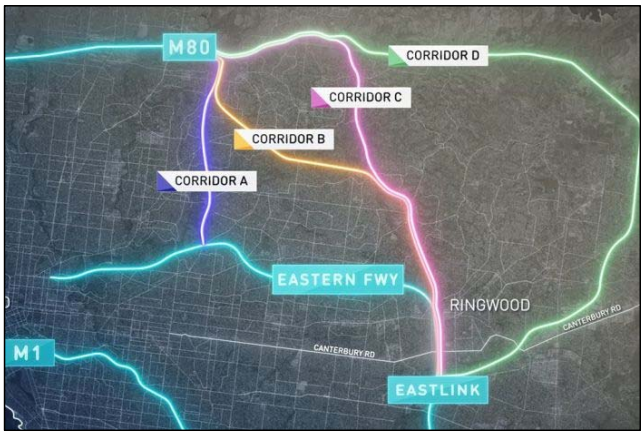


We are trying to build our way out of the Infrastructure Gap



- $700B Australian Infrastructure Investment Deficit
- 1.6% of Australian GDP invested in Infrastructure; highest in the OECD

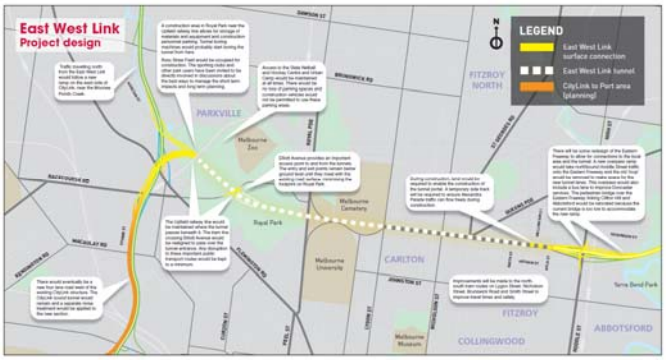
New Roads are a BIG part of this…



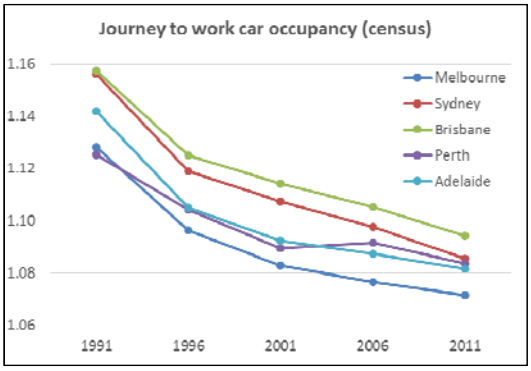
North East Link Options

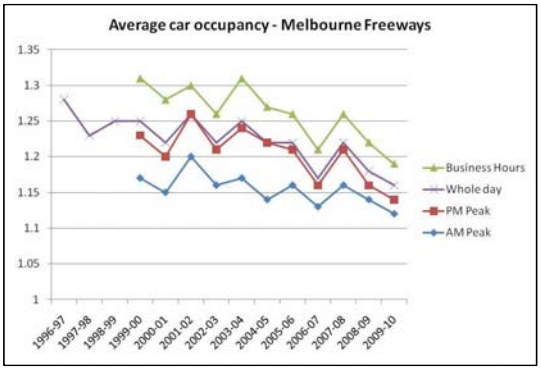
Western Distributor

East West Link

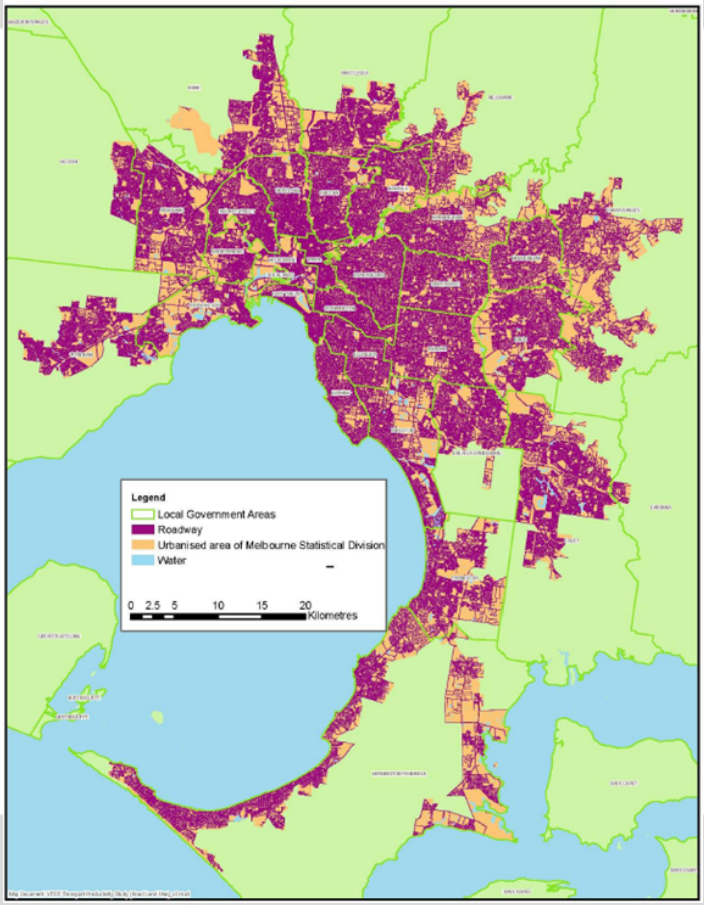


...but passenger use of cars is increasingly inefficient...



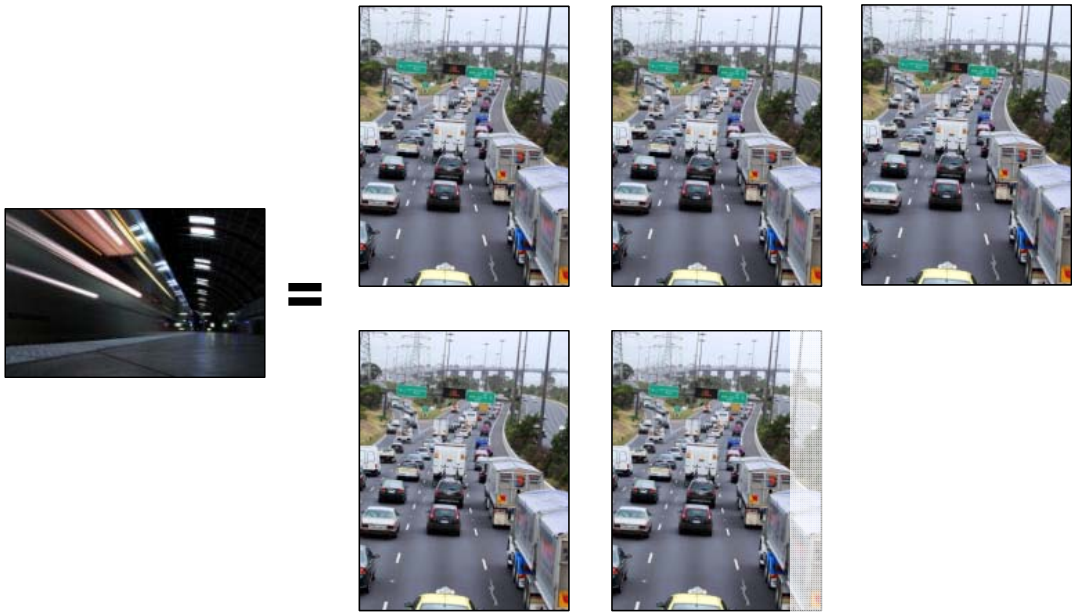


..and new roads are insignificant to the whole Melbourne transport problem



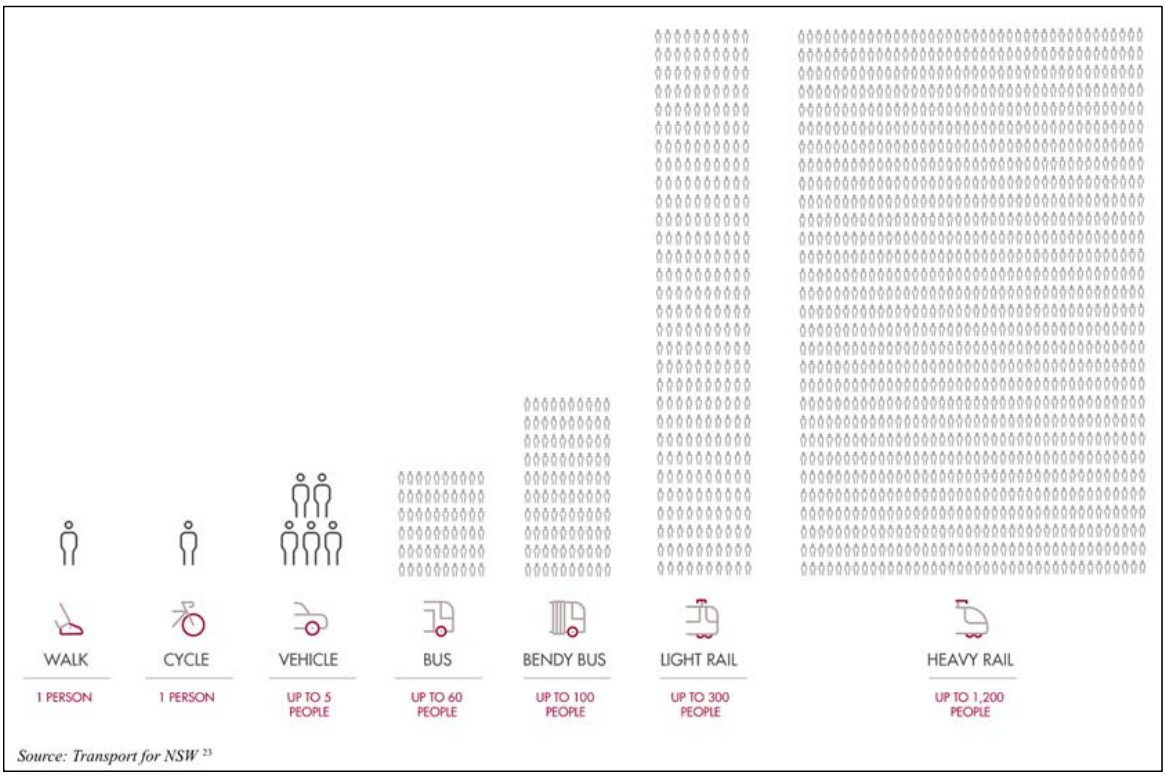
Public Transport Investment is highly volume effective

1 Rail Tunnel=4.8 Westgate Freeways

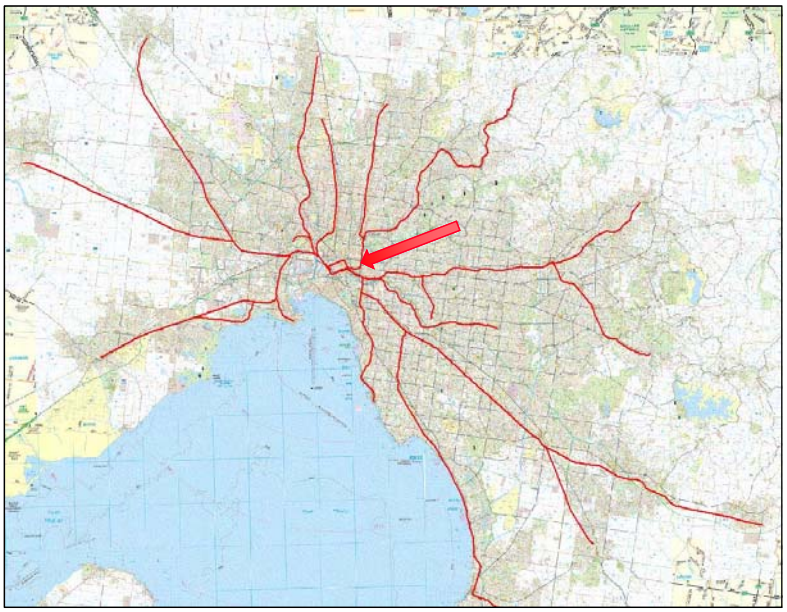


Note: Assumes a 2 way rail tunnel carrying 24 trains an hour at and average load of 800 = 38,400/hr and a freeway lane = 2000 vehicles an hour/Lane

Public Transport Investment is highly volume effective



But Melbourne Metro Is a TINY dint in Melbourne rail transport needs; which has a significant legacy liability



The Rail Reliability Legacy

Reported Signaling Disruptions

- **1,900 signal failures p.a. (12 months to August 2013)**
- **5.2 per day**
- **Biggest Locations:**
  - **Flinders Street Station 89**
  - **North Melbourne 71**
  - **Newport 51**

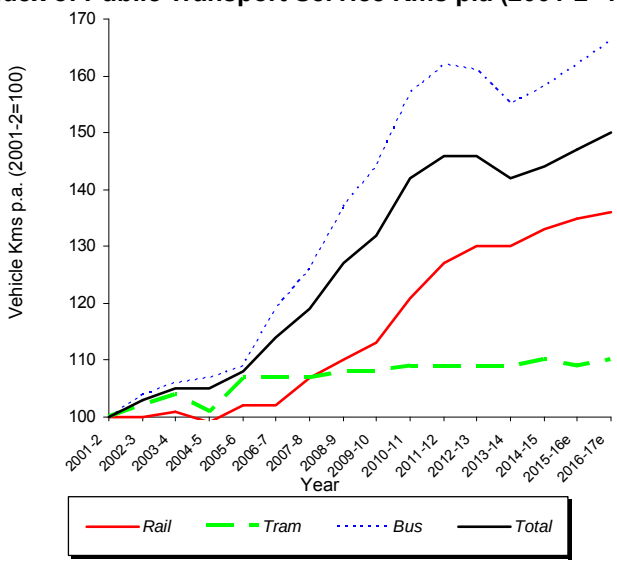
Metro Trains

"We are installing advanced computer technology which improves control of the signalling system, but our field equipment is outdated and requires replacing,"

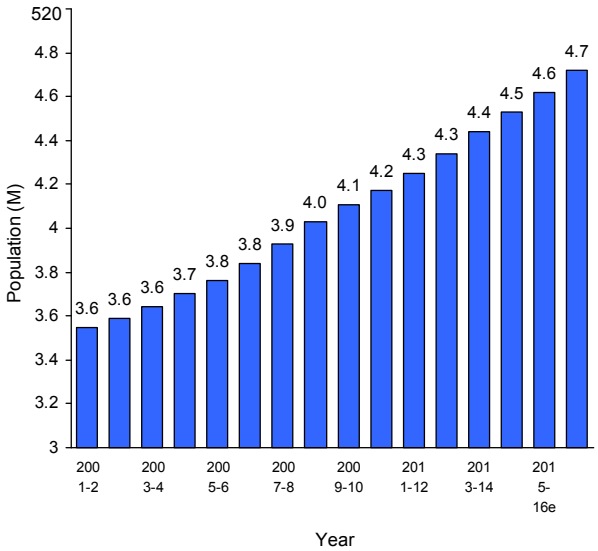
Source: Adam Carey, The Age, 'Signal failures are causing chronic rail delays' 23/10/2013

Despite progress; we have under-invested in public transport – and are now going backwards

Index of Public Transport Service Kms p.a (2001-2=100)

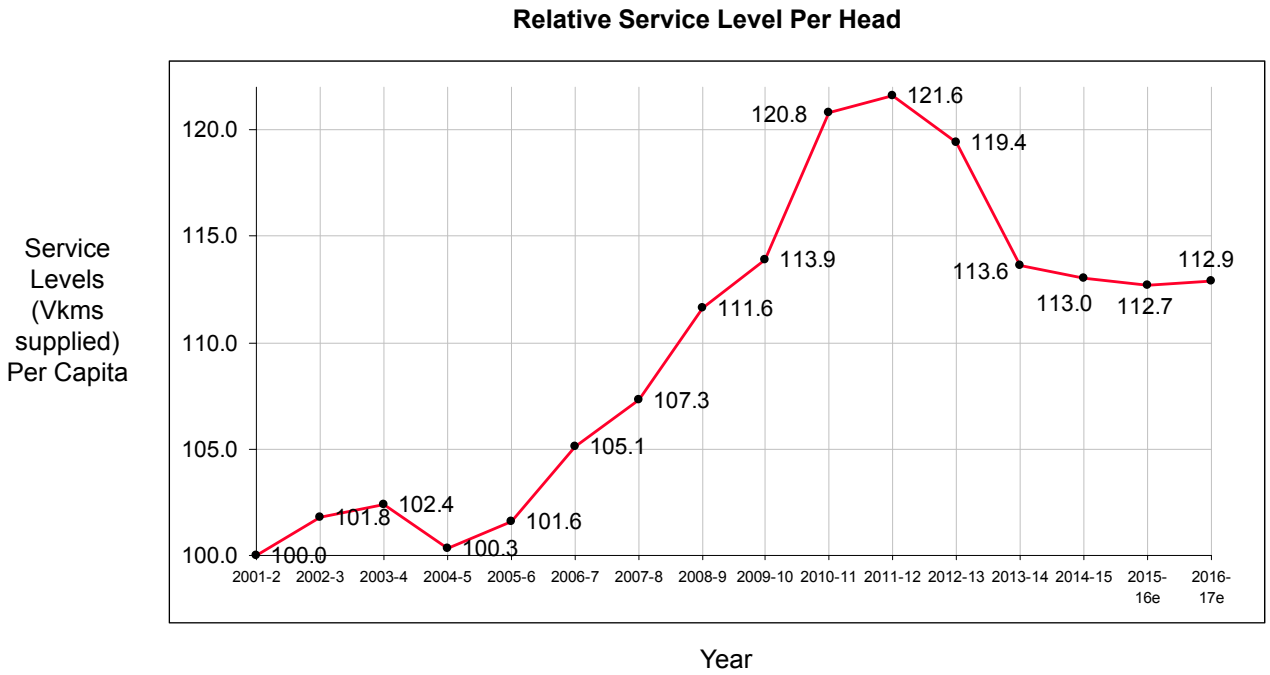


Population Growth (M)



Source: Department of Transport/ Public Transport Victoria Annual Reports

…in last 10 years, per person service increased 22% then declined since 2011 (we have declined by 9% points); recent trend is flat



Source: Department of Transport/ Public Transport Victoria Annual Reports

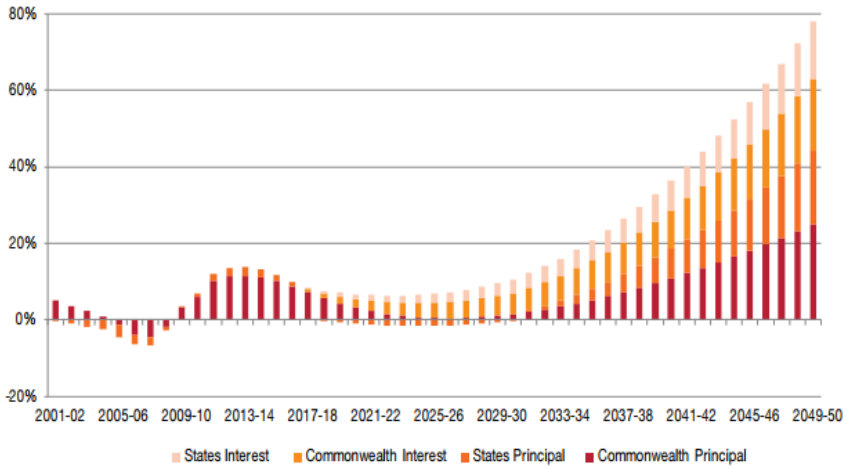
A stark fact is: our current infrastructure is most of what the future holds

In 20 Years:

- **95%+ of Our Transport Infrastructure will be Whats in Operation TODAY**

And we have a gigantic infrastructure funding gap

PwC's paper on *Tax Reform* shows that the combined annual deficits of Australian governments could rise from $27.4 bn in 2011-12 to an estimated $583 bn by 2049-50 – almost 6 per cent of GDP.



Net debt: Commonwealth and state/territory governments as a % of GDP

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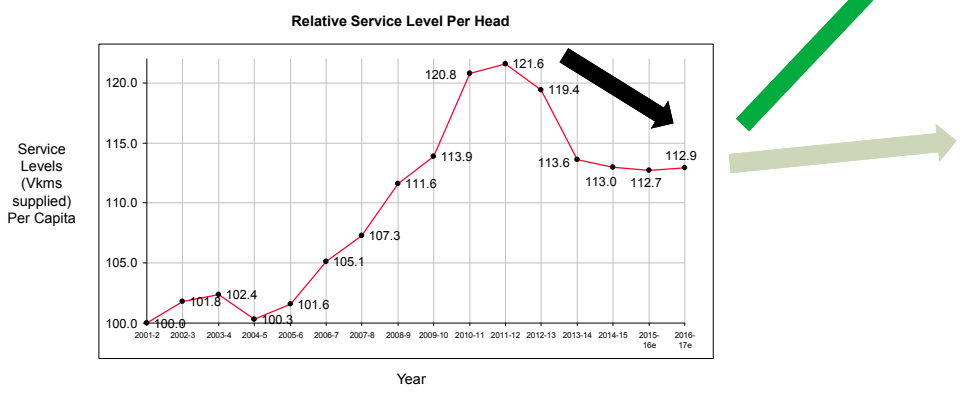
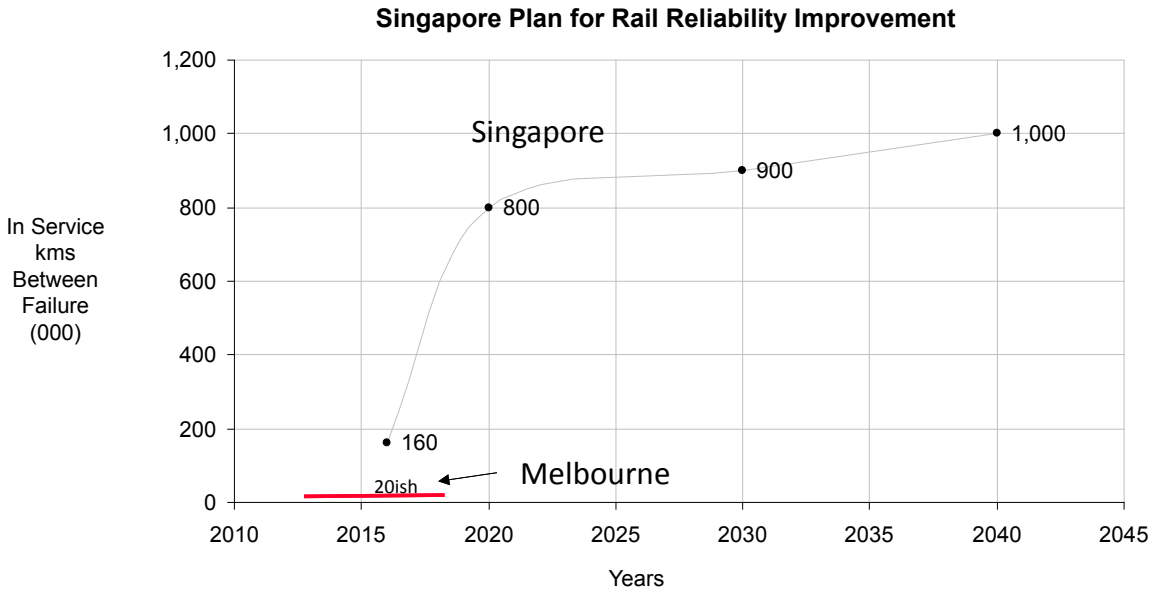
INVEST, INVEST, INVEST, INVEST – SERVICE LEVELS

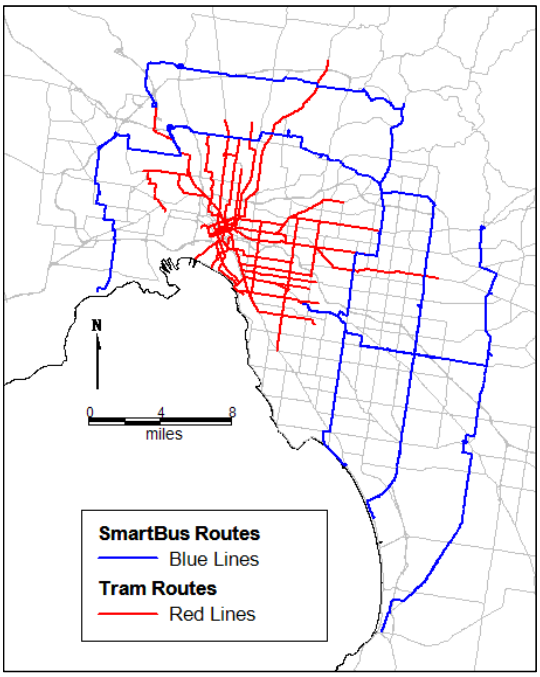


INVEST, INVEST, INVEST, INVEST – RAIL RELIABILITY

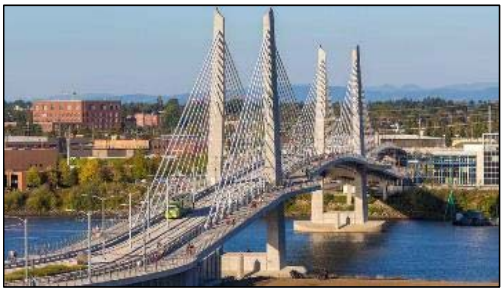


Source: Land Transport Authority of Singapore

INVEST, INVEST, INVEST, INVEST – TRAM/BUS RAPID TRANSIT

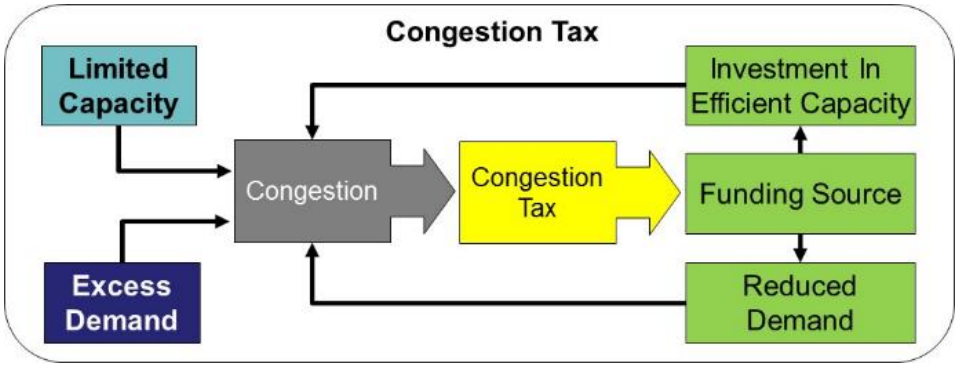


Get Sustainable Funding



Employment Tax /
Versement Transport

MAKE THE PROBLEM FUND THE SOLUTION



Take a new approach to discussing Congestion "SOLUTIONS"

NEGATIVE SPIRAL

Politican → "We will **Solve** Congestion"

↓

Big Investment

Expectations Raised

Congestion Can Never Be Solved

Congestion Gets Worse

↓

Credibility Loss

Change Government

POSITIVE APPROACH

Politican → "Congestion CANNOT be solved – we reduce worst impacts"

↓

Big Investment

Expectations LOWERED

Congestion Can Never Be Solved

Congestion Outcomes as Expected

↓

Credibility Gain

NO Change Government

Make a shift to MANAGE DEMAND not provide SUPPLY

Paradigm shift

From
PREDICT and **PROVIDE**
To
PREDICT and **PREVENT**

TDM

- It aims at reducing the demand at first place, rather than extending facilities to meet for ever growing demand.

CONGESTION REDUCING MEASURES

Supply side

- Efficient use of existing facilities.
- Increasing the supply ✗

Demand side

- Managing the existing demand.
- Controlling the growth of demand.
- Cutting down the existing demand.

TDM Measures – Politically HARD but necessary

PULL MEASURES

- Traffic management.
- Improvement of alternative modes.
- Integrated multi mode transport system.
- New technologies.

PUSH MEASURES

- Increasing vehicle occupancy.
- Influencing time and need of travel.
- Creating deterrence by introducing charges.
- Imposing restrictions.
- Land use and urban planning

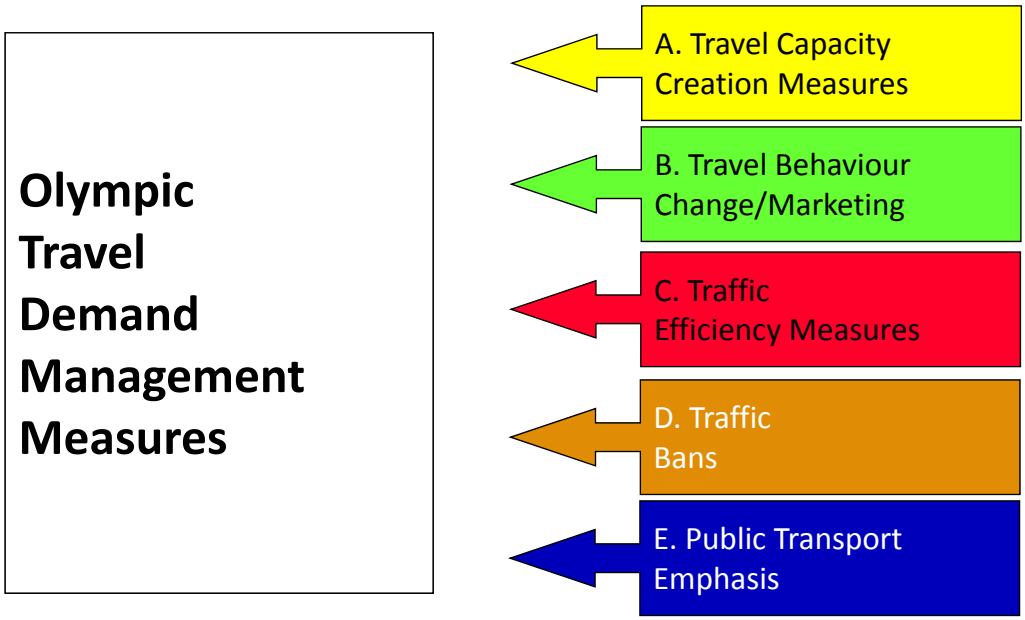
- **Pull measures** aims at **attracting** the road users to alternative modes, whereas **push measures** tries to **demoralize car users**.

Demand side

- Reducing the vehicle by modal change and HOV.
- Redistributing the vehicles by changing time and space of travel.

In March 2013 I was here explaining how congested London successfully ran the largest Olympic games in History

This was achieved using TDM



Source: Currie G and Delbosc (2011) 'Assessing Travel Demand Management for the Summer Olympic Games' TRANSPORTATION RESEARCH RECORD Journal of the Transportation Research Board Volume 2245 / 2011 Pages 36-48