

PUBLIC TRANSPORT BAROMETER

JUNE 2018

TTF 
AUSTRALIA
Tourism & Transport Forum

L.E.K.





The Tourism & Transport Forum (TTF) is the peak industry group for the Australian tourism, transport, aviation and investment sectors. A national, member-funded CEO forum, TTF advocates the public policy interests of the leading corporations and institutions in these sectors.

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IN THIS ISSUE

The TTF – L.E.K. Consulting Public Transport Barometer has been developed to provide up-to-date insight into the performance of major metropolitan public transport networks in Australia. Each edition will monitor public transport across Australia as well as explore specific challenges and opportunities facing service providers. The Barometer will promote the role of public transport in our capital cities and look at how operators are achieving improvements in customer service nationwide.

In this third edition we observe how public transport patronage across Australia has seen different fortunes for public transport around the country, and for the different modes. Varying population and economic growth as well as congestion levels are some of the contributing factors.

In each issue of the Barometer, we examine a specific issue affecting the public transport industry today and put this 'In the Spotlight'. In this issue, we explore rising congestion levels in Australia's capital cities and the subsequent impact on public transportation.

L.E.K. Consulting and the Tourism & Transport Forum (TTF) are delighted to partner together to present this third edition of the Public Transport Barometer.



Simon Barrett
Senior Partner
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1. PATRONAGE – AN OVERVIEW

The 2017 Barometer shows that the fortunes for public transport around the country have been quite varied, as has the growth in different modes of transport. There is stronger growth evident in the rail systems of Sydney and Melbourne than elsewhere, with Sydney in particular surging ahead in 2017. This would be consistent with the city's strong population growth and high levels of economic activity. Rail volumes in both Perth and Brisbane have struggled over the last 5 years, in part due to resource-related slowdowns.

Bus patronage has generally been weaker around the country, at least somewhat attributable to growing levels of congestion (see Section 7: In the Spotlight). Bus systems in Melbourne, Brisbane and Perth all experienced a decline in patronage last year, with negative overall growth over the last 5 years.



1.1 RAIL PATRONAGE

Rail patronage has continued to vary across major cities (Figure 1). Sydney and Melbourne (both heavy rail, i.e. trains, and light rail, i.e. trams) both achieved growth, while Brisbane and Perth experienced declines.

Strong growth in Sydney (>5% pa), has been attributed to increased residential development in Greater Sydney and growth in demand for airport services.¹ The government expects this trend to continue in the near future, driven by the expectation that the T1 Western Line, one of the busiest lines in Sydney, will “reach full capacity by 2030” based partially on population growth in the West.²

Melbourne heavy rail has seen modest growth. While positive macro trends such as increasing employment rates led to an increase in patronage, disruptions for level crossing removals has offset some patronage growth.³

Melbourne light rail has seen stronger growth due to population growth in catchment areas, as well as efforts to improve utilisation of the tram network, such as reallocation of trams, route revisions, the new Free Tram Zone initiative, and increased carrying capacity of new E-Class trams introduced in June 2017 (roll out will continue to mid-2019).⁴

Brisbane’s rail patronage remains relatively flat, failing to bounce back from the downturn earlier this decade. While the Fairer Fare scheme introduced in December 2016 has reduced public transport fares, a range of other factors appear to have curbed patronage growth including the replacement of ‘9 and free’ scheme⁵ with the ‘8 and 50’ scheme,⁶ the new go study project,⁷ and the impact of Ex-Tropical Cyclone Debbie. Shortages of train drivers in late 2016, and timetable challenges are also likely to have had an impact.

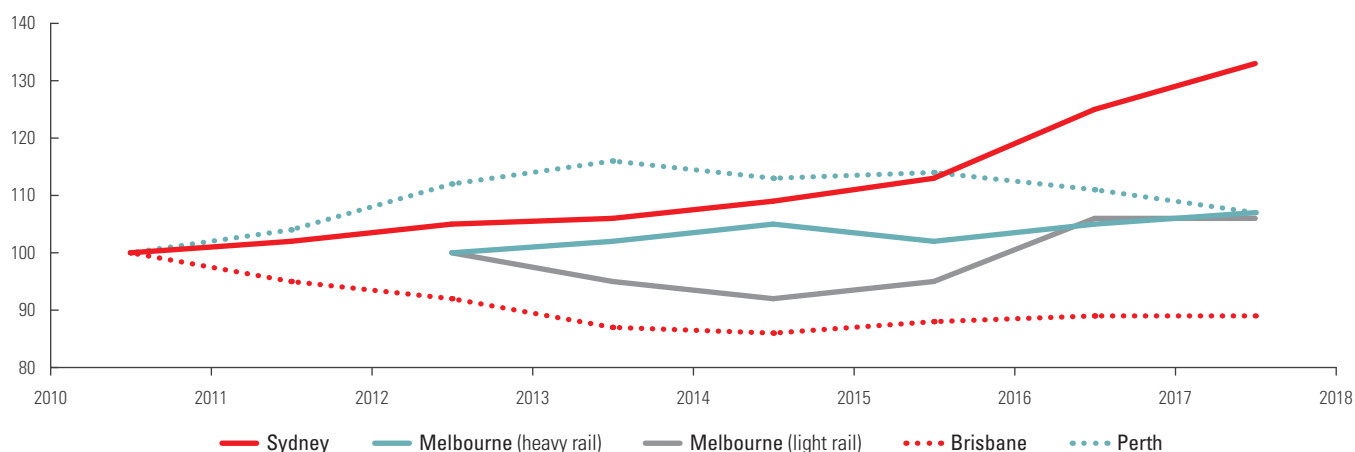
Perth rail patronage continues to decline, partly attributable to macro trends such as the growing rate of unemployment both in the mining industry and in jobs in the CBD area.⁸

Adelaide has seen a slight FY2017 year-on-year decline of 0.1% in the overall public transport system mainly due to line closures as a result of the Torrens Road to Torrens River and Torrens Junction projects.⁹

Figure 1: Rail and light rail patronage

**Rail patronage*, annual
(June 2010 – June 2017)**

Index (earliest available data = 100)



Note: *Adelaide data excluded due to inconsistent methodology changes in FY2016 and FY2017

1. Transport for New South Wales, Sydney Morning Herald 2. Sydney Morning Herald, 7 September 2016 3. Public Transport Victoria Annual Report, 2016-17; Level Crossing Removal Authority 4. Public Transport Victoria Annual Report, 2016-17; Level Crossing Removal Authority 5. After 9 paid journeys, consequent journeys are free in a week 6. After 8 paid journeys, consequent journeys receive 50% discount in a week 7. Under the go study project introduced in March 2016, some tertiary students will no longer be eligible for the 50 per cent fare discount if they are enrolled in a course with less than 12 contract hours 8. PTA Annual Report 2015-2016 9. PTA Annual Report 2016-2017

Figure 2: Rail patronage – Year on year change (CAGR%)

	YoY patronage growth			PatronageΔ 2012-17	PopulationΔ 2012-17	GSP/capitaΔ 2012-17
	FY2015	FY2016	FY2017			
Sydney*	+3.6%	+10.5%	+6.9%	+4.9%	+1.8%	+1.2%
Melbourne (Heavy Rail)	-1.9%	+2.6%	+1.5%	+1.3%	+2.6%	+0.3%
Melbourne (Light Rail)	+2.9%	+11.9%	+0.1%	+1.3%		
Brisbane	+1.2%	+1.3%	-0.2%	-0.7%	+1.7%	+0.5%
Perth	+1.2%	-2.5%	-4.1%	-1.0%	+1.0%	+1.1%
Adelaide (Heavy Rail)^	n/a^	+3.9%	n/a^	n/a^^	+0.9%	+0.3%
Adelaide (Light Rail)^	n/a^	+0.1%	n/a^	n/a^^		

Note: * Rail includes Sydney Trains and NSW Intercity. Sydney patronage data in FY2017 based on Opal data and thus comparison to previous years is not valid; ** Patronage change for 2015-16 due to methodology change in FY17; ^ Adelaide patronage in FY2015-16 represent initial boardings and all free boardings. Patronage in FY2017 represents total patronage including initial boardings, transfers and all free boardings; ^^ Patronage change incomparable due to methodology changes

1.2 BUS PATRONAGE

Bus patronage performance has been declining in Perth, Melbourne, and Brisbane, while Sydney and Adelaide appear to have grown in recent years.

Bus patronage has declined in Perth due to increase in unemployment in both the mining industry and jobs in the CBD affecting all modes of public transport.¹⁰

Melbourne buses have seen decreasing patronage, partially attributable to increasing congestion levels and improving popularity of the tram system (light rail) due to recent government promotional efforts.¹¹

In Brisbane, similar to rail and ferry, declines in bus patronage have been driven by the go study project (that has resulted in a reduction in tertiary student patronage), the '8 and 50' scheme (that has resulted in a reduction in weekend patronage) and Ex-Tropical Cyclone Debbie (that reduced patronage in March and April 2017). Also, a mode shift from buses to the new Redcliffe Peninsular Rail Line further reduced bus patronage in Brisbane.¹²

As each of the major cities becomes increasingly congested, buses are competing more with cars for scarce roadscape. All of our cities are likely to have to invest more resources in greater separation of buses, via separate corridors, more bus priority lanes and traffic signal priority.

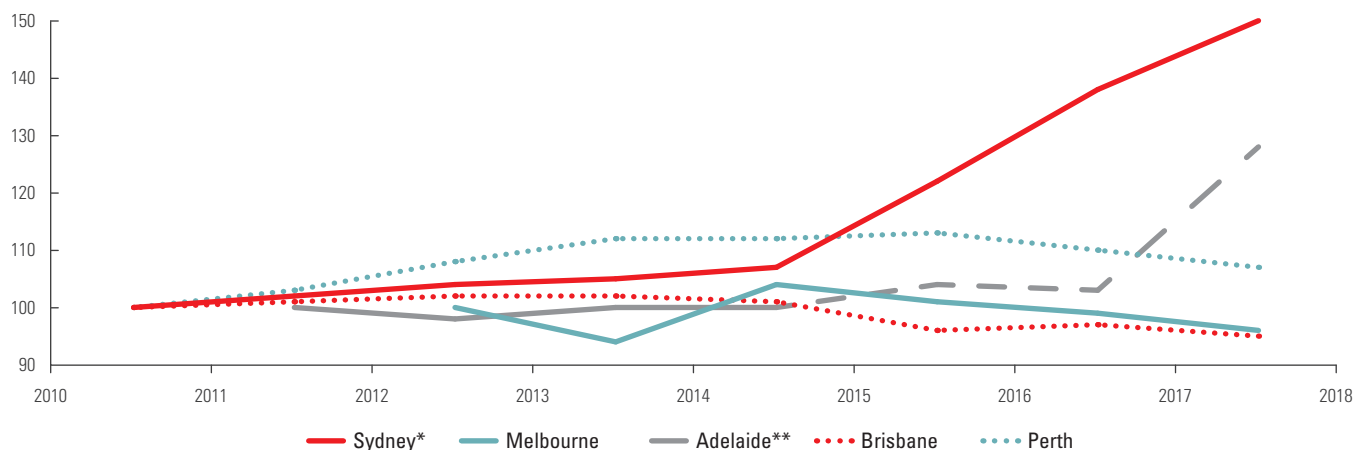
A recent study in the US suggested that rideshare services were likely to result in a decline in bus use, but a small increase in rail patronage.¹³ It is much too early to draw any conclusions on these impacts from the Australian data, but it will certainly be worth watching for in the future.

10. PTA Annual Report 2015-2016 11. Public Transport Victoria Annual Report, 2016-17; Level Crossing Removal Authority 12. Department of Transport and Main Roads Annual Report 2016-17, ABC news 13. UC Davis, Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States, October 2017

Figure 3: Bus patronage

**Bus patronage, annual
(June 2010 – June 2017)**

Index (earliest available data = 100)



Note: * Sydney Bus figures include Sydney GMA, STA and private bus operators patronage. Opal patronage for Free Travel, School Student Transport Scheme (SSTS) and Employee Pass were progressively included from Jan 2016. Hence, comparison to previous years is not valid; ** Adelaide showing initial boardings only, not total patronage. All figures post June 2014 include all free boardings (previously Adelaide had only included seniors free travel). Patronage in FY2017 represents total patronage including initial boardings, transfers and all free boardings

Figure 4: Bus patronage – Year on year change (CAGR%)

	YoY patronage growth			PatronageΔ 2012-17	PopulationΔ 2012-17	GSP/capitaΔ 2012-17
	FY2015	FY2016	FY2017			
Sydney*	+14.7%	+12.9%*	+8.7%*	n/a**	+1.8%	+1.2%
Melbourne	-2.8%	-1.2%	-3.7%	-0.9%	+2.6%	+0.3%
Brisbane	-4.7%	+0.9%	-2.1%	-1.5%	+1.7%	+0.5%
Perth	+0.5%	-2.1%	-2.9%	-0.2%	+1.0%	+1.1%
Adelaide^	n/a^	-0.8%	+10.0%	n/a^^	+0.9%	+0.3%

Note: * Opal patronage for Free Travel, School Student Transport Scheme (SSTS) and Employee Pass were progressively included from Jan 2016. Hence, comparison to previous years is not valid; **Patronage data incomparable due to methodology change; ^ Adelaide patronage in FY2015-16 represent initial boardings and all free boardings. Patronage in FY2017 represents total patronage including initial boardings, transfers and all free boardings; ^^ Patronage change incomparable due to methodology changes



1.3 FERRY PATRONAGE

Overall ferry patronage has improved since the low point in FY2015 (Figure 5). Perth has experienced the highest growth of the three cities.

While an increase in unemployment in Perth negatively impacted overall public transport patronage, Perth ferry has reversed the decreasing patronage trend with the opening of Elizabeth Quay Jetty in 2016.¹⁴

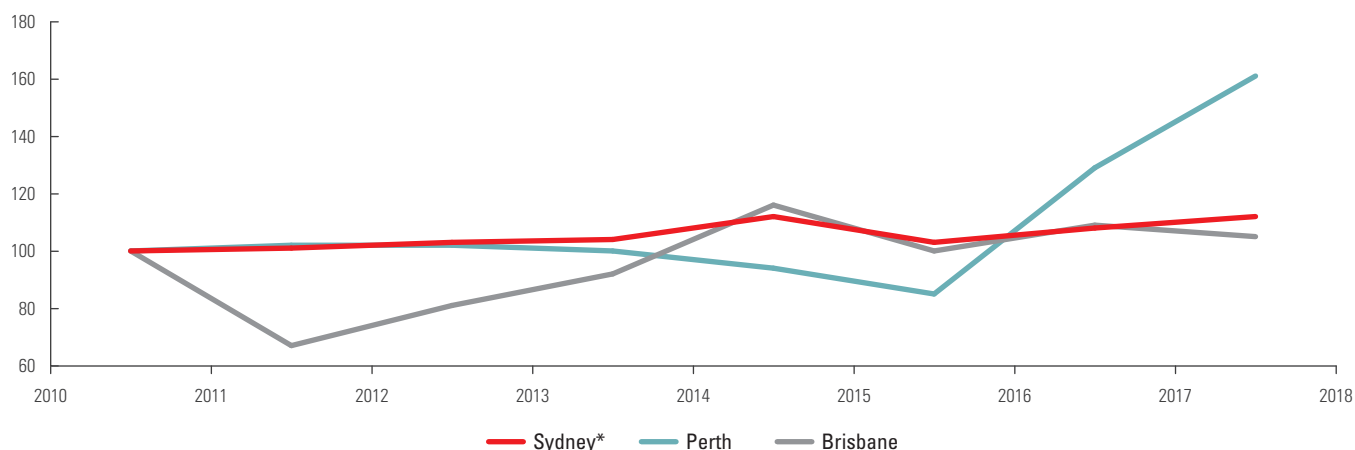
Sydney's ferry patronage is expected to grow as the impact of the two new Barangaroo ferry wharves that opened in June 2017 is likely to be visible in the FY2018 data. The government expects Barangaroo to be a ferry hub which will satisfy forecast demand beyond 2021.¹⁵

Brisbane saw a slight rebound from decreasing patronage in part due to closures of Brisbane City Council ferry terminals for reconstruction in FY15. However, similar to rail and bus, the go study project (reduction in tertiary student patronage), the '8 and 50' scheme (reduction in weekend patronage) and Ex-Tropical Cyclone Debbie (reduction in patronage in March and April 2017) have reduced overall ferry patronage.¹⁶

Figure 5: Ferry patronage

**Ferry patronage, annual
(June 2010 – June 2017)**

Index (earliest available data = 100)



Note: * Harbour City Ferries and Newcastle Ferry from July 2016

Figure 6: Ferry patronage – Year on year change (CAGR%)

	YoY patronage growth			PatronageΔ 2012-17	PopulationΔ 2012-17	GSP/capitaΔ 2012-17
	FY2015	FY2016	FY2017			
Sydney*	-7.4%	+4.2%	+3.9%*	+1.6%*	+1.8%	+1.2%
Brisbane	-13.6%	+8.2%	-3.4%	+5.3%	+1.7%	+0.5%
Perth	-9.4%	+51.5%	+25.3%	+9.6%	+1.0%	+1.1%

Note: * Harbour City Ferries and Newcastle Ferry from July 2016

14. PTA Annual Report 2015-2016 15. NSW Long Term Transport Master Plan (NSW 2021) 16. Department of Transport and Main Roads Annual Report 2016-17, ABC news

2. SYDNEY

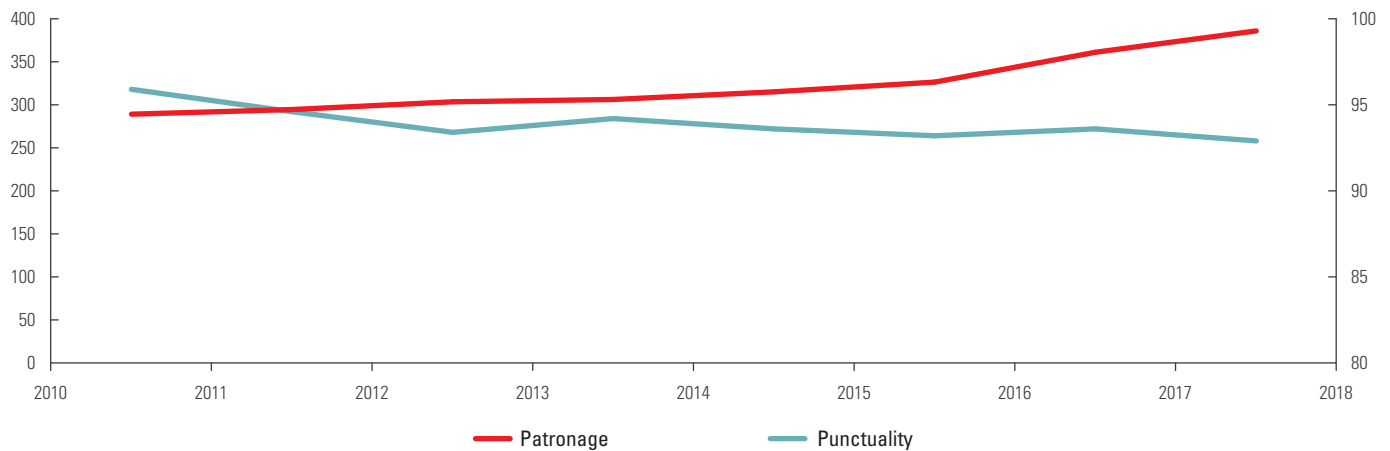




SYDNEY RAIL* PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	361.1 million	385.9 million	+6.9%	+4.9%
Punctuality	93.6%	92.9%	-0.7%	-0.5%
Reliability	n/a	n/a	n/a	n/a

Note: * Sydney Trains and NSW Intercity trains

- Notwithstanding these data limitations, Sydney Trains reported a 5.6% increase in patronage in FY16/17, indicating very strong growth
- Transport for NSW, also seeing surge in rail patronage growth, is investing \$1.5 billion in the More Trains, More Services program for the next three years to increase rail capacity
- Sydney rail patronage has been growing more rapidly in recent years with increased residential development in Greater Sydney and increased demand for airport services. Key areas of growth include Olympic Park and western Sydney
- Punctuality remains broadly in line with historical levels. Some reasons given for slightly reduced punctuality include trespass, track and power issues and extreme weather conditions¹⁷
- From July 2016, patronage data is based on Opal data rather than the previous methodology that was based on a combination of paper tickets, opal tap-on/tap-off data and fare non-compliance and unpaid trips. Adjustments have been made to allow like-for-like comparison

17. Sydney Trains Annual Report, 2016-17

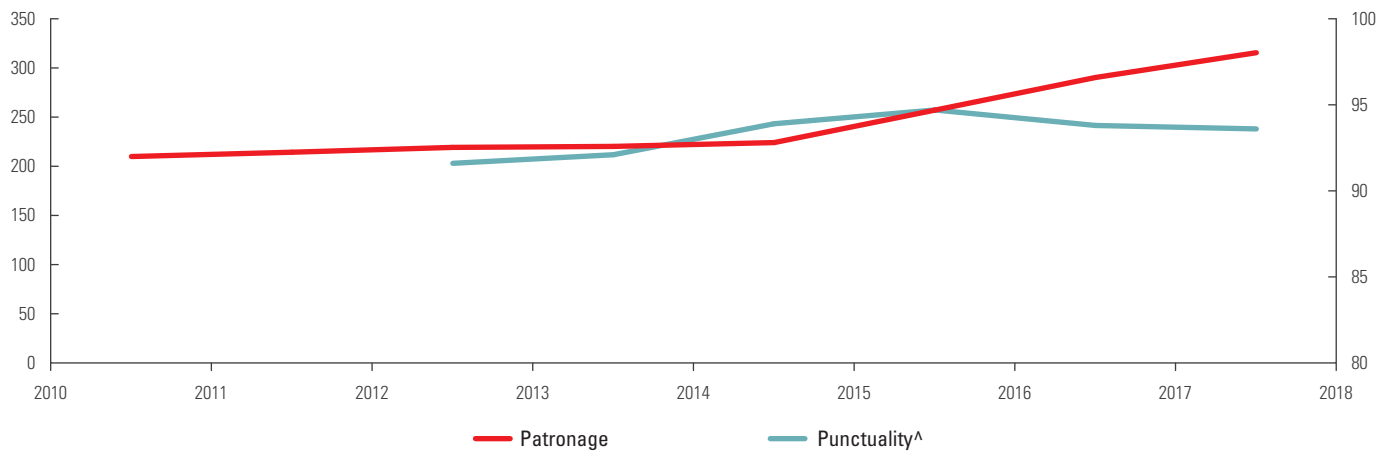




SYDNEY BUS* PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2012 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	290.3 million	315.5 million	+8.7%	n/a**
Punctuality	93.8%	93.6%	-0.2%	2.0%
Reliability	n/a	n/a	n/a	n/a

Note: * Sydney GMA, STA and private bus operators. Methodology change in FY15 and FY17; ** Data incomparable due to methodology changes; ^ Sydney Metro STA and private operators only

- From July 2016, patronage data is based on Opal data rather than official estimates based on a combination of paper tickets, opal tap-on/tap-off data and fare non-compliance and unpaid trips
- Punctuality has remained stable at c.94%
- The NSW Government has recently announced that Transit Systems will be the operator of the Region 6 franchise currently run by Sydney Buses
- The B-Line commuter service was launched on the Northern Beaches in late 2017, with double decker buses, real time information at stops and more bus priority measures

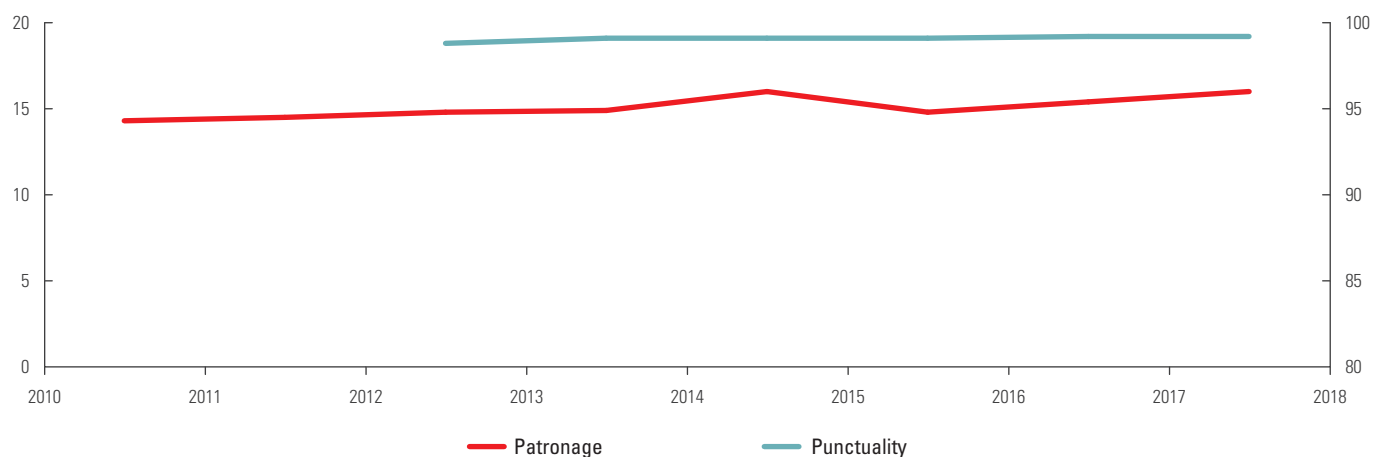




SYDNEY FERRY* PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2012 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	15.4 million	16.0 million	+3.9%	+1.6%
Punctuality	99.2%	99.2%	0.0%	0.4%
Reliability	n/a	n/a	n/a	n/a

Note: * Harbour City Ferries and Newcastle Ferry from July 2016

- Punctuality and reliability performance remains very strong
- Newcastle Ferry patronage is included from July 2016



3. MELBOURNE

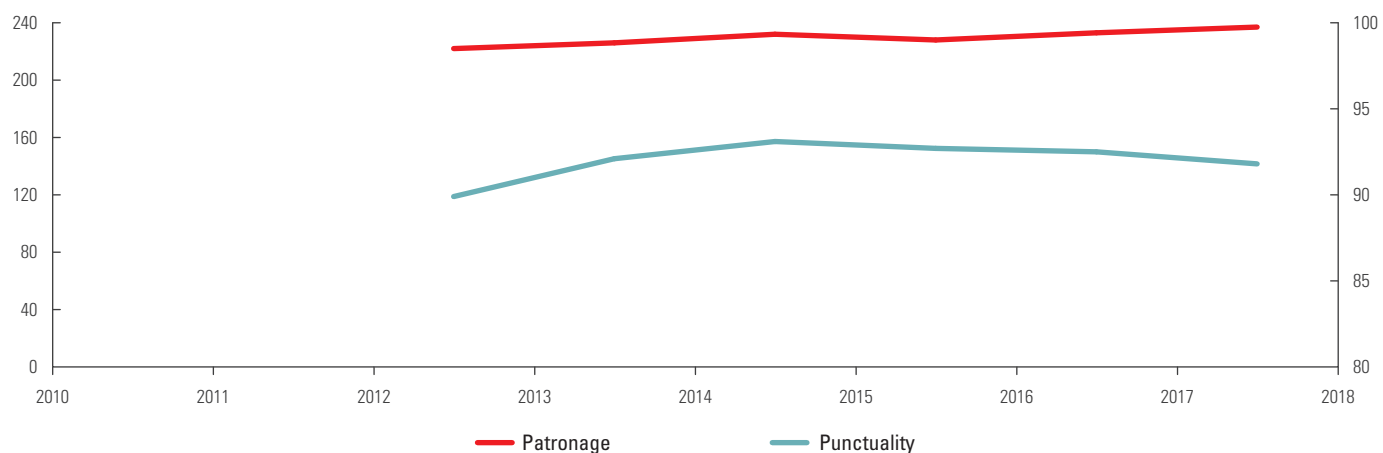




MELBOURNE RAIL PERFORMANCE

Patronage, annual
(June 2012 – June 2017)
Millions of travellers

Punctuality, annual
(June 2012 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	233.4 million	236.8 million	+1.5%	+1.3%
Punctuality	92.5%	91.8%	-0.7%	+1.9%
Reliability	98.7%	98.8%	+0.1%	+0.3%

- Melbourne rail patronage has increased mainly due to growth in the commuter market as a result of increasing employment (from 73.6% in June 2015 to 75.0% in June 2016 and 74.7% in June 2017 for inner metropolitan Melbourne).¹⁸ However, overall growth has been relatively modest in FY2017 due to disruptions to normal services for the level crossings removal program in metropolitan Melbourne¹⁹
- The new Metro Tunnel project, expected to finish in 2026, aims to help reduce crowding at CBD stations²⁰
- Punctuality is in line with historic trends. The slightly deterioration in punctuality in FY2017 was in part due to infrastructural challenges and increasing passenger demand²¹

18. Labour Market Information Portal (Australian Government Department of Employment) 19. Public Transport Victoria Annual Report, 2016-17; Level Crossing Removal Authority 20. Herald Sun, 19 June 2017 21. Public Transport Victoria Annual Report, 2016-17

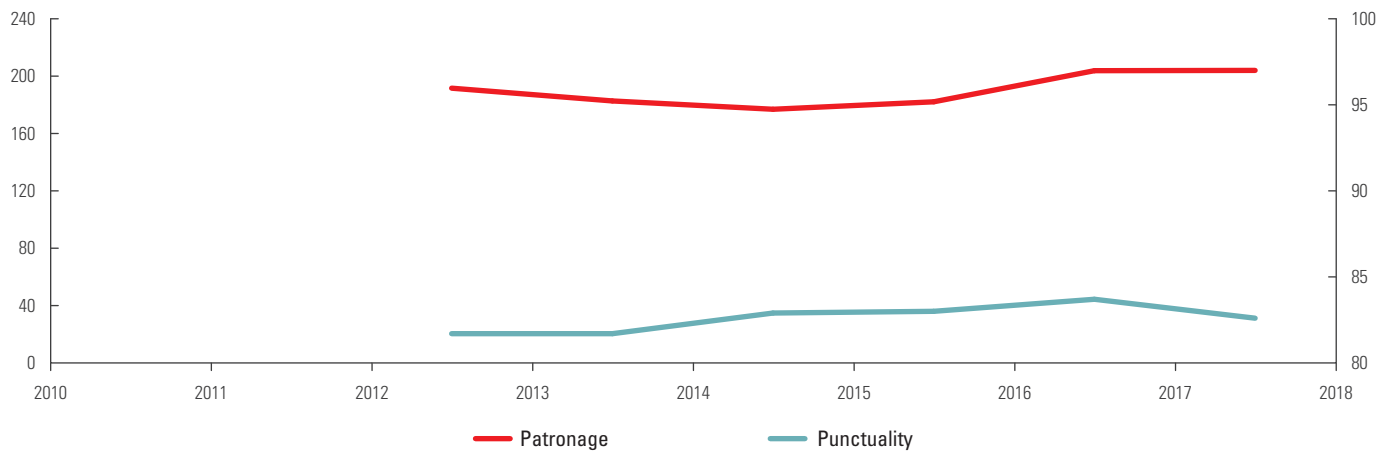




MELBOURNE LIGHT RAIL PERFORMANCE

Patronage, annual
(June 2012 – June 2017)
Millions of travellers

Punctuality, annual
(June 2012 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	203.8 million	204.0 million	+0.1%	+1.3%
Punctuality	83.7%	82.6%	-1.1%	+0.9%
Reliability	98.8%	98.6%	-0.2%	-0.5%

- Light rail (tram) patronage has seen strong growth in FY2017 due to population growth in catchment areas, increased carrying capacity of the new E-Class trams, reallocation of trams and route revisions, and the Free Tram Zone popularity²²
- Morning and afternoon peaks continue to see growth due to employment growth²³
- Punctuality and reliability remain relatively stable. Slight decrease in punctuality in FY2017 partially due to congestion which slows the speed of light rail operations²⁴

22. Public Transport Victoria Annual Report, 2015-16 23. Public Transport Victoria Annual Report, 2016-17 24. Public Transport Victoria Annual Report, 2016-17

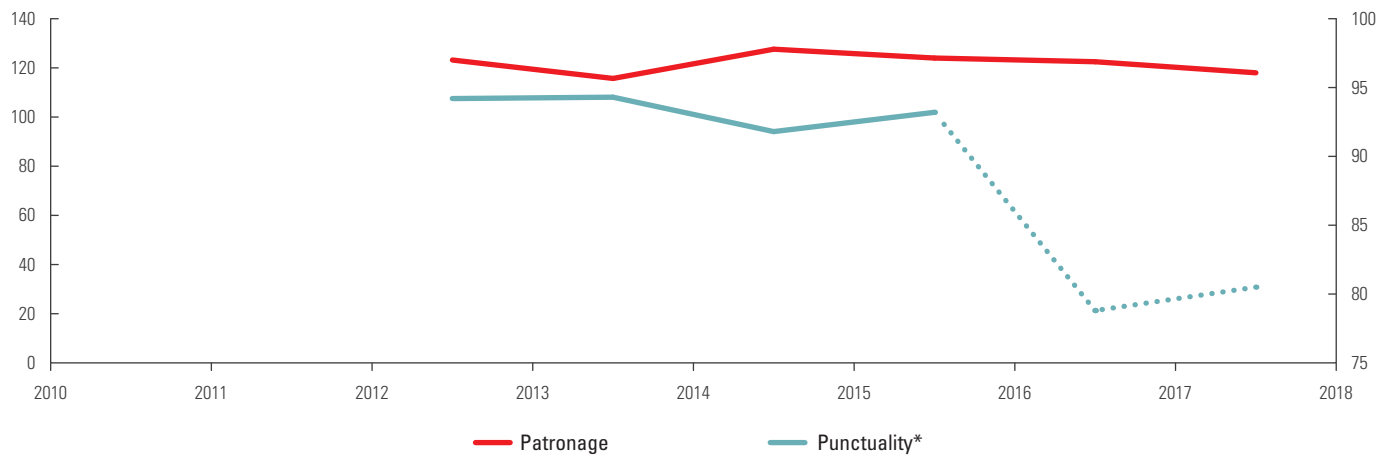




MELBOURNE BUS PERFORMANCE

Patronage, annual
(June 2012 – June 2017)
Millions of travellers

Punctuality, annual
(June 2012 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	122.5 million	118.0 million	-3.7%	-0.9%
Punctuality	78.8%	80.5%	+1.7%	n/a*
Reliability	99.9%	99.9%	0.0%	0.0%

Note: * 5 year annual change CAGR/PPTΔ between 2012 and 2017 punctuality data incomparable due to methodology change in FY2016²⁵

- Metropolitan bus patronage has seen a declining trend since 2014
- Punctuality and reliability data methodology has changed from previous methodology of self-assessment on limited sample size to a new bus tracking system that was first implemented in FY2016²⁵
- Significant reduction in FY2016-17 punctuality is mainly due to change in methodology. Traffic congestion is one of the key contributors to the relatively low punctuality levels²⁶

25. Public Transport Victoria Annual Report, 2016-17 26. Public Transport Victoria Annual Report, 2016-17



4. BRISBANE & SOUTH EAST QUEENSLAND

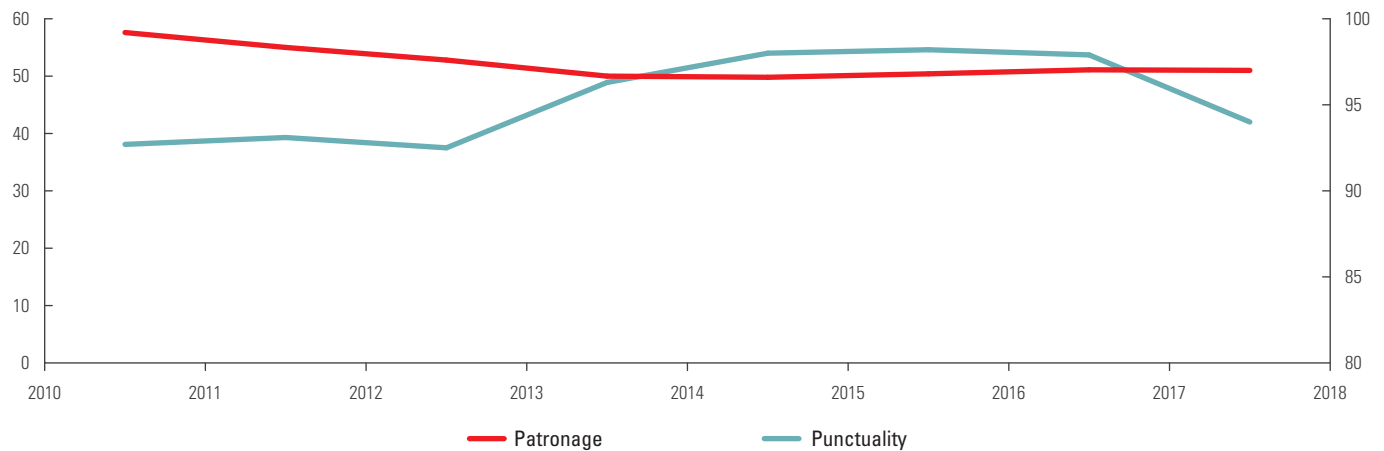




BRISBANE RAIL[^] PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	51.1 million	51.0 million	-0.2%	-0.7%
Punctuality*	97.9%	94.0%	-3.8%	+1.5%
Reliability**	99.7%	99.5%	-0.3%	-0.3%

Note: ^ Includes South East Queensland services; * Citytrain only; ** Service standard changed from FY13

- Through the Fairer Fares scheme introduced in December 2016 was expected to result in a “small increase in patronage”;²⁷ patronage has declined by 0.2% in FY2017 compared to FY2016. The introduction of the ‘8 and 50’ scheme, the go study project, and Ex-Tropical Cyclone Debbie have also contributed to the decline
 - » The Fairer Fares scheme reduced 23 travel zones to eight, extended weekend off-peak discount to 6am, free weekend travel for children 5-14 years old with orange child go card, and replacement of the nine-and-free deal with an eight paid journeys and 50 per cent off subsequent journeys per week²⁸
 - » Despite Translink expecting the new ‘8 and 50’ scheme (after 8 paid journeys, consequent journeys receive 50% discount in a week) that replaced the ‘nine and free’ fare scheme (after 9 paid journeys, consequent journeys are free) to reduce fares across all zones and befitting more people, the Department of Transport and Main Roads saw a decline in patronage on weekends as a result of this change²⁹
 - » Under the go study project introduced in March 2016, some tertiary students will no longer be eligible for the 50 per cent fare discount if they are enrolled in a course with less than 12 contract hours. This was expected to contribute to reduction in patronage (most significantly in bus patronage, though other modes were also impacted)³⁰
 - » Cyclone Debbie in March and April 2017 reduced the total numbers of passengers
- The new Moreton Bay Rail Link that opened in October 2016 partially offset declines in rail patronage, resulting in a smaller decline compared to bus and ferry patronage³¹
- Punctuality decreased due to train crew shortage at Queensland Rail, requiring temporary timetables to be put in place for extended periods during the year³²

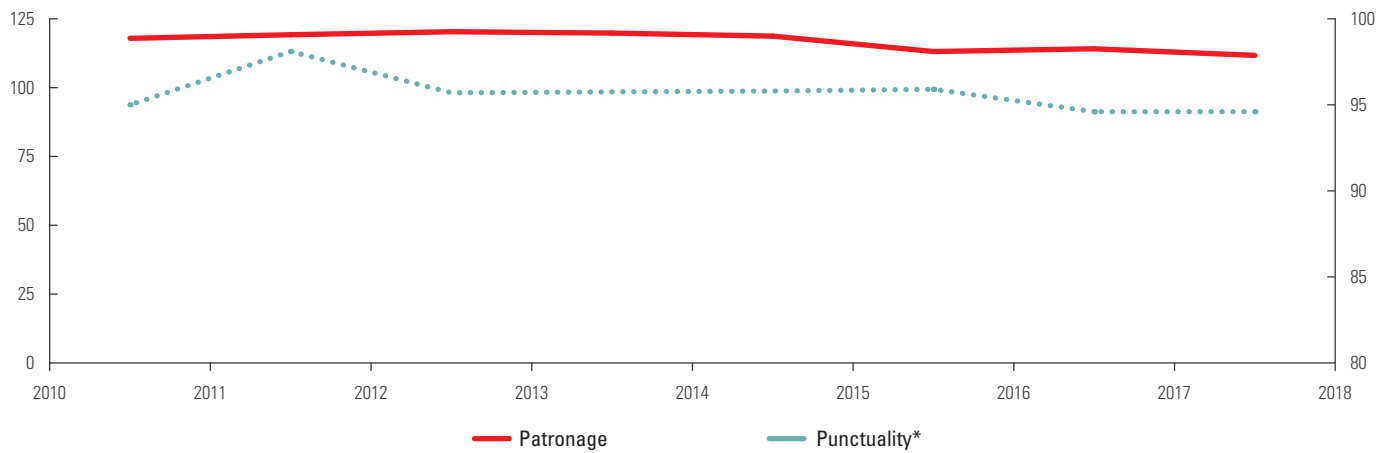
27. Brisbane Times 28. TransLink 29. Department of Transport and Main Roads Annual Report 2016-17 30. Department of Transport and Main Roads Annual Report 2016-17, ABC news 31. Department of Transport and Main Roads Annual Report 2016-17 32. Department of Transport and Main Roads Annual Report 2016-17



BRISBANE BUS[^] PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	114.1 million	111.7 million	-2.1%	-1.5%
Punctuality	94.6%	94.6%	-0.1%	-1.1%
Reliability	100.0%	99.9%	-0.1%	-0.1%

Note: ^ Includes South East Queensland services; * 2010-12 punctuality data from Translink Transit Authority Annual Reports, 2014-17 punctuality data from Translink Tracker Quarterly Reports, FY2013 data unreported

- Similar to rail, Brisbane bus patronage has also been affected by the change in consumer behaviour due to the 1) go study project; 2) the '8 and 50' scheme; and 3) Ex-Tropical Cyclone Debbie in March / April 2017,³³ as well as the introduction of the Fairer Fares scheme in December 2016 (reducing travel zones from 23 to eight, extended off-peak discount and replacement of the nine-and-free deal with an eight-and-50 per cent free travel days)
- Bus patronage also saw a decline due to mode shift to the Redcliffe Peninsular Rail Line³⁴
- Punctuality is high and stable, averaging c.95%
- Brisbane bus reliability remains stable at c.100%

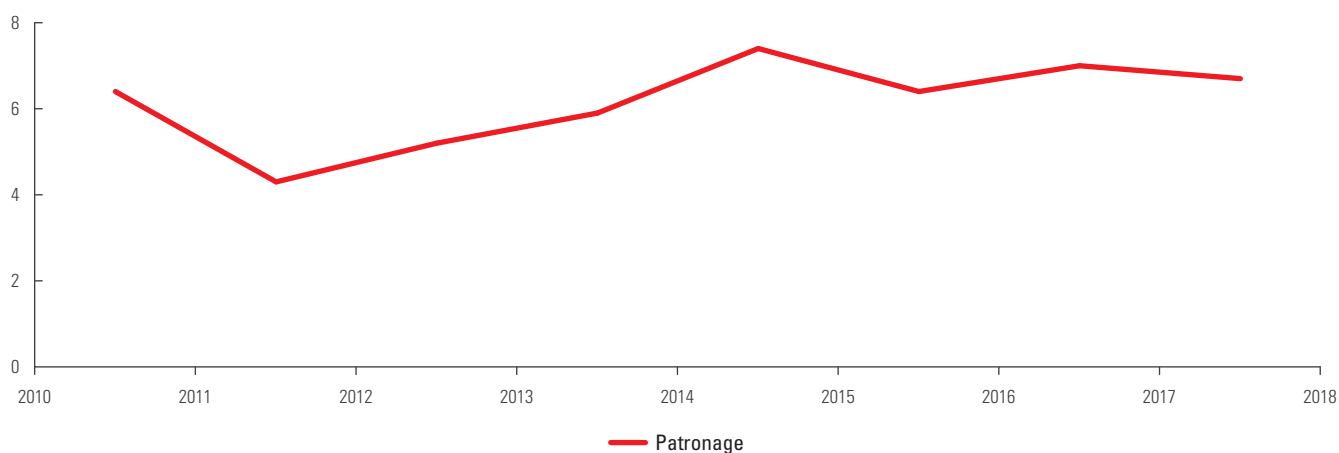
33. Department of Transport and Main Roads Annual Report 2016-17 34. Department of Transport and Main Roads Annual Report 2016-17





BRISBANE FERRY PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	7.0 million	6.7 million	-3.4%	+5.3%
Punctuality	n/a	n/a	n/a	n/a
Reliability	n/a	n/a	n/a	n/a

- Similar to rail and bus, Brisbane ferry patronage has also been affected by the change in consumer behaviour due to the 1) go study project; 2) the '8 and 50' scheme; and 3) Ex-Tropical Cyclone Debbie in March / April 2017³⁵

35. Department of Transport and Main Roads Annual Report 2016-17



5. PERTH

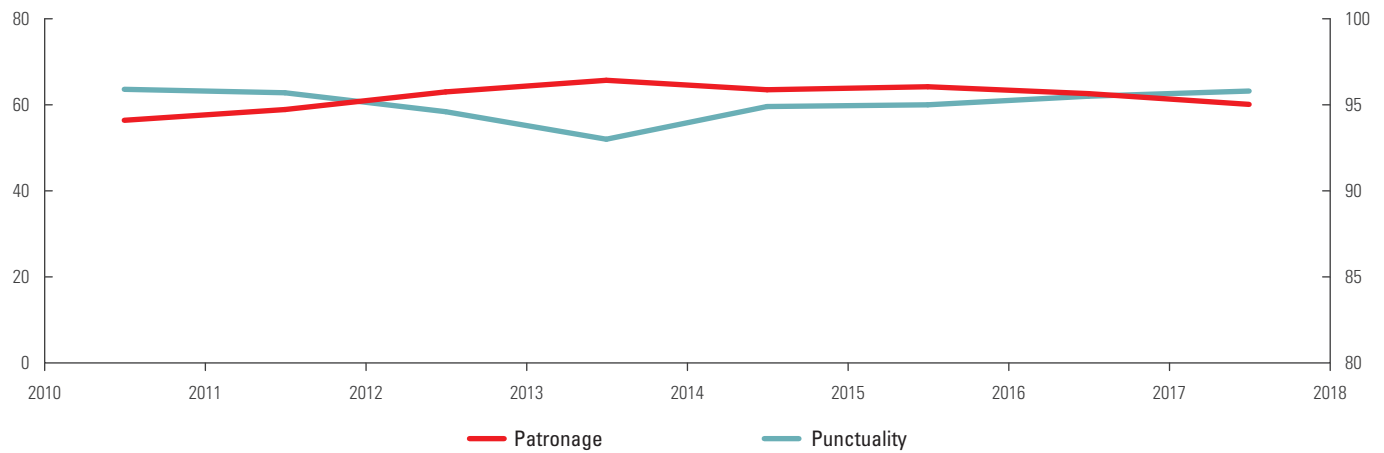




PERTH RAIL PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	62.6 million	60.1 million	-4.1%	-1.0%
Punctuality	95.5%	95.8%	+0.3%	+1.2%
Reliability	n/a	n/a	n/a	n/a

- Perth's rail system has seen steady decline, partly due to increasing unemployment both in the mining industry and in the CBD³⁶
- Punctuality is stable at 95%

36. PTA Annual Report 2015-2016

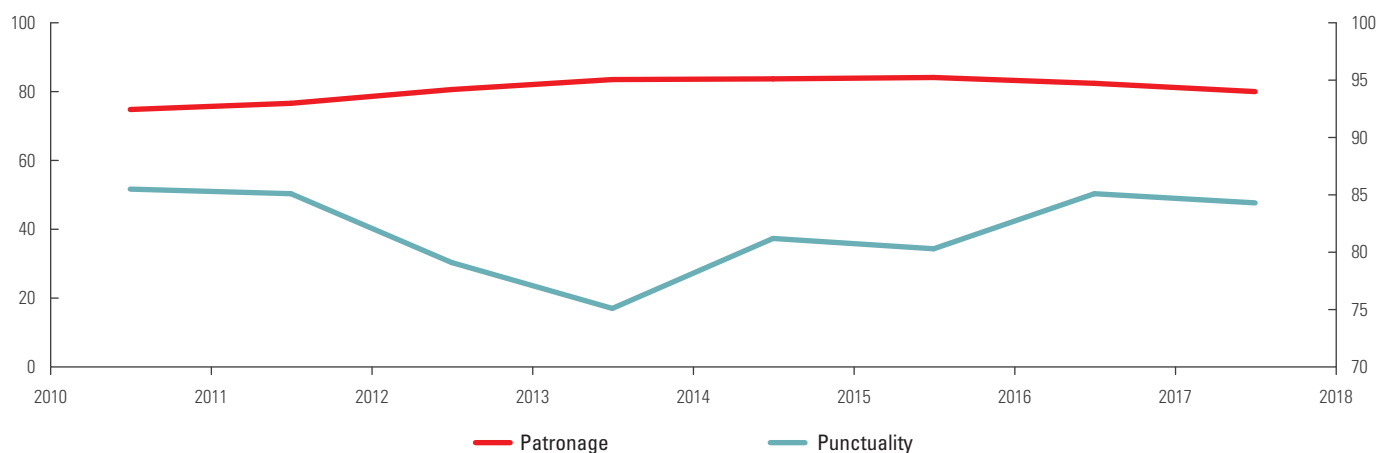




PERTH BUS PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	82.4 million	80.0 million	-2.9%	-0.2%
Punctuality	85.1%	84.3%	-0.8%	+5.2%
Reliability	n/a	n/a	n/a	n/a

- Similar to rail, Perth's bus patronage has also been impacted by growing unemployment
- Punctuality has improved since 2014 mainly due to reduced congestion following bus priority measures and renewed bus timetables³⁷

37. PTA Annual Report 2015-2016

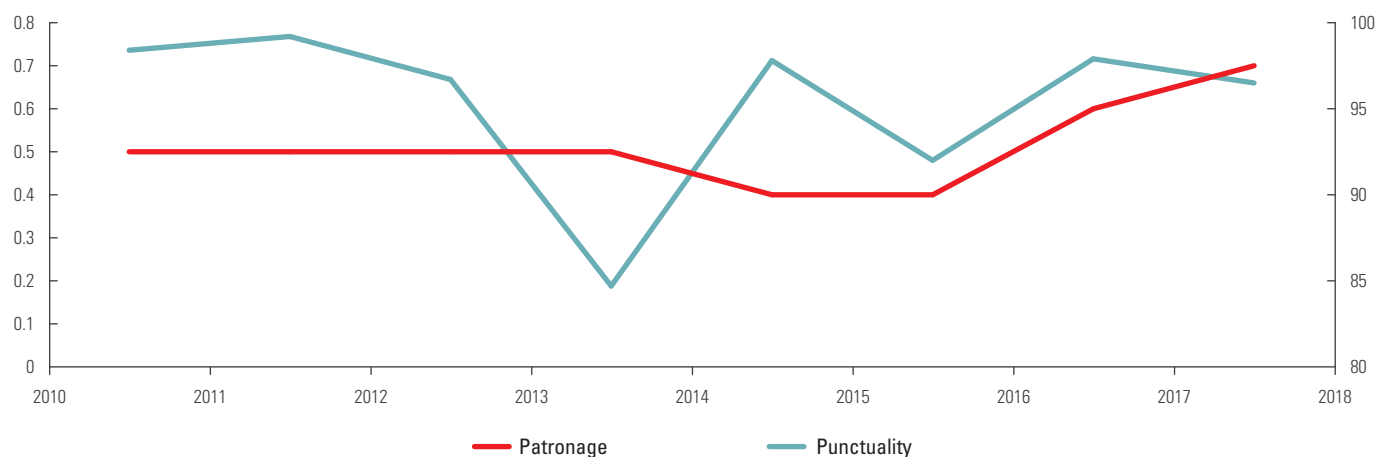




PERTH FERRY PERFORMANCE

Patronage, annual
(June 2010 – June 2017)
Millions of travellers

Punctuality, annual
(June 2010 – June 2017)
Percent on time



	FY2016	FY2017	1 year change CAGR/PPTΔ	5 year annual change CAGR/PPTΔ
Patronage	0.6 million	0.7 million	+25.3%	+9.6%
Punctuality	97.9%	96.5%	-1.4%	-0.2%
Reliability	n/a	n/a	n/a	n/a

- Opening of Elizabeth Quay in January 2016 underpinned patronage growth, reversing the previously declining ferry patronage
- Punctuality has improved since 2016 due to completion of Elizabeth Quay Jetty, previously causing some delays in 2014-15³⁸

38. PTA Annual Report 2015-2016



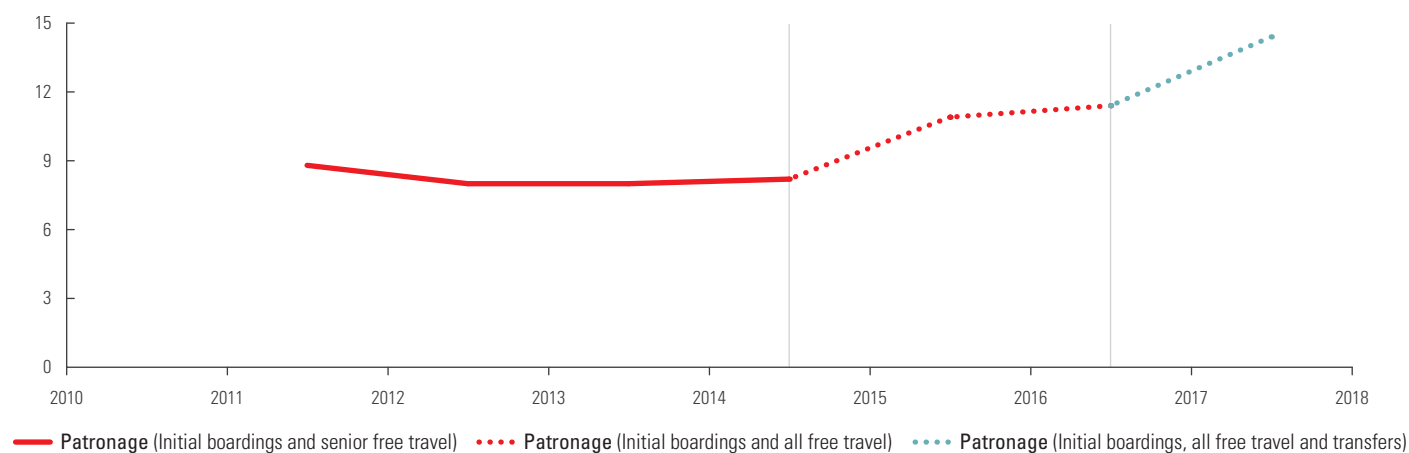
6. ADELAIDE





ADELAIDE RAIL PERFORMANCE

**Patronage, annual
Initial Boardings
(June 2011 – June 2017)**
Millions of travellers



	FY2016	FY2017	1 year change CAGR/PPT Δ	5 year annual change CAGR/PPT Δ^{\wedge}
Patronage	11.4 million*	14.4 million**	n/a***	n/a
Punctuality	94.9%	95.3%	+0.4%	n/a
Reliability	n/a	n/a	n/a	n/a

Note: * Patronage includes initial boardings and all free travel; ** Methodology change in FY2017, patronage includes initial boardings, all free travel, and transfers; *** Patronage data incomparable due to methodology change in FY2017; Δ Data incomparable due to methodology changes in FY2015 and FY2017

- Methodology changes in Adelaide make year on year comparisons difficult
- Adelaide total patronage in the public transport system (not limited to rail) decreased by 0.1% in FY2017 compared to FY2016 due to line closures as a result of the Torrens Road to Torrens River and Torrens Junction projects. Both projects are expected to finish in 2018³⁹
- There was no significant change in punctuality

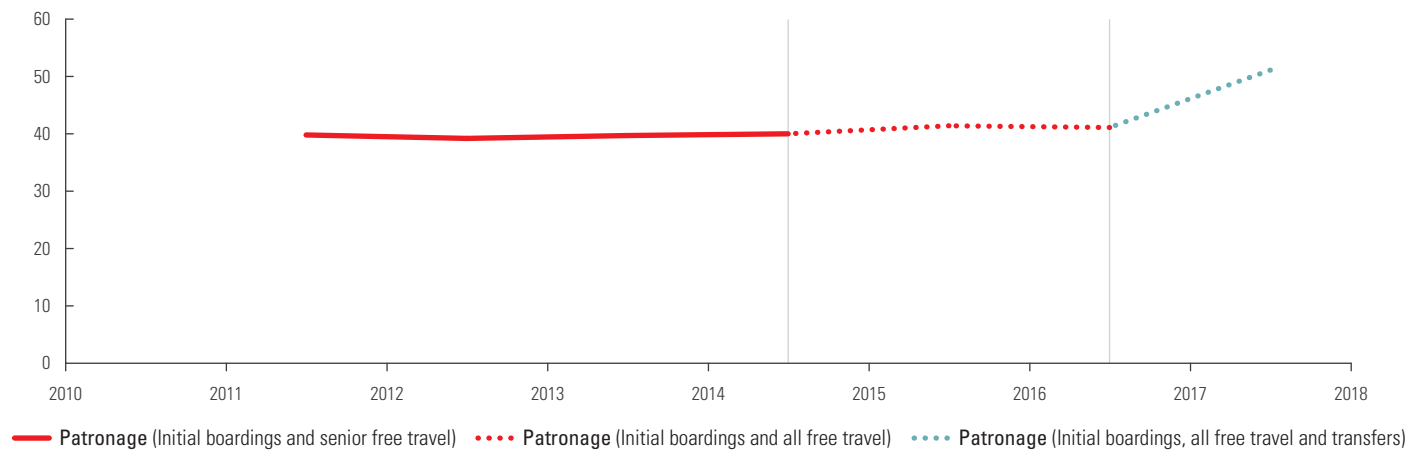
39. PTA Annual Report 2016-2017





ADELAIDE BUS PERFORMANCE

Patronage, annual Initial Boardings (June 2011 – June 2017) Millions of travellers



	FY2016	FY2017	1 year change CAGR/PPT Δ	5 year annual change CAGR/PPT Δ^A
Patronage	41.1 million*	51.1 million**	n/a***	n/a
Punctuality	93.2%	92.5%	-0.7%	n/a
Reliability	n/a	n/a	n/a	n/a

Note: * Patronage includes initial boardings and all free boardings; ** Methodology change in FY2017, patronage includes initial boardings, all free travel, and transfers; *** Patronage data incomparable due to methodology change in FY2017; ^ Data incomparable due to methodology changes in FY2015 and FY2017

- Adelaide total patronage in the public transport system (not limited to buses) decreased by 0.1 % in FY2017 compared to FY2016 due to line closures as a result of the Torrens Road to Torrens River and Torrens Junction projects. Both projects are expected to finish in 2018⁴⁰
- There was no significant change in bus punctuality

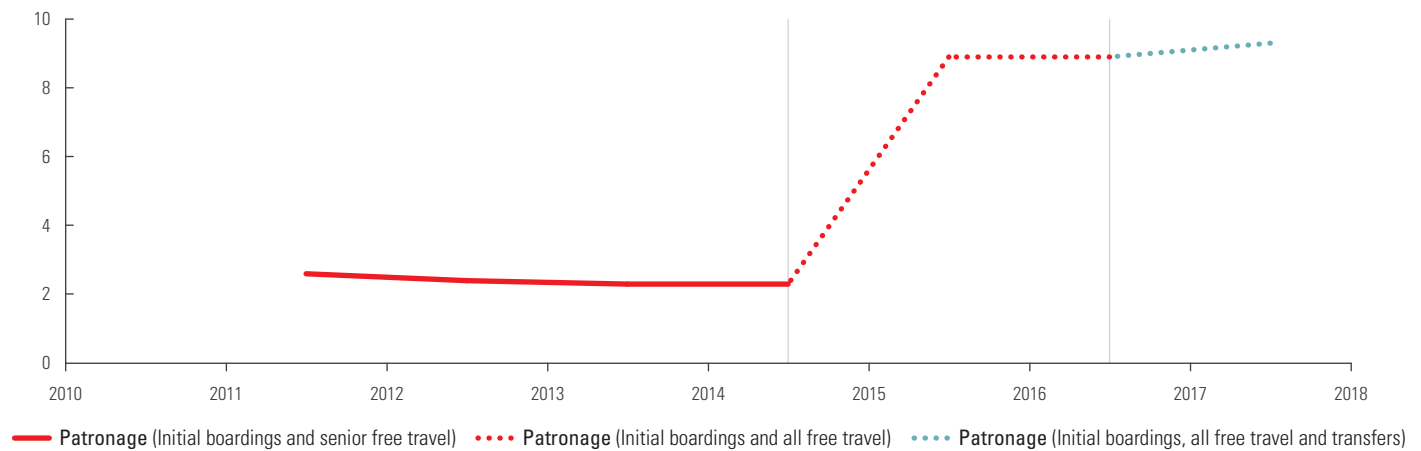
40. PTA Annual Report 2016-2017





ADELAIDE LIGHT RAIL PERFORMANCE

Patronage, annual
Initial Boardings
(June 2011 – June 2017)
 Millions of travellers



	FY2016	FY2017	1 year change CAGR/PPT Δ	5 year annual change CAGR/PPT Δ^A
Patronage	8.9 million*	9.3 million**	n/a***	n/a
Punctuality	99.1%	98.3%	-0.8%	n/a
Reliability	n/a	n/a	n/a	n/a

Note: * Patronage includes initial boardings and all free boardings; ** Methodology change in FY2017, patronage includes initial boardings, all free travel, and transfers; *** Patronage data incomparable due to methodology change in FY2017; ^ Data incomparable due to methodology changes in FY2015 and FY2017

- Adelaide total patronage in the public transport system (not limited to light rail) decreased by 0.1 % in FY2017 compared to FY2016 due to line closures as a result of the Torrens Road to Torrens River and Torrens Junction projects. Both projects are expected to finish in 2018⁴¹
- There was no significant change in punctuality

41. PTA Annual Report 2016-2017

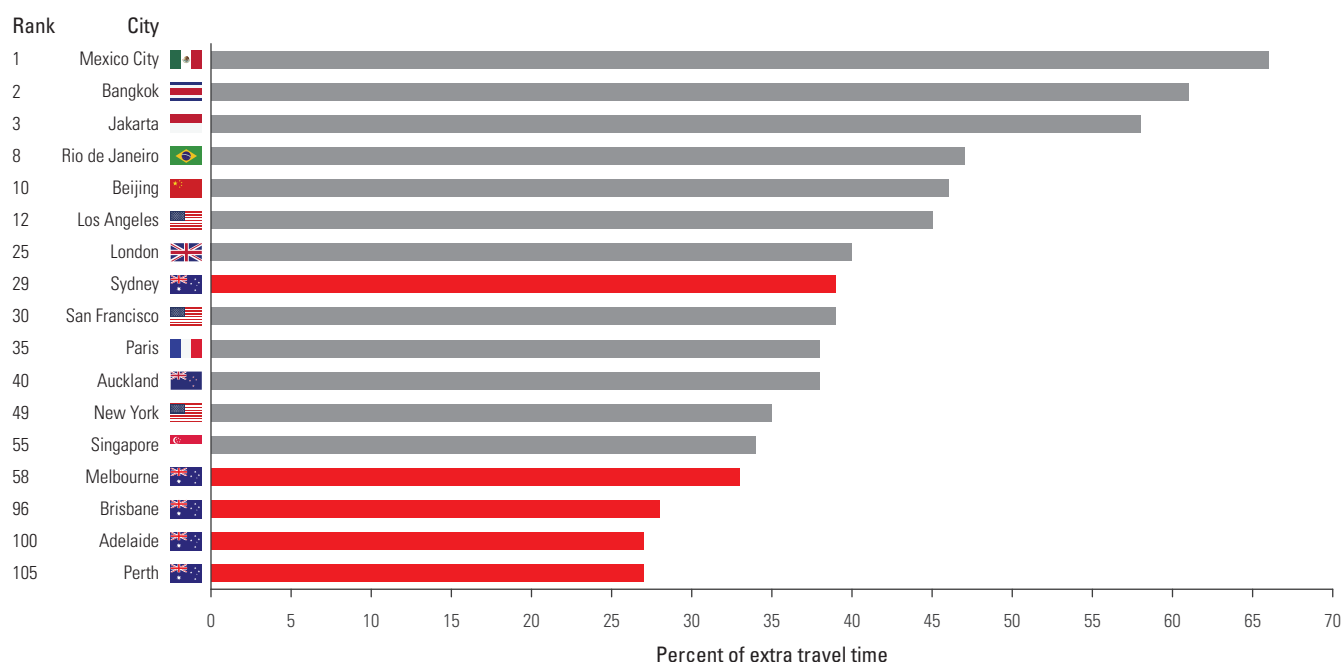


7. IN THE SPOTLIGHT: RISING CONGESTION LEVELS AND THE IMPACT ON PUBLIC TRANSPORT



Congestion has been on the rise in many cities around the world as growing populations and increases in vehicle ownership are not matched by road supply and efficient public transportation systems. Mexico City, Bangkok, and Jakarta are the most congested cities in the world in 2016, according to the TomTom Traffic Index (see Figure 7).

Figure 7: Global ranking of congestion levels in selected major cities



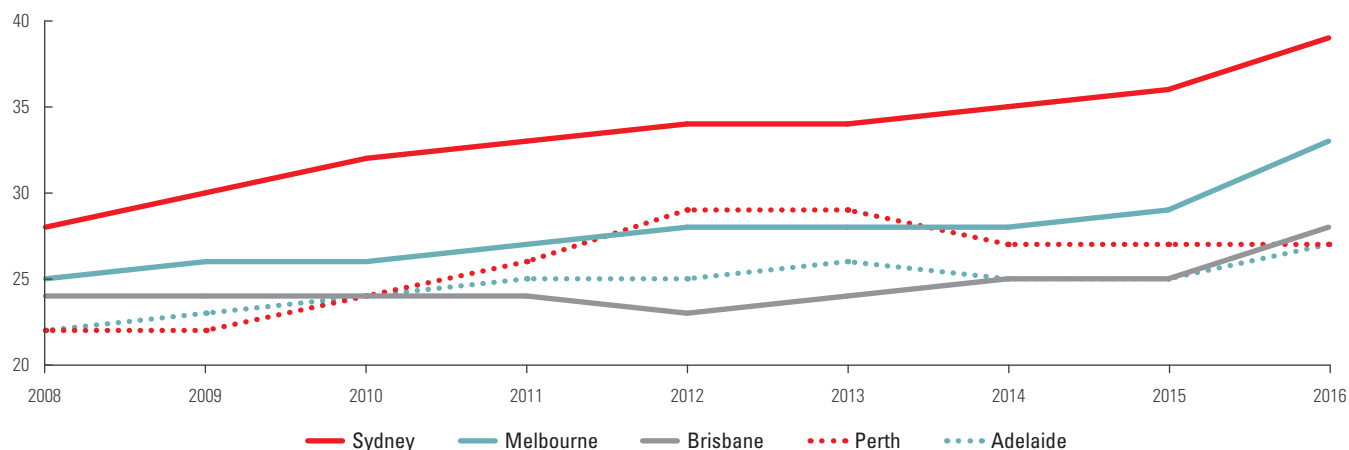
Note: * Percent of extra travel time spent during peak hours compared to an hour of driving during free flow conditions

Australian cities also experienced rising congestion levels of between c.25-40% of extra travel time, and this has been growing at c.2-4% per annum (see Figure 8). Within the global context, Sydney ranks within the top 30 most congested cities, experiencing more congestion than San Francisco, New York, and Singapore – cities with similar or larger populations. Melbourne, the second most congested Australian city, ranks 58th in the world, and has seen congestion growth due to recent increases in employment and population. In Brisbane, Adelaide and Perth congestion levels have remained relatively stable, at under 30% of extra travel time, and these cities rank at numbers 96-105 globally in the congestion index.

Figure 8: Congestion levels in key Australian metropolitan cities

**Congestion level
(2008 – 2016)**

Percent of extra travel time



	Extra travel time 2016 (minutes)	Congestion level Δ 2008-16	Population Δ 2008-16
Sydney	41	+4.2%	+1.7%
Melbourne	34	+3.5%	+2.3%
Brisbane	27	+1.9%	+2.0%
Perth	25	+2.6%	+2.1%
Adelaide	26	+2.6%	+1.0%

Increasing congestion levels in Australia are estimated to cost \$16.5 billion to metropolitan cities⁴² - \$6 billion in private time costs, \$8 billion in business time costs, \$1.5 billion in extra vehicle operating costs and \$1 billion in additional air pollution costs.⁴³

DEMAND (VEHICLES ON ROADS)

Population and vehicles owned per capita are some of the key drivers of road traffic.⁴⁴ In Australia, congestion is being driven more by population growth than by vehicle ownership rates. The total population has grown by c.1.7% per annum, or c.1.9% per annum in metropolitan cities,⁴⁵ while passenger vehicles owned per capita has remained relatively stable at c.0.6 vehicle per capita since 2016.⁴⁶

42. Metropolitan cities include Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Darwin and Canberra 43. BITRE traffic and congestion cost trends for Australian capital cities 2015 44. Ausroads 2016 Congestion and Reliability Review (Full Report) 45. ABS 2008-2017 3101.0 Australian Demographic Statistics 46. ABS 2008-2017 92080D0001_1231201610 Survey of Motor Vehicle Use

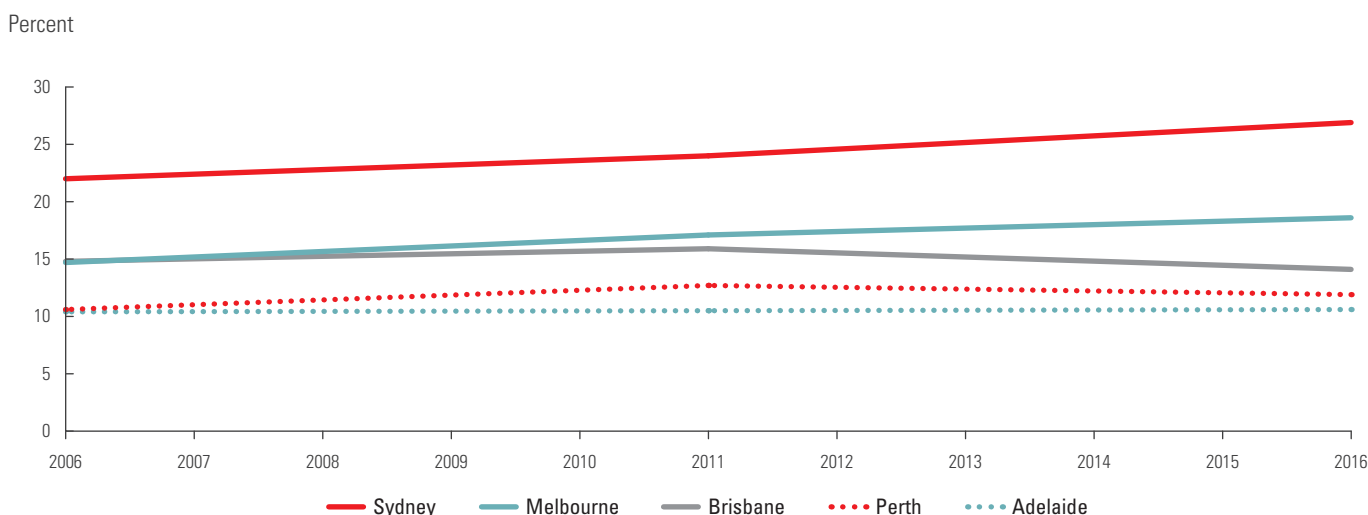
SUPPLY (ROAD CAPACITY)

Urban road supply in Australia has been growing at a slower pace of c.0.7% per annum⁴⁷ compared to the more rapidly growing population.

As a result of the imbalance between demand and supply, congestion levels have been increasing in metropolitan cities. More congestion has contributed to a decrease in kilometres travelled per vehicle, declining by c.1% since 2000.⁴⁸

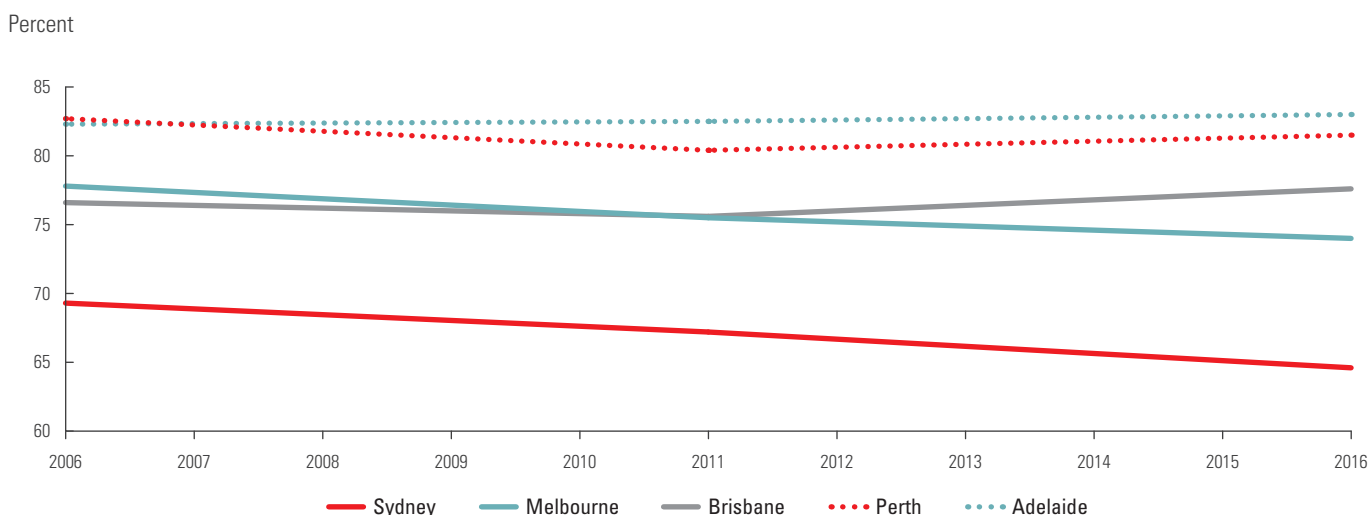
More people are using public transportation as an alternative mode of travel, especially in Sydney and Melbourne where congestion levels are increasing the quickest (see Figures 9 and 10). This trend is reflected in growing heavy and light rail patronage and may be a contributing factor to Melbourne's decreasing bus patronage due to on-road congestion impacts.

Figure 9: Percent of commute done by public transport only*



Note: * Commuters who travelled by public transport modes only (incl. trains, buses, ferries) and did not use private passenger vehicles as a driver or passenger based on Australian Bureau of Statistics Census Data. Does not include commuters who travelled by both private passenger vehicles and public transport modes

Figure 10: Percent of commute done by passenger vehicle only**



Note: ** Commuters who travelled by private passenger vehicles as a driver or passenger only and did not use public transport modes (incl. trains, buses, ferries) based on Australian Bureau of Statistics Census Data. Does not include commuters who travelled by both private passenger vehicles and public transport modes

47. BITRE Yearbook 2016 statistics (2010-15) 48. BITRE Yearbook 2016 statistics (2010-15)



Based on this modal change, BITRE is forecasting a slight modal change from cars and other private road travel to rail, buses and ferries in the near to mid future (see Figure 11). Both state and Commonwealth Governments are investing heavily in public transport networks in an effort to alleviate congestion impacts. The 2017-18 Commonwealth government budget put aside funds for a \$20 billion investment in rail aimed at reducing congestion, growing the regions and creating jobs. Of the \$20 billion, \$10 billion has allocated to the National Rail Program for urban and regional passenger rail projects.⁴⁹ Significant current projects being led by State Governments include:

- Sydney light rail: CBD and South East Light Rail (Expected opening in 2019)
- Sydney metro line: Chatswood to Sydenham and Bankstown (expected opening in 2024)
- Melbourne: Metro Tunnel (expected opening in 2026)
- Brisbane: Moreton Bay Rail Link (opened in October 2016)
- Brisbane: Cross River Rail (expected opening in 2024)
- Perth: Metronet project including the Forrestfield and airport rail link (expected opening in 2020)
- Adelaide: Torrens Road to Torrens River project, Torrens Junction project (expected opening in 2018)

Figure 11: Forecast of journey mode share in urban transport

	Mode share 2014	Mode share 2015F	Mode share 2020F	Mode share 2025F	Mode share 2030F
Non-motorised (walk and cycle)	3.8%	3.8%	3.8%	3.8%	3.8%
Bus and ferry (public and private)	3.8%	3.8%	3.9%	4.0%	4.2%
Rail (light and heavy)	5.0%	5.1%	5.3%	5.5%	5.7%
Car and other private road travel	87.4%	87.3%	86.9%	86.7%	86.3%

Under BITRE's forecasts, road travel is forecast to continue grow and the cost of congestion expected to rise to c.\$30 billion, almost double the cost in 2015.⁵⁰

The prospect in the future of autonomous vehicles (AV's) could have even greater implications for congestion, as the price of mobility falls. Conversely, AV's may be safer and make better use of available road space. The policy ramification of AV's appear likely to be significant, but remain uncertain while the technology is yet to mature.

49. Minister of Infrastructure, Media release, 2017 50. BITRE traffic and congestion cost trends for Australian capital cities 2015

8. METHODOLOGY & SOURCES

The key sources used in this report are summarised in the table below. Throughout this publication, changes in patronage are presented as a compound annual growth rate and changes in punctuality and reliability are presented as a percentage point change.

City	Mode	Metric	Source	Data Availability	Definition
Sydney	Rail	Punctuality	Transport for NSW (TfNSW) Annual Report; Sydney Trains Performance Data	Annual FY10-17 Monthly Jan 2002-Dec 2017	<ul style="list-style-type: none"> Percent on-time running Based on suburban services arriving within 5 minutes and intercity services arriving within six minutes of scheduled arrival time Not adjusted for force majeure Measured during AM and PM weekday peak periods
		Patronage	TfNSW Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid Opal data used for FY2017
	Bus	Punctuality	TfNSW Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent on-time running Measured by sample survey at commencement of bus trip
		Patronage	TfNSW Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid Opal data used for FY2017
	Ferry	Punctuality	TfNSW Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving within 5 minutes of scheduled arrival time Adjusted for force majeure
		Reliability	TfNSW Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent of timetable services delivered Adjusted for force majeure and exempt service
		Patronage	TfNSW Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid Opal data used for FY2017
Melbourne	Train	Punctuality	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving no more than four minutes and 59 seconds after the scheduled arrival time Metro train services only Not adjusted for force majeure
		Reliability	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent of timetable services delivered Metro train services only Data prior to June 2011 is inverse of services not cancelled, after which timetables services delivered is reported
		Patronage	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
	Light rail	Punctuality	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving no more than 59 seconds before or four minutes and 59 seconds after the scheduled arrival time Not adjusted for force majeure
		Reliability	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent of timetable services delivered Data prior to June 2011 is inverse of services not cancelled, after which timetables services delivered is reported
		Patronage	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
	Bus	Punctuality	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving no more than 59 seconds before or five minutes and 59 seconds after the scheduled arrival time Not adjusted for force majeure Data from FY2017 based on new bus tracking system
		Reliability	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> Percent of timetable services that operate and are completed Data prior to June 2011 is inverse of services not cancelled, after which timetables services delivered is reported Data from FY2017 based on new bus tracking system
		Patronage	Public Transport of Victoria Annual Report	Annual FY12-17	<ul style="list-style-type: none"> All boardings, paid and unpaid

City	Mode	Metric	Source	Data Availability	Definition
Perth	Rail	Patronage	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
		Punctuality	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> Percent on time running Based on services arriving and departing within 4 minutes of scheduled arrival time
	Bus	Patronage	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
		Punctuality	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> Percent on time running Based on services arriving and departing within 4 minutes of scheduled arrival time
	Ferry	Patronage	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
		Punctuality	PTA Annual Report	Annual FY10-17	<ul style="list-style-type: none"> Percent on time running Based on services arriving and departing within 3 minutes of scheduled arrival time
Brisbane	Bus	Patronage	Translink & Dept. Transport & Main Roads Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
		Punctuality	Translink Tracker Translink & Dept. Transport & Main Roads Annual Report	Quarterly (Fiscal) Q1 09/10 – Q4 12/15 FY2013 unavailable Annual FY16-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving within 6 minutes after or 2 minutes before the scheduled arrival time.
		Reliability	Translink customised data	Monthly, Jun 12-Jun 17	<ul style="list-style-type: none"> Percent of timetable service completed
	Rail	Patronage	Translink & Dept. Transport & Main Roads Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
		Punctuality	Translink & Dept. Transport & Main Roads Annual Report	Annual FY10-17	<ul style="list-style-type: none"> Percent on-time running Based on services arriving less than 4 minutes after the scheduled arrival times
		Reliability	Translink & Dept. Transport & Main Roads Annual Report	Annual FY10-17	<ul style="list-style-type: none"> Percent of timetable service completed
	Ferry	Patronage	Translink & Dept. Transport & Main Roads Annual Report	Annual FY10-17	<ul style="list-style-type: none"> All boardings, paid and unpaid
Adelaide	Bus, Train, Light rail	Patronage	Department of Planning, Transport and Infrastructure Annual Report	Annual FY11-17	<ul style="list-style-type: none"> All initial boardings only. Includes all unpaid from FY2015. Includes transfer from FY2017
All cities		Population and GSP / capita	ABS		

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