

# Melbourne Airport Rail Link – Status, Rationale and Options

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# Introduction

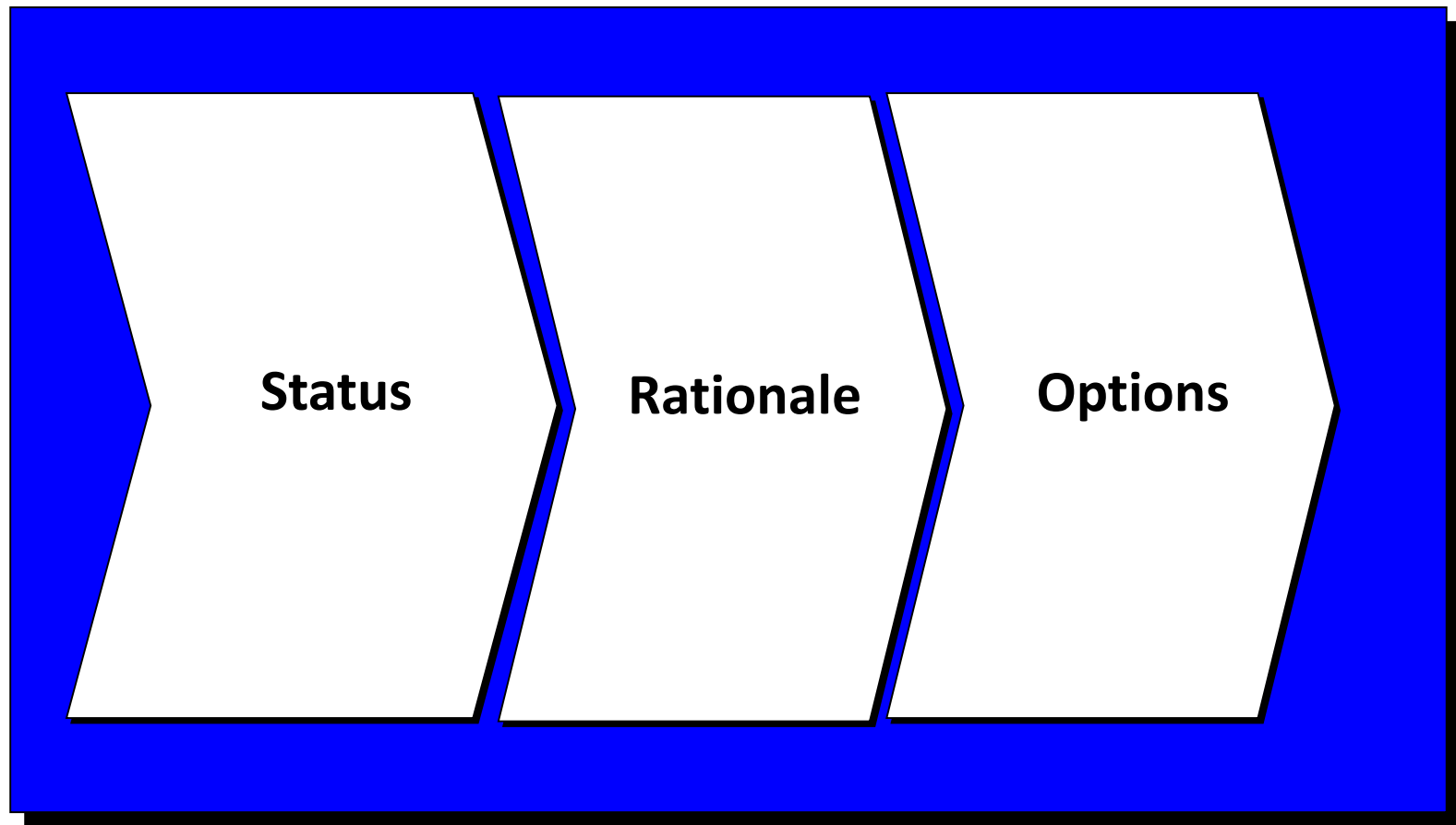
Status

Rationale

Options



# This presentation explores the Melbourne Airport Rail Link project – its current status, rationale and options



**Main Motivation – how do we get a successful airport rail link?**

# Introduction

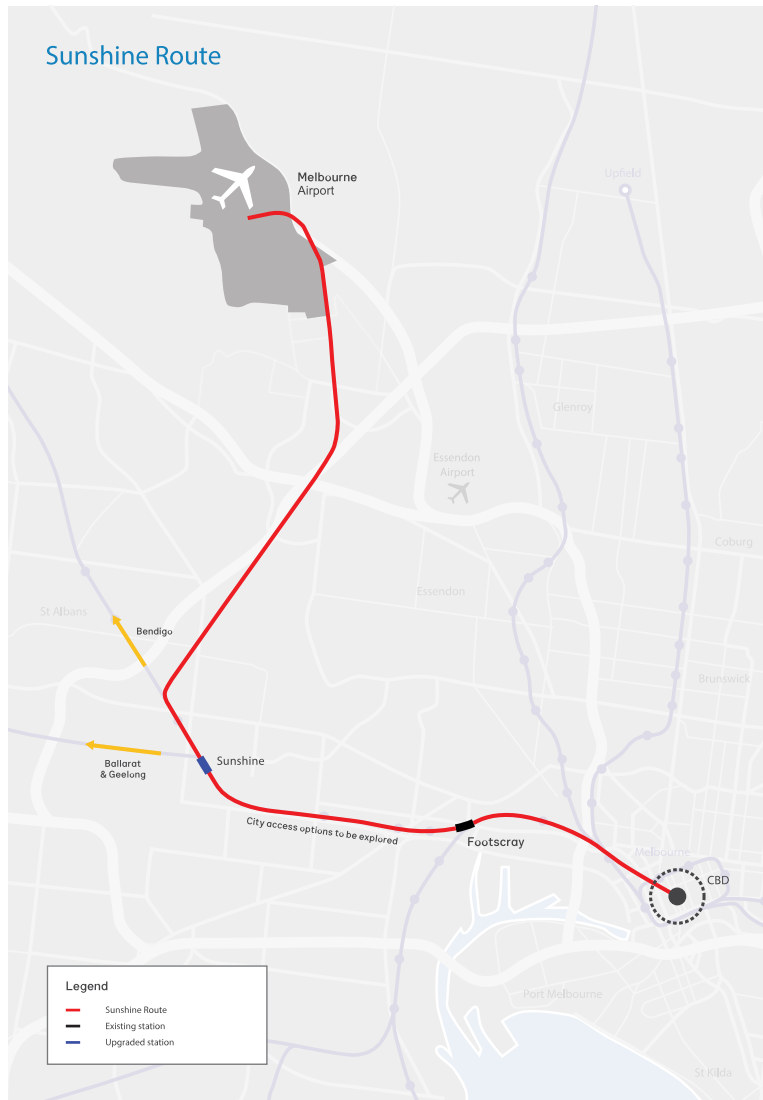
## Status

## Rationale

## Options



# There is all party and State/Federal Support for the airport rail link – An Inquiry selected the Sunshine option...

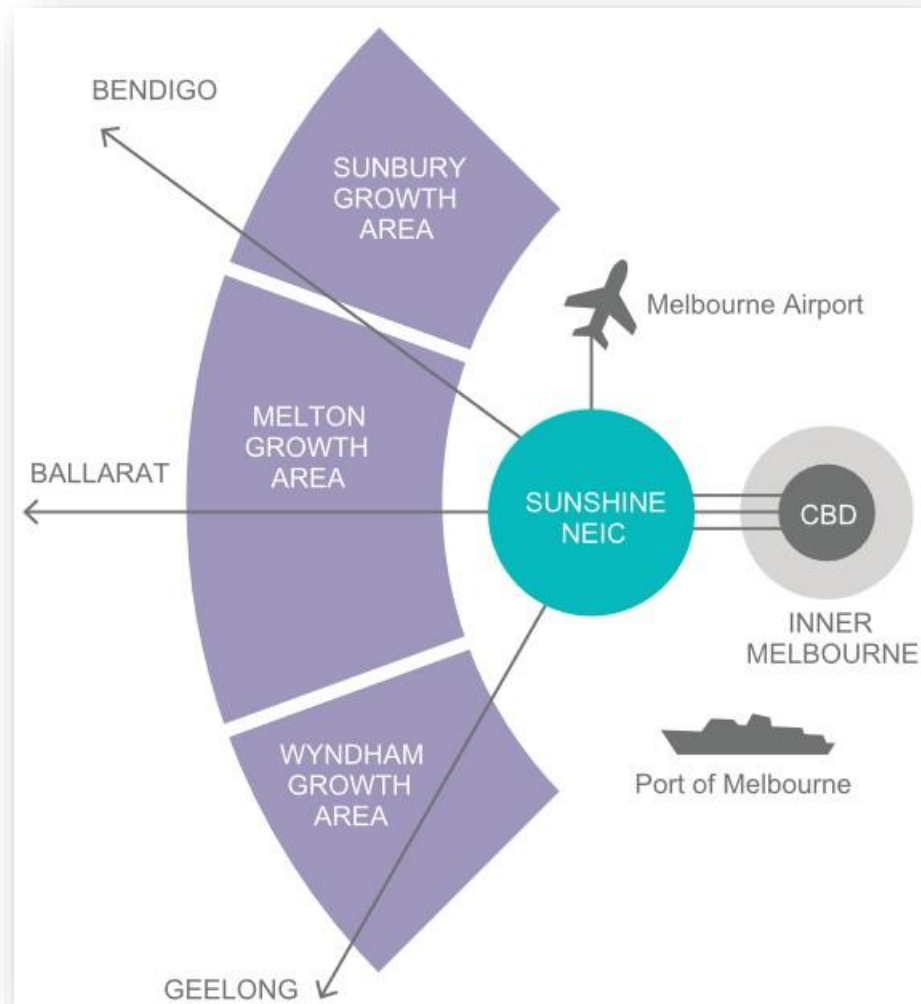


## Melbourne Airport Rail Link – Current Status

- State Govt developing a business case – selected the Sunshine route as the preferred route in a 2012 study
- Next step is the business case due 2019/2020
- Construction set to begin in 2022

### Melbourne Airport Rail Link – Rationale for Sunshine Route

- Superior connections to more areas of Melbourne via the Metro Tunnel
- Superior connections to Regional Victoria via Sunshine Interchange
- Earlier delivery at a lower cost



In practice many options abound; many alternative proposals and ideas...



These diagrams show how AirTrain will provide connectivity to the CBD, to regional cities via the InterCity rail network, and to all suburbs with a quick interchange at Sunshine for Melbourne Metro, and at Southern Cross for other suburban lines.

### Connectivity!

Melbourne's population is set to double in the next 35 years.

We need high capacity, connected transport systems that get people around the city and to and from peri-urban and regional centres quickly and safely.

Only a heavy rail, networked solution has this capability.

### Why is AirTrain the best solution?

Alternative proposals do not have the capacity, engineering or operational solutions to provide service quality that Air Train provides

#### Driverless Monorail Direct to the Airport

- Has around half the capacity people/hour of heavy rail
- Doesn't provide a network solution
- Doesn't connect airport with Sunshine, western suburbs, any Melbourne Metro lines or regional cities
- Elevated structure above Tullamarine Freeway likely to reduce freeway capacity
- Unproven route into city
- Unproven performance
- Too slow - few overseas examples and all appear to have 80km/h or lower operating speed

#### Alternative metro route via Maribymong

- More tunnelling and more underground stations with higher capital cost than AirTrain via Sunshine
- Too slow - stops at several stations and hence not suitable for integration with regional network
- Doesn't connect airport with western suburbs or Melbourne Metro
- Regional connections all require travel via Southern Cross
- Maribymong defence site will require years of expensive remediation
- Mixes airport passengers with suburban commuters on standard metro trains
- Less reliable than a dedicated line segregated from the metro network

Only Heavy Rail has the capacity to deal with the future growth in air traffic at Melbourne Airport; Only dedicated heavy rail can reliably deliver 15 minute journeys CBD to Airport.

NEWS

# Warning over budget airport rail link

From Page 1

being assessed as part of the standard planning and development and business case preparation," she said. "Rail Projects Victoria and its expert advisers are currently undertaking the detailed planning and development works for Melbourne Airport Rail and faster services to Geelong."

She said construction for the airport rail was still set to start in 2022.

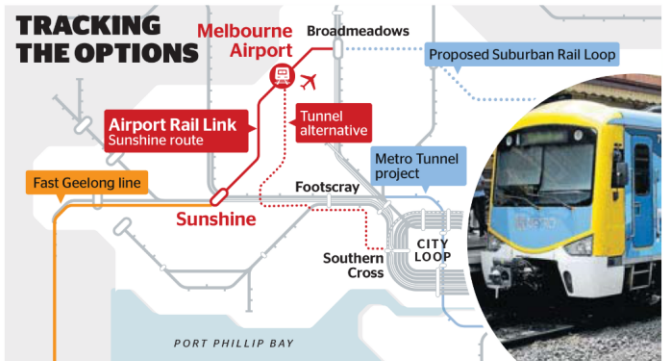
But Mr Tudge, who has pledged \$5 billion for the airport rail, said a dedicated airport line from the CBD to Sunshine would probably be needed to deliver fast airport services.

The federal government has also promised \$2 billion for fast rail to Geelong - a project that requires dedicated tracks to the state's second biggest city, he said.

"Our ambition is to have a train journey to the airport from the city that is fast, affordable and meets the needs of travellers," Mr Tudge said.

"In order to achieve these objectives, the federal government considers it likely that new dedicated tracks will be required between Sunshine and the city."

"This would also provide additional capacity to support Geelong fast



rail and improved regional services."

Mr Tudge said the federal government was working "constructively with the Victorian government" on the project. "This is a huge and complex project and we need to get the planning right."

The alternative airport rail plan would see airport trains "jammed in" with Geelong, Ballarat and Bendigo services on heavily congested rail lines, making airport trains unreliable, a leading rail expert has warned.

John Hearsch, president of rail think tank Rail Futures Institute, said this meant a trip to the airport could take 28 minutes, making it barely faster than the SkyBus.

"It will be used by backpackers and tourists travelling on a budget," said Mr Hearsch, who is a former

connection to Tullamarine and the regions ... the regions are in a world of strife," Cr Harwood said.

Shifting population growth to the regions was critical to easing Melbourne's congestion, he said. "We need a solution now; we can't afford to wait five, seven, 10 years."

Infrastructure Australia warned this month the trip between the city and Tullamarine airport was Melbourne's most congested route, with cars facing 24-minute delays on trips. But transport bureaucrats are under pressure to save cash on airport rail, with the Andrews government promising a \$107 billion infrastructure program, despite a \$5.2 billion stamp-duty writedown in this year's budget.

A private consortium including Melbourne airport, Southern Cross station, Metro Trains and super fund giant IFM Investors, offered last year to tip in \$5 billion on top of the state and federal \$10 billion already pledged and build the project along the Sunshine alignment.

It is not yet clear if the consortium's market-led proposal would be adopted by the state government.

A spokesman for IFM Investors said it could not comment on the airport rail while the government was considering its proposal.

# Victoria won't cop 'half-baked' airport rail link, says opposition

Rob Harris

Opposition transport spokesman David Davis has warned that Victorians will not accept a "half-baked" rail link from the city to Tullamarine, as he implored the state government to work with the Commonwealth to build a dedicated fast-train service.

Mr Davis seized on revelations the state government is considering a budget airport rail link that would scrap a tunnel to the city and stymie fast rail to Geelong, saying it would not be what Victorians were promised.

The Age reported on Saturday the mayor of Geelong and a leading rail expert were calling on the state government to ditch the cheaper option, warning it would make airport services slow and unreliable.

Mr Davis said the state government appeared to have "gone cold" on a market-led proposal from a private consortium - including Melbourne Airport, Southern Cross Station and super fund giant IFM Investors - which has offered \$5 billion on top of the \$10 billion state and federal governments have pledged.

"What is required for the state government to do is take the money and work with the federal government to produce a proper airport rail link," Mr Davis said. "We need a

**RAIL** Budget route considered

## Fears over 'unreliable' cut-price airport link

**EXCLUSIVE** Times Jaxx  
**SAFETY MOVE** Electric and hybrid cars will travel to Geelong

The Age, August 31, 2019

fast service from Southern Cross to the airport. It can't be scrambled in with a slow suburban service, it can't be scrambled in with a crowded suburban service."

A poll of 1500 Victorians by JWS Research, commissioned by the Air-Rail Melbourne consortium, found seven out of 10 people want the airport rail link to be an express service that gets from the city to Tullamarine in under 20 minutes.

The project remains hugely popular across the state, with 55 per cent saying they plan to switch to it when it is up and running in a decade.

Mr Davis said it was clear Victorians wanted the link to be a "dedicated fast service" and not result in travellers switching on and off suburban trains.

"It needs to be frequent, it needs to be not more than 20 minutes to

the airport, otherwise it simply won't be used," he said.

A cheaper proposal believed to be under consideration would involve airport trains using existing rail lines between Southern Cross and Sunshine, and add a new line between Sunshine and the airport, sources close to the project have said.

But a government spokeswoman said a decision had not been made on a particular airport rail option or service frequency.

"The options for Melbourne Airport Rail to access the CBD are being assessed as part of the standard planning and development and business case preparation," she said.

"Rail Projects Victoria and its expert advisers are currently undertaking the detailed planning and development works for Melbourne Airport Rail and faster services to Geelong."

Federal Urban Infrastructure Minister Alan Tudge said a dedicated airport line from the CBD to Sunshine would probably be needed to deliver fast airport services.

Former prime minister Malcolm Turnbull pledged \$5 billion towards the project in April last year on the condition the state matched the cash, while Prime Minister Scott Morrison promised \$2 billion for fast rail to Geelong ahead of the election campaign.

The Age, September 2nd 2019

# Introduction

## Status

## Rationale

## Options

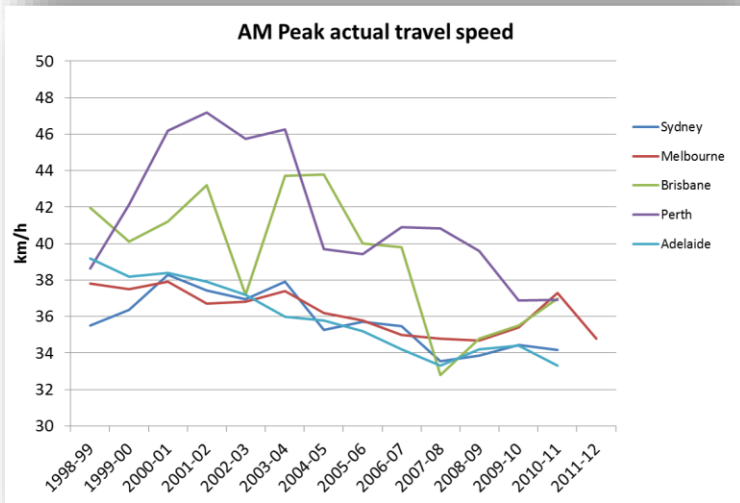
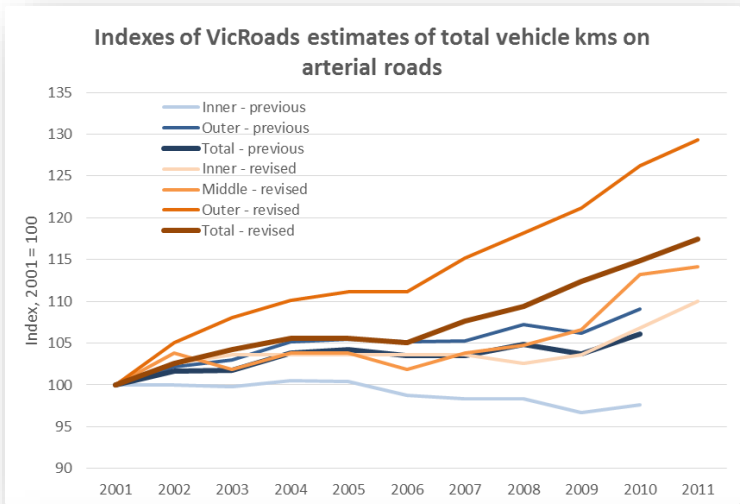


# State Govt has shown some of the rationale in its recent publications

	Major International Airports						
	Sydney Kingford Smith Airport	New York JFK Airport	Singapore Changi Airport	Melbourne	Paris Charles De Gaulle Airport	Hong Kong International Airport	London Heathrow Airport
Approx current annual air passengers	43 million	59 million	62 million	35 million (68 million in 2038)	69 million	73 million	78 million
Transport Infrastructure	1 freeway 1 rail line	2 freeways 2 rail lines	1 freeway 1 rail line	1 freeway	2 freeways 2 rail lines	1 freeway 1 rail line	2 freeways 3 rail lines

- Melbourne expected to grow to 8-million by 2051
- Airport demand expected to increase from 35-million to 68-million passengers by 2038
- Forecast that 40% of growth to 2031 will be in regional cities of Geelong, Ballarat or Bendigo.

# Growing traffic, slower speeds and congestion are the norm as a result of car access – the Tullamarine Fwy is a known concern



Source: Charting Transport



Australian Infrastructure Audit  
Transport Modelling Report - Melbourne

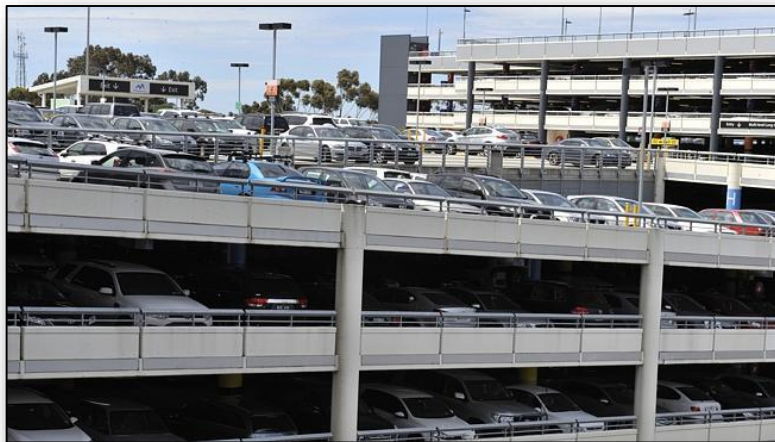
Table 7-3 – Melbourne GCCSA 2016 top ten most delayed road corridors (ranked by user delay)

Corridor name	Number	Direction	Corridor length (km)	% of journey time accounted for by congestion	Delay per vehicle (mins)	Congested travel time for corridor (mins)
AM peak (7-9AM)						
1 Tullamarine Freeway (Airport) Corridor	8	SB	17	67%	24	36
2 Greensborough Rd / Rosanna Rd	31	SB	11	63%	21	33
3 CityLink Western Link	13	SB	10	61%	10	16
4 CityLink-Eastern Fwy connection north of CBD	15	WB	5	60%	10	17
5 North-South Arterial - Northern Suburbs (St Georges Rd/High St)	25	SB	17	59%	31	52
6 Docklands Hwy Corridor	11	EB	10	59%	18	31
7 Calder Freeway Corridor	7	EB	31	59%	29	49
8 Eastern Fwy Corridor to Ringwood	16	WB	23	59%	22	38
9 CityLink-Eastern Fwy connection north of CBD	15	EB	5	58%	9	16
10 Monash/Princes Fwy Corridor (Monash/Princes Fwy)	22	WB	57	57%	49	86

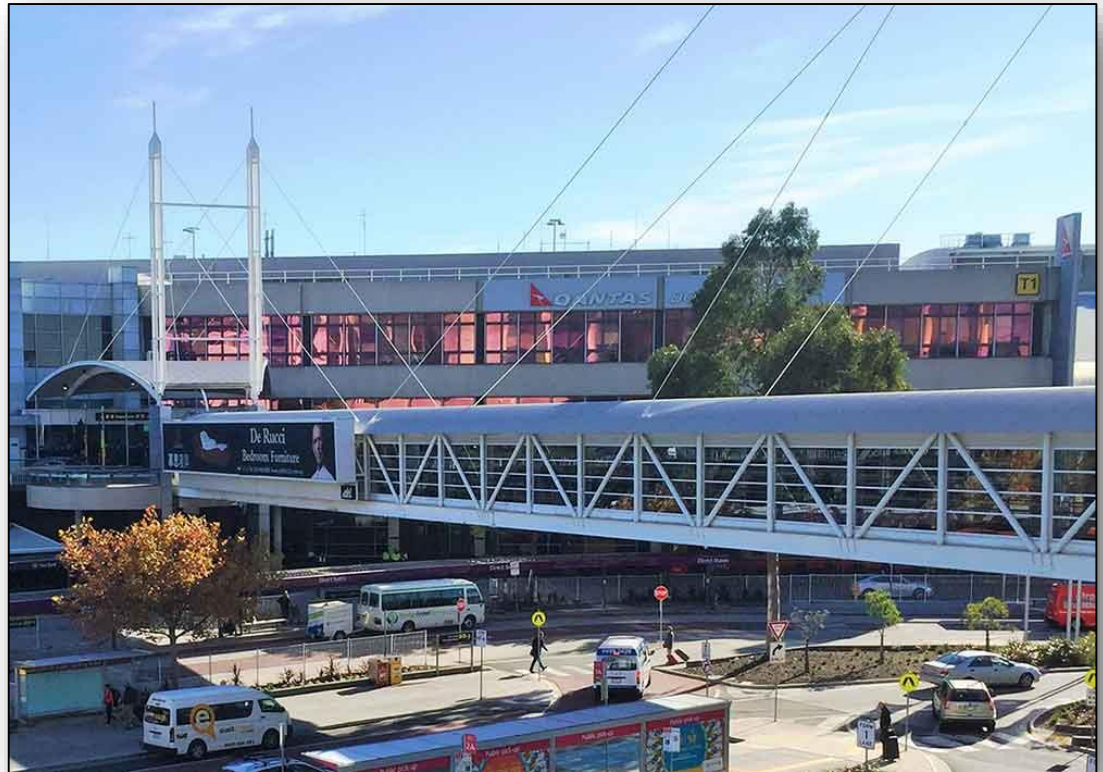
# Rail is a space efficient way to carry high volumes of people quickly



# And Airport Parking Capacity grows



[a pet peeve; lack of ped grade separated terminal access]



- Monash Research:

- 2019:

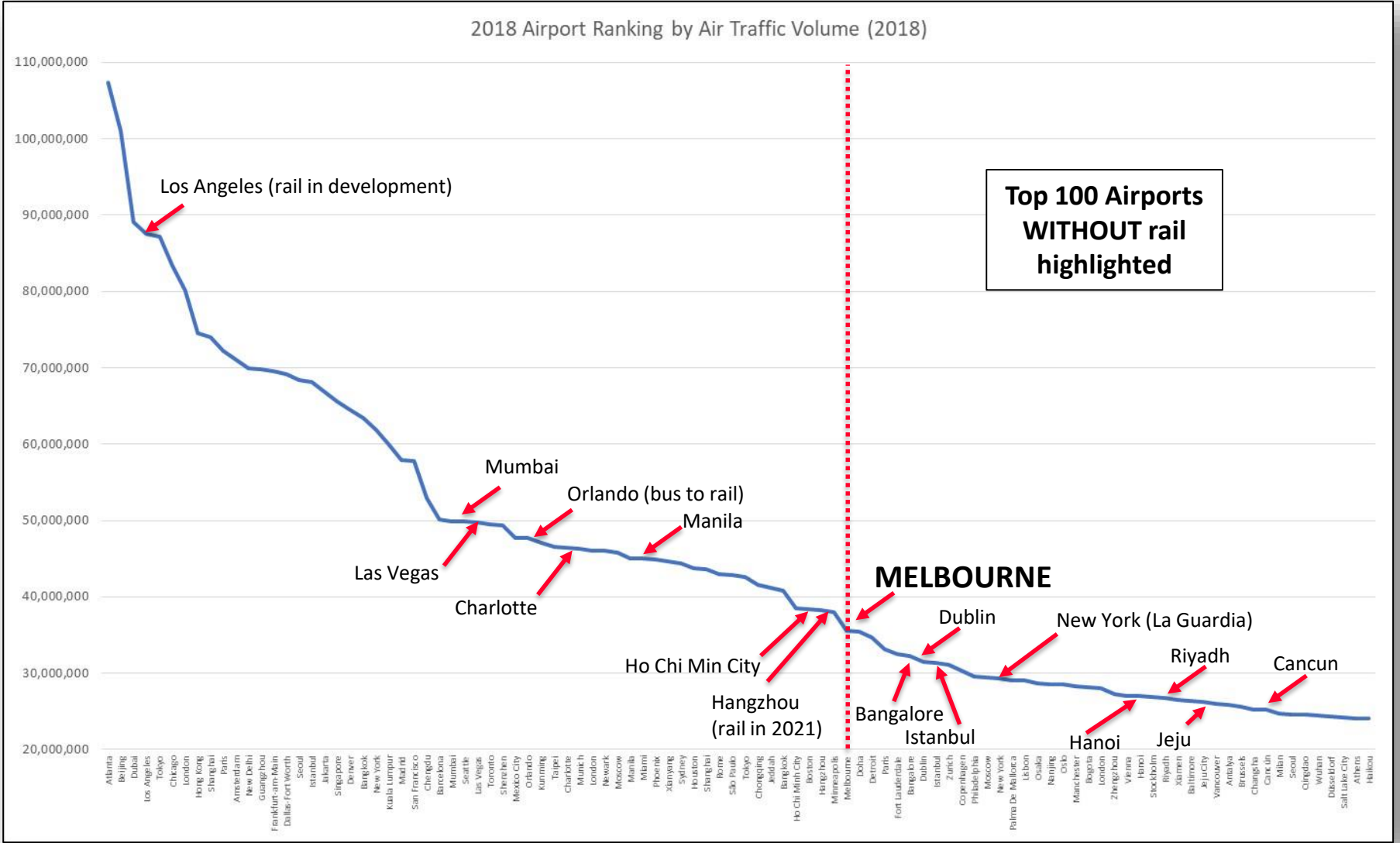
- Study of all of top 100 airports by air traffic volume where access data can be found

- 1998

- Data compiled for a 1998 airport access mode study from international airports

- Contrast trends in airport access notably with and without rail

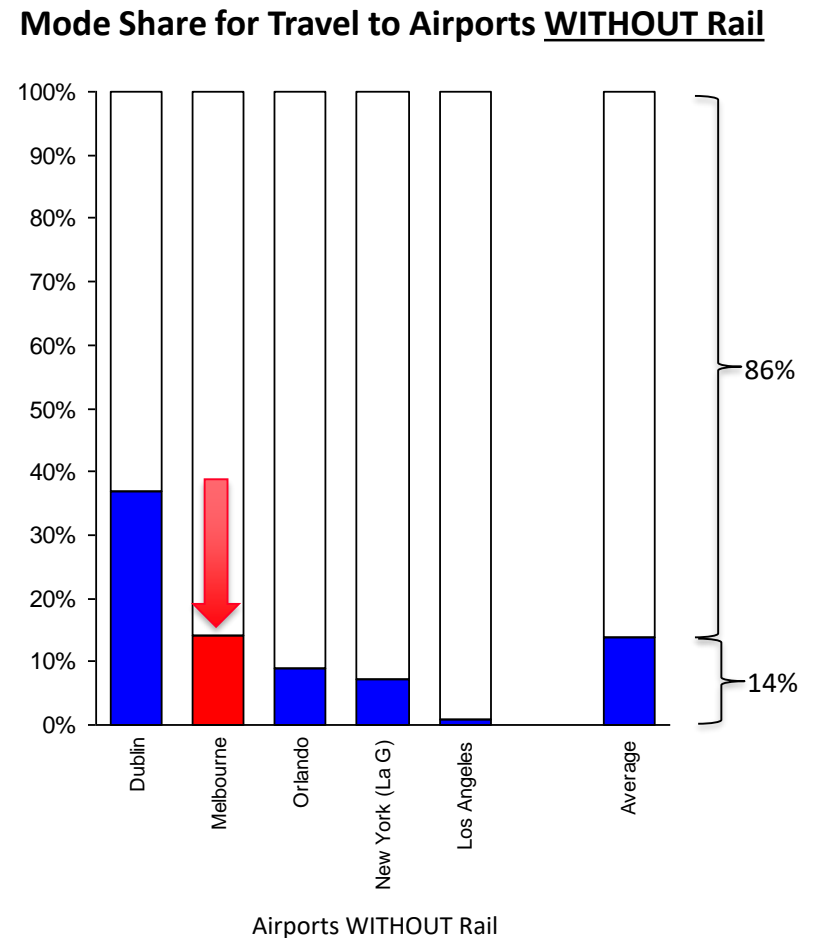
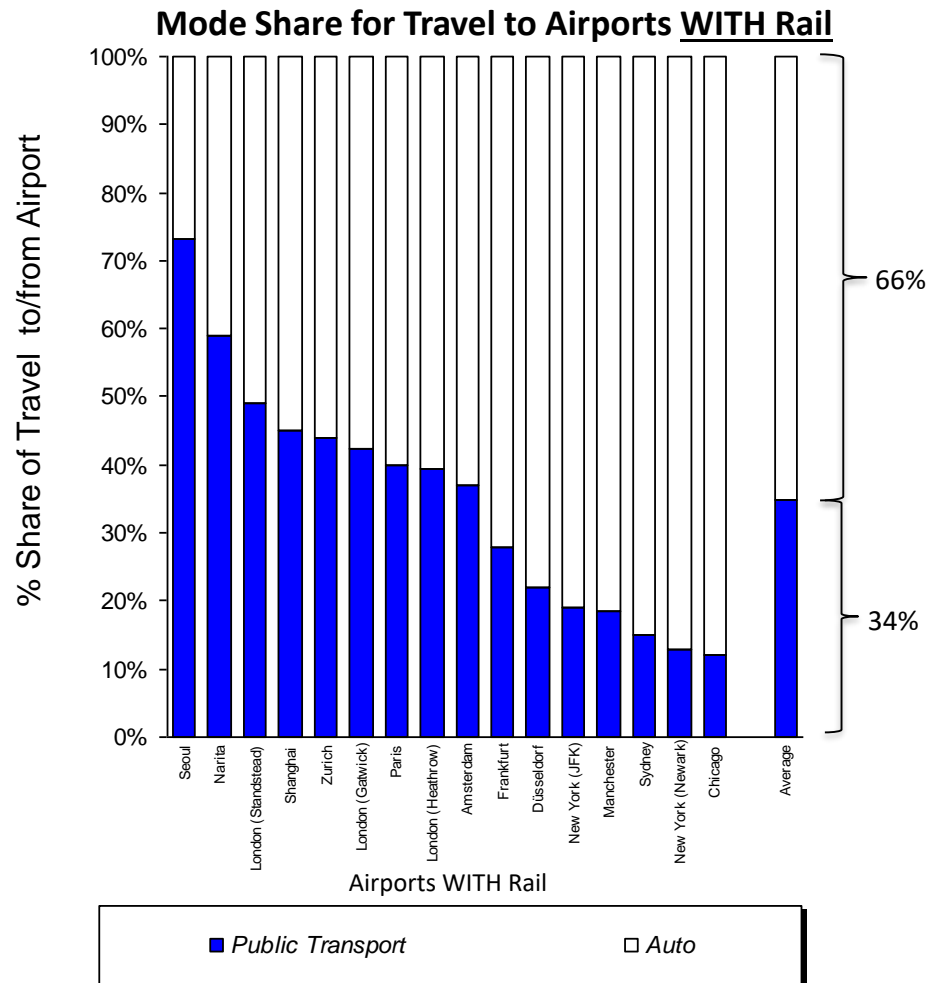
# Of the top 100 global airports; 82% have rail access; Melbourne (ranked 59th) doesnt



Source: Monash Public Transport Research Group Analysis

Those WITH rail have an average of 34% PT access – those WITHOUT 14%

### Top 100 airports where Access Mode Share is Known



Source: Monash Public Transport Research Group Analysis – Top 100 airports (2018) where access mode share data was available

# There are 5 key factors for a successful transit link

## Key Factors to Achieve High Mode Share for Transit Links - Research Literature

Key Success Factor	Discussion of Issues
▶ Relative Mode Price	▶ Transit should be considerably cheaper than alternative modes – this includes relative taxi fares and airport car parking charges
▶ Relative Travel Time	▶ Transit should be considerably time competitive to travel compared to alternatives
▶ Passenger Amenities	▶ Good transit baggage handling and real time passenger information are cited as important elements of good airport transit modes
▶ Relative Accessibility	▶ Good transit modes should provide door to door access covering a full range of destinations or catchments
▶ Frequency of Service	▶ High frequency is important for a good transit link service – the service should also cover a wide range of time periods

### Key Sources Are:

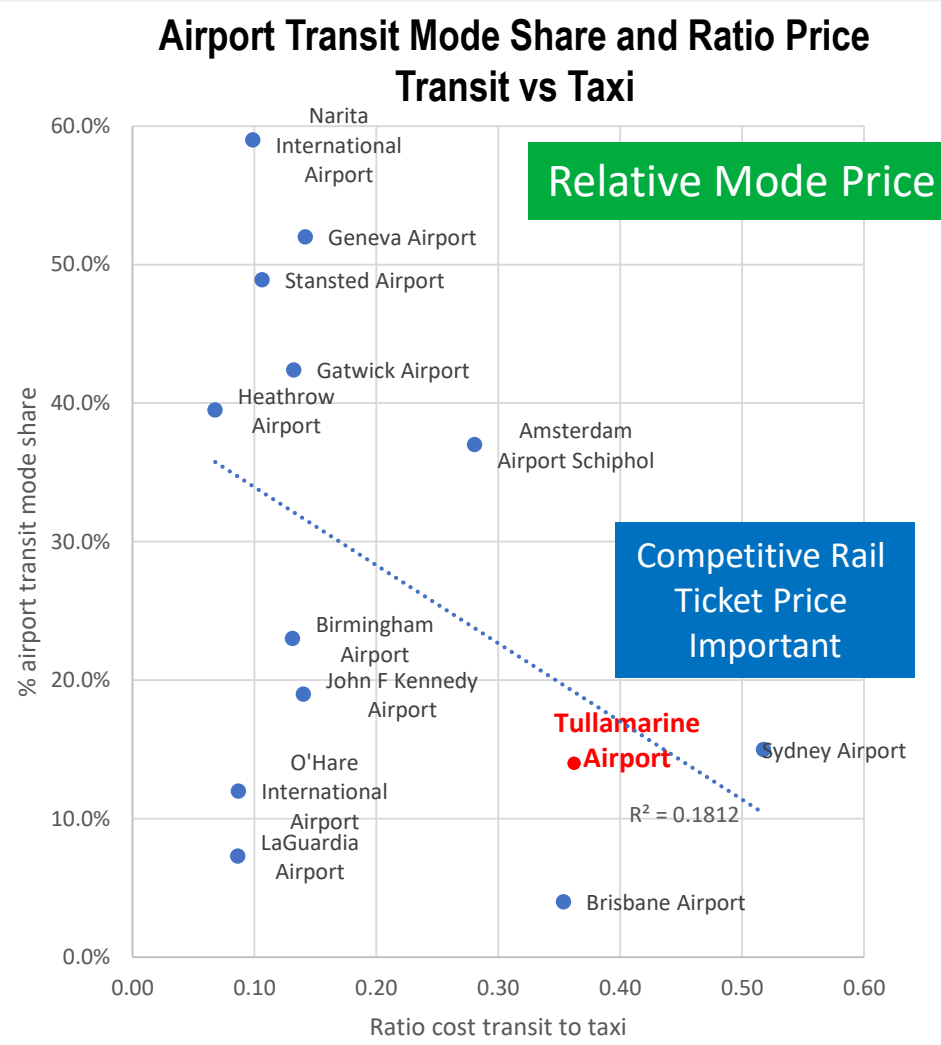
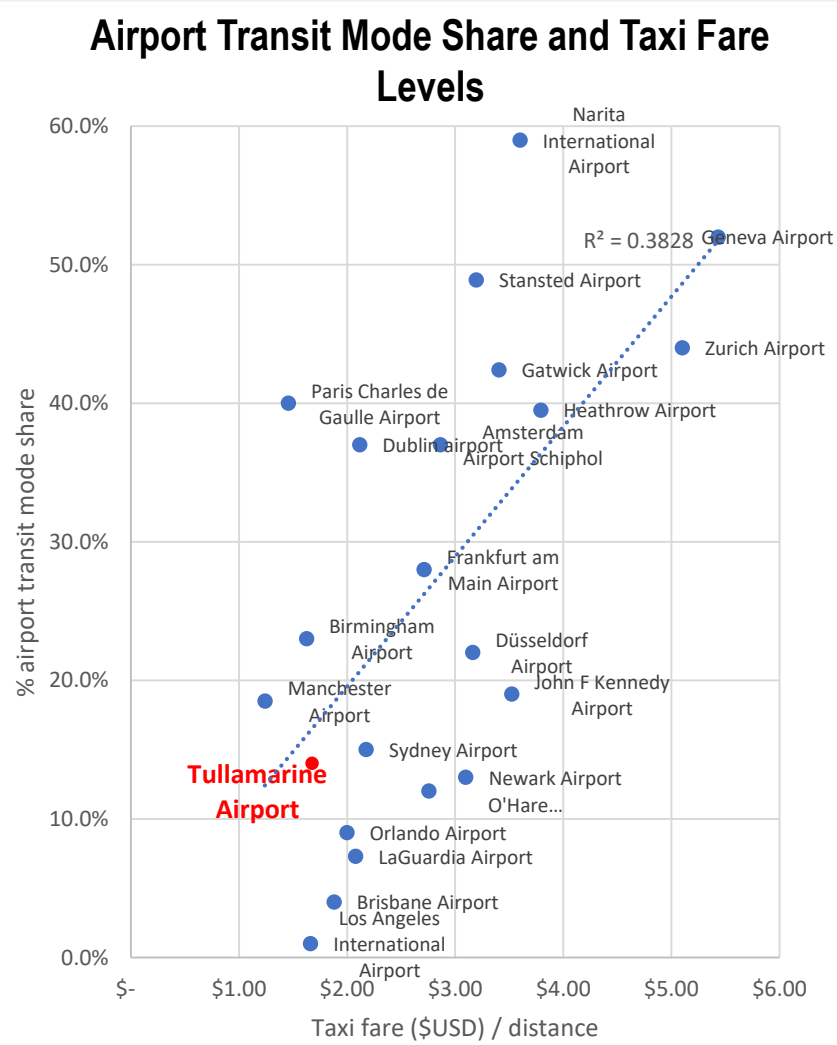
Niblett, R., (1995) 'Keys to Success in Airport Rail Links', *Railway Gazette International*, December

Scott, F. and Black, J., (1998) 'CBD-Airport Rail Access: Institutional Arrangements and Decision Making', paper presented to the 22<sup>nd</sup> Australasian Transport Research Forum, Sydney, September

Buchanan and Partners.,(1995) 'Optimising rail/air intermodality in Europe', Study undertaken for the European Commission, November, 1995

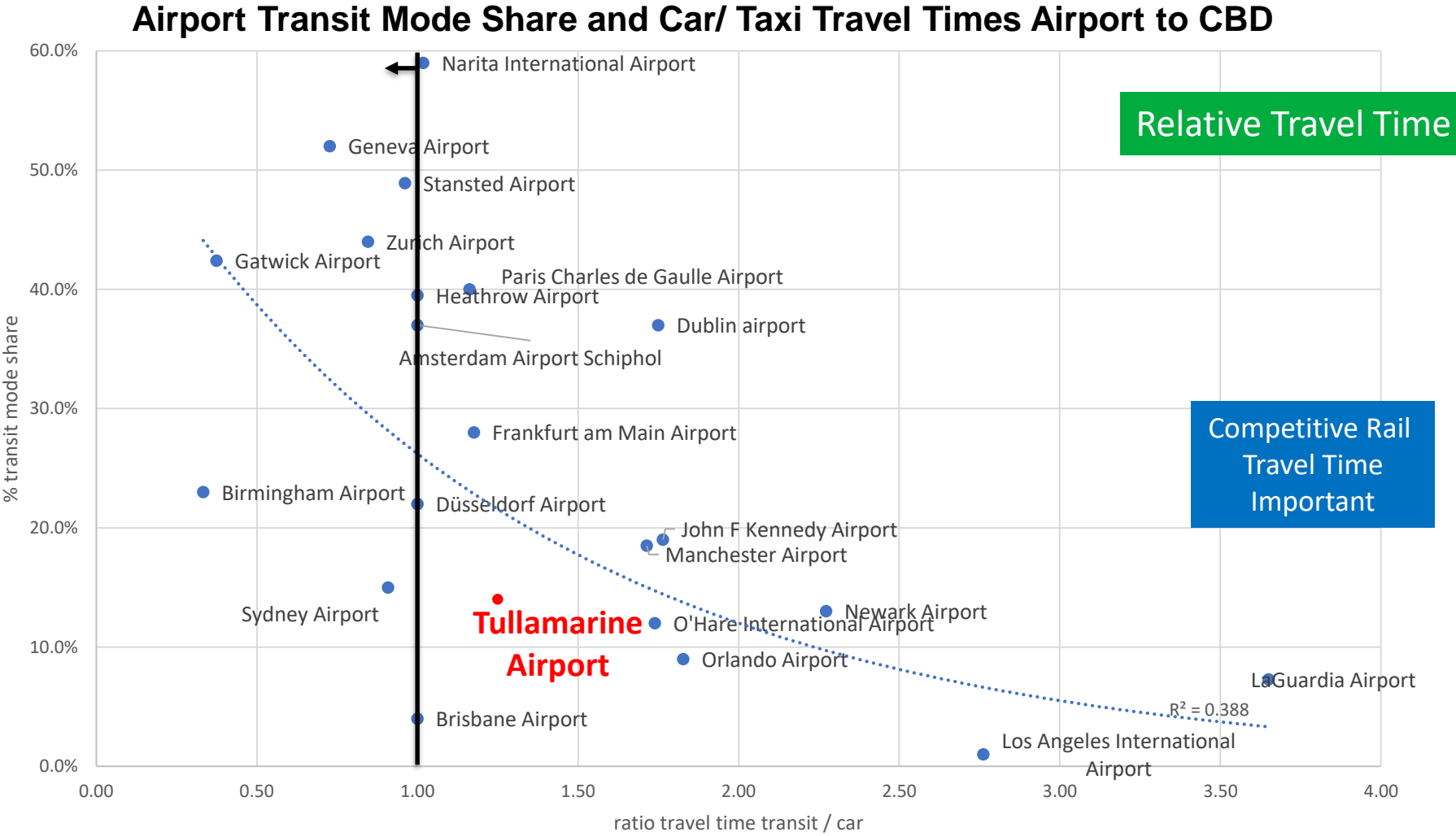
Civil Aviation Authority cited in *Transport Statistics for London*, (1997)

# Melbourne auto-mode price is competitive - suggesting low Melbourne airport transit share of travel



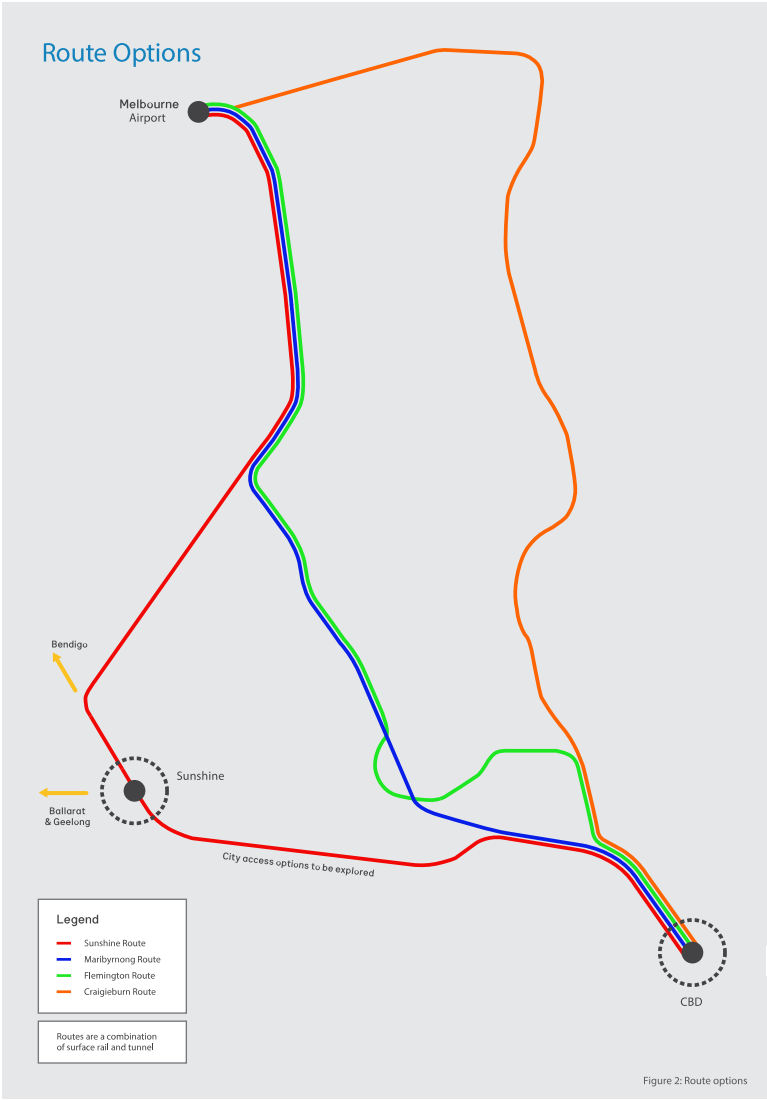
Source: Monash Public Transport Research Group Analysis – Top 100 airports (2018) where access mode share data was available – 2019 price analysis year

Transit share is linked to speed; high transit share airports have much quicker rail travel time than car/taxi



Source: Monash Public Transport Research Group Analysis –2019 travel time analysis year – mode share years vary

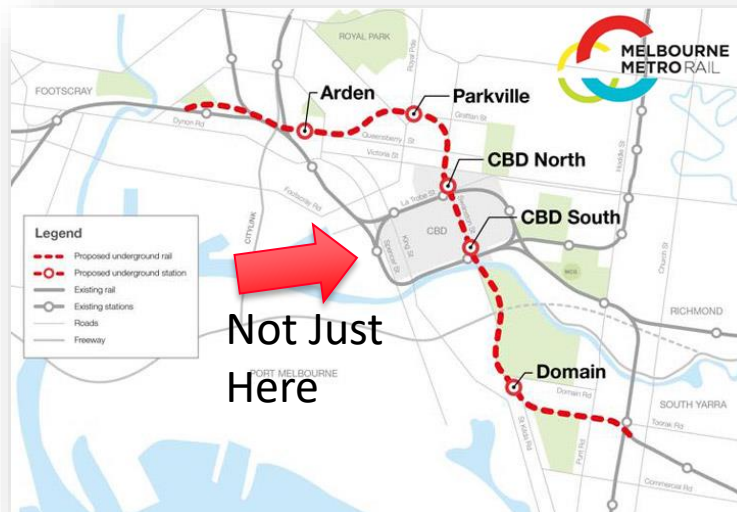
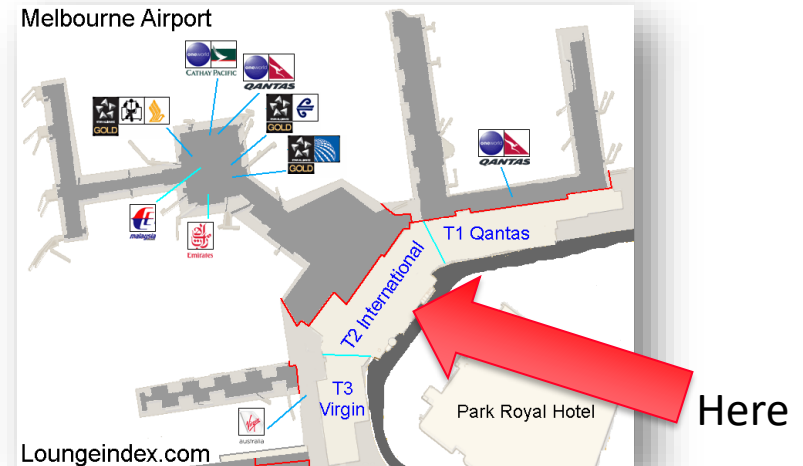
...yet most rail link options explored are dog leg alignments; which will tend to be uncompetitive



# The other key issue is direct access – terminal and city

## Key Factors to Achieve High Mode Share for Transit Links - Research Literature

Key Success Factor	Discussion of Issues
► Relative Accessibility	► Good transit modes should provide door to door access covering a full range of destinations or catchments



# Introduction

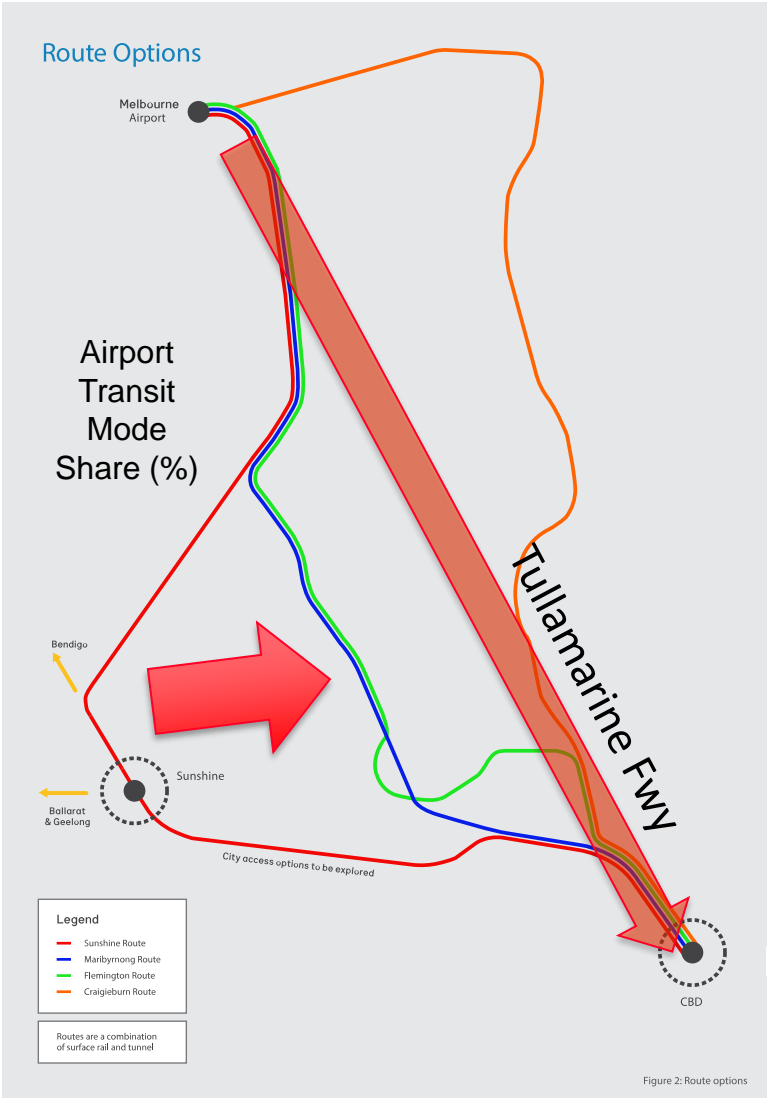
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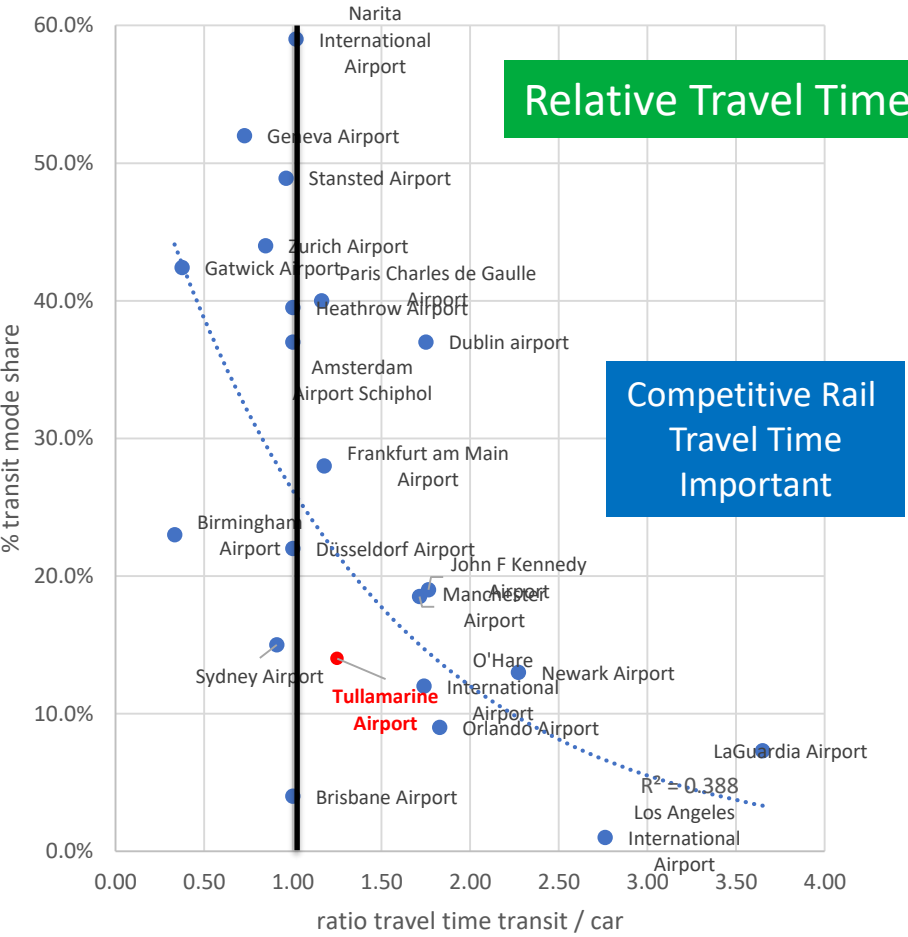
## Options



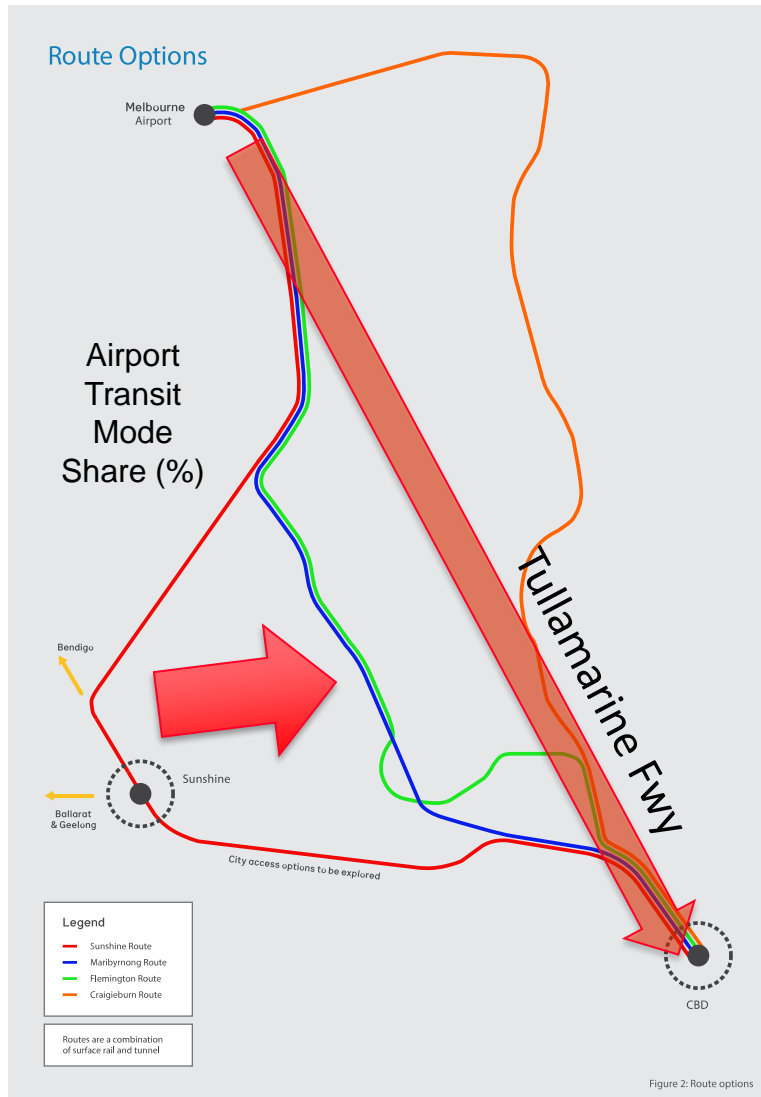
The direct link options provide a more competitive travel time to the city and will enhance transit mode share...



Airport Transit Mode Share and Ratio of Transit to Car/ Taxi Travel Times Airport to CBD



...the direct link options also reduce rail operating resources, track and has operational benefits for existing lines – but expensive tunnelling may be needed



### Wider benefits of a Direct Route

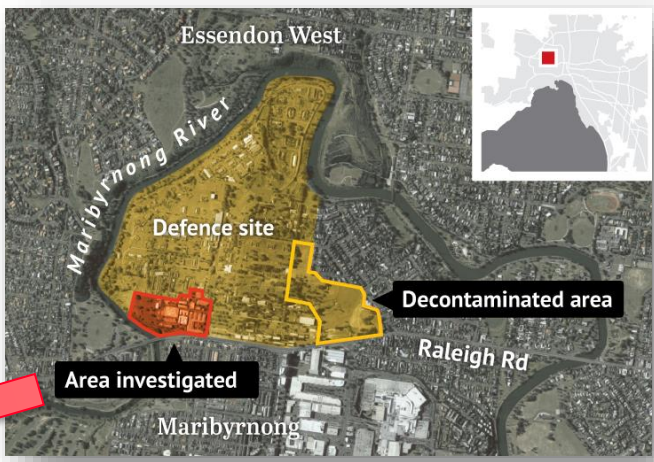
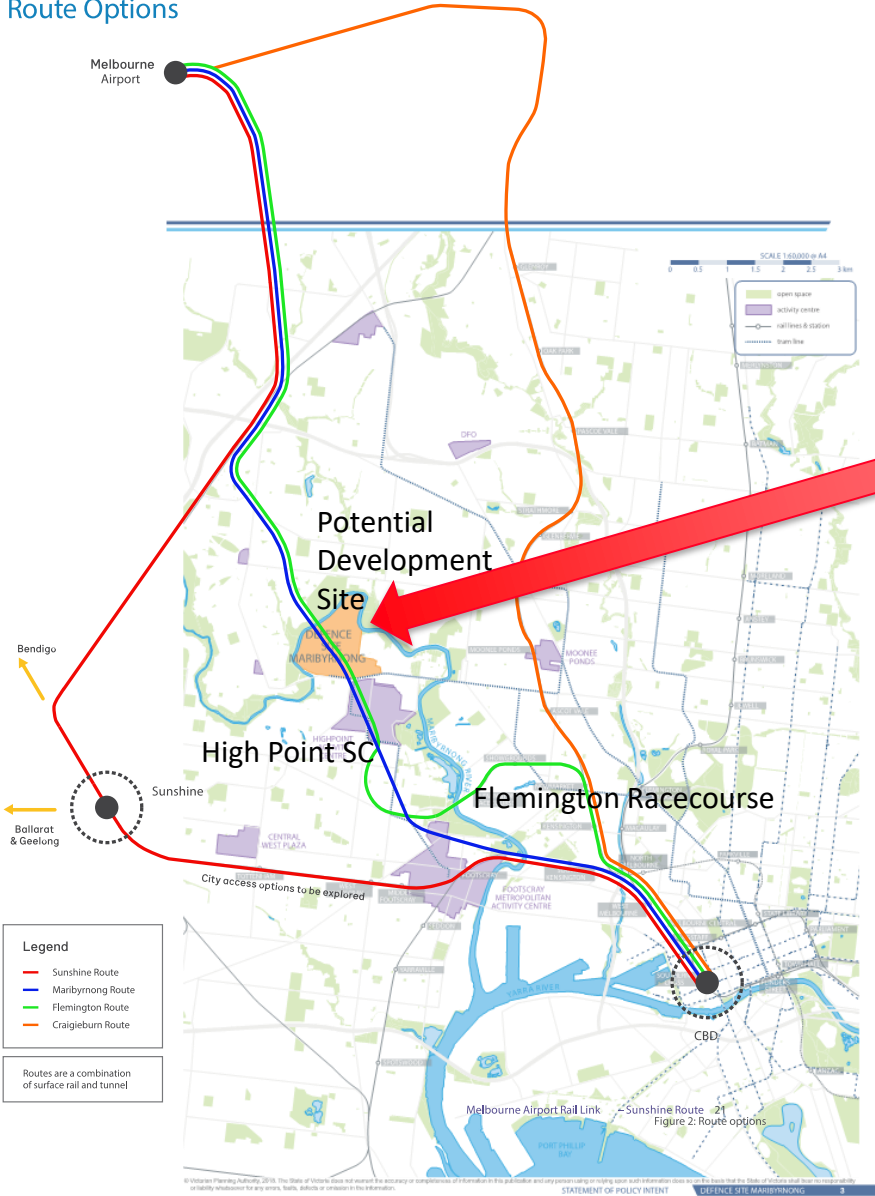
- More direct route decreases rail running time and requires less trains to operate
- Direct alignment takes up less new track reducing costs
- Directly alignment SEPARATES track from existing busy lines (in most areas)

### Problems of a Direct Route

- High cost tunnelling is likely required to create the alignment

# A major benefit of the Direct alignment is the potential to serve the Maribyrning Defence site development - & High Point SC/ Flemington Racecourse

## Route Options

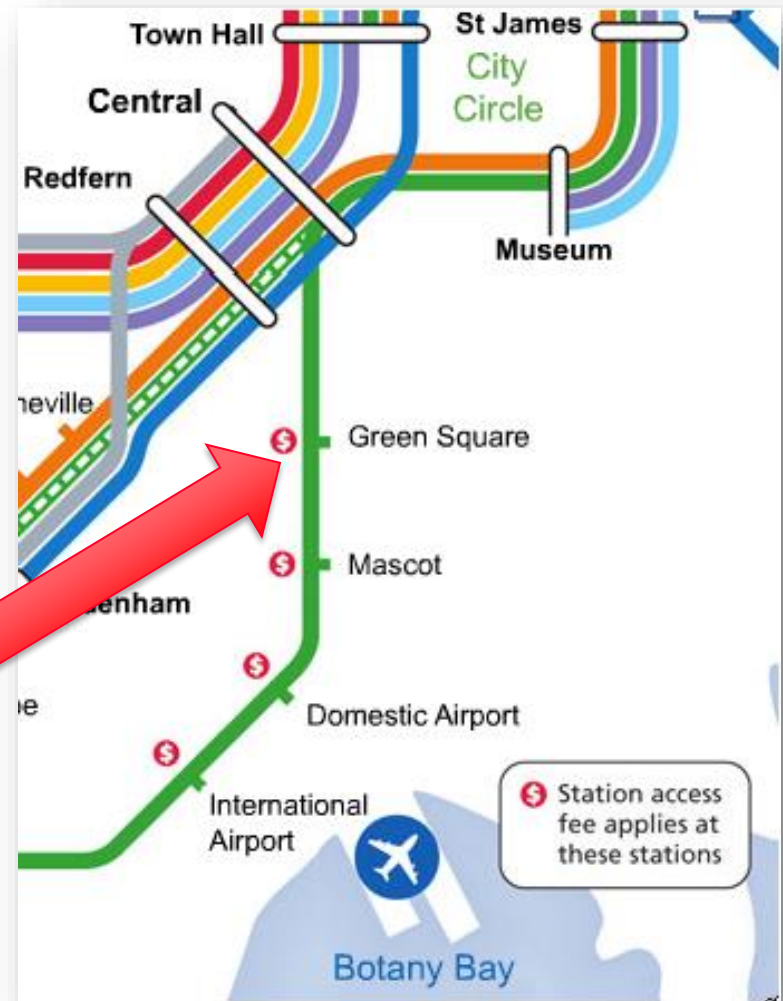


# Sydney Airport Rail link had the Green Square development – a major opportunity to leverage the airport connection for city growth



## Sydney Green Square Development

- One of Australia's largest urban renewal sites
- 278 hectares; \$13Bn construction; 30,500 new residential dwellings; 61,000 people to live there by 2030

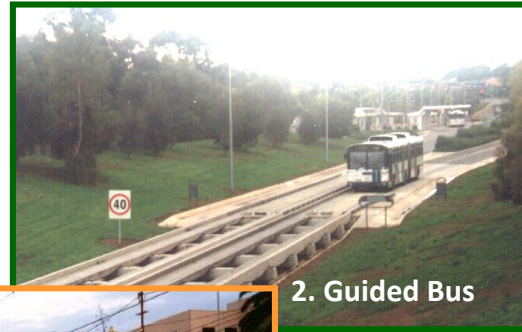


Regarding modes; many are possible but most of the discussion has been about heavy rail..

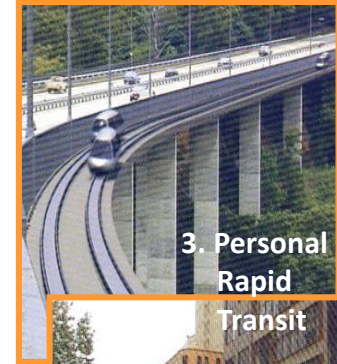
### Transit Modes Used for Appraisal as Potential Airport Transit Service Candidates



1. On Street Bus/Coach



2. Guided Bus



3. Personal Rapid Transit



4. Heavy Rail



5. Monorail






































6. Light Rail



7. Maglev

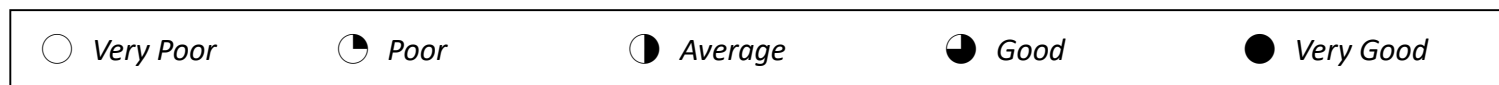
..because of lower cost and capacity advantages

Summary of Mode Performance Ratings

Characteristic	Bus On Street	Guided Bus	PRT	Light Rail/Tram	Monorail	Heavy Rail	Maglev
Speed	 <sup>1</sup>						
Right of Way Flexibility							
Capacity							
Capital Costs (Procurement/Construction)							
Operating Costs							

(1) Bus on Freeway

Rating Scale



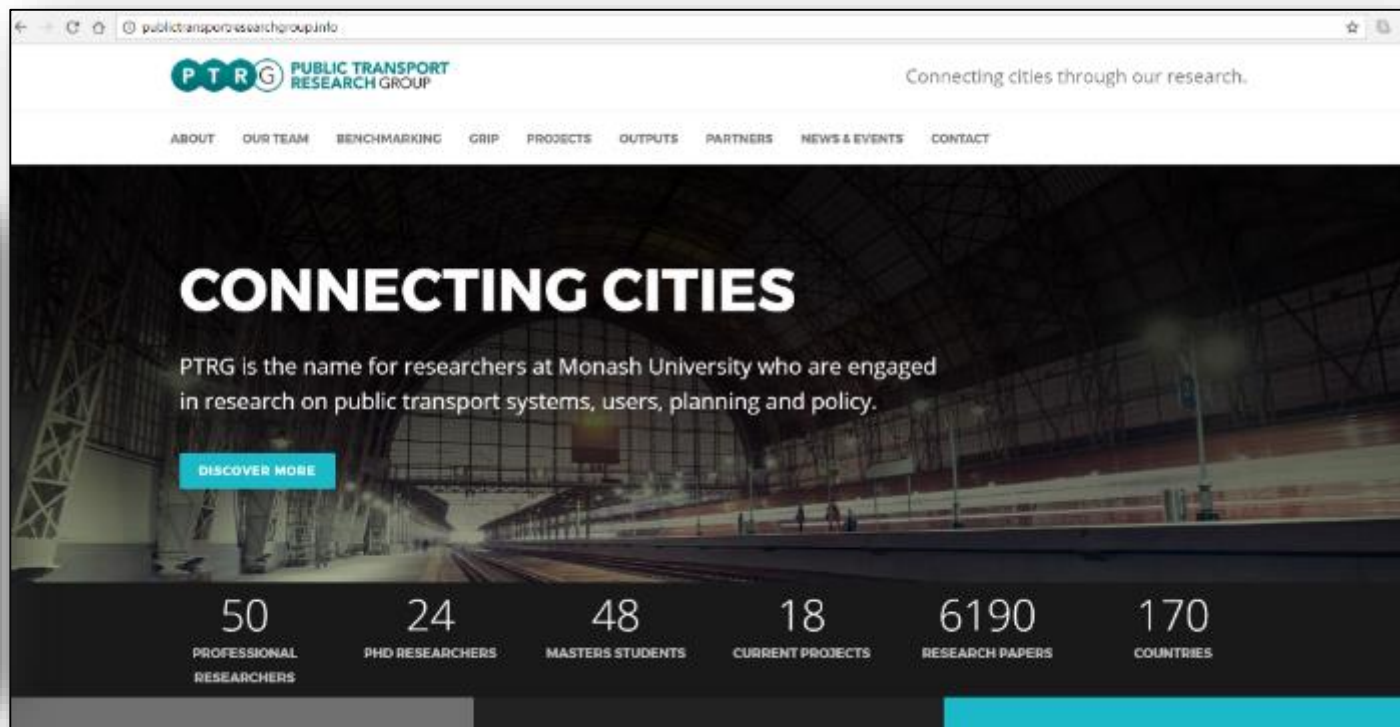
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