

# Options for Multimodal Public Transport Development in Victoria



PUBLIC TRANSPORT USERS ASSOCIATION

# Public transport: for mobility and productivity

2

- Footscray station: currently 33 trains to city in busiest hour
- 17,000 passengers (cons. estimate)
- West Gate Bridge citybound capacity: 7,500 cars per hour

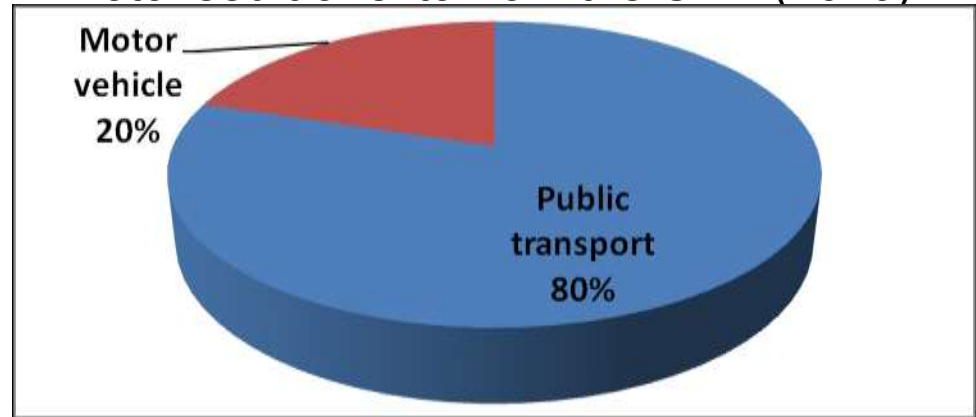


PUBLIC TRANSPORT USERS ASSOCIATION

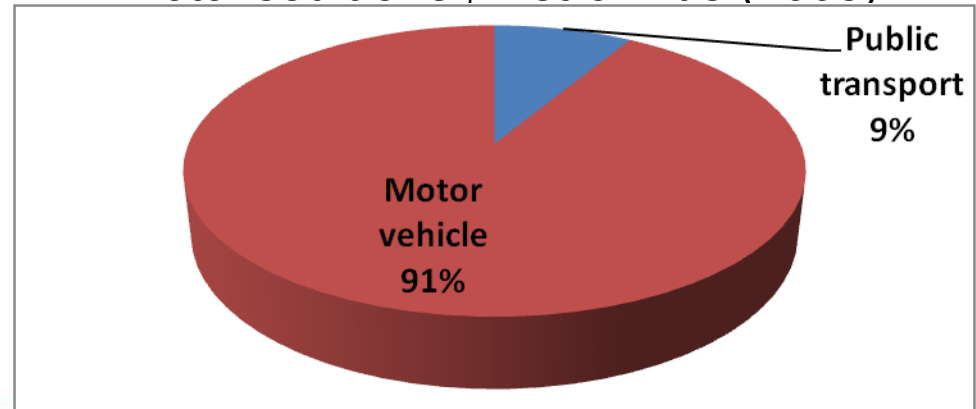
# Public transport: Not just for the CBD

- The CBD is won: but needs work to maintain capability
- Where public transport is failing is in the suburbs - yet no capacity shortage

Motorised travel to/from the CBD (2010)



Motorised travel, metro-wide (2008)



# Accessibility: suburbs need work 4

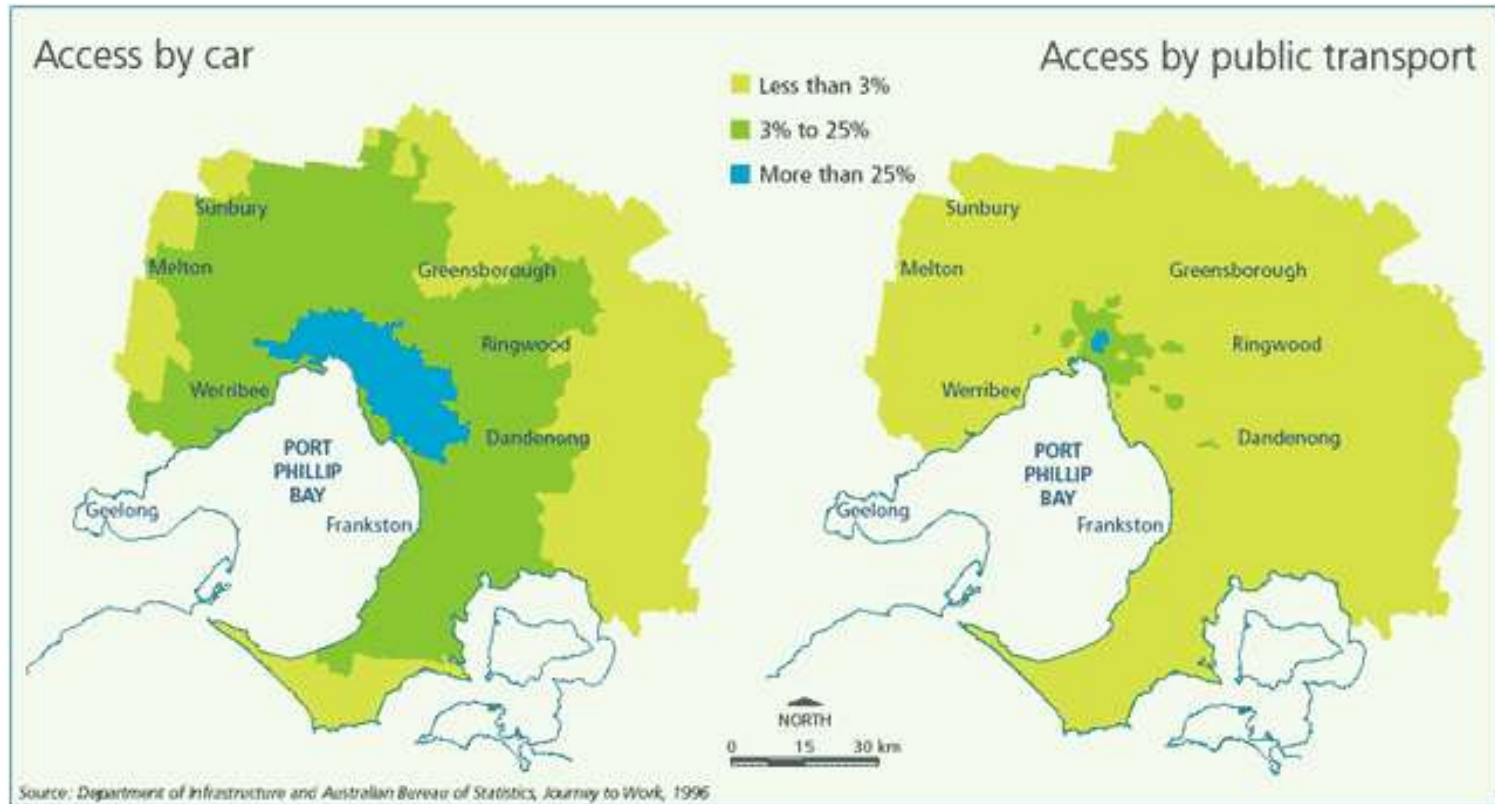
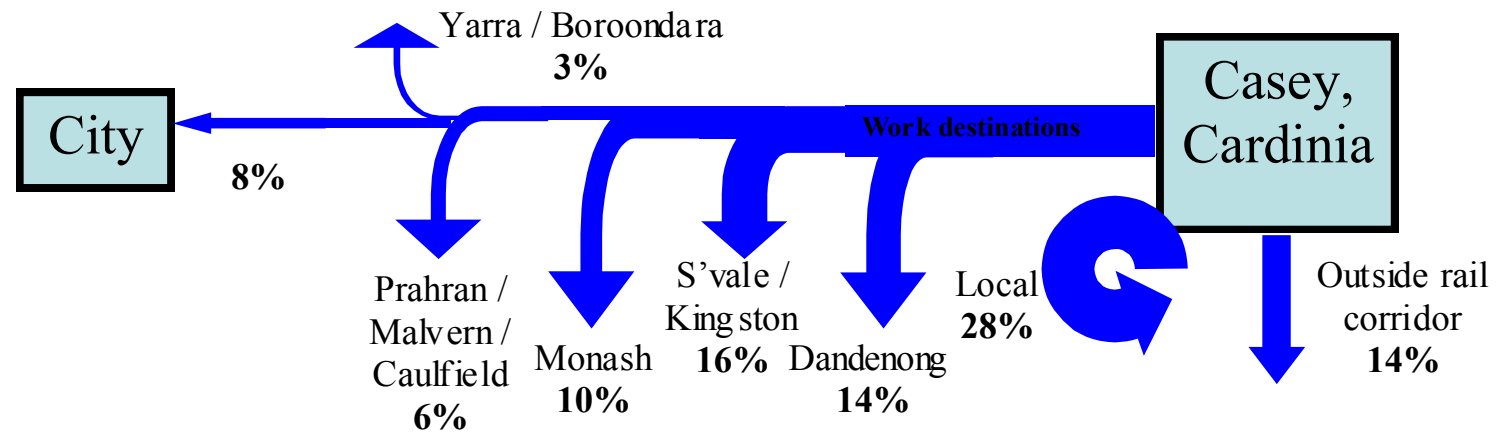


Figure 4. Percentage of jobs accessible within 40 minutes travel (by car and by public transport)



PUBLIC TRANSPORT USERS ASSOCIATION

# Transport patterns: local, radial



- 86% of all journeys to work here are either local, or located along the rail corridor
- All 86% within the ambit of radially and locally focussed public transport - yet currently only the 8% going to CBD are fully catered for

# Perth shows value of rail backbone

- Prior to 2006, buses to Mandurah carried 16,000 passengers each weekday
- The train service was forecast to lift this to 25,000 passengers each weekday
- By second year of operation, the train was carrying 50,000 passengers per weekday: it now carries 75,000



PUBLIC TRANSPORT USERS ASSOCIATION

# Accommodating rail expansion

- Capacity limiting factors in Melbourne:  
EWLNA's Analysis of Rail Capacity (2007)
  - Limited sectorisation
  - Layovers at Flinders Street
  - Dwell times at central city stations
- Trains-per-hour capacity primarily limited by constraints of signalling system
  - Opportunity to learn from others' experience



PUBLIC TRANSPORT USERS ASSOCIATION

# High capacity signalling

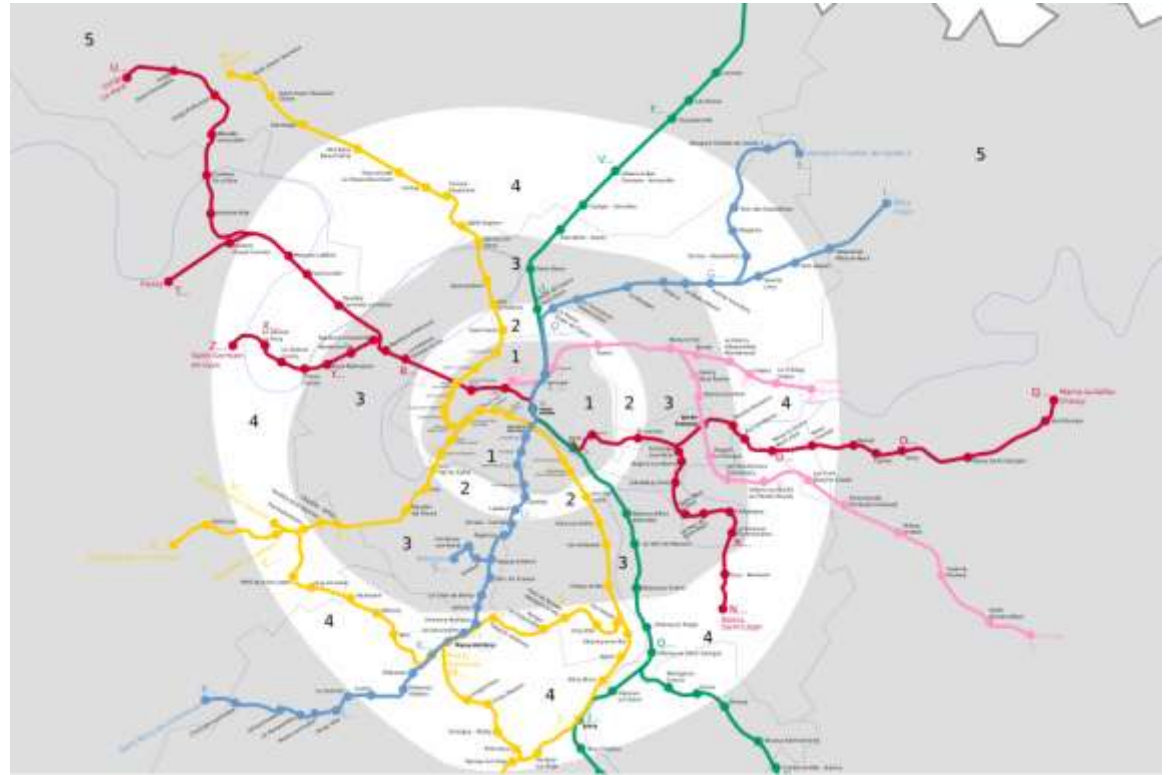
- Many systems available, but most share common technical attributes
  - ‘moving block’ not ‘fixed block’
  - In-cab, rather than track-based, signalling
- Paris RER and London Underground use two different implementations, obtain similar results
  - 33 trains per hour on London’s Victoria Line





# Paris RER: a case study

- Like Melb Metro lines, a radial heavy rail network, branching lines
- Most heavily used is the 'A' line (in red)



PUBLIC TRANSPORT USERS ASSOCIATION

# RER 'A' line timetable

Neuilly-Plaisance		7 43			7 49		7 53	
▼ Val de Fontenay		7 46	7 48		7 52		7 56	7 58
Vincennes	7 48	7 50	7 52	7 54	7 56	7 58	8 00	8 02
Nation	7 51	7 53	7 55	7 57	7 59	8 01	8 03	8 05
Gare de Lyon	7 55	7 57	7 59	8 01	8 03	8 05	8 07	8 09
Chatelet-Les Halles	7 58	8 00	8 02	8 04	8 06	8 08	8 10	8 12
Auber	8 01	8 03	8 05	8 07	8 09	8 11	8 13	8 15
Charles de Gaulle-Etoile	8 05	8 07	8 09	8 11	8 13	8 15	8 17	8 19
<b>La Defense (Grande Arche)</b>	8 09	8 11	8 13	8 15	8 17	8 19	8 21	8 23
Nanterre-Prefecture	8 11	8 15		8 17	8 20	8 21	8 25	
Houilles Carrieres-sur-Seine		8 20					8 30	
Sartrouville					8 27			

- Note trains *scheduled* every 2 minutes in the central area
- Again, this line branches: observe junctions at Vincennes and Nanterre



PUBLIC TRANSPORT USERS ASSOCIATION

# Comparing costs and benefits

- London Underground upgrade (Bombardier)
  - 310 track km, 113 stations, 246 trains
  - Brownfield project (operating lines)
  - Budget cost £354 million (\$570 million)
- Melbourne suburban network
  - 830 track km, 200 stations, ~300 trains (incl V/Line)
  - High level industry estimate \$3b for entire network, though London figures suggest \$1.5b–\$2b realistic
  - Achievable capacity ~30–33tph in peak, compared with 16–24tph limit on line groups currently



# 'Local + Feeder' bus network

- Role of buses: serve local travel needs, and connect homes with railway stations
  - 'Network effects' allow doing more with less
  - Network coverage: not past all front doors, but within walking distance of all homes
  - Route design based on providing quickest route to nearest activity centre / rail station
  - Fare system must ensure bus travel and nearest rail station within same fare zone(s)



PUBLIC TRANSPORT USERS ASSOCIATION

# A package of measures

- No magic pill: effective investment needs to be spread across a set of measures
  - High capacity signalling
  - Level crossing elimination
  - Staffing to manage dwell times
  - Targeted rail network extensions
  - Bus network improvements
  - Multi-destination focus: not just CBD
  - Melbourne Metro: 10-20 year timeframe



PUBLIC TRANSPORT USERS ASSOCIATION