
Briefing Note

24 Nov 2014

Victorian Liberal Party promises new trains

As part of their election platform, the Victorian Liberal party has announced \$3.9 billion for new train and tram rolling stock over 10 years. This is a substantial addition to public transport capacity in Melbourne. The purchase includes

- 75 new trains for Melbourne,
- 75 new E-class trams, and
- 24 new V/Locity rail cars.

The Victorian Liberals said it would build “better public transport for a growing population”. Minister for Public Transport Terry Mulder said “the new trains and trams will allow an extra 150,000 passengers to be carried each week day” on the Melbourne network.¹

But would these new trams and trains grow rail capacity as fast as the population is growing? Will it be enough to meet demand? To answer these questions, this paper compares growth over the coming 10 years in:

- Melbourne’s population,
- Melbourne’s rail demand, and
- Melbourne rail patronage, if increased by 150,000 a day.

Will this keep up with population and demand growth?

Melbourne’s Population growth

The most recent population projections from the ABS for Melbourne are summarised in Table 1.² The projections were based on 2012 data and published in 2013. The table shows projected growth between 2014 and 2024, under the ABS’s three different projections, each based on assumption of different demographic trends. The ABS projects a range of growth over the 10 year period from between 23.13 per cent to 18.98 per cent.

¹<http://www.vic.liberal.org.au/News/2014-11-09/RAIL%20STATE%3A%20%243.9%20billion%20%3D%20a%20new%20train%20every%20month%20for%2010%20years%20and%203%2C500%20jobs>

² ABS, Cat no. 3222.0 - Population Projections, Australia, 2012 (base) to 2101, URL:<[http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02012%20\(base\)%20to%202101?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02012%20(base)%20to%202101?OpenDocument)>

Table 1: “Greater Melbourne” population projections

| | Series A | Series B | Series C |
|------------------|-----------|-----------|-----------|
| 2014 | 4,429,118 | 4,422,724 | 4,419,383 |
| 2024 | 5,453,746 | 5,347,459 | 5,258,367 |
| Projected growth | 23.13% | 20.91% | 18.98% |

According to ABS historical data on population growth³ between 2002-2003 and 2012-2013 Melbourne’s population grew 20.68 per cent. However in 2012-13 Melbourne’s population grew faster than in previous years, at 2.2 per cent in that year, due to interstate migration. If that rate continued, it would result in growth of 24.31 per cent over the next 10 years. That is, if interstate migration continues at similar rates, then the higher ‘Series A’ ABS projections seem more likely.

During the year to June 2013, some central parts of Melbourne grew much faster than others. For example the Melbourne CBD grew by 23 per cent while Docklands and Southbank by 15 per cent, and the broader city area grew by 10.5 per cent.⁴ Such exceptional rates of growth in inner city areas place great pressure on transport. Existing central roads are unlikely to cope with such great increases in private vehicle traffic, requiring even greater investment in public transport.

Melbourne’s increasing demand for rail travel

In 2012, Public Transport Victoria published a ‘demand forecast’ for trains, trams and buses over coming decades.⁵ This forecast used detailed customer survey, demographic, planning and other data, and fed this data into three separate models. PTV forecasted 10 year average growth rates for weekday patronage for trains and trams from 2012-13, shown in Table 2.

³ <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3218.02012-13?OpenDocument>

⁴ <http://www.theage.com.au/victoria/population-record-rise-in-city-dwellers-melbourne-tops-nations-growth-rate-20140406-3673v.html>

⁵ <https://s3-ap-southeast-2.amazonaws.com/ptvic/Metropolitan+Patronage+Demand+Forecast+Report+2012+-+updated.pdf>

Table 2: PTV's forecasts from 2012-136

| | Trains | Trams |
|------------------------------|--------|--------|
| Yearly average over 10 years | +4.0% | +3.6% |
| 10 year growth | 48.02% | 42.43% |

PTV states:

*these forecasts are not 'capacity constrained'. This means it is assumed that investments will be made to expand network capacity to accommodate patronage growth.*⁷

Hence these rates of growth will not be achieved if capacity remains insufficient. That would mean there are people who would be willing to catch trains or trams who would be unable to do so.

“150,000 new passengers a day” compared to current patronage

The Victorian Liberals announced new trains and trams they say would allow 150,000 new passengers on a weekday.

It is unclear how this number has been calculated. It is also unclear what exactly it is measuring. Most public transport experts and documents talk about patronage in terms of the number of single trips from A to B. However, it is possible that the Liberals have chosen to talk about passengers taking a trip to and from a destination. This would mean their promise would deliver capacity for 300,000 new passenger trips a weekday.

The promise is made in terms of increased capacity. PTV does not provide aggregated data for current capacity, rather existing patronage numbers (single passenger trips). This analysis uses the patronage numbers as a conservative proxy for capacity. PTV says “Growth of 70 per cent in train patronage in the last decade has resulted in rail demand rapidly approaching the capacity of the current network.”⁸ So current train patronage is likely to be close to capacity.

The PTV Annual Report 2013-14 displays the total number of passenger journeys on trains and trams in 2013-14. There were 232.0 million passenger journeys on trains and 176.9 million passenger journeys on trams in 2013-14. That means there were 408.9 million

⁶<https://s3-ap-southeast-2.amazonaws.com/ptvic/Metropolitan+Patronage+Demand+Forecast+Report+2012+-+updated.pdf> p 44-5

⁷<https://s3-ap-southeast-2.amazonaws.com/ptvic/Metropolitan+Patronage+Demand+Forecast+Report+2012+-+updated.pdf> page 4

⁸ <https://s3-ap-southeast-2.amazonaws.com/ptvic/Network+Development+Plan+-+overview+-+updated.pdf> page 9

passenger journeys in total, or 1,120,274 a day on average. Note this is an average per day. Weekdays would be higher. The Liberals say the trains and trams will increase capacity by 150,000 passengers on a week day. Using the lower daily average again provides a conservative estimate of the promised growth.

If the Liberals mean the trams and trains will increase capacity by 150,000 new passenger journeys on a weekday, then this would increase patronage by 13.39 per cent, assuming the capacity is used in full. The Liberals may instead mean that the new trams and trains will allow 150,000 passengers to travel both to and from their destination, equivalent to 300,000 new trips a day. This would represent 26.78 per cent growth in patronage.

Comparison of growth in population, demand and capacity

As noted, Melbourne's rail system is approaching capacity, and demand is expected to grow greatly.

The lowest population growth projection for the period is 19 per cent, and the higher rate of projected growth is 23 per cent, which are more likely if recent interstate migration continues.

Expected demand growth over that period is 42 to 48 per cent.

Assuming the Liberals refer to passenger journeys, then according to their numbers, the new trams and trains would increase patronage by 13 per cent, assuming the capacity is used in full. That is less than population growth and a third of demand growth.

If the Liberals mean 150,000 new passengers can travel to and from a destination per day, then the new trams and trains would increase patronage by 27 per cent. That is slightly above population growth, but still far less than demand growth.

Other new capacity already coming online

Trams and trains themselves are not sufficient to increase capacity, which also requires new and upgraded lines, signalling and stations, as well as prioritising to improve travel times relative to private commuting. Nonetheless, new rolling stock is necessary for ongoing growth in a system approaching its capacity.

There are a number existing contracts for trams and trains already budgeted and due to come online soon. This includes:

- 41 E-Class trams
- 25 trains for the Cranbourne-Packenham project
- 8 X-Trapolis trains

Note this is less than half the newly promised stock. Moreover, some of this higher capacity stock will replace existing stock, and so represent only a net increase in capacity. According to the Tourism and Transport Forum:

The existing tram fleet is aging, with the 147 strong Z-Class fleet reaching the end of its design-life after about 30 years of operation. Renewal of the fleet should be accelerated to 20 vehicles per year, and a further 70 to 80 E-Class vehicles should be acquired by 2020.⁹

It is notable that Public Transport Minister Terry Mulder was reported as saying that the 75 new trams promised in the recent announcement “would carry up to 14,000 passengers a day.”¹⁰ That would mean each tram would increase capacity by 187 passenger journeys a day, less than the full capacity of the trams at any one time. That is, the calculations appear to already incorporate the removal of old stock.

It is unclear whether the new trams and trains, and the associated promise of increased patronage, represent a net or gross increase in capacity. In turn, it remains unclear whether the existing budgeted stock, plus the newly promised stock, together are sufficient to keep up with population growth. It is even less likely to meet demand growth.

Commitments from other parties

The Victorian Labor Party and the Victorian Greens have also made announcements about new trains and trams, and other upgrades (e.g. to signalling). Neither have demonstrated their commitments are sufficient to grow capacity in line with either population growth or demand growth.

These parties have committed to a lower number of rolling stock purchases, which suggests capacity growth will be even lower. Labor has announced “30 new trains for the metropolitan network and 20 new VLocity V/Line carriages”.¹¹ The Greens have promised to purchase 50 new trams. However, neither have said what time period these will be purchased over, leaving it unclear what rate of growth they represent compared to the Liberal announcement.

Labor has also promised to “commission the Premier’s Jobs and Investment Panel to develop a Victorian Rolling Stock Strategy which will formulate a long term order”. This order has not been budgeted for.

The Greens have also promised to upgrade signalling across the rail network: “Estimates to upgrade the whole network indicate a total cost of around \$3 billion which could boost existing train frequencies by up to 50 percent.”¹² The 50 per cent increase is a maximum and for most services the capacity increase would be lower.

⁹ Transport and Tourism Forum, 2014, A TRANSPORT AGENDA FOR MELBOURNE, <http://svc007.wic014v.server-web.com/DisplayFile.aspx?FileID=2470>

¹⁰ <http://www.theage.com.au/victoria/victoria-state-election-2014/tourism--transport-forum-calls-for-melbournes-slow-tram-network-to-catch-up-with-the-times-20141110-11jvso.html#ixzz3J02mE8hN>

¹¹ <https://www.viclabor.com.au/media-releases/more-victorian-trains-more-victorian-jobs-under-labor/>

¹² <http://greens.org.au/initiatives/vic/train-overcrowding>

Difficulty comparing these pledges underscores the need to develop clear frameworks for determining whether public services, like public transport, are being planned and developed fast enough to keep up with population growth.