

RAPID BUSES, ROAD AND RAIL

GROUND TRANSPORT SOLUTIONS TO MEET MELBOURNE AIRPORT'S
PASSENGER GROWTH TO 2050

JULY 2013



Membership of Tourism & Transport Forum

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EXECUTIVE SUMMARY

Ensuring transport choice for Melbourne Airport

Melbourne Airport, as Australia's first purpose-built airport, reflects the optimism of its age. The considered planning of the 1960s has given Victoria not only one of the country's most important aviation assets, but also one that still has significant room to grow. Melbourne Airport has 24-hour operations and is set to expand its runway networks.

Today Melbourne Airport is Australia's second busiest by passenger movements and the dominant passenger and air freight gateway to southern Australia.

By 2033, Melbourne Airport is expected to have more than 60 million passenger movements a year; more than existing demand for the primary airports of Los Angeles, Paris or Hong Kong.

This matters to the people of Victoria. They are rightly proud of their airport, not least because it contributes \$1.47 billion to Victoria's gross state product and directly supports more than 14,000 jobs. This is set to grow to 23,000 by 2033, bringing a doubling in GSP contribution to \$3.2 billion.

However, the access needs of the airport must be given more serious and focused attention by the state and federal governments to support the airport operator's plans for significant infrastructure investment. If Melbourne Airport is to reach its full potential, land transport to the terminals needs to be expanded in three areas: rapid bus, road and rail.

Road access to Melbourne Airport is reaching capacity

Rapid growth in the number of passengers travelling through the airport, combined with rising traffic volumes across greater Melbourne, has constrained access to the airport. Without significant investment, congestion will increasingly threaten the airport's potential.

By 2026, projections show an additional 60,000 road trips will be made to Melbourne Airport each day and passengers and workers will be delayed unless capacity improvements are delivered. Of greatest concern is the Tullamarine Freeway, which carries three quarters of all airport traffic. A widening of the freeway is urgently needed.

Melbourne Airport's internal road network is also under considerable pressure. Over the next five years, Melbourne Airport will invest \$200 million in internal road upgrades and expansions, including the construction of a major new access point through the Airport Drive extension project.

Melbourne Airport's responsibility to fund surface transport infrastructure is limited to the airport precinct. To ensure the airport can operate to its maximum capabilities, governments also need to ease transport bottlenecks across the broader network, now and into the future.

Public transport must play a greater role in Melbourne Airport's future. Victoria's road network has served Melbourne Airport well in the 40 years since its opening, however the time has now come to complement this with greater public transport access to the airport.

Transport to Melbourne Airport is dominated by cars and taxis. Currently only 11 per cent of airport users travel on public transport. As Melbourne Airport grows, this share will have to rise if road congestion and parking availability are not to thwart the expected air passenger growth.

The Melbourne Airport Master Plan for 2013-2018 foresees up to a quarter of all airport users completing their journeys by public transport by 2022. In the longer term this will rise to a third, a figure consistent with international cities with similar-sized populations and airports.

Rapid buses now, road upgrades next, rail later

To reach this target, no single public transport option will suffice: bus and rail networks will both have to be expanded to meet the needs of airport travellers. In the immediate term, Melbourne's bus network can be improved and reworked to better service outer regions' access to the airport.

In the medium term, improvements to the airport express shuttle bus service SkyBus must be prioritised. This includes the creation of dedicated high occupancy vehicle lanes from the airport to central Melbourne and possibly other destinations. SkyBus will continue to be the direct link to the CBD but will need innovative ways of avoiding the freeway congestion.

Ultimately, Melbourne Airport will need the rail link its planners foreshadowed in its original design. The Victorian government has had the foresight to preserve the necessary assets to do so. Now is the time to draw on this prescience, committing to the construction of a rail link before 2025.

The state government's preferred rail route uses the existing suburban network. This would offer a new travel option to the millions of Victorians in metropolitan Melbourne and regional Victoria.

The preparation of Melbourne Airport's draft master plan during 2013 provides an opportunity to reform airport public transport. In Melbourne Airport, Victoria has a competitive advantage in aviation infrastructure, particularly its curfew-free operation and capacity to expand; failing to ensure this is supported by efficient surface transport represents a foregone opportunity.

This report advocates the key infrastructure projects and policy reforms required to ensure Melbourne Airport is capable of managing significant forecast growth.

This growth will only be possible if a range of transport options is available to every passenger. Melbourne Airport needs a rail link, but also more bus services to suburbs not connected to the rail network. The airport also needs its major roads kept free of congestion for both cars and the rapid bus that will link it to the city for decades to come.

It is possible to do all these things and it is possible to do them in a way that delivers short term relief while solutions for the medium to longer term are developed.

Summary of Recommendations

Recommendations (page)
RAPID BUSES
Reroute SmartBus 902 to connect with Melbourne Airport (p15)
Establish an orbital bus service running from the airport to Melbourne's western suburbs (p15)
Improve regularity and hours of bus services to nearby regional centres including Sunbury and Craigieburn (p16)
Expand signal priority rollout for all SmartBus services to Melbourne Airport (p16)
Establish express lane for SkyBus on the Tullamarine Freeway (p19)
Enforce and improve signage for CityLink express lane (p19)
Maintain employee discounts for SkyBus services (p20)
Integrate SkyBus with the <i>myki</i> smartcard system (p21)
ROAD
Widen Tullamarine Freeway between the M80 Ring Road and Melbourne Airport (p23)
Expand National Managed Motorways program to the Tullamarine Freeway (p24)
Duplicate Sunbury Road and construct the Bulla Bypass (p25)
RAIL
Construct a rail link to Melbourne Airport within 15 years (p28)
Ensure Melbourne Airport rail link fares are price competitive (p32)

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Melbourne Airport – the next 30 years

Melbourne is Australia's second busiest airport, representing the major aviation hub for the continent's south. Contributing \$1.47 billion to Victoria's gross state product and supporting more than 14,000 jobs, Melbourne Airport is a key economic driver for the state. As Victoria's only major international airport, it also plays a unique role in the tourism industry, facilitating more than \$8 billion in spending by interstate and international visitors each year

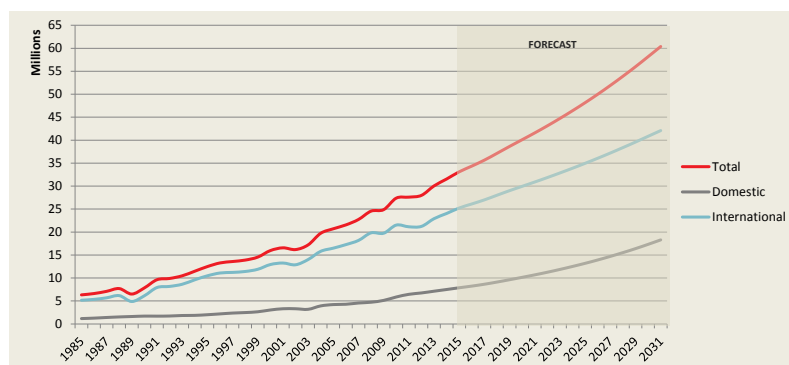
Melbourne Airport is the largest of the few major Australian airports to operate without a curfew. Curfew-free operations generate an additional two million passengers every year and add \$590 million to the Victorian economy. 24-hour operations have also contributed to Melbourne Airport's position as Australia's busiest airport for air freight export, responsible for around 40 per cent of Australia's air freight export market.

Central to the growth of Melbourne Airport has been the rapid expansion of Victoria's tourism industry. Over the past five years, growth in international visitor arrivals to Victoria has outstripped every other state, at nearly triple the national average. This has a crucial impact on the Victorian economy as whole, with tourism supporting 73,200 businesses and employing 204,000 people, which accounts for more than seven per cent of state employment. Central to this success is the convenient and efficient aviation link that Melbourne Airport provides, which contributes more than \$1 billion to Victoria's interstate domestic tourist revenues each year alone.

Forecast demand

Increased business, freight and leisure activity are driving rapid growth in aviation demand at Melbourne Airport. Passenger numbers are expected reach an estimated 40 million by the end of the decade, and more than 60 million by 2033¹. This will be accompanied by ongoing growth in non-aviation activities, including the future expansion of the airport landside business precinct.

FIGURE 1 MELBOURNE AIRPORT PASSENGER NUMBERS, FORECAST



Source: *Air Passenger Movements through Capital and Non-Capital City Airports to 2031*, Bureau of Infrastructure, Transport and Regional Economics. 2012

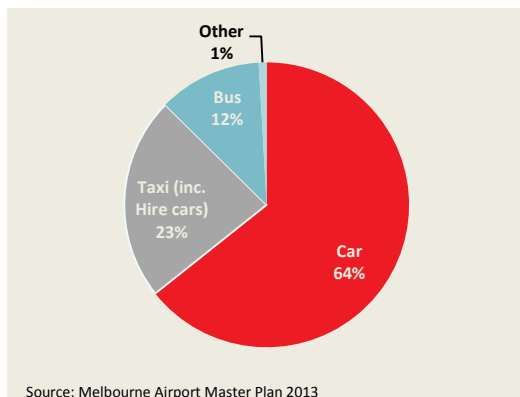
Melbourne Airport is targeting additional development of 20,000 square metres per annum in its draft master plan depending on market conditions. If the current transport mode share prevails, the number of vehicle trips to the airport is forecast to grow from 62,000 to 140,000 by 2033² (see figure 1).

¹ *Melbourne Airport Master Plan 2013 – People, Place, Prosperity. Preliminary Draft*, Melbourne Airport, May 2013 p103.

² *Ibid.* p114.

Accessing Melbourne Airport

FIGURE 2 – LAND TRANSPORT MODE SHARE



At present, access to Melbourne Airport relies predominantly on private transport. In 2011 approximately 64 per cent of trips were undertaken by private vehicle and another 17 per cent by taxi, with a further six per cent by hire car. Bus services represent only 12 per cent of trips (see figure 2).

High private vehicle mode share, rapid growth in airport demand and rising congestion across greater Melbourne have led to increasingly constrained access to Melbourne Airport particularly in peak travel periods.

Internal airport transport

Melbourne Airport's draft master plan recognises the need for major investment in the ground transport network and identifies four main areas for improvement in the next five years. This

FIGURE 3 MELBOURNE AIRPORT PRECINCT MAP



includes additional internal road capacity through upgrades to existing roads; the development of ground transport hubs to facilitate passenger pick-up and drop-off; multi-mode access; and additional road capacity and access points into the airport. The latter includes plans for the development of a major new access point through the Airport Drive extension project due for completion in 2016.

A longer-term solution to improve traffic flow on the airport road network includes the proposed development of a single-direction, elevated high-capacity loop road system to supplement the existing road network, providing better access from freeways and more efficient utilisation of the airport road network.

Melbourne Airport plans to build the loop road in stages over several years, with the first stage expected to begin in 2015.

Broader road network

Although a number of upgrades are required to meet increased demand, overall Melbourne Airport is serviced by a comprehensive and well-developed road network. Located 22km north-west of the CBD, Melbourne Airport is adjacent to a radial (Tullamarine) and orbital (Western Ring Road) freeway. In free-flow conditions, access from Melbourne Airport to the CBD can be achieved in less than 20 minutes along the Tullamarine Freeway, which carries 75 per cent of airport traffic.

Similarly, located 6km from the M80 Ring Road, Melbourne Airport has direct links to the city's only east-west motorway, linking the airport to greater Melbourne. As a result, Melbourne Airport is well positioned to provide airport users a direct link to the Melbourne CBD and to facilitate dispersal across broader metropolitan Melbourne and regional Victoria.

Despite being well positioned in relation to Melbourne's road network, unprecedented growth has resulted in arterial roads servicing Melbourne Airport reaching capacity and suffering heavy congestion. Peak traffic volumes on the Tullamarine Freeway have doubled in the past decade, leading to considerable delays, particularly between Melbourne Airport and the M80 Ring Road. The section of the freeway north of Essendon Airport is the most congested in Melbourne, particularly around the Mickleham Road interchange and at Melbourne Airport interchange.

FIGURE 4 PROPOSED ELEVATED ROAD, MELBOURNE AIRPORT



Source: Melbourne Airport

Passenger transport

Increased road congestion not only affects private passenger vehicles and taxis, it also significantly impacts public transport. SkyBus, the shuttle bus operating between the CBD and the Airport along the Tullamarine Freeway, provides access for around 10 per cent of airport users. However, congestion is diminishing performance, with peak SkyBus services now recording delays of up to 39 minutes during peak times compared to off-peak travel times of 20 minutes.



The primary cause of delays for SkyBus services is insufficient segregation from private vehicle traffic. From Melbourne Airport to the M80, there are no dedicated bus lanes on the Tullamarine Freeway, subjecting buses to escalating delays during peak times. Further south, the CityLink Motorway, which runs from Strathmore to Melbourne CBD, operates a priority express lane in peak periods exclusively for buses, hire cars and taxis.

However, the express lane remains unenforced, limiting the ability of SkyBus to provide fast and consistent journey times between Melbourne Airport and the CBD.

Melbourne Airport can also be accessed through the public bus network, with services operating to the city's outer east and south as well as nearby regional centres including Sunbury and Craigieburn.

There is considerable scope to expand the bus network servicing Melbourne Airport, assisting in reducing congestion but also improving access for regional centres to aviation facilities and jobs. The recent relocation of public bus services, including the 901 SmartBus, into the main terminal forecourt should support greater utilisation of these services for passengers and airport staff alike.

Building for growth

Despite the challenges brought by increased growth, Melbourne Airport is capable of expansion and was always designed to grow. When the Tullamarine site was selected for the new Melbourne International Airport in 1959, provision was made for a third, and an eventual fourth, runway, as well as corresponding noise buffer zones. Similarly, terminal expansions in the precinct's south, an additional access road from the Western Ring Road, and a dedicated rail line have been planned for extensively. In this regard, Melbourne Airport has been explicitly designed for expansion to meet Victoria's aviation capacity well into the future.

Melbourne Airport is investing \$200 million in landside transport over the next five years

Users of Melbourne Airport, and accordingly Victoria as whole, have benefitted substantially from continued and significant investment into the region's road networks. This has flown from the long-sighted vision for the airport, developed over a period of more than

50 years. To ensure the continued success of Melbourne Airport and the significant competitive advantage it brings to Victoria, this program of continual works to meet increased aviation demand must continue, with full support from the Victorian and federal governments.

As part of continual development to meet growing aviation activity at Melbourne Airport, landside access upgrades have been progressively developed. This investment will reach unprecedented levels in coming years, with Melbourne Airport committing \$200 million over the next five years to improving landside transport access.



Source: Melbourne Airport

Role of government

Although these investments by the airport operator will go a long way to accommodating demand within Melbourne Airport, there is a considerable need to expand transport infrastructure across the broader network. Following the commencement of flights on the proposed third runway, Melbourne Airport's aviation capacity will increase significantly, placing unprecedented pressure on the surrounding road network.

To ensure Melbourne Airport remains accessible, a fundamental shift is required in the way land transport access to airports is governed and funded. At present, airport surface transport remains a disjunct between state and federal priorities, with little ownership of decision making or investment by either party. With airports a federal responsibility and urban transport a state responsibility, access to major airports has too often been ignored.



Source: City of Melbourne

TTF recognises that the establishment and expansion of Infrastructure Australia, and more broadly, the increased role of the federal government in funding urban transport infrastructure represents a positive step to address this. However, there is still considerable scope to create a more productive partnership between governments in this field. Airports represent unique and significant drivers of economic activity and their efficient use requires greater cooperation and coordination between governments.

More broadly, the failure to address land transport access to airports is partly attributable to a lack of recognition of the growth in aviation demand as a proportion of economic activity. Between 1990 and 2010, total airline passenger movements Australia's 10 largest airports grew almost four times faster than the Australian population.

Future priorities

Despite the significant program of current works (see figure 5), development of the next generation of surface transport must begin now. The projected long-term demand forecasts for both airport access and broader traffic volumes for the airport region indicate that additional infrastructure investment is essential.

FIGURE 5 OUTLINE OF MAJOR SURFACE TRANSPORT PROJECTS

Project	Outline	Key benefits	Status
Airport Drive extension	Four lane extension, providing a secondary southbound airport entry point	By 2026 will carry up to 23 per cent of airport traffic, removing 12,500 vehicles each day from congested Terminal Drive	Undergoing development approvals process
APAC Drive on-ramp	Additional entry to Tullamarine Freeway from airport, allowing more efficient exit for city-bound traffic	Redirect up to 15 per cent of southbound traffic away from congested roads	Completed 2012
Francis Briggs Road	Extension of Francis Briggs Road, linking with Melrose Drive	Reduce traffic on Melrose Drive to improve freight and staff car park access	Completed 2013
Elevated Loop Road	Single direction high-capacity elevated road allowing intersection-free access to terminal precincts	Reduce congestion and delays through increased capacity and reduced congestion	To be built in stages from 2015
Melrose Drive duplication	Duplication of airport's only southerly entry point	Effectively doubles road capacity on Melrose Drive	Completed 2013
Southern Precinct Project – Stage 1	Major redevelopment of existing Terminal 3 and around Terminal 4 with capacity to cater for an additional 10 million passengers per year	Improved ground transport interchange with multi-level road and parking spaces with improved public transport access	Development approved – phase 1 expected completion mid-2015
Terminal forecourt redevelopment	Construction of pick-up lane and 1-minute parking bays within terminal forecourt	Significantly reduces congestion from vehicles stoppages	Completed 2013

Following the approval of the Melbourne Airport Master Plan, TTF recognises the need to provide a range of options to meet rising demand in land transport access. As a result, TTF has outlined a set of recommendations to address airport access under three broad principles.

Rapid buses: Improve bus access and priority

Road: Upgrade freeway infrastructure

Rail: Construct a train line to Melbourne Airport

Rapid buses

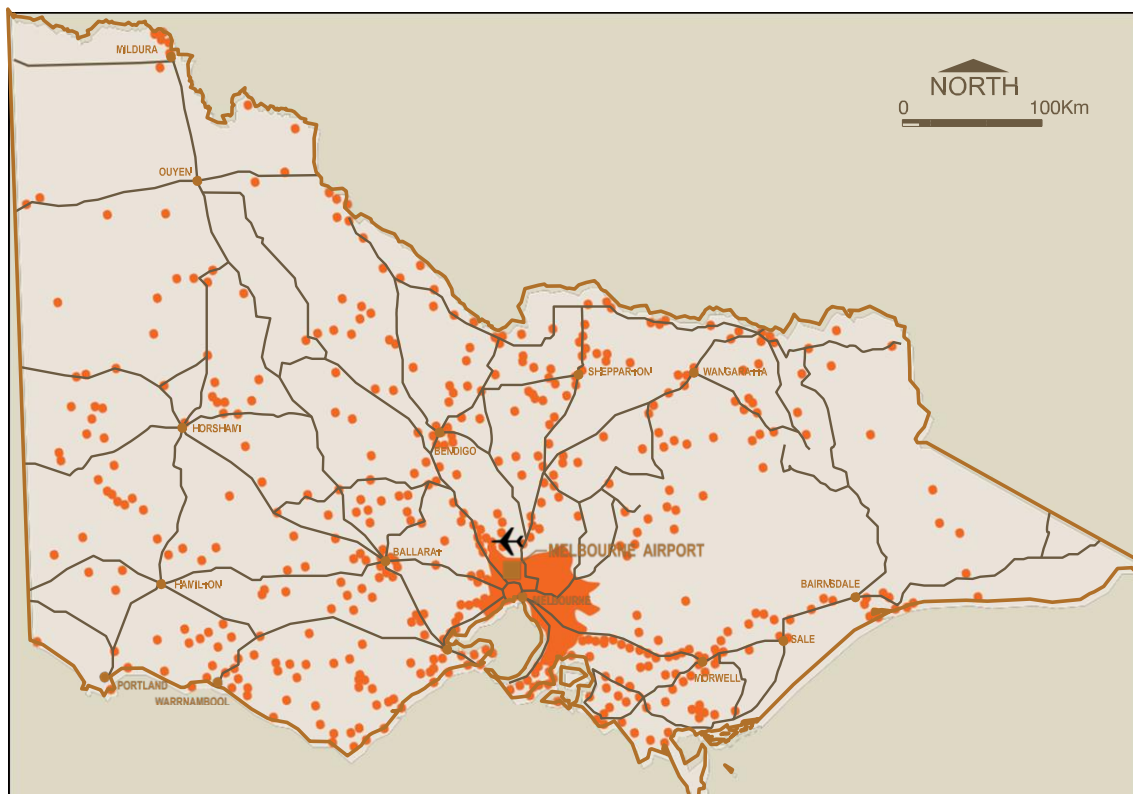
Government-managed bus network

While increasing road capacity between Melbourne Airport and the CBD as well as construction of an airport rail link are fundamental priorities, access to Melbourne Airport must also be designed to better support dispersed suburban areas.

Melbourne Airport's catchment area reaches every corner of greater Melbourne and across Victoria as a whole. To provide for outer-suburban and nearby regional centres, improvements to bus networks are a versatile and affordable mechanism to improve airport access.

More than half of trips to Melbourne Airport begin outside the metropolitan region

FIGURE 7: DISTRIBUTION OF MELBOURNE AIRPORT AIR PASSENGERS IN VICTORIA



Buses play an important and rising role in Melbourne's transport task, providing the flexibility and affordability to service the city's expanding outer suburbs. Over the past five years, Melbourne has experienced an unprecedented expansion of the metropolitan bus service. In 2011-12 alone, Melbourne's bus patronage rose by almost 16 per cent.

Despite this growth, many of Melbourne's outer suburbs still remain devoid of adequate public transport access. BusVic in 2011 indicated that more than 55,000 homes on the metropolitan fringe are outside walking distance of buses, trains and trams³. This has been a growing trend with recent

³ *Trains buses to slow to catch Melbourne's outer sprawl*, Herald Sun, 6 October 2011

housing development, with 43 per cent of housing lots developed between 2004 and 2009 beyond the reach of the public transport network.

There is significant potential to expand and reform the bus network to better service Melbourne Airport. This will be vital to better accommodate outer suburban areas, reduce congestion by minimising car trips, and accommodate growth in the lead up to construction of an airport rail link.

Expansion of SmartBus services

The SmartBus orbital service, which provides long-distance routes across greater Melbourne, has considerably expanded bus coverage for cross-suburban trips in Melbourne. Since its introduction in 2000, the SmartBus network has achieved unprecedented success. In 2009, the SmartBus 903 Red Orbital became Melbourne's most popular bus route, carrying more than 16,000 passengers per day. In 2011 alone, total SmartBus patronage increased by over 40 per cent.

Expanding SmartBus access to Melbourne Airport represents a cost-effective measure to improve access to outer-suburban areas. The decision in 2011 to extend the SmartBus 901 service to Melbourne Airport has been an important initiative for widening the bus catchment area as well as integrating with the rail network by linking with Broadmeadows station.

Melbourne Airport recently relocated the 901 bus stop in front of the terminal, rather than its previous terminus in the service roads adjacent to the Tigerair terminal (T4). As such, the 901 to Broadmeadows station becomes the airport's interim rail link.

Integration should be extended to the SmartBus 902 service, which runs from Chelsea to the Airport West shopping centre in Essendon. Extension of this to Melbourne Airport would further strengthen the airport's connectivity to Melbourne's outer east and south.

Further, introduction of additional SmartBus routes to Melbourne Airport should be considered. In particular, an orbital service running north-south through Melbourne's west would be of significant benefit. This would represent an important interim measure to provide access to these rapidly expanding areas prior to completion of the rail link.

RECOMMENDATIONS

- **Reroute SmartBus 902 to connect with Melbourne Airport**
- **Establish an orbital bus service running from the airport to Melbourne's western suburbs**

Regional buses

The rapid growth of regional centres north of Melbourne will spark significant increased demand for airport access. In particular, Sunbury and Craigieburn are undergoing strong growth and remain key catchment areas for the airport.

The proportion of employees at Melbourne Airport living in Melbourne's outer west will double in the next 20 years

Existing bus services to nearby regional centres remain limited, resulting in relatively low public transport mode share for airport users. Improving bus access for regional centres remains an important initiative for improving regional access. This will be particularly

important for catering to airport employees who are increasingly living in nearby regional centres.

RECOMMENDATION

- **Improve regularity and hours of operation for bus services to nearby regional centres including Sunbury and Craigieburn**

Signal priority

The biggest inhibitor to increasing public transport mode share for airports is ensuring travel times are competitive and reliable. At present, non-segregated bus services to and from the Melbourne Airport are increasingly delayed by congestion on Melbourne's arterial road network.

For bus services to Melbourne Airport to be attractive in terms of reliability and speed, greater separation from private vehicle traffic is required. Signal priority represents an important mechanism to achieve this. At present, a number of SmartBuses are equipped with systems to communicate requests for priority at traffic lights to remain on schedule. This feature will prove critical to bus reliability in light of rising congestion on Melbourne's orbital freeways. VicRoads is currently undertaking a trial of satellite navigation-based signal priority for SmartBuses on Springvale Road and Blackburn Road.

Despite being a relatively recent initiative on the bus network, signal priority for tram services in Melbourne has proven highly effective in improving service reliability performance in congested areas. For example, the use of active priority on Swanston Street, which included providing green light time extension and minimum phases for tram services, has reduced delays by up to one third.

To ensure the SmartBus network is capable of maintaining the reliability and travel times to remain competitive, roll out of signal priority measures across all SmartBus services to Melbourne Airport must be a key priority.

RECOMMENDATION

- **Expand signal priority rollout for all SmartBus services to Melbourne Airport**

SkyBus

The SkyBus service, the shuttle bus operating between the CBD and Melbourne Airport, represents the primary mass transit mode for airport users. The role of SkyBus as a fast and affordable public transport service has risen significantly in the last decade, now catering for roughly seven per cent of all airport users.

For at least the next decade, SkyBus will remain the most important passenger transport asset for accessing Melbourne Airport. Despite the Victorian government's commitment to build the airport rail link, its completion remains a medium to long-term prospect. In the interim, the need for a mass transit link to Melbourne Airport is imperative. SkyBus presents the most viable option to achieve this, capable of accommodating the significant rise in public transport patronage if a number of infrastructure and service reforms are delivered.

Case study: Ben Gurion Airport Fast Lane – Tel Aviv



Photo: E Milrod/Haaret'z

High Occupancy Vehicle (HOV) lanes provide fast and reliable travel times for public transport users and those choosing to carpool. However, this can come at the expense of other traffic. To address this, High Occupancy Toll (HOT) lanes, which provide free or discounted access for high occupancy vehicles but a higher rate for others, are increasingly popular. HOT lanes also use variable tolling to manage traffic volumes in real time, ensuring a minimum level of speed and reliability.

In 2011, the Fast Lane, Israel's first HOT lane, was opened between Tel Aviv's international airport, Ben Gurion Airport, and the city. The lane is free for buses, taxis and cars with three or four occupants, depending on traffic volumes. Other vehicles pay a toll, which is adjusted in real time to respond to congestion levels. This guarantees travel times for airport users, ensuring speeds stay above 70km/h.

A free shuttle bus also runs along the Fast Lane, allowing motorists to alight at a major park-and-ride facility halfway between the city and the airport. This allows travellers from regionally dispersed areas who may not have access to public transport to use it for the final and most congested part of the trip.

Since opening in 2011, the lane has achieved considerable success in reducing travel times for public transport with minimal impact on other road users. At present, average capacity is running at 80 per cent over conventional lanes – delivering a more efficient service for both public and private transport.

Enhanced bus priority

The ability for SkyBus to increase patronage is entirely contingent on its ability to provide fast and reliable travel times for airport users. Patronage growth that followed road improvements to help safeguard its performance demonstrates this fact. For example, the widening of a number of sections of the Tullamarine Freeway has contributed to a 50 per cent rise in demand for the service in two years.

Without improved priority, SkyBus journey times could increase by one to two minutes every year

For SkyBus to maintain optimal performance and increase its mode share, the next round of road upgrades is now required. Congestion along the Tullamarine Freeway is reaching critical levels, impacting the service's reliability. Travel times for SkyBus services

during peak times often reach 40 minutes and can be as long as 51 minutes in the morning and 59 minutes in the afternoon peak, compared to 20 minutes for off-peak times⁴.



Photo: SkyBus

SkyBus will suffer from deteriorating performance unless buses are given greater priority status, insulating them from increased congestion. Of particular concern is the section of the Tullamarine Freeway from Melbourne Airport to the beginning of the CityLink in Strathmore, which currently has no dedicated high occupancy vehicle lane. Using existing emergency lanes on the Tullamarine Freeway, a dedicated service lane for SkyBus and other high occupancy vehicles could be established without reducing road space for private vehicles.

⁴ SkyBus lane faces fight, Adam Carey, The Age, 4 January 2013.

Further south, the CityLink Motorway, which runs from Strathmore to Melbourne CBD, operates a priority express lane in peak periods exclusively for buses, hire cars and taxis. However, use of this lane remains relatively unenforced, limiting the ability of SkyBus to provide fast and consistent journey times between Melbourne Airport and the CBD.

Ensuring that the CityLink express lane is used only by permissible vehicles will significantly improve the speed and reliability of SkyBus services. This should include enforcing fines for non-complying vehicles, as well as improved awareness for drivers including improved signage and differentiated lane colouring.

The establishment of dedicated bus priority will allow SkyBus to emerge as the first-stage mass transit link to Melbourne Airport that is required, well in advance of the completion of a rail link. The proposed bus lane reforms would allow SkyBus services to operate every 2 to 3 minutes during peak times, carrying approximately 1200 passengers an hour with a maximum 20-minute journey time.

The Victorian government should consider widening the Tullamarine Freeway for designated bus lanes. This would improve the reliability and efficiency of SkyBus, as well as taxi and hire car services, increasing its attractiveness for airport users. This would not only provide a valuable service for airport users, but would also create an important dedicated north-south corridor for Melbourne's wider bus network.

RECOMMENDATIONS

- **Establish express lane for SkyBus on the Tullamarine Freeway**
- **Enforce and improve signage for CityLink express lane**

Pricing

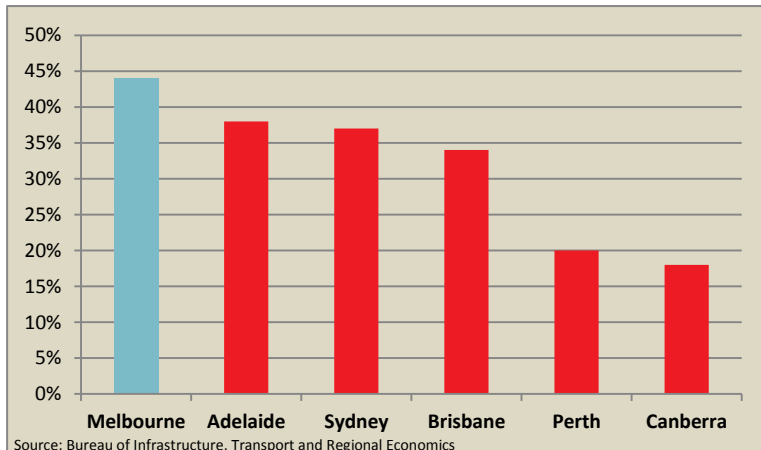
While SkyBus remains considerably cheaper than many other forms of transport to Melbourne Airport, pricing reform does represent an important lever to increase mode share.

One effective mechanism to achieve this is to target on-site employees. Employees making a daily commute are significantly more influenced by decreases in price for public transport. SkyBus's discount for employees has been a successful scheme in this regard and should be maintained over the long term.

Typical low cost flight Sydney to Melbourne - \$90

Estimated taxi fare from Melbourne Airport to Melbourne CBD - \$60

FIGURE 6 DOMESTIC LOW FARE PASSENGERS AS A PROPORTION OF TOTAL



Similarly, the rapid increase in low cost flights has opened up aviation to a price sensitive market that is equally price sensitive regarding land transfer to and from the airport.

With domestic low-cost flights often less than \$100, airport transfers represent a significant proportion of total travel costs.

This is particularly important for Melbourne Airport, which holds the highest proportion of low cost flights of any mainland capital (see figure 7). The airport is the hub for Tigerair (formerly Tiger Airways), the low cost carrier of the Virgin Australia group, as well as welcoming many flights from Qantas's Jetstar and other budget airlines. As a result, ensuring public transport options are price competitive is particularly vital to increase public transport mode share for airport users.

RECOMMENDATION

- **Maintain employee discounts for SkyBus services**

Myki compatibility

Despite being the dominant public transport carrier for Melbourne's major airport, SkyBus is not integrated with Victoria's public transport smartcard. Melbourne's *myki* card is now the only payment method across Melbourne's entire train, tram and bus networks. The addition of the SkyBus service, which still relies on paper ticketing, would make travel on this service more attractive for commuters.

Integrating the SkyBus service with *myki* is particularly important to support the 15,000 people working at Melbourne Airport. Allowing this group, who are significantly more likely to already own a *myki* card, to use it to travel to and from work represents an important opportunity to increase public transport mode share.

Myki tickets are available on all passenger transport modes in Melbourne except SkyBus

The introduction of *myki* on SkyBus services is also a critical initiative for improving the visitor experience. The introduction of the *myki* Visitor Pack in 2012 was designed specifically to encourage interstate and overseas visitors to use public transport, providing them with additional information on the city and its attractions. As Australia's second largest airport, Melbourne Airport represents a large proportion of international visitors' first impression of Australia. As a result, SkyBus represents the first public transport experience. Failing to provide *myki* capabilities for SkyBus not only sets a poor first impression; it also fails to encourage visitors to use public transport from the start, significantly reducing the likelihood that they will use it later in their trip.

Melbourne Airport has agreed to facilitate the installation of *myki* ticket vending machines in its international and domestic terminals to support greater utilisation of public transport by airport passengers.

RECOMMENDATION

- **Integrate SkyBus with the *myki* smartcard system**

Case Study: SEEQ *go* Card

A smartcard designed specifically for tourists, which includes airport transfers, reduces the uncertainty associated with using public transport upon their arrival to a new city. This encourages public transport patronage, improves the visitor experience and presents an important marketing opportunity for major attractions.

In south east Queensland, the SEEQ *go* card offers visitors three or five consecutive calendar days on all TransLink bus, train or ferry services. This includes two journeys on the Airtrain to Brisbane Airport. By offering unlimited time-based fares, the SEEQ *go* card gives visitors an all-access pass, which is most appropriate given they are familiar with a city's zone and fare structure.

Integrated ticketing designed for visitors also promotes visitation to tourist attraction by including maps, attraction guides and discounts. The SEEQ *go* card offers over \$700 in offers and discounts at more than 80 key tourist attractions, theme parks, accommodation providers, restaurants and more.



Photo: Brisbane Airport Corporation

Road

At present, access to Melbourne Airport is undertaken entirely by road. However, rapid growth in aviation demand, as well as non-airport related traffic, has seen the cost of congestion continue to rise. The effect of this is compounded by the fact that traffic to and from the airport is concentrated on a small number of arterial roads, limiting options for airport users.

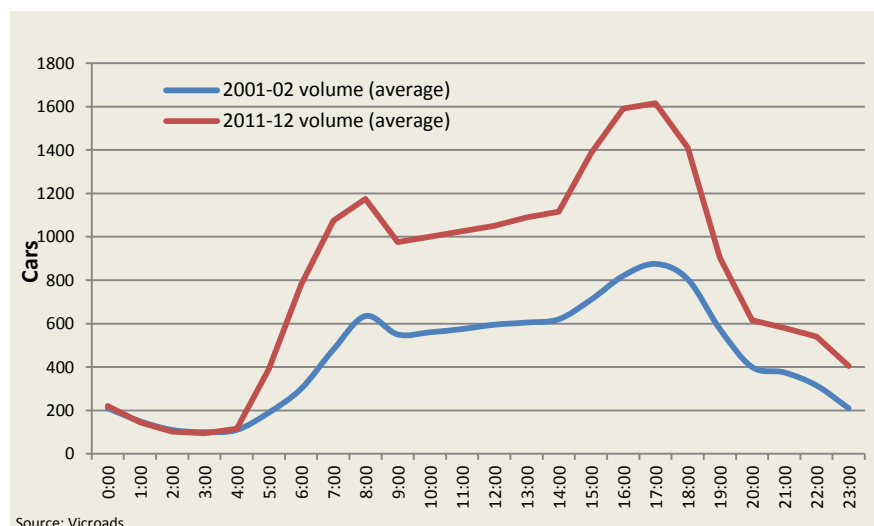
To ensure Melbourne Airport remains accessible, existing road infrastructure must be upgraded and used more efficiently. Below is an outline of the most critical reforms required to ensure the road network servicing Melbourne Airport is capable of meeting expected growth.

Tullamarine Freeway widening

The Tullamarine Freeway (M2), the freeway heading south-east from Melbourne Airport towards Melbourne CBD, carries 75 per cent of all traffic to and from Melbourne Airport. In favourable traffic conditions, the Tullamarine Freeway provides a 20 minute connection to the Melbourne CBD via private car, taxi and bus.

As Melbourne's major north-south artery, the Tullamarine Freeway also plays a vital role in the region's wider transport system. A rise in traffic volumes across Melbourne's north and north-west, as well as increased airport use, has led to a significant rise in congestion. Over the past ten years, traffic volumes over the entire freeway have nearly doubled during peak times.

FIGURE 7 TULLAMARINE FREEWAY CAR VOLUME



An additional 20,000 cars use the road each day on the section of the Tullamarine Freeway connecting directly to Melbourne Airport, between the M80 Ring Road and Mickleham Road (see figure 6).

The congestion effect of this growth has been compounded by the

limitations of Melbourne Airport's internal road network, with overflow from the airport spilling onto the freeway. This has resulted in travel times during the peaks now declining below the 80km/h average speed threshold required for optimal freeway performance⁵. Of particular concern is the congestion caused in the afternoon due to the significant overlap between the commuter and flight peak.

⁵ *Traffic Monitor 2010-2011 August 201, Vicroads.*

Widening the Tullamarine Freeway between the M80 Ring Road and Melbourne Airport from four to six lanes is critical to accommodate this growth in demand. Doing so would free up capacity during peak times on the airport's primary access route, resulting in shorter and more reliable trips for airport users as well as other traffic. The ability of the two additional lanes to improve traffic

The Tullamarine Freeway carries three quarters of all traffic to and from Melbourne Airport

performance would be significantly enhanced by the recent completion of the M80 Tullamarine Freeway interchange flyover, allowing rapid distribution from the Tullamarine Freeway across Melbourne's orbital road network.

Over one fifth of all passengers at Melbourne Airport use taxis or hire cars for their journey. This important mode of transport provides access to parts of metropolitan Melbourne and regional Victoria not served by public transport. Taxis and hire cars also provide a fast, efficient service for business travellers direct to their meeting place. This important service could be jeopardised by road congestion.



Source: Melbourne Airport

As the Tullamarine Freeway reaches capacity and beyond, airport users will increasingly suffer from reliability and travel time variations. This unpredictability forces individuals and businesses to make changes to travel plans that cost both time and money. This is a particularly crucial concern for airport users, who often face rigid deadlines. To avoid the most adverse impacts of rising congestion, funding should be provided to begin works through the next round of the Nation Building Fund.

RECOMMENDATION

- **Widen Tullamarine Freeway between the M80 Ring Road and Melbourne Airport**

Managed motorways (intelligent transport systems)

Managed motorways use a range of intelligent transport systems to maximise the efficient capacity of existing motorway assets. These include priority access for high occupancy vehicles, limiting freeway entry and varying speed limits based upon traffic conditions. This is achieved using traffic sensing equipment that adjusts measures to ensure traffic volumes are optimised in real time, delivering improved reliability and enhanced productive capacity.

Managed motorways can be a highly effective means of increasing the efficiency of major arterial roads, ensuring high speeds are maintained. Managed motorways can also reduce other negative road-based externalities, reducing road-based emissions and fatalities by around 30 per cent. These methods can also be implemented for 40 - 60 per cent of the cost of lane widening.

This potential has been recognised by Infrastructure Australia, which estimates that electronic freeway management could deliver \$500 million in economic benefits nationwide. In 2011-12, the Australian government committed \$61.4 million for the development of Managed Motorways systems in all eastern state capitals. The Tullamarine Freeway represents a vital opportunity for the expansion of this program, ensuring the airport's primary access point operates efficiently.



Source: The Transit Coalition

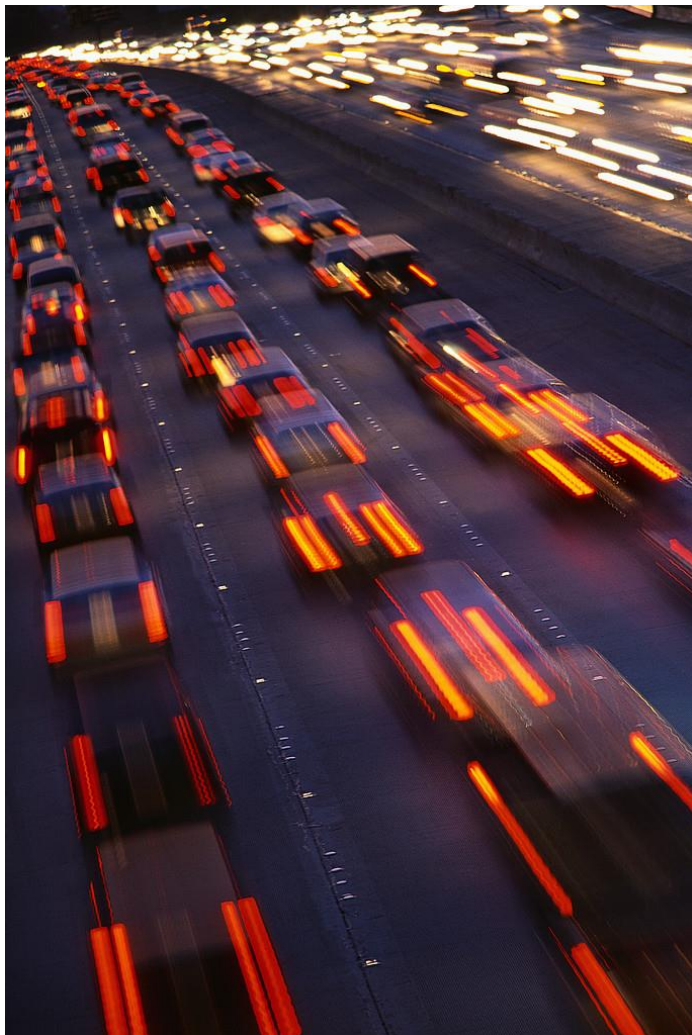
Technology can also play a role in helping to manage traffic on the airport road network, including access to the main terminal precincts. This can include tools such as licence plate recognition technology to support initiatives which can deliver more efficient utilisation of terminal access infrastructure through congestion charging or peak period management.

RECOMMENDATION

- **Expand National Managed Motorways program to the Tullamarine Freeway**

Sunbury Road and Bulla Bypass

Rapid urban growth to the north and west of Melbourne Airport will place an increasing demand on road access. This will be driven by growth in the Sunbury-Diggers Rest Growth Corridor, which is expected to eventually house a population of 71,000.



Trips from the north to the airport will increase significantly, driven by employee growth. Within the next two decades, 20 per cent of the precinct's workforce will come from the outer west. In addition, trips from the north to inner Melbourne will be accommodated by Melbourne Airport's main feeder roads, increasing overall congestion.

Sunbury Road will be forced to accommodate the vast majority of growth, which is already suffering delays and traffic congestion. While a longer-term project than upgrades to Melbourne Airport's southern entry points, duplication of Sunbury Road, as well as the construction of a bypass at Bulla, will be vital to meet demand.

RECOMMENDATION

- **Duplicate Sunbury Road and construct the Bulla Bypass**

Rail

Melbourne Airport was one of the first international airports to be designed to allow for the future inclusion of a rail line. A proposal was put forward for a high-speed rail line to the airport during its construction in 1965 by the then premier, Henry Bolte, which did not proceed at the time. Since then, increased private vehicle mode share, concerns regarding adequate patronage and cost, as well as the expansion of Avalon Airport outside Geelong, have all contributed to the stagnation of progress towards a rail link to Melbourne Airport.



After decades of inaction, there is now a pressing need to ensure a rail link to Melbourne Airport is delivered. Modelling conducted by Melbourne Airport suggests that once passenger movements reach 40 million, a dedicated rail link will be required to effectively move passengers to and from the airport. With current growth in visitor arrivals, this target is expected to be reached in little over a decade.

There is now sufficient demand for both aviation and train travel to warrant a rail link to Melbourne Airport. In the decade since 2001, air passenger trips and patronage on trains in Melbourne have both grown by an unprecedented 70 per cent.

Melbourne Airport was one of the first international airports to be designed for a rail link

Similarly, road congestion surrounding Melbourne Airport has now become a critical issue, demanding that public transport mode share increase substantially. TTF recommends that the Victorian government commit to completing an airport rail link within 15 years.

Melbourne Airport Rail Link Study

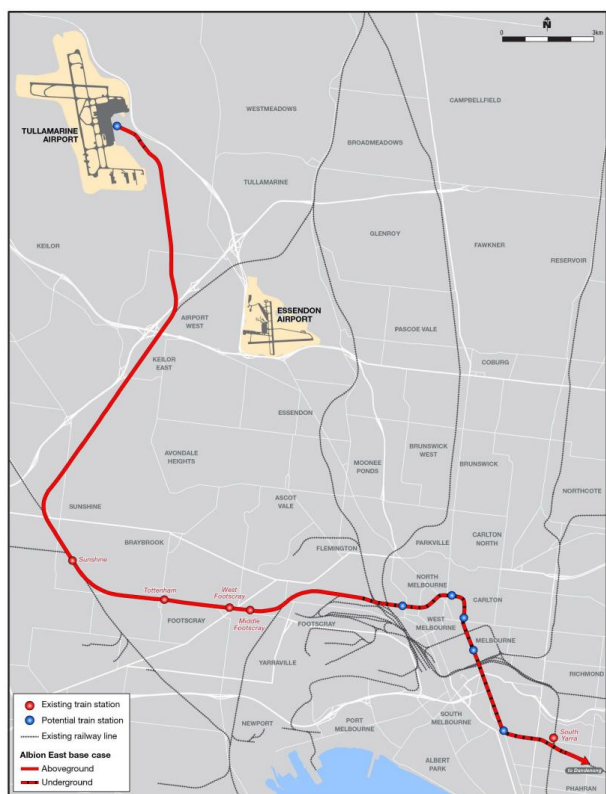
In March 2013 Public Transport Victoria released a study on the viability of a rail link to Melbourne Airport⁶. The study assessed 80 different alternatives, which were narrowed to a shortlist of four route options:

- Albion East, using land reserved in 2001 and the existing Sunshine rail corridor
- Direct tunnel link through central and north Melbourne
- Craigieburn link, through existing Craigieburn line and new track through West Meadows
- Flemington link, through existing Flemington line and rail tunnel

Of these four alternatives, the Albion East alignment proved to be the most viable. The Albion East design follows the route preserved in 2001, then connects with existing rail tracks from Sunbury within the Sunshine corridor and with the

Melbourne Metro rail tunnel, extending the link to Melbourne's east.

FIGURE 8 ALBION EAST ALIGNMENT



Source: Public Transport Victoria

As the Albion East alignment uses land and track preserved since 2001, it performed highly in terms of cost and environmental impact. Similarly, by connecting into the proposed Melbourne Metro, the East Albion alignment delivers high patronage potential, allowing direct connections to Melbourne's south-east suburbs as well as the regional cities of Bendigo, Ballarat and Geelong.

The Albion East alignment is the best outcome for both commuters and government. It delivers greatest patronage and connection facilities within a competitive travel time. Similarly, due to effective corridor preservation, it is more cost and environmentally efficient.

While construction of a direct tunnel would provide a faster journey between the CBD and the Airport, this would cost double either the Albion East or Craigieburn alignments. Further, it would only provide limited connections to Melbourne's wider rail network.

TTF believes that a rail line to Melbourne Airport is of most benefit if it expands public transport access to the airport, rather than simply mimicking the existing one. With appropriate investment in

⁶ Melbourne Airport Rail Link Study – Final Technical Report, Parsons Brinckenhoff for Public Transport Victoria. March 2013
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infrastructure and operations, SkyBus is capable of acting as a direct mass-transit link between the CBD and the airport, delivering comparable travel times with a proposed rail link.

The Melbourne Airport rail link should be designed to complement the SkyBus service, providing for the increasing number of airport users arriving and departing from the suburbs.

RECOMENDATION

- **Construct a rail link to Melbourne Airport within 15 years**

Case Study: Integrated airport rail lines - Munich

Munich Airport is an example of the integrated approach. The airport is serviced by a rail line that is integrated with the existing *S-Bahn* suburban rail network. This delivers a relatively slow trip to the CBD of 45 minutes, relatively equal to bus journeys and ten minutes slower than by car. However, this is offset by an increased array of stations and a greater numbers of connecting services. As a result, Munich Airport has been highly successful in attracting people away from driving to the airport, with more than 36 per cent of airport users travelling by public transport.

The importance of integrating airport rail with the broader rail network was further evident in 1998, when a second *S-bahn* line was extended to Munich Airport, linking it to the city's west. The extension provided no reduction in travel time for services between the airport and the CBD, but effectively doubled the frequency of trains and increased accessibility to suburban Munich. In the first months of the new service, patronage from the airport station increased by seven per cent, with air traveller mode share rising from 28 to 31 per cent.

Global comparison

Airport rail links are features of almost all the world's leading airports.

Internationally, airport rail lines fall under two broad categories: dedicated or integrated. Dedicated train lines (usually marketed as 'express') deliver nonstop connections between the airport and city centre, whereas shared services integrate with the broader rail network.

Most airports have either dedicated or integrated services, although some, like London Heathrow, have a mix. Additionally, some airports in Europe also house long-distance train stations to offer intercity connections with regional centres.

Although dedicated services offer faster travel times for those heading to and from the city, integrated services can often generate a larger passenger catchment and greater service numbers. Typically cities with extensive metro-style rapid transit or commuter networks integrate these into airport precincts.

The viability of each train network depends on local conditions and also local attitudes towards public transport. As illustrated previously, European residents are generally more favourably predisposed towards taking public transport than their peers in North America, a fact reflected in the smaller size of cities with airport rail links in Europe than elsewhere.

One fact that is stark is that once airports reach the benchmark of 40 million passengers per year, a rail link becomes a necessity. This is even the case in the United States, where rail links are under construction in Los Angeles and Dallas-Fort Worth and planned in Denver to ease the road congestion. A further example is Jakarta, where the extension of the city's metro to the airport has been prioritised.

With Melbourne Airport expected to join the ranks of the 40 million passenger mark within the next two decades, a rail link must be delivered within this timeframe to ensure efficient passenger movement.

FIGURE 9 RAIL LINKS AT TOP 20 INTERNATIONAL AIRPORTS IN 2012

Rank	Airport	Passengers	Rail link	Type(s)
1	Hartsfield–Jackson Atlanta	89.3m	Integrated	Metro
2	Beijing Capital International Airport	73.9m	Dedicated	Metro
3	Chicago O’Hare International Airport	66.8 m	Integrated	Metro
4	London Heathrow Airport	65.9 m	Dedicated	Main line rail
			Integrated	Metro and commuter
5	Tokyo International Airport (Haneda)	64.2 m	Dedicated	Monorail
			Integrated	Commuter
6	Los Angeles International Airport	59.1 m	-	Metro (under construction)
7	Paris Charles de Gaulle Airport	58.2 m	Integrated	Commuter and intercity
8	Dallas/Fort Worth International Airport	56.9 m	-	Metro (under construction)
9	Frankfurt am Main Airport	53 m	Integrated	Commuter and intercity
10	Denver International Airport	52.2 m	-	Light rail (planned)
11	Hong Kong International Airport	50.3 m	Dedicated	Commuter
12	Madrid–Barajas Airport	49.9 m	Integrated	Metro and commuter
				Intercity (planned)
13	Dubai International Airport	47.2 m	Integrated	Light rail
14	John F. Kennedy International Airport	46. 6 m	Integrated	People mover to metro and commuter
15	Amsterdam Airport Schiphol	45.2 m	Integrated	Commuter and intercity
16	Soekarno–Hatta International Airport (Jakarta)	44.3 m	-	Commuter (under construction)
17	Suvarnabhumi Airport (Bangkok)	42.8 m	Dedicated	Main line rail
			Integrated	Commuter
18	Singapore Changi Airport	42 m	Integrated	Metro
19	Guangzhou Baiyun International Airport	41 m	Integrated	Metro
20	Shanghai Pudong International Airport	40.6 m	Dedicated	Maglev
			Integrated	Metro

Case Study: Dallas-Fort Worth rapid transit extension

Dallas/Fort Worth is one of the world's largest and most car-dependent airports. Despite moving nearly 57 million passengers per year, only an estimated six per cent of people using the airport travel by public transport.

Inadequate rail infrastructure has been a major contributor to the low use of public transport. From downtown Dallas or Fort Worth, airport users must transfer once at the rail station and a second time at a remote parking lot before getting a bus to any one of five airline terminals. This results in journey times that can double or even treble when compared with free-flow traffic conditions.

Roadside access to DFW Airport has subsequently become strained, extending travel times for both public and private transport. The airport is surrounded by a number of Texas's most congested roads, with delays costing more than \$109.6 million annually.

To address this, the Dallas Area Rail Transit (DART) light rail network is currently being extended to the airport. An economic impact study determined the benefits of the project would almost treble the US\$1.18 billion cost, including US\$2 billion into economic activity, and boost property income by over US\$218 million.

Importance of airport rail to the visitor economy

For 99 per cent of international visitors, an airport is the first impression they have of Australia. Enhancing the aviation experience therefore represents an important and often neglected component of enhancing the value of Australia's \$107 billion tourism sector.

Ensuring fast, comfortable and simple access to and from our major international gateways is a vital component of this task. Around the globe, major visitor destinations ensure seamless ground transport options. International business hubs including Dubai and Hong Kong also offer business class services, with initiatives such as internet facilities and direct links to major conference centres. Similarly, tourist destinations such as Rome, New York and Barcelona offer features such as public art and design, guidebooks and specially trained staff to improve the quality of the customer experience.

Building an airport rail link represents more than a train line extension – it is an enhancement to first impressions of Victoria as a whole.

In the last decade, air passenger trips and patronage on trains in Melbourne have both grown by 70 per cent

Case Study: City branding through Airport Rail - Stockholm

The journey from an airport is often the first experience visitors have of a city and, in many cases, the country. For this reason, major global cities ensure this trip is as pleasant and impressive as possible, ensuring first impressions are good ones.

The Arlanda Express, the high-speed rail service for Stockholm, is an example of this concept. In 2010, the service introduced new Framtidståg trains, designed to provide a high-quality and fast transport link for airport users. This included a major overhaul of the service's design, with the introduction of a New Nordic theme for the train's interior which highlighted the region's famed simple and functional design.

The New Nordic designed Framtidståg trains provide increased luggage space and legroom as well as 20 per cent more seating. Since the relaunch, Arlanda's new trains have won a number of prestigious awards, including the 2011 Red Dot Design Award for product design of the year. It was also named the Project of the Year by the Global AirRail Awards.

Fares

Ensuring that fares on rail links to airports are price competitive is vital for their success. Due to factors such as strict time constraints, the need for certainty, luggage requirements and the relative infrequency of trips made, motivating airport users to choose public transport is notoriously difficult.

This is particularly important for the Melbourne Airport rail link. As a shared service that integrates with suburban stops, the rail link will not be able to offer competitive travel times for many passengers. As a result, the airport rail link must be competitive on other key measures, with service reliability and pricing being paramount. Further, the large proportion of low-cost flights, which now makes up nearly half of all trips, provides a firm indicator of the need for affordable public transport.

Regardless of operator model, fares for the airport rail link must remain competitive. TTF recommends that fares be set in line with the existing Metro fare structure as the optimal solution.

RECOMMENDATION

- **Ensure Melbourne Airport rail link fares are price competitive**

Case study: Sydney Airport Rail Link

On a per-kilometre basis, the Sydney Airport Rail Link is one of the world's most expensive airport public transport services. This is due to a levy of up to \$12.30 imposed on train passengers travelling to the airport as part of the cost-recovery agreement with the Airport Rail Link's private operator. Further, as part of the agreement, improvements cannot be made to extremely limited public bus access to the airport.

Lack of sufficient surface transport in the region has reached a critical level, affecting the productivity of Sydney's largest aviation and port asset. The Sydney Airport-Botany Bay precinct is now home to four of NSW's five most congested roads, with road capacity to the airport itself expected to be exceeded by as soon as 2020.

The high price of the Airport Rail Link is a key factor in low public transport mode share, which is contributing to worsening road congestion in the area. It is predicted removing the levy would result in patronage growth of 35 per cent, removing 3,500 trips from the road network each day.

Conclusion

Melbourne is a growing global city with an international airport that has ambitious plans for its future growth. This growth will place Melbourne Airport at the centre of aviation capacity not only in Victoria but in Australia as a whole, as capacity constraints start to impinge on other states' ability to offer unlimited access for new flights.

Key to leveraging this opportunity is ensuring that all Melbourne Airport passengers, workers and visitors have easy access to the airport and its environs. This means a choice of rapid bus, road and rail connections from as many suburbs as possible. It means reacting to customer demand and providing both direct access to the CBD and indirect services to all of Melbourne's rail-connected suburbs. It means ensuring workers in nearby suburbs have a choice on whether to drive to work or catch a bus. It means visitors having a choice on the level of service they require in their ground transport. It means ensuring private car drivers and taxicabs have easy access to the airport and its surrounds.

All of this needs careful planning. Melbourne Airport was built with growth envisaged. This growth is now tracking on even faster than predicted.

The airport operator is investing in progress, both within the airport infrastructure itself and on its precinct roadways. What is needed is joined up thinking from state and federal authorities to ensure that the airport's efforts are matched on land outside the airport's control.

The road network needs widening to accommodate growth. Additional bus services will be needed to more suburbs. A new rail link will be needed to connect the airport to the existing rail network. The existing rapid bus route needs to be protected and strengthened through innovative priority tolling on congested roads.

Taken together, these measures will ensure Melbourne Airport is able to meet the golden opportunity passenger growth presents for tourism, the Victorian economy and the Australian visitor economy.

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