4.0 BASELINE CONDITIONS (2031)

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4.1 INTRODUCTION

As discussed in Section 3.0 of this report, Melbourne is a growing city, and ongoing growth of the city is likely to introduce a number of challenges in terms of transport provision, congestion and public transport patronage in coming years. It is therefore important before considering what the future may look like for Melbourne with a Doncaster rail line, efforts are made to understand what the impact may be of not building a Doncaster rail line. This understanding then provides a vantage point, or 'base case', against which possible rail alignments can be compared.

4.2 TRANSPORT MODELLING

As discussed previously, in order to understand the wider transport demands and characteristics of the study area, the study team developed a strategic mathematical transport model of Melbourne's transport network by using the Victorian Integrated Transport Model (VITM).

The study team calibrated the initial model provided by PTV for the study area, using observed data from sources including ABS Census Data (2006), VicRoads Traffic Count Data (2006), public transport boarding information (2006–2010) and the Victorian Integrated Survey of Travel and Activity (2009). The model also employed agreed PTV assumptions and data for current and projected land use, population and employment data, and key economic assumptions, some of which are shown in Table 4-1, below:

ECONOMIC MEASURE	COST INCREASE ASSUMED
Public Transport Fare Levels	In line with Consumer Price Index (CPI)
Private Vehicle Operating Costs	1.4% – 2% above CPI
Cost of Parking for Work	2.1% – 2.3% above CPI
Cost of Parking (non-Work)	2.1% – 3.9% above CPI
Toll Charges	In line with CPI

Table 4-1: Key economic assumptions used within the VITM Model

The modelled year for the transport patronage assessment was 2031. This year was chosen by the study team as it was deemed to provide the best balance of being far enough into the future to enable passenger familiarity of the modelled Doncaster rail line to have reached a point where patronage levels should be steady, but close enough to the present day to permit a suitable level of confidence in the population growth and other assumptions upon which the model is built. Generally, as the timescales that are being considered by transport models increase, the confidence level that can be implied into their output decreases.

It should be stressed that traffic models such as VITM provide a realistic interpretation of what is likely to happen, rather than an accurate prediction of absolute passenger outcomes at a route or road link level. Additionally, it is not possible to predict how human behaviour will adapt to changes in some of the assumed data, for example increased parking costs or the increased cost of fuel. For these reasons, it can best be considered as a tool for comparing different route options, rather than a means to determine exact travel demand along any particular road or rail link within the study area. It is possible, however, for the model to provide some useful understanding of the key sources of demand for transport, including public transport, in future years.

4.3 TRANSPORT DEMAND IN 2031— BASE CASE

The VITM Modelling outputs for 2031 prepared as part of this study show a substantial rise in public transport mode share can be expected over the coming 20 years, even before the effects of the Doncaster rail line are considered. Figure 4-1 shows how the modelled mode share of public transport trips to the Melbourne LGA is expected to increase across the inner east of Melbourne, when compared with 2011. Noteworthy outcomes include the expected public transport mode shares in both Whitehorse and Maroondah LGAs, where public transport mode share is expected to exceed 70 per cent for these trips by 2031.

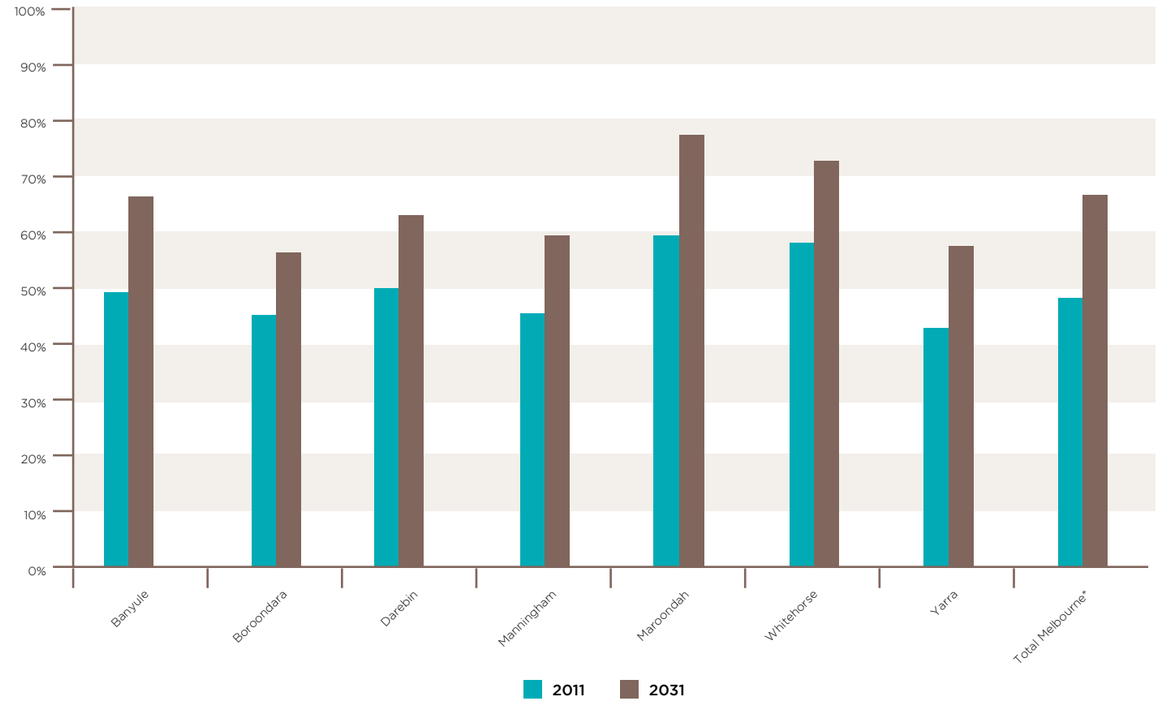

Figure 4-1: Public transport mode share for trips to the Melbourne LGA (source: VITM Modelling)

* Internal trips within Melbourne LGA have been excluded from the Total Melbourne result

The results shown here refer to a modelled situation without a Doncaster rail line. Further information is available in sections six, seven and eight of this report, describing how these 'base-case' assumptions are further altered by the introduction of the new rail line.

A similar trend was observed when the effect upon all trips across Melbourne was modelled across the same time scale.

The effect of this increase in public transport mode share is compounded by an increase in the total travel demand across the city. As can be seen in Table 4-2, the total number of private vehicle kilometres travelled per year increases by almost 45 million kilometres between 2011 and 2031, equating to a compound annual average growth rate of 2.1 per cent.

With significant increases in both travel demand and public transport mode share, the model predicts a substantial increase in the demand experienced by existing public transport infrastructure across the study area and wider metropolitan Melbourne.

Tables 4-3 and 4-4 show the predicted increase in patronage across the existing train and tram networks in the study area between the modelled years of 2011 and 2031.

The greatest increase in public transport throughout the study area is expected to take place on buses, largely due to the limited ability of most of the residents of the study area to be able to directly access either train or tram services. For that reason, bus patronage within the study area is greater than the Melbourne average and, in the absence of a rail connection between Doncaster and the CBD, it is likely that buses will be required to cater for the increased demand for public transport services in the short to medium-term. This potential growth in bus usage is shown in Table 4-5.

In summary, the key findings of the base case transport demand assessment are as follows:

- private vehicle travel demand across Melbourne is expected to increase by over 50 per cent between 2011 and 2031 (in terms of vehicle kilometres travelled)
- private vehicle travel demand within the study area is expected to increase by only five per cent between 2011 and 2031 (in terms of vehicle kilometres travelled)
- public transport mode share is expected to increase significantly within both the study area and Melbourne-wide during the same period
- patronage demand on train and tram services is expected to continue to increase throughout the city and
- bus services are expected to continue to grow throughout the study area, with patronage levels expected to more than double from those currently experienced.

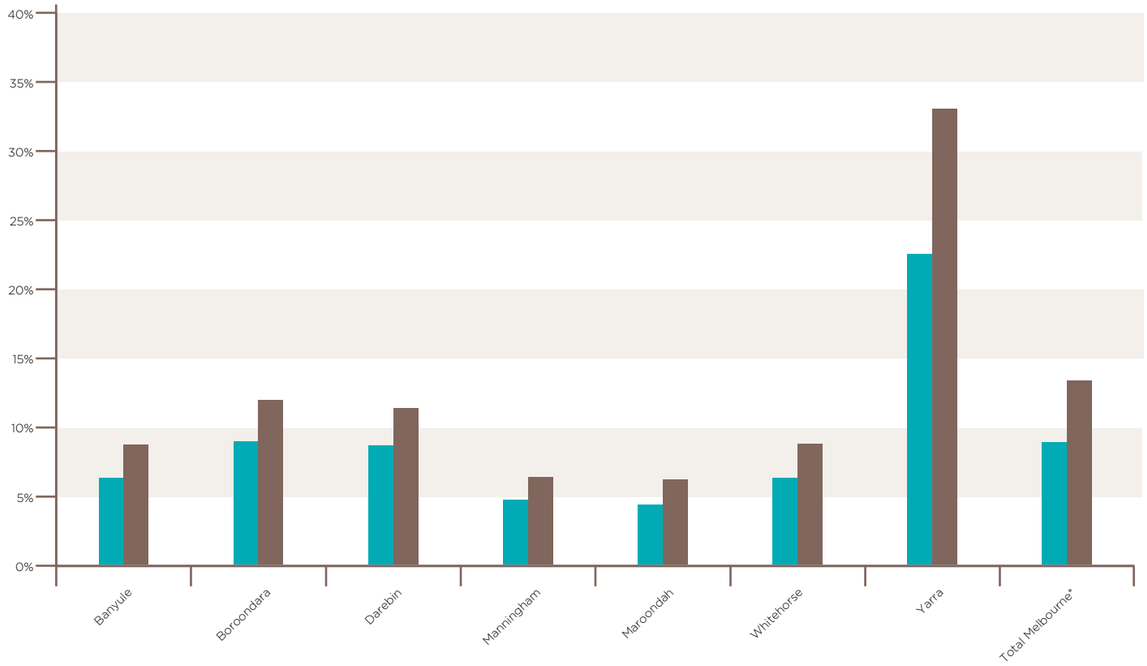

Figure 4-2: Public transport mode share for all trips originating in the study area (source: VITM Modelling)

* Internal trips within Melbourne LGA have been excluded from the Total Melbourne result

	AREA	2011	2031	COMPOUND ANNUAL AVERAGE GROWTH RATE
Vehicle kilometres travelled per day (km/day)	Study Area	12,193,899	12,839,000	0.3%
	Melbourne	105,254,740	159,586,700	2.1%
Vehicle hours travelled per day (hr/day)	Study Area	337,966	361,000	0.3%
	Melbourne	2,485,946	3,315,900	1.5%

Table 4-2: Modelled change in private vehicle travel demand between 2011 and 2031

RAIL LINE BY GROUP	2011	2031	COMPOUND ANNUAL AVERAGE GROWTH RATE
Belgrave/Lilydale	23,135	30,202	1.3%
Burnley	1,143	1,518	1.4%
Camberwell	5,259	6,513	1.1%
Alamein	1,663	1,924	0.7%
Glen Waverley	9,294	9,962	0.3%
Burnley group Total	40,494	50,119	1.1%
Clifton Hill	3,094	7,202	4.3%
South Morang	10,550	20,685	3.4%
Hurstbridge	11,564	17,193	2.0%
Clifton Hill group Total	25,208	45,080	2.9%
City Loop	11,913	19,031	2.4%
North Melbourne	222	359	2.4%
Richmond	856	1,454	2.7%
South Yarra	1,407	2,251	2.4%
Inner Core Total	**14,398**	**23,095**	**2.4%**

Table 4-3: Expected change in train patronage between 2011 and 2031 (passenger numbers equate to the expected number of boardings along each line during the morning peak period of 7.00 am to 9.00 am)

TRAM SERVICE	2011	2031	COMPOUND ANNUAL AVERAGE GROWTH RATE
1 — East Coburg–South Melbourne	6,982	9,069	1.3%
1 — West Preston–Victoria Harbour Dockland	4,123	13,473	6.1%
19 — North Coburg–City via Elizabeth Street	3,796	5,426	1.8%
24 — North Balwyn–City (La Trobe Street)	690	1,272	3.1%
48 — North Balwyn–Victoria Harbour Dockland	3,780	5,874	2.2%
72 — Camberwell–Melbourne University	3,543	8,126	4.2%
75 — Vermont South–City (Spencer Street)	2,892	8,753	5.7%
86 — Bundoora RMIT–Waterfront City Dockland	6,620	12,975	3.4%
96 — East Brunswick–St Kilda Beach	8,804	12,831	1.9%
109 — Box Hill–Port Melbourne	7,054	11,850	2.6%
All Melbourne Trams	**110,118**	**176,618**	**2.4%**

Table 4-4: Expected change in tram patronage between 2011 and 2031 (passenger numbers equate to the expected number of boardings along each route during the morning peak period of 7.00 am to 9.00 am)

BUS SERVICE	2011	2031	COMPOUND ANNUAL AVERAGE GROWTH RATE
200 — Bulleen–City	185	373	3.6%
201 — Doncaster–City	212	664	5.9%
202 — Box Hill–East Kew	95	206	3.9%
203 — Bulleen–City	120	362	5.7%
205 — Doncaster–Melbourne Uni	123	434	6.5%
207 — Donvale–City	242	1,118	8.0%
273 — The Pines–Nunawading	42	87	3.7%
279 — Doncaster–Box Hill	111	145	1.3%
280 — The Pines–The Pines	53	65	1.0%
282 — The Pines–The Pines	45	53	0.8%
284 — Doncaster–Box Hill	37	64	2.8%
285 — Doncaster–Camberwell	85	163	3.3%
286 — The Pines–Box Hill	92	128	1.7%
293 — Greensborough–Box Hill	137	263	3.3%
295 — The Pines SC–Box Hill	78	121	2.2%
302 — Box Hill–City	715	1,272	2.9%
303 — North Ringwood–City	78	845	12.7%
305 — The Pines–City	509	811	2.4%
309 — Donvale–City	269	705	4.9%
313 — Doncaster–City	25	377	14.5%
315 — Box Hill–City	25	530	16.5%
318 — Deep Creek–City	370	636	2.7%
905 — The Pines–City*	956	1,329	1.7%
906 — Warrandyte Bridge–City*	1,070	1,490	1.7%
907 — Mitcham–City*	1,376	2,089	2.1%
908 — The Pines–City*	944	1,281	1.5%
All Melbourne Buses	**67,285**	**146,685**	**4.0%**

Table 4-5: Expected change in bus patronage between 2011 and 2031 (passenger numbers equate to the expected number of boardings along each route during the morning peak period of 7.00 am to 9.00 am)

* Denotes DART bus service