This document was prepared as a background report to input into the preparation of the Growth Corridor Plans.

The report represents the view of the consultant only and not the Government.

GROWTH AREAS AUTHORITY

Tertiary Education Advice for Growth Area Framework Plans

Final Report

May 2010

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Executive Summary

The Growth Areas Authority (GAA) commissioned PhillipsKPA to advise it on the likely future demand and supply of tertiary education in Melbourne's growth areas together with models of provision and locational criteria for tertiary education facilities to inform Growth Area Framework Planning.

The core findings for demand are:

- the growth areas will experience a large increase in the core tertiary age population over the coming fifteen years and beyond;
- this population increase is disproportionately large when compared to the rest of Melbourne because the six growth area councils are expected to accommodate close to half of Melbourne's total population increase;
- current participation in higher education in the growth areas is substantially lower than for other parts of Melbourne, while VET participation is slightly above the Melbourne average for most of these areas;
- a greater supply of higher education places, and/or additional support to assist residents of growth areas transition into higher education, is likely to be required to contribute to state wide goals to increase tertiary education participation rates and to reduce the current imbalance in higher education attainment between residents in growth areas and the rest of Melbourne; and
- over the coming decades the needs for access to tertiary education in the growth areas will grow at a substantially faster rate than elsewhere in Melbourne both as a result of population growth and increases in participation which reflect the changing nature of growth area communities and broader requirements for higher levels of skills.

Overall, the pattern for the seven growth areas shows that attendance at TAFE is generally localised (with the exception of some university-affiliated campuses such as RMIT and Swinburne) while university attendance is more broadly spread, with the majority provided for within the broader sub-regions extending back to the Melbourne CBD.

It is anticipated that the expected growth in demand for campus based higher education and VET can largely be met from existing outer and mid Melbourne campuses, with significant current underuse of campuses at Berwick (Monash), Bundoora (RMIT), Sunbury, Melton and Werribee and capacity for expansion of enrolments at Berwick (Chisholm), Greensborough, Epping, Bundoora (La Trobe), Broadmeadows, and St Albans.

In addition to those existing campuses, additional sites may be needed in the south east in Cardinia and in the north at Craigieburn to ensure reasonable local provision

of educational facilities. There could also be consideration of whether the current Sunbury site should be replaced by another more suited to tertiary education provision.

Any additional sites should be developed as multipurpose educational precincts, capable of use by a number of providers and have the capacity to be developed over time to meet changing needs as each region matures. This points to the need for any required sites to be clearly identified and acquired early in the development process.

Criteria for identifying future sites for tertiary education:

- access to and from the site by both public and private transport from the surrounding growth areas, other parts of Melbourne, and other tertiary education campuses;
- accessibility to major industrial and employment sites in the region;
- the site should desirably be within or adjacent to a high order activity centre and be of sufficient size to enable staged development of a multi-purpose education precinct;
- the site should enable access to advanced computing capacity; and
- potential for housing and employment suitable for students on or near to the education precinct and for housing for staff in the region.

The general transport needs of growth areas – both public and private - also need to be effectively met to ensure that residents have access to tertiary education and training education both within the area and in further parts of Melbourne.

In addition the development of the growth areas will also need to provide for the needs of community and smaller private sector tertiary education and training providers. These providers often operate from community, office and employment sites, so allowance for smaller multipurpose facilities provided by a mix of education and training providers should be included when calculating the areas required for commercial and community centres.

Greater use of online learning and learning based in the workplace are not expected to significantly reduce the need for campus based provision targeting the immediate post-school leaver demand, but may be important in meeting the need for additional education and training by older students, many of whom require part-time access that combines with work and family requirements. The ease of access and close proximity of tertiary education and training facilities to home or work can be particularly important for older part-time students.

1 Introduction

1.1 The Project

In June 2009 the Victorian Government set out in *Delivering Melbourne's newest sustainable communities* its proposals for extension of the urban growth boundary building on previous statements outlining where Melbourne could and should grow to meet expected population levels. The investigation areas identified focus on Melbourne's west in Wyndham and Melton-Caroline Springs, north in Sunbury and Hume-Mitchell-Whittlesea and South East in Casey-Cardinia.

The Growth Areas Authority is responsible for planning for likely future growth to ensure appropriate provision of all necessary services and effective consideration of the impact of urban growth particularly its environmental implications.

One important factor is to identify likely need for tertiary education – both higher education, usually provided through universities, and vocational education and training, predominantly provided through Institutes of TAFE.

The Growth Areas Authority (GAA) commissioned PhillipsKPA to advise it on the demand and supply of tertiary education, models of provision and locational criteria for tertiary education facilities to inform Growth Area Framework Planning.

The specific tasks of the Project are to:

- analyse existing data on demand for tertiary education and training to estimate a plausible range for demand in the growth areas taking account of current levels of demand in similar areas and the demand needed to meet Victorian and Australian Government targets for the acquisition of tertiary qualifications;

- gather data on potential supply which could be available to meet the demand from the growth areas, taking account of the potential to expand existing education and training sites in or near the growth areas and potential alternative means to deliver tertiary education and training; and

- identify the likely need for additional sites for tertiary education and training and criteria for their placement.

The project team has worked in two streams:

- to assess future demand using census, On Track and other data sources; and

- collecting input from universities, TAFE Institutes, and ACPET as the representative body for private providers. The Victorian TAFE Association hosted a forum attended by seven institutions.

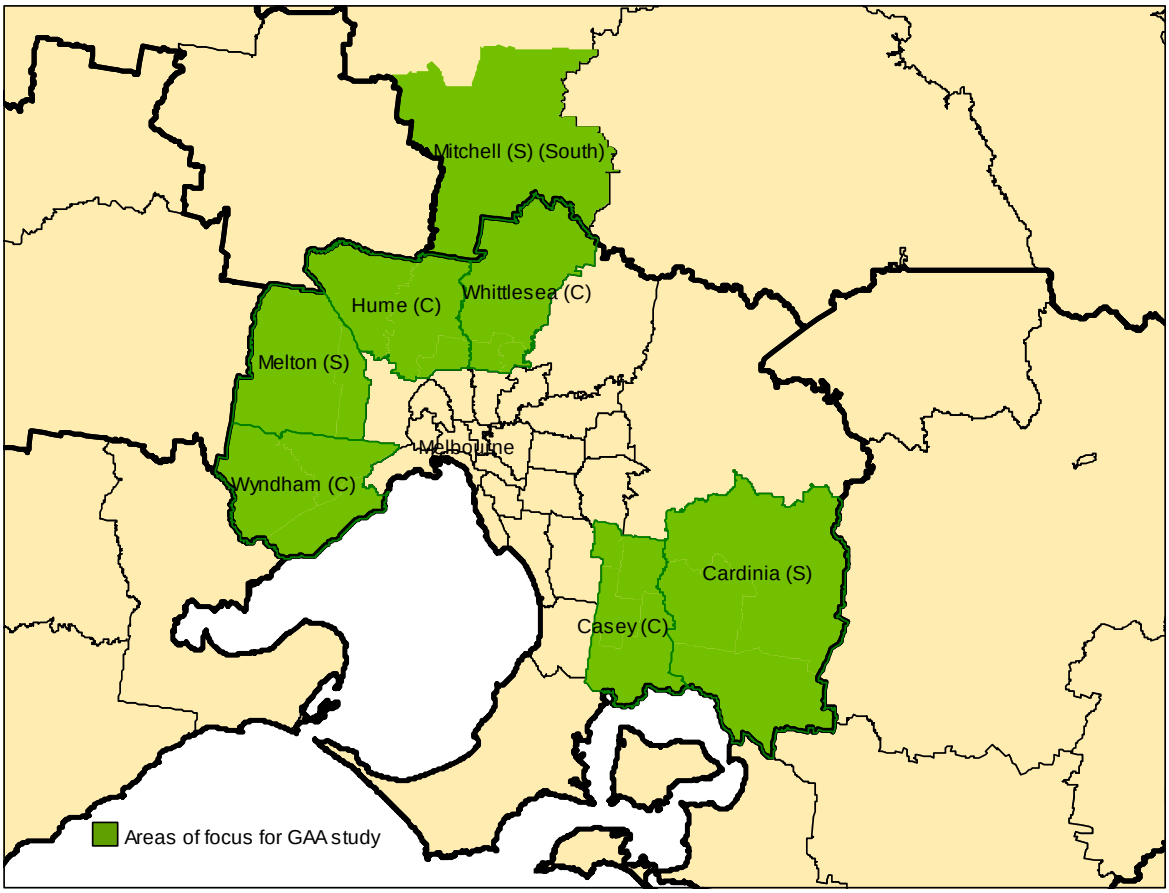


Figure 1: Map of focus areas for GAA study

1.2 Glossary and definitions

A number of terms are used throughout the Report which are explained below.

Higher education (HE) is education leading to the award of Diplomas, Advanced Diplomas, Associate Degree Bachelor degree, Graduate Certificates and Diplomas Masters and Doctorates under the Australian Qualifications Framework

The vast majority of higher education is provided by **universities** which are education bodies formally permitted to use that title. There are now some hundreds of other organisations approved to provide particular higher education qualifications. Therefore the report uses 'higher education' when considering the totality of higher education provision, but also considers universities in particular as the leading providers of higher education and those most likely to occupy major spaces designated for provision of higher education.

Vocational Education and Training (VET) is education and training leading to the award of qualifications under the Australian Qualifications Framework of Certificates I-IV, Diplomas, Advanced Diplomas, and VET Graduate Certificates and Diplomas. VET is provided by **Registered Training Organisations** (RTOs) of

which there are many thousands in Australia, many with a focus on a particular area of training.

The larger part of VET funded by Governments is provided through **TAFE Institutes.** The TAFE Institutes are the major VET users of large spaces allocated for education and training.

Data from the census and similar sources are driven by sector and funding rather than by institution types. A particular institution can operate in both higher education and VET, for example some universities are also TAFEs and many have established RTOs, while some TAFEs have approval to provide higher education qualifications. In the private sector many organisations work across both sectors.

Tertiary education and training is used in this report to refer to the combination of higher education and VET, which is consistent with Government practice in recent years. Some prefer 'tertiary' to refer only to the higher level VET together with all HE qualifications.[1]

Counts of people using tertiary education and training can either refer to the number of distinct individuals or to a measure of the amount of education and training received. For higher education the latter is expressed in terms of **full-time equivalence**, for VET funded by Governments it is expressed in notional **Student Contact Hours**.

1.3 Structure of the report

The draft Report has the following sections:

- Chapter 2 considers the policy and related context for demand and provision of tertiary education as the basis for estimating future demand;
- Chapter 3 and Appendix One estimate the potential demand for tertiary education from the local Government regions containing the growth areas;
- Chapter 4 considers the various ways in which the demand in those regions can be met;
- Chapter 5 considers each region in turn to identify the issues and potential outcomes for each;
- Chapter 6 sets out the criteria which the GAA should consider in allocating land for tertiary education and training purposes; and
- Chapter 7 provides a summary of the Report.

[1] See for example the recent statement by TAFE Directors Australia and Universities Australia http://www.tda.edu.au/cb_pages/Newsletter_20100426.php#_TDA_and_Universities

2 Growth in tertiary education: context

2.1 The growing demand for tertiary education and training

The take up of tertiary education has grown over many decades through a mixture of population growth and changes in the balance of employment towards jobs that require tertiary level skills. It is also built on the greater than 70% year 12 completion rates since the late 1980s which provide a constant stream of young entrants to both higher education and VET. Governments have supported this development, on the basis that it supports economic growth and sustainability and improved life outcomes for Australians.

In recent years there has been a strong focus on estimating, and planning for, the growth in tertiary level attainment required for coming decades. Building on the national target for completion of year 12 or equivalent of 90% by 2015, targets have been set for the coming 10-15 years by COAG to:

- reduce by half the proportion of people aged 16-64 without a Certificate III or above; and
- to double the number of diploma and advanced diploma completions;

and by the Commonwealth Government for:

- 40 per cent of people aged between 25 and 34 to hold a bachelor degree; and
- 20 per cent of those enrolled in higher education to be from low-SES backgrounds.

The reverse side of demand by individuals, and encouragement of Governments, is the need for higher level qualifications as the basis for employment. The Skills Australia report *Workforce Futures – a National Workforce Development Strategy* provides the most recent attempt to estimate future skills needs for the workforce[2]. A central part of the estimates for future skills needs is an expectation that the skills required by each industry will continue to increase over time as they have over past decades, a process known as skills deepening. Skills Australia concludes, consistent with previous analyses, that there is need for significant growth in the provision of higher level VET and higher education to meet skills demands, with a significantly greater proportion of the workforce holding higher level qualifications.

[2] Commonwealth of Australia, 2010. The report's analysis is based on a commissioned study by Access Economics which follows the approach set by Burke Shah, C & Burke, G 2006, *Qualifications and the labour market in Australia*, Report to National Training Reform Task Force, Melbourne and Shah, C, Cooper, L & Burke, G 2007, *Industry demand for higher education graduates in Victoria 2008-2022*, Report to Office of Training and Tertiary Education, Department of Industry, Innovation and Regional Development, Melbourne.

To achieve the output levels desired by the Governments, and identified as needed by Skills Australia, will require enrolment of many more people in each sector, extending to many who would currently be unlikely to take up either. It should also see a considerable expansion in the number of people with qualifications from both sectors.

Broadly the various groups of future students can be grouped as:

1. school leavers who want education and training, predominantly similar to students who now progress smoothly from school to tertiary education and training;

2. school leavers who need to be persuaded to continue with education and training. This group is the major pool to meet targets for expansion. Broadly put they require additional supports to engage effectively with education and training and often a series of achievable steps through lower level qualifications;

3. older students seeking their first post school qualification, a declining group as significantly more people complete higher level tertiary qualifications immediately post school;

4. older people seeking renewal or upgrading of skills to change or retain employment, a growing group with substantially more people acquiring multiple tertiary qualifications from one or both sectors;

5. research students, whose numbers are set to grow but who will nevertheless remain a minor group in terms of number; and

6. international students, a major industry for Australia, often predicted to settle in number as higher education systems mature in our main source countries but as yet to show any significant signs of slowing.

In terms of the outer metropolitan regions where participation in education tends to be lower than in inner and middle city regions, it is the second and third groups which are the initial target but with an expectation that the first and fourth will grow as the regions mature and a need for the latter two to develop if institutions and campuses based on those regions are to be comparable to others across Australia.

2.2 *Recent Victorian Government papers*

2.2.1 The Victorian Tertiary Education Plan

To support achievement of the higher education targets the Victorian Government through Skills Victoria is developing a state wide tertiary education plan. The plan will address the question of how best to provide for future demand for additional tertiary places. The *Report advising on the development of the Victorian Tertiary Education Plan* by an Expert Panel was released in April 2010.

The report estimates the additional number of places required to achieve the national higher education targets. The estimates are based on raising levels of access proportionate to current access and attainment. As a result for Victoria to maintain its higher rate of higher education provision and attainment it needs to reach 47% bachelor attainment for the 25-34 cohort by 2025 as part of achieving an across Australia rate of 40%. Equally within Victoria the report assumes a continued gap between metropolitan and regional attainment. In part this is due to constraints in modelling, but it also recognises the likelihood of an ongoing differential region to region, despite efforts to reduce the gap.

This is important for the growth areas which in metropolitan terms tend to have low attainment. It is likely that the Victorian Government will aim to reduce the extent of the imbalance, hence requiring higher levels of growth in attainment and a consequent greater supply of places for the residents of growth areas.

The Expert Panel's report concludes that there is no short term need for additional universities in Victoria, but expects that into the future there could be some new institutional structures. It emphasises the importance of making effective use of existing facilities and the likelihood that alternative ways to provide tertiary education and training will provide an important element in meeting the need to expand provision.

2.2.2 A focus on youth transition

The Victorian Government discussion paper *Stronger Futures for all young Victorians*[3] argues that a successful transition from school to independent adult working life works most effectively where young people at 15 are well prepared to undertake a senior secondary certificate, such that at 19 they are attaining or have attained an initial tertiary qualification, and by 24 are established in work with many holding higher level tertiary qualifications.

The consequence is that planning for tertiary education and training should be based on ensuring that nearly all young people are able to access tertiary education

[3] A discussion paper on the youth transitions system, Department of Education and Early Childhood Development and the Department of Innovation, Industry and Regional Development, 2010

and training in the decade following school. As a consequence of the growing proportion of people successfully making that transition there will be proportionately fewer people among older age groups seeking first time tertiary qualifications.

2.3 *Issues in estimating demand from the growth areas*

The focus for this project is to consider potential demand for tertiary education out to 2025 and beyond. The major factor is population growth as these areas provide one major outlet for Melbourne's growing population.

There are reasonable data for population estimates. The challenge is to estimate how that future population will respond to the economic and social demands for higher levels of education. The potential range of outcomes is sketched below to provide the framework for the analysis provided in Chapter 3 and the Appendix.

The low end for future tertiary demand is to retain current levels of higher education and VET participation in the outer metropolitan regions by age group and apply those rates to the future population. Since participation is currently low compared to other parts of Melbourne, the same relatively low participation would then continue.

This approach is unlikely to reflect the actual composition of the growth areas. The future population will substantially be made up of people from elsewhere in Melbourne and Australia who have moved into the areas. The University of Ballarat study of the tertiary education needs of the Melton and Moorabool Shires draws attention to the different nature of the Caroline Springs residents compared with other parts of those shires where longer term residents remain predominant[4]. Hence the next option is to assume participation rates for Melbourne as a whole will apply to the growth areas in the future, producing a higher level of future demand.

Both of these options are based in current participation levels. The remaining options assume that participation increases in response to social, employment, and Government expectations.

A middle to high end option is to reflect the estimates for employment demand for skilled workers, with some variation depending on the assumptions about economic and employment growth as reflected in the Skills Australia report.

Another set of medium to high end estimates come from modelling achievement of the various Government targets. The medium outcome is based on an overall Victorian achievement of 47% bachelor degree attainment, in line with the Australian target of 40%. The high end is based on differential growth in tertiary

[4] *An investigation of tertiary education provision in the Melton-Moorabool Region*, the University of Ballarat, January 2010

education reducing the gap between low participation and high participation areas of Melbourne.

Hence the spectrum of possible demand is from demand equal to present levels in outer metropolitan regions adjusted for population change to demand required for outer metropolitan regions residents to achieve outcomes close to the Government targets for Australia as a whole.

2.3.1 Second and further tertiary qualifications

The major focus is on people acquiring their initial higher level tertiary qualification, with an emphasis on this occurring in the decade following completion of schooling or its equivalent. There is also significant demand from people with qualifications for additional qualifications or ways to renew or upgrade which may not lead to a formal qualification.

This is a major factor in demand for VET, particularly from those aged 30 and over, often driven by employers. Likewise in higher education the extent of postgraduate coursework enrolments is likely to continue to grow. However, the need for dedicated campuses is less for both these groups, who are more likely to be enrolled part-time, able to use online learning or be trained in the workplace as outlined further in Chapter 4.

2.3.2 International students

International student enrolments now make up over a fifth of higher education enrolments in Victoria and are a growing presence in TAFE Institutes as well as supporting many private providers. International students are required to study on campus, a rule that may develop in line with learning technology but is unlikely to change substantively. Their presence thus increases enrolments on campus both helping make campuses viable but also reducing the capacity of existing campuses to meet growing domestic demand. Hence, consideration of need for tertiary provision in the outer metropolitan regions should include a provision for international students.

3 Estimating future demand

The paper at Appendix One provides a detailed analysis for the Local Government Areas (LGAs) containing the growth areas of future populations, existing demand for tertiary education, and potential future demand for higher education and for VET. The main elements are summarised below.

3.1 Future populations

Each of the growth areas is projected to expand notably faster than the other parts of Melbourne between 2010 and 2025, with growth ranging from 39% in Hume to 86% in Cardinia. In terms of actual population, Wyndham and Casey are projected to expand by more than 100,000 people each over the coming fifteen years. This is shown in Table 1.

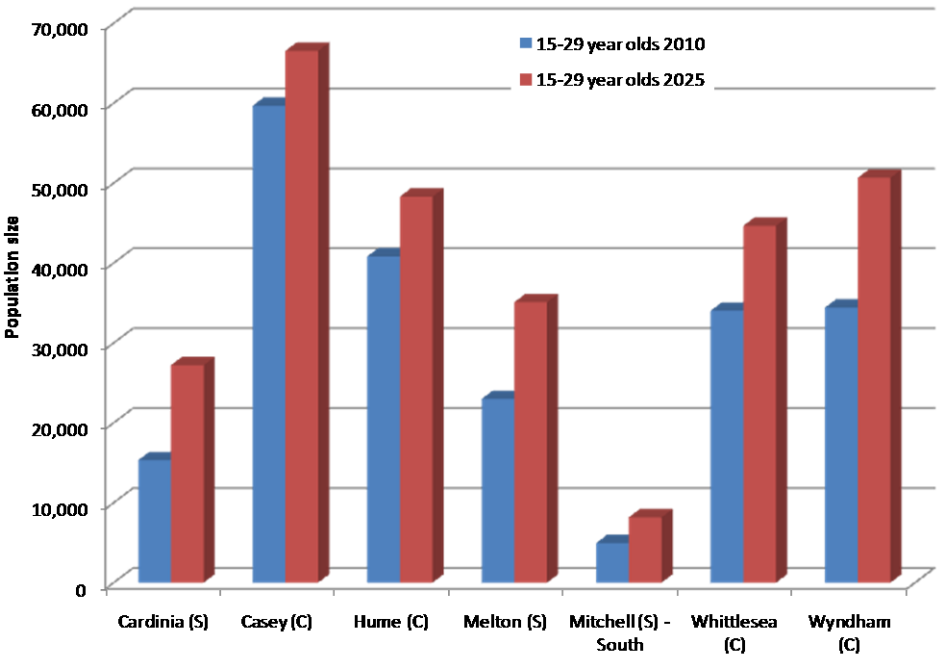
Table 1: Population projections for selected growth areas, 2010 to 2025 – Total Population

Area	'000 persons				Change 2010 to 2025	
	2010	*2015*	*2020*	*2025*	*Number*	*Per cent*
Cardinia (S)	74.9	96.0	115.1	139.7	64.8	86.4
Casey (C)	261.5	303.8	342.5	369.3	107.8	41.2
Hume (C)	176.1	199.3	220.9	245.2	69.1	39.3
Melton (S)	106.9	137.9	166.7	193.1	86.2	80.6
Mitchell (S) - South	24.8	29.9	35.7	42.1	17.3	69.6
Whittlesea (C)	155.2	189.3	220.9	244.8	89.7	57.8
Wyndham (C)	152.9	194.7	234.2	270.9	118.0	77.2
Balance of Melbourne*	3,090.9	3,213.4	3,343.7	3,479.1	388.2	12.6
Melbourne Total	*4,018.3*	*4,334.3*	*4,644.1*	*4,942.1*	*923.8*	*23.0*
Victorian Total	*5,469.0*	*5,864.2*	*6,255.5*	*6,636.8*	*1,167.8*	*21.4*

* Balance of Melbourne figure includes all LGAs in the metropolitan area which are not specified here (note that Mitchell is not in the metropolitan area)
Source: *Victoria in Future* projections, DPCD, Oct 2009

The major age groups using both VET and higher education are those aged between 15 and 29. Figure 2 shows the size of the 15 to 29 year old population in each of the growth areas in 2010 and in 2025. It shows that the largest proportionate growth in this group is expected in Cardinia, while the largest growth in terms of numbers is anticipated in Wyndham. In general, the population distributions for 2025 suggest that for most of the growth areas, the population bulge for the childhood years is just beginning to hit the late teens and early 20s, suggesting a substantial growth in demand especially in the decade following 2025. As with overall population

growth, the growth in the areas selected here is substantially larger than the growth in this age group expected in other parts of Melbourne where overall there is a 0.3% reduction in the 15 to 29 age group between 2010 and 2025.



Source: *Victoria in Future* projections, DPCD, Oct 2009

Figure 2: Projected population of 15 to 29 year olds in 2010 and 2025 for selected areas

3.2 *Current demand for tertiary education and training*

Using the 2006 census data, Table 2 and Table 3 provide comprehensive participation rate figures for residents of each of the selected LGAs as well as for Melbourne as a whole by age. In general, for higher education attendance, the participation rates are highest between the ages of 18 and 22, after which they drop off considerably. For VET, the prime participation age range is generally between 18 and 21.

The higher education participation rates of residents from the GAA areas are substantially lower than the Melbourne average. These lower rates are in part a reflection of the fact that there are few higher education places offered nearby these areas and therefore university students often move out of these localities to be closer to their campus. However, as shown in the On Track data following local school leavers presented in the Appendix , there are substantially lower progression rates to higher education from school students who lived in these areas and therefore the low rates are not simply attributable to a lack of geographic access to campuses.

The VET participation rates for the GAA areas are in general higher than for the Melbourne average (especially in the 18 to 21 ages). This is substantially different than for higher education participation. If the transition to higher education increases in these areas, to match that achieved elsewhere, there will be pressure on the VET participation rates. It is also interesting that conversely for those aged 24 to 34 the VET participation rates are mostly lower than for Melbourne overall, perhaps due to less take up of retraining and work based opportunities. Increasing the participation in these age groups in these regions will be important to achieving positive outcomes for residents of the growth areas.

Table 2: Higher education participation rates by age and location, 2006 (%)

Age	Cardinia	Casey	Hume	Melton	Mitchell	Whittlesea	Wyndham	Melbourne Total
18 years	11.8	17.1	20.1	17.0	7.6	23.2	17.2	27.4
19 years	20.3	23.9	24.7	21.1	11.5	28.1	27.1	40.2
20 years	16.4	22.4	23.9	21.4	10.2	28.7	25.3	41.9
21 years	15.4	20.8	21.3	18.0	9.9	26.1	22.2	39.3
22 years	14.9	14.2	15.0	12.7	9.9	19.5	14.2	31.9
23 years	8.7	11.0	11.6	8.8	3.6	13.6	11.9	24.8
24 years	4.2	7.8	7.5	7.3	5.3	9.6	8.8	18.8
25-29 years	4.6	3.9	3.7	4.0	3.4	5.1	4.7	10.3
30-34 years	2.4	2.1	2.1	2.5	2.3	2.3	3.3	5.3
35-39 years	1.8	1.7	1.7	2.1	2.2	1.5	2.9	3.4
40 and above	0.7	0.6	0.6	0.7	0.9	0.5	1.1	1.1

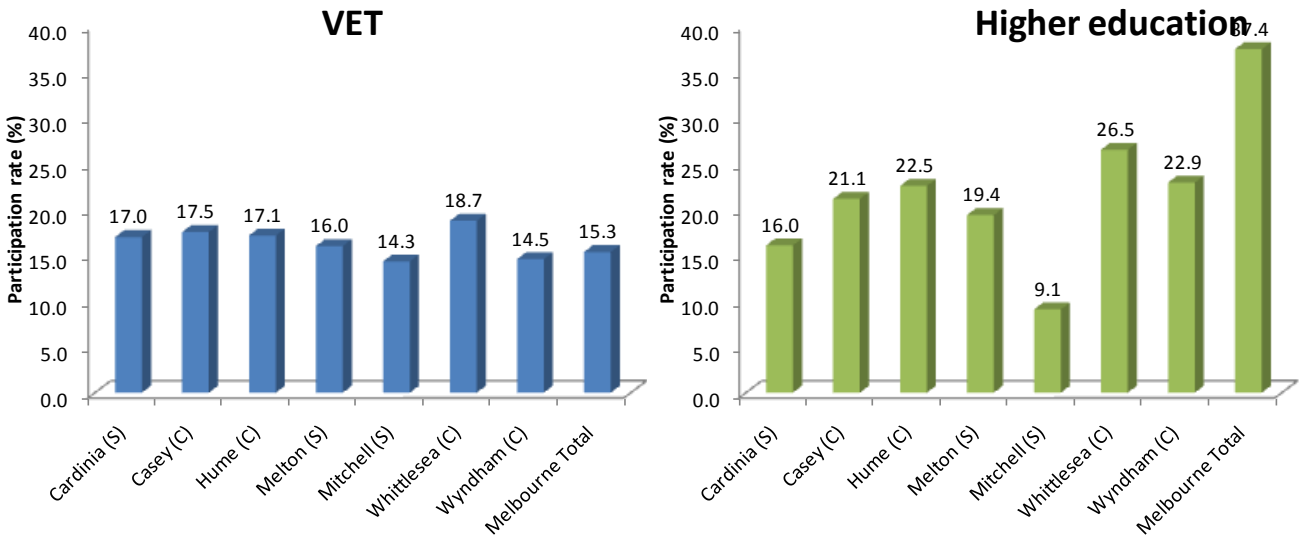
Source: ABS Census 2006, customised data

Table 3: VET participation rates by age and location, 2006 (%)

Age	Cardinia	Casey	Hume	Melton	Mitchell	Whittlesea	Wyndham	Melbourne Total
18 years	17.3	19.9	19.5	20.5	12.9	23.0	16.9	16.2
19 years	23.1	23.2	20.9	20.4	18.7	23.8	19.8	19.8
20 years	17.5	16.0	16.7	13.4	14.8	18.6	12.9	15.1
21 years	10.6	10.8	11.0	9.4	11.5	10.0	8.7	10.5
22 years	7.1	8.8	6.8	5.7	6.0	7.7	6.3	7.9
23 years	7.3	6.0	6.3	3.9	4.9	6.8	4.8	6.5
24 years	4.6	5.0	5.6	3.7	3.1	5.2	3.6	5.6
25-29 years	3.4	3.7	3.5	2.3	3.1	3.4	2.9	3.9
30-34 years	2.4	2.6	2.6	1.5	1.6	2.1	2.0	2.6
35-39 years	2.1	2.2	2.4	1.2	2.6	2.0	1.5	2.1
40 and above	1.0	1.0	0.9	0.7	1.1	0.8	0.8	0.9

Source: ABS Census 2006, customised data

Figure 3 displays the participation rates of the 18 to 21 year age groups for each of the areas and both tertiary sectors. This figure allows comparison within sectors and between the sectors and provides a focus on the core ages where participation in tertiary education is highest. It helps to highlight the stark differences in participation in higher education and the more even participation distribution for VET. It also shows that some of the areas of focus have higher VET participation rates than higher education rates (Cardinia and Mitchell). For the others the higher education participation rates (while still low) are higher than the VET rates.



Source: ABS Census 2006, customised data

Figure 3: Tertiary education participation rates of 18 to 21 year olds, selected areas, 2006

3.3 Future demand for tertiary education and training

We have modelled three scenarios for future demand:

- Low: participation rates in tertiary education remain at the levels recorded in the 2006 Census at both the university and VET level and across all age groups from 2010 to 2025;

- medium: growth in tertiary education participation rates based on the relative age-based changes in participation evident in the Census data from 1996, 2001 and 2006 and other assumptions relating to policy targets.

  The level of participation in higher education for the age cohorts from 18 to 24 year olds has been incrementally increased by 0.5 percentage points per year from 2010 to 2025. The participation levels of other groups remain stable.

For VET, participation rates for the 24 to 39 year age groups have been raised between 2015 and 2019 by 0. 1 percentage points and by 0. 2 percentage points from 2020 to 2025. Also between 2020 and 2025 there is a growth of 0.1 percentage points in participation among the 40 to 49 year age group; and

- High: extending the growth in higher education beyond that for the medium scenario so that the growth in the 18 to 24 year age groups increases from a yearly 0.5 percentage point increase in participation between 2010 and 2015, to 0.75 between 2016 and 2020 and 1 percentage point between 2021 and 2025.

The level of growth in higher education participation forecast in the medium scenario approximately matches the modelling work undertaken for the Victorian Tertiary Education Plan advisory committee which sees Victoria overall achieve a bachelor degree attainment rate of about 47 per cent of the population aged 25 to 34 by 2025. The high scenario pushes the increase in attainment in the growth area LGAs so that the disparity in attainment between those areas and the rest of metropolitan Melbourne is reduced, pushing them closer to the 40% target.

The assumptions for growth in VET participation take account of the relatively high levels of participation among younger age groups in the growth areas, which is likely to be under pressure from growth in higher education participation.

Figure 4 and Figure 5 show the estimated demand for VET and for higher education for each of the LGAs set at a constant scale to show the quantum of increase as well as the proportionate increase. Table 4 and Table 5 provide the actual figures for 2010 and for 2025 for each scenario.

3.4 Key findings for tertiary demand in the growth areas

The core findings for demand outlined here and detailed in Appendix One are:

- that the growth areas will experience a large increase in the core tertiary age population over the coming fifteen years and beyond;

- crucially, this population increase is disproportionately large when compared to the rest of Melbourne;

- participation in higher education in the growth areas is substantially lower than for other parts of Melbourne, while VET participation is slightly above the Melbourne average for most of these areas; a d

- the needs for tertiary education are likely to grow in the growth areas at a faster rate than elsewhere in Melbourne over the coming decades as a result of population growth alone. With increases in participation reflecting the changing nature of the regions and broader requirements for higher levels of skills, the demand will grow substantially.

Table 4: VET enrolment scenarios for selected areas, 2010 and 2025

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010 base	1,584	6,061	4,070	1,757	495	3,459	2,802
Low Scenario 2025	2,784	7,300	4,960	2,921	790	4,801	4,374
Medium Scenario 2025	3,451	9,011	6,133	3,782	970	5,936	5,752

Table 5: Higher education enrolment scenarios for selected areas, 2010 and 2025

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010 base	1,580	6,611	4,772	2,514	407	4,584	4,700
Low Scenario 2025	2,796	7,702	5,644	3,957	666	6,152	7,219
Medium Scenario 2025	3,676	9,915	7,233	5,157	951	7,647	8,829
High scenario 2025	4,116	11,022	8,027	5,757	1,094	8,394	9,634

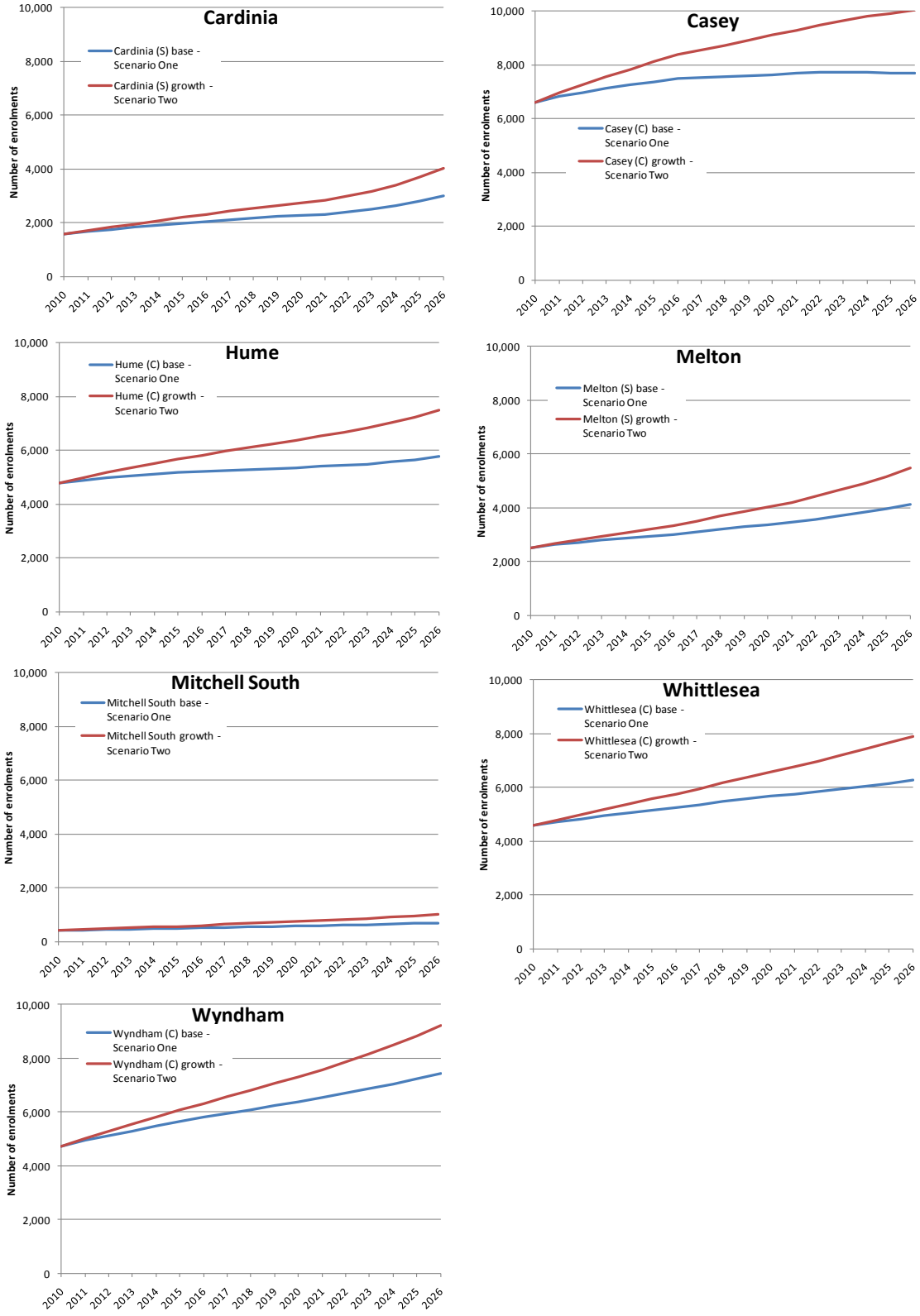


Figure 4: Comparison of VET enrolment scenarios for selected areas, 2010 to 2025

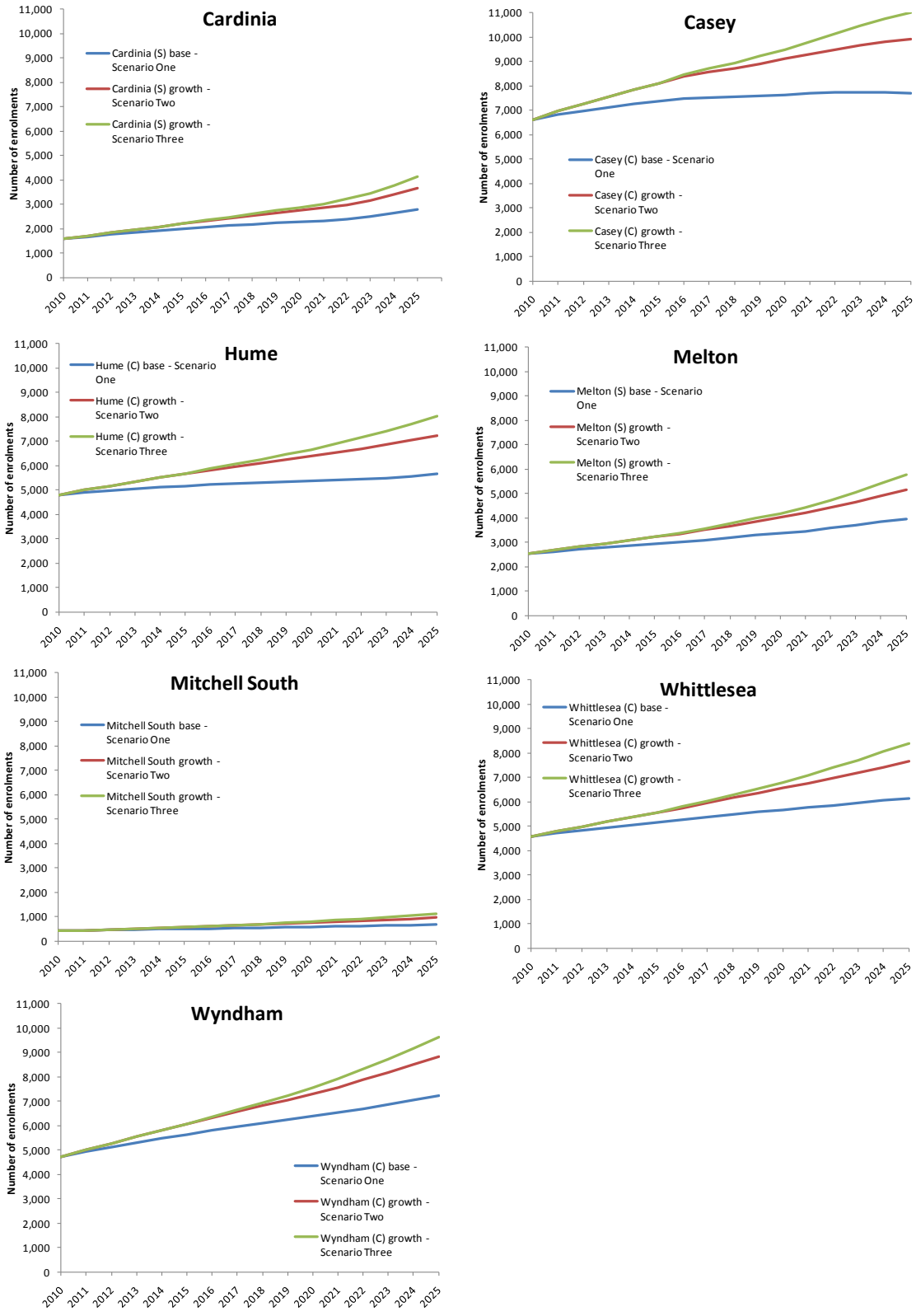


Figure 5: Comparison of higher education enrolment scenarios for selected areas, 2010 to 2025

4 Meeting the need for tertiary education and training

The options for expanding both HE and VET provision focus on a combination of four main options:

- expansion of current campuses which are not fully utilised;
- changes in the nature of provision that reduce the need for physical infrastructure such as options for online enrolment and training in the workplace;
- creation of new campuses in areas of major population growth not in easy reach of existing higher education and VET provision; and
- provision for smaller multipurpose facilities in commercial and community centres used by a mix of education and training providers.

This chapter considers the issues concerning each, with the following chapter then identifying the current provision in each of the metropolitan growth areas and the development plans of the major providers in each region.

4.1 The development of current campuses

4.1.1 Expanding campuses

The essential starting point for considering how best to meet the expected high levels of demand in the growth areas is to identify the capacity of existing campuses in or near to those regions to expand. The middle and outer metropolitan areas of Melbourne contain many university and TAFE campuses each with either underused facilities and/or space for expansion.

The under use is particularly evident in the university sector where the various factors which make for a vibrant campus are rarely present. These factors interact, with weakness or strength in some tending to create or extend weakness or strength in others. They include:

- a breadth of courses, capable of appealing to a broad range of potential students both local and from around Melbourne and Victoria plus international students;
- some courses that distinguish the campus from other parts of the university and from other universities, adding a sense of importance to the campus and attracting a higher proportion of the more capable students;
- research and research students;

- significant numbers of staff based at the campus, rather than attending it for specific classes; and

- a range of social infrastructure including cafes, restaurants, sporting and exercise facilities.

For campuses with significant higher education provision a simple benchmark is that there should be at least 5000 full-time equivalent students. It is an arbitrary measure dating from the 1980s but used again in the Australian Government's Review of Higher Education[5] which argued it may be too low. The measure was created for a stand-alone university but it also provides a useful guide for campuses at some distance from other parts of the institution.

The emphasis of the universities consulted is to ensure the value of the current campuses before others are developed. For example Victoria University only passes the benchmark well at Footscray. Its plan to concentrate growth there and at St Albans-Sunshine is to ensure it has a small number of strong locations rather than a series of weaker ones. Monash, similarly, wants to expand Berwick to be a major campus.

Hence an initial focus for addressing the expected growth in demand, for higher education at least, is the capacity of those campuses to expand to, and beyond, the benchmark, drawing both on students from the growth areas and from elsewhere in Melbourne plus international students.

The question that arises is whether the campuses that now exist are well placed to support the needs of the growth areas such that their expansion is a suitable response. It is possible that some may not be, in which case there may need to be consideration of their best future use.

Many of the issues for universities also apply to TAFE Institutes, however there is nothing equivalent to the benchmark of 5000 full-time equivalent students. TAFE Institutes support a greater number of small facilities but also are looking to rationalise provision, building up key campuses. In discussion, TAFE representatives argued that there is a need for a reasonable mass of students to sustain a campus but could not specify a minimum, arguing that it in part depended on the industry sector of the qualifications to be provided.

To improve the education and training provided from current TAFE campuses Skills Victoria's strategic asset management plan for future investment in the sector targets the replacement of poor quality infrastructure that impedes many TAFE campuses' ability to grow and meet the demands of growth in the metropolitan growth corridors.

[5] Bradley, Noonan, Nugent, Scales, *Review of Australian Higher Education Final Report*, December 2008, p111. The original measure was for a stand alone university, not a campus of a university. However, most of the issues that drive the assessment apply to a campus as much as to a whole institution.

4.1.2 Improving the efficiency of campuses

It is difficult to estimate the carrying capacity of campuses. The general tendency for developments on new sites has been for single or low rise buildings, often generously spaced. More intense development or redevelopment would increase the service capacity. Conversely, not all land is suitable for development due to environmental requirements and some buildings are of heritage value restricting redevelopment.

A very rough assessment was done at VU based on the student load per hectare at Footscray, its most built up non-city location. If its other campuses achieved a similar density of students VU's total numbers would multiply three to four times. The estimate includes fully using Werribee and Sunbury which both cover large areas. The key point is that a medium sized university and a very large TAFE could easily double its load on current sites.

The use of facilities is also subject to considerable scrutiny across both sectors. University facility managers have a benchmark of spaces being used 75% of the time at 75% of the capacity of each space. This is rarely achieved, particularly not in the less populated campuses.

4.1.3 Supporting research

The presence of major research and researchers on a campus is critical to its standing as a location for higher education provision. Research helps brings academic staff onto a campus and tends to ensure the courses provided are up to date and potentially attractive to a wider range of students. The outer university campuses tend to have less research and indeed may not be the base for the staff that teach there.

The exceptions are where a campus is the base for research infrastructure that requires space such as water research at VU Werribee and RMIT's engineering research at Bundoora. In contrast Monash's plans to create health industry courses at Berwick is tied to a focus on social science research relating to health and wellbeing but not clinical health research. However La Trobe at Bundoora remains the only broadly based research focused institution in the outer metropolitan area.

The lack of research activity limits a university's impact on the region, in particular its capacity to interact with local industry and the capacity of the region to attract major industrial development. It may be that the fact that most campuses are outliers of the main university holds back research in particular. As a result there may be a case for a major investment in a research focused university in one of the growth areas to provide a stimulus for regional development. However that would be a major Government decision, not driven directly by the demand for higher education from the future regional population.

4.2 Changing delivery of tertiary education and training

4.2.1 The changing use of educational campuses

The historical allocation of sites for tertiary education and training has tended to focus on one type of provision, whether it be university education, advanced education (which then become university education during the 1990s), or for vocational and technical education.

Since the 1990s the prime use for a site has tended to remain identified with a particular sector but there has been much more intermixing. First, Victoria created four multi sector universities in RMIT, VU, Swinburne and Ballarat. These institutions inherited sites which mostly had a focus on one or other sector. Over time the campuses have become less identified with a sector but for cultural and sometimes funding reasons sector identification remains strong.

Secondly, there have been various efforts to create educational precincts involving multiple partners linking schools, VET and higher education in different combinations. The argument for this approach is to support transition across the different forms of education but also to garner efficiencies in the use of sites. Some of these arrangements have struggled to realise the intended outcomes but it remains a useful model.

Current examples include Berwick, where Monash and Chisholm interact with a select entry school and a Technical Education Centre; Broadmeadows, where Kangan Institute is located near a new secondary college which is involving VU; and redevelopment of Epping rail Station to link a variety of education provision with NMIT.

The constant message through the consultations was the need to have available a range of options in an area, with the capacity for those options to change as regions develop and mature. Rather than tie a location too tightly to a specific provider or type of provider, approaches which allow for flexibility and development are needed.

4.2.2 Delivery in community and commercial facilities

Linked to the multiple use of dedicated education sites is the use of community and commercial centres for education and training. It is the location for much Adult and Community Education, private VET and is being targeted by TAFE Institutes and universities.

The advantage is to provide access to education and training closer to home and in smaller settings which may be more attractive to those at the margins of training and employment. The focus tends to be transition courses developing the skills required for more sustained study, providing an important entry point. The nature

of the growth areas means that there will be a considerable group for whom such approaches are desirable.

The use of commercial training facilities and meeting spaces is a related use, often for short courses and targeting a broader group.

In the planning context the issue is to ensure that such spaces are created in the development of community and commercial facilities and the potential for education and training uses factored into the likely amount of space required.

4.2.3 Delivery off campus – online and learning in the workplace

Delivery of tertiary education and training off campus reduces the physical facilities required by students and potentially by staff.

4.2.3.1 Learning in the workplace

Training in the workplace is now a common location for education and training, particularly in the VET sector, with two TAFE Institutes commenting that their biggest campus is 'workplace'. Learning in the workplace has most relevance for those already employed, particularly where the employer purchases the training. Hence it applies to VET students across the age groups but tending towards the older training participants. In contrast, school leavers, who are not apprentices or trainees, tend to be full-time TAFE students, based on-campus.

Universities are also extending work based learning opportunities, with for example, VU requiring 25% of assessment for a course to be based in learning in the workplace and Swinburne encouraging it in all courses. These have a minor impact on the need for campuses with the work-based learning integrated into the degree, not replacing it.

4.2.3.2 Online learning

Online learning is an important area for universities. At the undergraduate level provision is primarily through a sub-set of universities and OUA. Regional universities are among the larger providers both as a means to buttress their enrolments but also because rural students are one target group. There is also a notable group of metropolitan students enrolled in distance education often with regional universities. Both groups tend to be older, and usually part-time. Universities are also building in online learning into campus based provision, which alters the nature of the campus learning experience but does not diminish the use of the campus as such.

At the postgraduate level online learning is more prevalent, particularly mixed with targeted on-campus meetings.

4.2.3.3 Impact

There is little evidence that either online or learning in the workplace is having any major impact on the expectations for a campus based education for immediate post school education and training. Hence planning for that group should expect an ongoing requirement for a physical base. However, in the growing provision of education and training to older age groups, often second and subsequent qualifications, the emphasis is to fit the learning in with work and family requirements, if it is not directly set up by the workplace. For this group the physical base of the education and training provider is less used, and there is a preference for office based locations close to major employment hubs.

4.3 Community and private sector education providers

The report focus is on the universities and TAFE Institutes as the education organisations with the greatest requirement for significant space. There is also an important community and private sector engaged in education and training, which, particularly for the private providers, has grown substantially over the past two decades.

4.3.1 Private sector providers

The private education and training sector is a very diverse group, with most organisations small VET providers. However, it also includes some larger operators which tend to operate in or near Melbourne city using office space. Most providers work on a fee for service basis beyond the Government funded VET system, hence the amount of data is limited.

Advice from the Australian Council of Private Education and Training is that its members tend to be based in major population centres, the city but also in major metropolitan points such as Dandenong. These providers operate extensively in workplaces and other sites not directly their own. Hence they often require a small office base near to potential clients, generally business.

The Government expects that TAFE Institutes will remain the major providers of VET for Victorians but equally wishes to expand the role of the private sector. The Victorian Government's 2008 statement *Securing jobs for your future – Skills for Victoria* creates the Victorian Training Guarantee, which ensures funding for all eligible students VET providers enrol. The policy extends the potential for private VET providers to compete against TAFE Institutes. This could increase the number of larger private providers, with a consequent need for more significant space.

Projecting forward it is important to include provision for some private training businesses to operate in the growth areas, closely aligned to employment centres. It is less likely that larger providers will be based in those regions. However, they would be potential users of sites for tertiary education established to support a range of providers.

4.3.2 Adult and Community Education

Adult and Community Education (ACE) providers are also a diverse set ranging from parts of most TAFE Institutes, large organisations such as Adult Multicultural Education Services through to small community organisations with annual incomes of less than $50,000.[6]

There are ACE providers currently covering most areas of Melbourne. It is the nature of this provision that it should be close to the communities being serviced. Hence as Melbourne expands it is important to provide for ACE through ensuring good community facilities with capacity to allow for small to medium classes. ACE provision is also an option for multi-purpose education facilities.

4.4 Expectations for the provision of tertiary education

The preceding sections have considered the capacity of current campuses to expand to meet growth in demand and the potential from non-campus based provision. These opportunities need to be matched to expectations from those intended to receive the education and training.

Previous studies of the relationship between metropolitan residence and the choice of university shows a strong correlation with the large majority of students choosing a campus either in the city or with some proximity to where they live[7]. For example, Edwards' data indicate that about 80% of the Government school students from the northern and western regions making the transition to university went to one of the two metropolitan universities of VU and La Trobe or to the large city universities of RMIT and Melbourne[8].

Overall, the pattern of figures for the seven growth areas shows that attendance at TAFE is generally localised (with the exception of some university-affiliated campuses such as RMIT and Swinburne) while university attendance is more broadly spread. However, there are basic patterns in university campus enrolments that suggest 'regionalised' patterns of attendance across the metropolitan area.

There are many reasons that effect students' choice of university and TAFE campus. The core reason is generally recognised as being availability of courses in the field of interest[9]. For students in the growth areas, this seems to help to explain the different patterns of attendance between TAFE and university students – the university

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[6] *A stronger ACFE Delivering Skills for Victoria*, Department of Planning and Community Development, June 2009

[7] D Edwards, 'Keeping it local: geographic patterns of university attendance', *Australian Universities Review*, vol 51, no. 1, 2009

[8] Data is for 2005 commencing school leavers. It is unlikely that there has been any significant change in the following years.

[9] Beavis, A., & Elsworth, G. (1998). *Individual demand for tertiary education; interests and fields of study, Evaluations and Investigations Programme (EIP)*. Canberra: Department of Education, Training and Youth Affairs

campuses in close proximity to the growth areas are generally small and have a limited range of subject and course offerings. On the other hand, in most cases the TAFE Institutes in these areas generally cover a wide spectrum of courses and qualifications offered by these institutions. However, for university attendance, there is a local proximity issue also at play because in all cases where there is a university campus located within the LGA of one of the growth areas, the proportion of local students attending the campus is much higher than the overall share of metropolitan students that the campus attracts.

In sum, in finding a course that matches their interest applicants prefer an institution that is accessible, whether in the broad region or the city. The key point is that if there are no suitable courses students will go past a local campus to find a suitable course. The conclusion for the GAA is that arguments for local campuses and provision only work if the local provision is sufficiently extensive. Otherwise it will cater for only a few and most will look further.

Ballarat in its assessment of the Melton and Moorabool Shires assumes that 30% of TAFE students could be retained in region and only 12% of higher education students. These figures are low but higher than VU's actual experience in Melton and Wyndham. Note that many of these students would travel only as far as St Albans, Sunshine and Footscray to access VU's larger campuses.

This suggests that only a proportion of the growth area demand need be met locally. but that the majority should be provided for within the broad region extending back to the city. That is, although individuals will travel right across Melbourne to access a particular course or qualification, planning should assume this will not occur.

The broad regional focus is important to the assessment of the potential for any campus. A successful campus will attract people from the immediate catchments of other campuses such that a viable Melton campus should attract students from across the western and northern regions but not significantly from the south east.

There is thus a connection with the longer term development of city and inner metropolitan campuses and universities. The data shows that there will be a slight fall off in the 15-29 year old population in these areas, while the high rate of higher education participation in the inner and eastern regions suggests potential for only moderate increases in participation[10].

RMIT and Melbourne for example should continue to look for students across Melbourne and hence take up some of the growth in demand in the outer regions. But neither indicate an interest in large numbers of additional undergraduate students. [11] Monash at Clayton and Caulfield is similar. Only Deakin at Burwood is likely to grow notably. VU in contrast will continue to build up St Albans, Sunshine and Footscray continuing to grow alternatives to its outer campuses.

[10] See Appendix for data
[11] Information from The University of Melbourne

5 Meeting demand from each growth area

5.1 *The south eastern growth area: Casey-Cardinia*

The major providers located in or near the Casey-Cardinia local Government areas are Monash University at Berwick and Peninsula (Frankston) and Chisholm Institute at Berwick, Dandenong, Cranborne and Frankston.

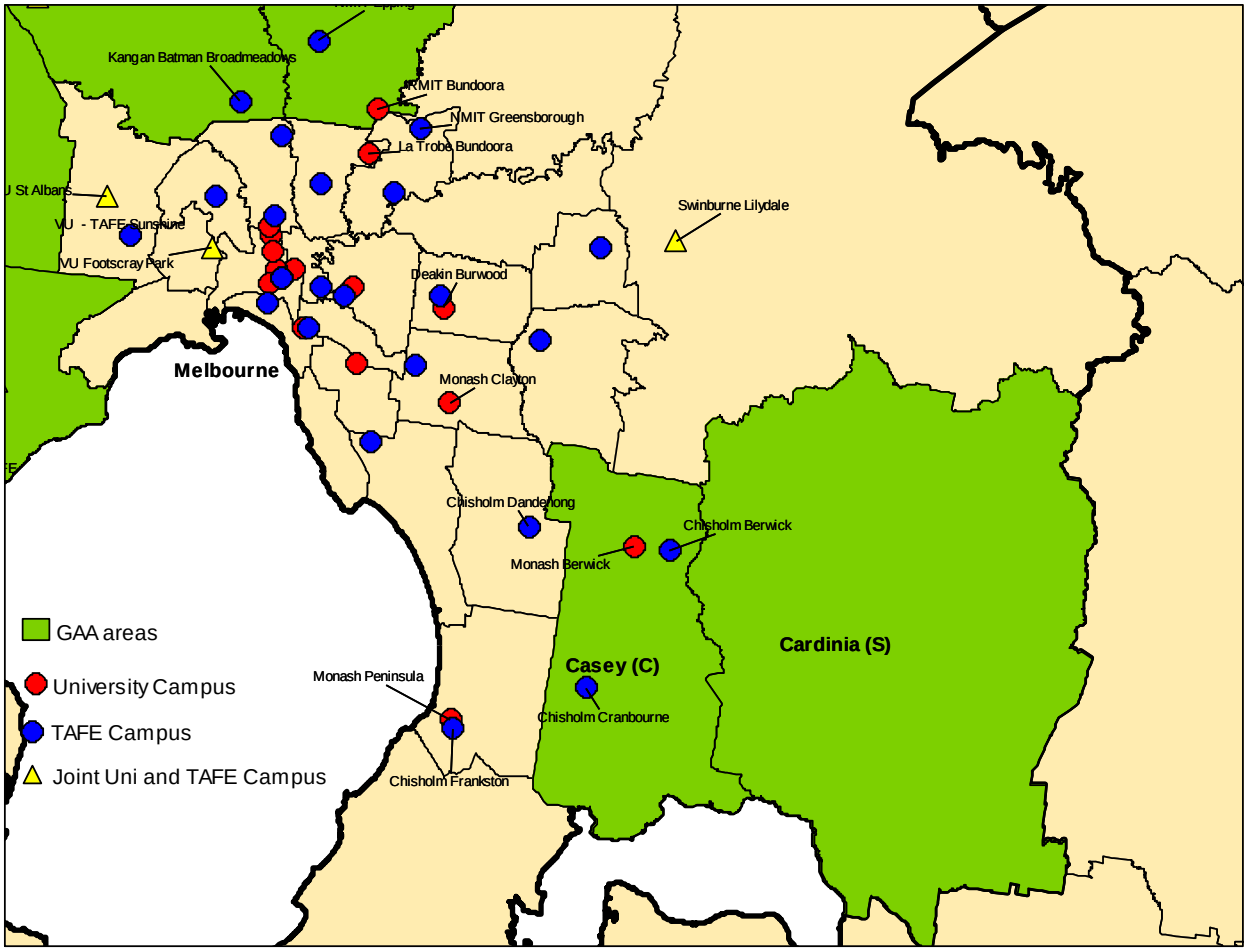

Figure 6: Map University and TAFE Campuses – Melbourne South East

5.1.1 School leaver destinations

In Cardinia, there are no local tertiary education campuses specifically within the boundaries of the LGA. However, nearby Casey has a number of options. Of all Year 12 completers who went into tertiary education in 2009, nearly 10 per cent went to campuses of nearby Chisholm TAFE (in order to highlight that this is a large proportion relative to the size of the institute, this TAFE attracts 2 per cent of all Melbourne students). In terms of other TAFE destinations among this cohort, about 6 per cent travelled into the city to attend RMIT TAFE or William Anglis

TAFE and another 4 per cent travelled to the eastern suburbs campuses of Swinburne TAFE. In terms of university attendance, 4.7 per cent of the Year 12 completers went to the Berwick campus of Monash University (compared with 0.7 per cent of all metropolitan students) and 3 per cent went to the Gippsland campus of Monash University which is the closest regional university campus to this area. A substantial proportion of students travelled outside the area to attend university, including 10 per cent to Deakin Burwood, 10 per cent to Monash University's Clayton campus and 7 per cent to the Australian Catholic University in the city.

In general, the patterns for Casey were similar to that of Cardinia – these two areas share a similar locality and the same local tertiary facilities. Of all Year 12 completers who went on to enrol in a tertiary course, 13 per cent from Casey went to the local Chisholm TAFE campuses. A further 3 per cent went to RMIT TAFE in the city and 3 per cent to Swinburne TAFE campuses in the eastern suburbs, but few of the other TAFE students attended anything but their local campuses. Students from Casey who went to university chose to enrol at Berwick and the Peninsula (Frankston) campuses of Monash University at a much greater rate than was take-up for these campuses among the whole metropolitan area. However, for university, most students travelled notable distances, with 10 per cent attending Monash Clayton, 8 per cent at Deakin Burwood and 5 per cent at both the University of Melbourne and RMIT in the city.

5.1.2 Monash University[12]

Monash is committed to expanding its total numbers through growth in its outer metropolitan campuses.

At Berwick it has about 60 hectares of which Monash now uses 13ha. There are about 1600-1800 students currently enrolled at Berwick, who are a mix of local students, those from elsewhere in Melbourne and international students. The University has flagged an ambition to increase numbers at Berwick to 10,000 by 2020. The major restriction is the extent of demand for places with an assessment of demand, growth, and provision suggesting that a more likely outcome is about 5000 students by 2020. To change the relative attractiveness of Berwick Monash plans to increase the range of courses taught to be more comprehensive, including some degrees in areas such as health services and disaster management which are not provided elsewhere by Monash.

The Monash Peninsula campus services the south east but with a focus into the Mornington Peninsula. It plans to increase its student numbers from below 4000 to over 6000, which would reach the capacity of the campus without significant redevelopment.

[12] Based on discussions with Monash's senior executives responsible for the Berwick and Peninsula campuses

Monash Gippsland also attracts residents of the south east, using the train link. It has about 3000 students on a large site. The university would like it to grow but recognises the challenge of achieving that.

5.1.3 Chisholm Institute[13]

Chisholm Institute is based in the south eastern metropolitan area. It is currently at the capacity of the facilities available on of its campuses but plans to grow substantially in response to strong demand. The main restriction is buildings, with all campuses having considerable space for expansion. It considers that Berwick could double its provision, targeting the younger TAFE cohort, from its current 3600 students (1.2 million student contact hours).

Chisholm supports increased use of online and workbased training, which it considers most suitable for the older TAFE cohorts, aged 25 and over.

It has a small presence at Pakenham in Cardinia which has struggled to succeed. It would rather maintain this site as a small presence than grow it in counterpoint to Berwick.

5.1.4 Inter-sectoral provision

Berwick is also the site for cross sector collaborations. The selective school Nossal High is located on the Monash campus. There is extensive collaboration between Monash and Chisholm intended to create better pathways across the sectors, using the physical co-location in Berwick to drive connections. Chisholm hosts a Tertiary Education Centre, combining secondary and vocational education and training.

Deakin at Your Doorstep is an innovative program offered by Deakin University which increases opportunities for students across Victoria by offering the Associate Degree of Arts, Business and Sciences in conjunction with Chisholm. In 2010 students could study the associate degree at a learning centre at Dandenong, via video conference with on-campus tutor support.

5.1.5 Potential to increase access to other providers

Residents of the south eastern suburbs also access other providers as outlined above for school leavers. Of these Monash's campuses at Clayton and Caulfield are not expected to increase notably in provision but will continue to attract students from across Melbourne, particularly from the eastern areas. Deakin University seeks to increase provision at Burwood and through alternative provision at smaller sites designed to give access to higher education to areas of low provision.

[13] Based on Chisholm's participation in the VTA forum and its submission.

Swinburne has indicated publicly that it wishes to expand both VET and higher education, strengthening its already leading position in enrolling TAFE graduates into higher education.[14]

5.1.6 Regional issues

The major issue raised in the consultations is the importance of transport links. There is reasonable rail into the region, particularly to Berwick Monash and Chisholm, but local bus services within and across the region are poor such that it can be easier to get to a major inner city campus than to a notionally neighbouring one.

Chisholm in consultations emphasised the strong need to engage the mature population without formal qualifications which remains a significant group in the region.

5.1.7 The need for additional campuses in Casey and Cardinia

There is no evidence to support creation of a new major campus for higher education in the Casey and Cardinia regions. The current Monash campuses in and near the region have the capacity to provide significantly greater number of places. Expansion of those campuses, with a focus on Berwick, would make them effective locations for higher education, able to provide a wide range of courses and qualifications and bringing greater research activity into the region.

Competition to Monash, to ensure an element of choice for residents, will be met through Deakin's use of local learning centres to connect students to its main sites and the capacity of residents to travel to the inner and mid metropolitan campuses of Deakin, Swinburne, RMIT and Melbourne.

There is a need to provide additional infrastructure to support vocational education and training, including further education opportunities which set the grounds for transition to higher education. Chisholm Institute considers that an additional site in Cardinia would ensure it meets local needs through its network of locations and extensive training in the workplace.

[14] Swinburne input to the Project.

5.2 *The northern metropolitan growth areas: Hume-Mitchell-Whittlesea and Sunbury*

The major providers located in or near the northern metropolitan growth areas of Hume-Mitchell-Whittlesea and Sunbury are La Trobe University at Bundoora, RMIT at Bundoora, providing primarily higher education, Kangan Institute at Broadmeadows and Cragieburn, NMIT at Epping and, to the east, at Greensborough, and VU at Sunbury. In addition Goulburn Ovens TAFE operates to the north of the metropolitan boundary.

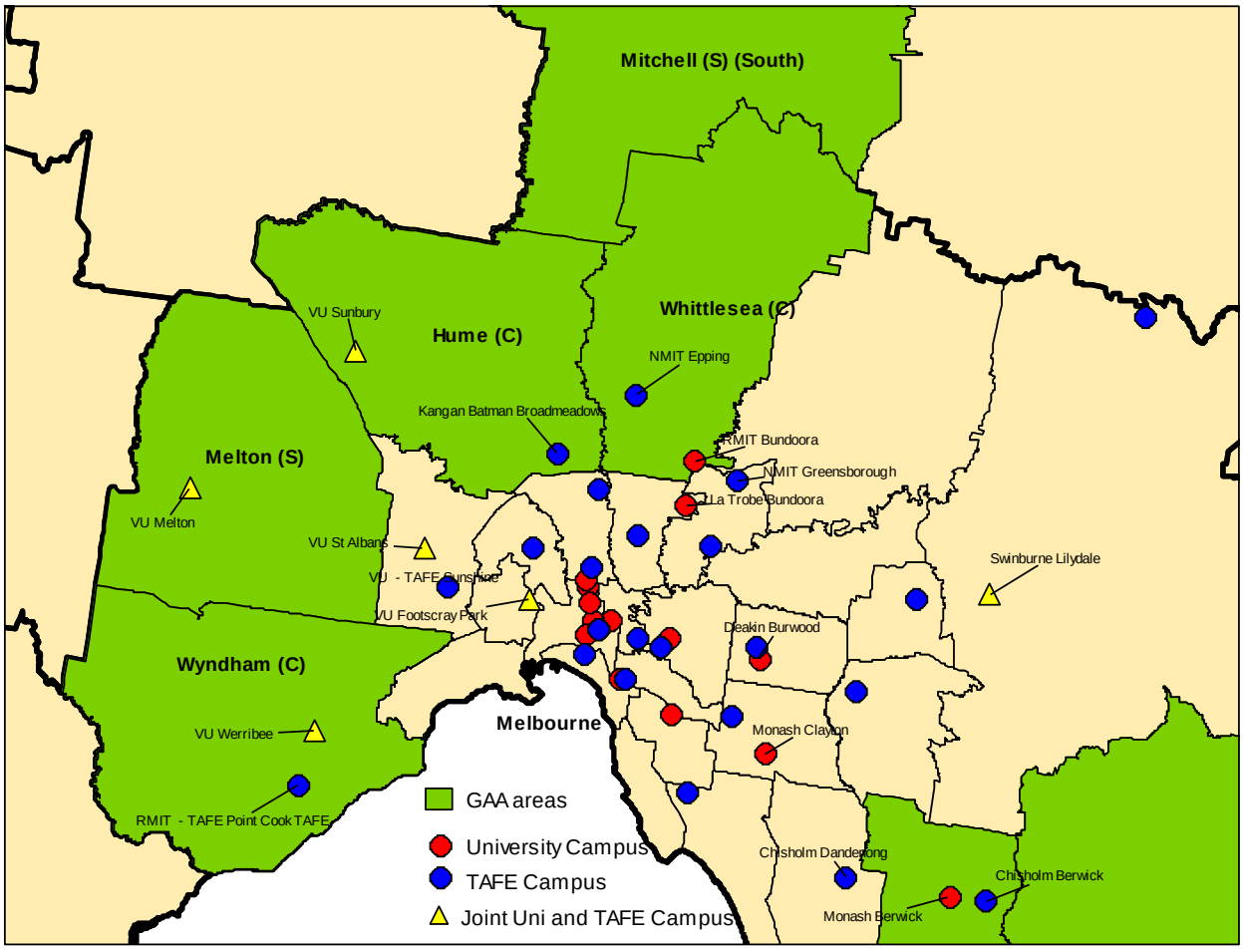

Figure 7: Map University and TAFE Campuses – Melbourne West and North

5.2.1 School leaver destinations

For Year 12 completers from Hume, those who went to TAFE generally attended the local Kangan Batman TAFE campus at Broadmeadows (7 per cent). A further 6 per cent went to relatively close TAFE campuses of Victoria University. Five per cent went to TAFE campuses at NMIT (nearby, but outside the LGA) and another 5 per cent attended RMIT TAFE in the city. Those in this cohort who went to university

were most likely to enrol in campuses of Victoria University (15 per cent), with 1 per cent attending the Sunbury campus (located within Hume). This 1 per cent represents a small number, but is worth noting given that overall this campus is small and attracts less the 0.1 per cent of all metropolitan Year 12 completers. Those students from Hume who went on to travel further to university attended RMIT in the city (12 per cent), La Trobe University in Bundoora (11 per cent) and Melbourne University (9 per cent).

Whittlesea Year 12 completers showed strong patterns of attendance at both local TAFE and nearby university campuses. Seventeen per cent of this cohort went to campuses of NMIT for TAFE, 17 per cent went to the LaTrobe Bundoora university campus and a further 5 per cent went to the RMIT Bundoora university campus. Of those who travelled further for tertiary education, 10 per cent went to university at RMIT in the city, 8 per cent went to Melbourne University and 7 per cent to Victoria University. In addition, 5 per cent went to RMIT TAFE in the city, but few other TAFE students went past the NMIT campuses.

Mitchell is located outside the metropolitan area. As such access to tertiary education facilities are even more limited than they tend to be in the outer metropolitan suburbs. For year 12 completers in this area who articulated to tertiary studies in 2009, the most common TAFE destinations were the local Seymour campus of Goulburn TAFE and the Broadmeadows campus of Kangan Batman TAFE. Among the whole cohort of completers, 15 per cent went to university at La Trobe Bundoora and a further 4 per cent travelled to the Bendigo campus of La Trobe. Others went further for university with 11 per cent attending the University of Melbourne and 9 per cent travelling to campuses of Victoria University.

5.2.2 NMIT[15]

NMIT operates at a number of campuses from the inner north through to the northern growth regions with campuses at Epping and Greensborough and a variety of training centres in the rural hinterland, particularly focused at racing and agriculture. NMIT could expand both campuses considerably if demand grows, widening out the range of qualifications on offer. At present the major part of its qualifications are available from its inner and mid northern campuses at Preston, Heidelberg and Collingwood. Its asset management plan focuses immediately on replacement of poor infrastructure on its Preston campus with development of the Epping campus to meet future growth demands in the Whittlesea corridor.

The campus at Epping is near the old station site which is proposed by the Council for redevelopment with an education focus, involving school and low level tertiary provision.

[15] NMIT contribution at the VTA Forum and advice from Skills Victoria.

5.2.3 La Trobe

La Trobe at Bundoora is a major, research driven, university established in the 1960s to provide university education for the northern metropolitan region. It plans to expand considerably in response to the Australian Government's widening participation targets.

The Bundoora campus is the only major university campus in the outer northern and western metropolitan regions, with about 16,300 undergraduate and 6,000 postgraduate students. The target is for Bundoora to grow to 21,000 undergraduate and 9,000 postgraduate students as part of La Trobe's plan to grow undergraduate numbers by 30% by 2015 across all its campuses (including in regional Victoria), with 5% growth per annum over 2010 to 2014.[16] .Its It has a strong focus on enrolling students from backgrounds and regions unfamiliar with higher education including through more effective partnerships with local TAFE Institutes. To support the growth it has in place a ten year campus refurbishment plan.

5.2.4 RMIT[17]

RMIT has concentrated campus provision in Central Melbourne and Northern suburbs at its Bundoora campus which comprises two large sites either side of a major road, on a tram route. There are currently 5070 equivalent full-time students, primarily higher education focussed at locally driven courses of nursing, community services and other health. RMIT generally leaves TAFE provision in the region to NMIT and Kangan. The sites host a major research facility for engineering but does not involve undergraduate engineering programs.

There is no current plan to expand provision on the Bundoora campus, however RMIT has identified the need for an assessment of TAFE provision in the Northern Growth Corridor in the future. RMIT has plans to develop additional facilities on the Bundoora campus such as a new athletics track, new lecture theatre, and additional wireless access.

RMIT could drive more intensive development of its existing infrastructure given the opportunity and demand but would need to consider this against its institutional goals which emphasise its role as a leading provider for all of Melbourne and Victoria, driven from its city base.

[16] La Trobe University Interim Compact with the Australian Government and submission.
[17] Based on RMIT contribution at the VTA Forum and subsequent submission.

5.2.5 VU[18]

VU's overall strategy, which applies to its western and northern campuses, is to build up its strongest campuses to provide an effective alternative to the major inner city universities, particularly RMIT and Melbourne. It has considerable capacity to expand its St Albans and Sunshine campuses with potential also at Footscray, its only current substantial site. It plans to grow its higher education students from 18,000 to 26,000 by 2025 with a similar growth in TAFE which it can achieve on its target campuses. Skills Victoria is supporting expansion at Sunshine through a technical trades and green skills facility designed to meet the growth in the north and west corridors[19].

Consistent with this intent VU has withdrawn all teaching from Sunbury. Previous courses available have generally struggled for enrolments, and all that have moved have easily strengthened demand on the new location. On VU's analysis it is very unlikely that there will ever be sufficient demand to sustain a Sunbury campus of suitable size. VU is exploring options for use of the campus both by other education bodies and more broadly for other purposes considered suitable by the Victorian Government and local interests.

VU is supportive of alternative forms of provision targeting the establishment of base level skills for further education and training. In the northern region it is working with the Broadmeadows Secondary College to use its available space for this.

5.2.6 Kangan Institute[20]

Kangan Institute is concentrating its activities on two major campuses of Broadmeadows and Docklands, with retention of some smaller sites in the inner and northern city. It is pulling back from more costly sites which do not have a substantial justification for continued use. Broadmeadows is being redeveloped with many buildings now at replacement age. Overall the site has considerable capacity for expansion, if demand warrants it.

One option for use of land is for student residential accommodation, targeting international students, rural and regional students and metropolitan students not wanting to travel so far. Kangan has some specialist qualifications which can attract students from a distance.

Kangan has a small presence in Craigieburn, using the library of a primary school. The school is new and so far there has been moderate use of the facility. The facility can grow to meet demand.

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[18] Based on VU input to the VTA Forum and follow up discussions.
[19] VU Interim Compact with the Australian Government and advice from Skills Victoria.
[20] Based on discussions with Phil Cook Kangan Institute, Manager Facilities & Capital Development and advice from Skills Victoria.

5.2.7 Goulburn Ovens[21]

Goulburn Ovens TAFE has a campus at Seymour that delivers approximately 150,000 Student Contact Hours per annum in Health, Community Services Pathways, Business and Building & Construction. The Institute believes that the development of its existing Seymour Campus could service many of the projected students who will live in the Craigieburn to Wallan growth corridor – especially with the road link via the Hume and the regular train services to Seymour.

It argues that the evidence from post trade building programs in Seymour shows that middle to higher level TAFE students prefer the ease of travelling north to Seymour for specialist training rather than deal with travel into the northern metropolitan region. It considers that there is an option to run targeted middle to higher level provision within the next few years on the basis that student travel north rather than south.

It remains interested in having a site in Wallan, for example the school site which was originally planned to be a Prep to TAFE complex. This precinct could focus on lower level VET qualifications which would feed higher level delivery at Kangan, NMIT, RMIT or GOTAFE or develop these higher level offerings in Wallan.

5.2.1 Access to multiple providers

In contrast to the western and south eastern outer metropolitan regions the northern has access to a wide range of TAFE Institutes and a number of higher education options. There seems little need to encourage additional major providers.

5.2.2 Regional issues

The major transport issue raised in consultations was the emphasis on north-south travel which makes travel across the region difficult and hence encourages enrolment at inner and city locations where the immediately local provision is not suitable. Construction of the proposed Outer Metropolitan Ring Transport Corridor, providing both private and public transport options, could relieve this.

5.2.3 The need for additional campuses in the northern growth areas

For higher education the growth in demand is capable of being met through the planned expansions of VU and La Trobe supported by the general growth in higher education planned by most universities across the State.

VU reports that some local bodies argue that the physical gap between Bundoora and VU's campuses at Footscray-Sunshine-St Albans is too large to leave empty. The two other campuses are Sunbury and RMIT Bundoora. Sunbury is located

[21] Based on input to the VTA Forum and subsequent submission.

within one of the growth areas but there is much to question about the campus due to its siting and its historical buildings. The option is to identify a more suitable site for tertiary education and training and focus further discussion at how and when it should be developed along with a clear future for the current Sunbury campus.

RMIT Bundoora offers considerable scope for development but it is close to La Trobe. It is thus an option for meeting growth but not for a substantial change in ease of access. The major question is whether RMIT wants to develop the campus to its full extent and hence whether there are options for other users to exploit the site.

For TAFE the existing northern campuses provide a solid base for expansion and there is interest from Goulburn Ovens in providing a northern option. Issues of access have greater resonance than for higher education. This suggests that consideration of sites for tertiary education is needed, with a focus on VET qualifications but potential use for some higher education feeder courses, in both growth areas of Cragieburn and Sunbury.

5.3 The western metropolitan growth areas: Melton-Caroline Springs and Wyndham

The major provider located in or near the western metropolitan growth areas of Melton-Caroline Springs and Wyndham is VU with campuses at St Albans, Sunshine, Werribee and Melton as well as Footscray and the city. In the immediate region the University of Ballarat is interested in whether it can support provision in the region and Deakin University also draws students as does Gordon TAFE.

There are also specialist research focused presences, for example The University of Melbourne's veterinary hospital and the RMIT flight school at Point Cook.

5.3.1 School leaver destinations

Melton Year 12 completers who followed the TAFE pathway generally attended the relatively nearby campuses of Victoria University TAFE (13 per cent). Of this group, 2 per cent attended the VU TAFE campus at Melton (compared with 0.1 per cent of all students across Melbourne). The other main TAFE destination chosen by students from this area was for the city campus of RMIT (7 per cent). Of all Year 12 completers, 16 per cent from the Melton LGA went on to higher education courses at Victoria University (with 0.6 per cent enrolled at the Melton campus of VU compared with a share of all enrolments at this campus of less than 0.1 per cent). Students from this area also travelled in numbers to La Trobe in Bundoora (7 per cent), RMIT in the city (7 per cent) and the University of Melbourne (7 per cent) for their university studies.

In Wyndham, Year 12 completers tended to be spread between the Melbourne and Geelong for their tertiary studies. At the TAFE level, 5 per cent of the whole Year 12 cohort enrolled at VU Werribee and 3 per cent at Gordon TAFE in Geelong. Overall, VU TAFE attracted 12 per cent of the year 12 cohort from Wyndham and few went

anywhere else (apart from 5 per cent to RMIT city). Two per cent of all Year 12s from this area went on to enrol at the VU Werribee university campus (compared with this campuses overall share of 0.3 per cent of the student population) and VU in general attracted 18 per cent of the cohort to its university courses. A further 12 per cent of the cohort enrolled at Deakin in Geelong, while 8 per cent travelled to Melbourne University in the city and smaller numbers to other city-based university campuses.

5.3.2 VU

VU's strategy to concentrate on a spine of campuses running from the city through Footscray, Sunshine and St Albans is set out above. Its analysis of future demand for its outer campuses tends to the low side due to its methodology which expands current enrolments in line with population and participation growth. It does not consider the impact of the few courses available in determining current use. Were there more courses at an outer campus the number of students would be higher (but not high).

5.3.2.1 Werribee

VU retains an active presence at Werribee where it aims to build up to 5000 full time equivalent students, its marker of reasonable size for a campus. Current provision is mostly TAFE, some of which requires considerable space, a little higher education and an important research base.

The campus is linked to Werribee industry precinct which has not developed in line with initial plans but is showing some signs of improvement. The Government has located a new select entry school in the region with support from The University of Melbourne and VU which is now being built near to VU. There is considerable land at Werribee, sufficient to support any large scale development that can be justified.

5.3.2.2 Melton

VU has withdrawn higher education from Melton but continues with VET. The Melton campus is being considered as the site for a Trade training Centre and for other uses by tertiary education providers including the University of Ballarat. The intent it to retain an active connection with the campus to allow for expansion once demand strengthens, most likely for a more comprehensive range of VET and preparation for higher education.

The campus is near Melton Station, close to freeway exits, and near much of the Melton growth.

5.3.2.3 VU Gateways

VU has explored the potential of establishing small 'gateway' sites using community facilities and mobile services with a focus on further education – preparation in learning skills, literacy and numeracy – and information provision.

5.3.3 Ballarat[22]

The University of Ballarat has done a thorough study of the tertiary education needs of Melton and Moorabool [Bacchus Marsh] shires, as the basis for determining whether it should become more engaged in the shires. In assessing demand Ballarat assumed that 30% of local TAFE demand and 12% of local higher education demand would look at a local service with the remainder going elsewhere whether further into Melbourne or out to Ballarat or Deakin and Gordon. These rates are higher than previous VU experience. The study's conclusion supports VU's analysis that there is little scope for viable university campus in those areas for the next decade.

Ballarat's response to that conclusion is different from VU's, reflecting its existing strength in supporting low levels of demand through use of social centres such as libraries and health facilities. Hence it argues for the need to build up education and training capacity and interest, starting at the lower end of further education skills and base TAFE provision.

5.3.4 Deakin[23]

Under the previous funding arrangements Deakin University had aimed to increase enrolments by three per cent per annum. It is now exceeding that target taking advantage of the removal of restrictions on funded places. In 2009 it attracted 14 per cent of first preference applications from the Melton and Wyndham LGAs, enrolling just over half.[24] Its ambition is to be able to offer more of those applicants a place through continuing to expand its numbers.

It plans to do this through increasing enrolments at its Geelong campuses which it is developing to allow for more students. It is also building on its extensive distance education experience to create more options for off campus provision and is looking to strengthen pathways to its courses through partnerships with schools, TAFE Institutes and other providers which it labels Deakin at Your School, Deakin at Your Doorstop, and Deakin at Your TAFE. Deakin does not consider there to be a need for a new university campus in the region.

[22] Ballarat provided *An investigation of tertiary education provision in the Melton-Moorabool Region*, January 2010 and attended the VTA Forum.
[23] Deakin submission and preliminary discussion.
[24] Deakin submission to PhillipsKPA, which details the proportions for all universities.

5.3.5 Potential to increase access to other providers

The western metropolitan region is primarily serviced by VU but with significant numbers of people travelling into the city to RMIT and Melbourne with a further set travelling to Deakin at Geelong. The analysis above shows considerable interest from Deakin and Ballarat in providing an alternative for residents which should be encouraged while supporting VU in its plan to concentrate its provision on fewer, more effective, sites.

5.3.6 Regional issues

As with the other growth areas transport is a major challenge, particularly across the region rather than into and back from the city. The Government's announced plans to create a rail link from Werribee to Sunshine and for an Outer Metropolitan Ring Transport Corridor provide an important base to reduce the transport problems and open up more parts of the region.

The region is one where most people leave to go to work hence there is little employment driving training beyond the construction industry, and few people in the area during the day to access education and training for themselves. Where mature residents are looking for up-skilling and retraining they are more likely to do so at work or in the city following work.

There is also a significant group of long term residents with few if any qualifications whose needs are challenging to meet through traditional means.

5.3.7 The need for additional campuses in the western growth areas

The existing suite of VU campuses, including Melton, has the capacity to cater for more than double the number of students than are currently serviced. The locations are well spread through the region and are in reasonable proximity to the growth areas including those of the northern metropolitan region. Melton's particular challenge is to attract nearby residents to go further out for education and training rather than in. There is need to support additional community based options, taking advantage of Ballarat and Deakin's interest in these, which would then complement the VU provision.

6 Criteria for identifying future sites for tertiary education

6.1 Major new education precincts

Through the discussions with universities, TAFE Institutes and ACPET a number of factors for planning the future allocation of space for tertiary education and training emerged:

- access to the site and access to and from the growth regions;
- an assumption that any site be a multi-purpose precinct;
- the need for a site be clearly established before any development;
- links to major industrial and employment sites in region;
- access to advanced computing capacity; and
- potential for housing and employment suitable for students on or near to education precinct.

6.1.1 Access to the site and access to and from the growth regions

6.1.1.1 Access to sites

The most common issue raised in discussions was the importance of transport links. Tertiary education facilities need to be accessible by large numbers of students and staff both at the peak periods of morning and evening and across the day.

Locations near to train stations are a major advantage, requiring a walk of no more than ten to twenty minutes. For most campuses this is currently the case. Nearby train stations support access from a wide area of Melbourne, although sometimes nearer regions to the side of the train line are excluded due to trains running out from the city rather than across the regions.

Trams do not seem a realistic prospect for the areas under discussion. The tram access to Bundoora is the only case of access reaching so from the city.

The major challenge is to ensure effective bus routes that support students from neighbouring areas, rather than just the immediate area, access a campus where the direction is across rather than into or out of the city.

6.1.1.2 Access to and from regions

As discussed earlier only a proportion of residents will attend the closest campus to home, while any campus to be successful should attract some of its students from further parts of Melbourne. Hence the general transport needs of the region should

be effectively met. This likely aligns to issues of access to employment and many other services.

6.1.2 Any site should be a multi-purpose precinct, accessible by more than one provider

Growth areas in particular will have different needs for tertiary education and training over time as the area matures. Initially there will be a mix of the current residents with quite low levels of education and training attainment and often disengaged from the need for education. The newer residents will be more aspirational, bringing expectations of education for their children and for themselves, the latter likely to be for second and subsequent qualifications.

In addition the collective demand will more likely produce the number of students across all sectors needed to make efficient use of facilities.

6.1.3 Establish there is a real level of ongoing demand before any development

There is a tension between allocating a space for tertiary education purposes and when that site should first be so used. The common experience with new sites is that there is an initial surge of enrolments as built up demand from older cohorts is released which then reduces to the annual increment in people identifying further education and training as something they wish to do. The latter point can be well below that needed to support the facility.

6.1.4 Look for links to major industrial and employment sites in region

Linkages to industry and major employers are a major element in VET provision and for many higher education courses. Notable examples include any major health facilities.

6.1.5 Access to advanced computing capacity

Universities and TAFE Institutes require access to the highest levels of broadband capacity which they achieve through linkages to AARNet. This is generally available throughout the metropolitan area. Planning should involve any needed extension of the AARNet high speed network.

6.1.6 Potential for housing and employment suitable for students on or near to the education precinct and housing for staff in the region

The majority of students will come from the local area, particularly in the initial years of any campus. As the campus develops it should be able to attract students from other parts of Melbourne and beyond, including international students. Provision for residential accommodation that is of moderate cost and within walking distance of the campus will allow for student demand for accommodation

to be met. There is a similar need for part time employment from local businesses suitable for students.

The teaching and administrative staff's need for residential accommodation is broadly similar to the needs of all potential residents for a range of housing suited to varied income levels.

6.1.7 Ensure the site is suitable for education purposes

The most problematic of current outer metropolitan campuses is Sunbury. An important element of that is due to the site being historical, requiring care in how buildings are used and additional costs. The lesson is that while an education institution may be a valid way to keep alive a historical building it can be an encumbrance for the institution.

6.2 Small site provision

It is of equal importance that planning build in provision for training spaces in zones for community and business facilities to support creation of a range of smaller education providers in both the community and private sectors.

7 Conclusion

The Project has analysed the likely need for tertiary education and training in the outer Melbourne metropolitan growth areas of Wyndham and Melton-Caroline Springs in the west, Sunbury and Hume-Mitchell-Whittlesea in the north and Casey-Cardinia in the south east as the basis for considering the need to include specific further sites for tertiary education and training in or near those regions.

The growth areas are set for a substantial increase in the key tertiary education age cohorts covering the decade or so following completion of schooling. Current participation in the growth areas when compared with the rest of Melbourne is notably lower for higher education but slightly higher for VET.

We have estimated likely demand for tertiary education and training for three scenarios, the first allowing for population growth only, the second and third building in assumptions of greater participation consistent with Government targets and estimates of future skill requirements. This provides a range of potential demand each of which require additional provision to meet the particular combination of growth in population, participation and skills requirements. Of the three scenarios, the second and third are the more likely and the more relevant to planning to ensure appropriate educational facilities can be provided.

The expected growth in demand for campus based higher education and VET can largely be met from existing outer and mid Melbourne campuses, with significant current underuse of campuses at Berwick (Monash), Bundoora (RMIT), Sunbury, Melton and Werribee and capacity for expansion of campuses at Berwick (Chisholm), Greensborough, Epping, Bundoora (La Trobe), Broadmeadows, and St Albans.

In addition to those campuses the need to ensure reasonable local provision of educational facilities suggests that additional sites are likely to be needed in the south east in Cardinia and in the north at Cragieburn. There could also be consideration of whether the current Sunbury site should be replaced by another more suited to tertiary education provision. Any additional site should be developed as a multipurpose educational precinct, capable of use by a number of providers and of development over time to meet changing needs as each region matures.

Tertiary education and training also includes a wide array of community and smaller private sector providers which operate from community, office and employment sites. The development of the growth areas should support such providers as part of encouraging local economic development and social cohesion.

The report also considers the impact of greater use of online learning and learning based in the workplace. These are significant developments but they are not expected to significantly reduce the need for campus based provision targeting the immediate post-school leaver demand. Rather, those factors are important in

meeting the need for additional education and training by older students, many of whom require part-time access that combines with work and family requirements.

The major issues for planning the future provision of tertiary education and training for residents of the growth areas are:

- effective access to education precincts, particularly across local regions and access to and from the growth regions;
- an assumption that any site be a multi-purpose precinct;
- links to major industrial and employment sites in region;
- access to advanced computing capacity; and
- potential for housing and employment suitable for students on or near to education precinct.

GROWTH AREAS AUTHORITY

Tertiary Education Advice for Growth Area Framework Plans

Final Report: Appendix One

Estimating demand for tertiary education in the growth areas

May 2010

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1 Introduction and methodology

In planning for tertiary education provision it is important to explore the future size of the potential tertiary education market. This analysis uses population projections and participation rate information to estimate levels of future demand for higher education and VET qualifications within the growth areas of Melbourne.

The discussion begins by outlining the methodology and data used for these analyses, it then explores the basic population growth projections for the selected areas. This is followed with an examination of current levels of participation and demand for tertiary education. Projections of future demand for higher education and VET courses among the growth area LGAs are then calculated.

Throughout this document, the term 'higher education' refers to study of qualifications at the university-level. These are primarily facilitated by universities, although private providers and some TAFE institutions now also offer qualifications at the higher education level. The term 'VET' or Vocational Education and Training refers to the study of non-higher education tertiary qualifications undertaken at technical or further education institutions (including TAFEs and private providers).

The analysis relies primarily on three core sources of data; projections, the 2006 Census and the On Track survey. The focus of the analysis is on the key areas of relevance to the GAA. These comprise six metropolitan Local Government Areas (LGAs) – Wyndham, Melton, Hume, Whittlesea, Casey and Cardinia and one area outside the metropolitan zone, the Mitchell South Statistical Local Area (SLA). Where possible, this SLA has been used instead of the full Mitchell LGA in order to focus on the area of Mitchell which abuts the current urban fringe of Melbourne. The areas of focus are highlighted in Figure 1.

The population projections provide the base population numbers for the analysis. These projections are from the Victorian Department of Planning and Community Development's (DPCD) *Victoria in Future* calculations (DPCD, 2008). The DPCD projections used here were calculated at the Statistical Local Area (SLA) geographic level for individual years of age and each year from 2006 to 2026. The time series used in the analyses in this report are for the fifteen year period from 2010 to 2025.

The *Victoria in Future* projections are based on the Australian Bureau of Statistics (ABS) projections Series B. The Series B projections by the ABS are based on the following assumptions – a total fertility rate of 1.8 babies per woman, an annual migration rate of 180,000 persons, and a life expectancy of 85 for males and 88 for females (see ABS, 2008 for further details).

These ABS projections are slightly altered by the DPCD to calculate the *Victoria in Future* projections, allowing for estimates at the smaller geographic levels. According to the DPCD, the projections are based on additional information such as housing development planning, Victorian economic and social trends, and local knowledge gained through consultation with local governments and other stakeholders with knowledge in this area (DPCD, 2008).

Individual projections for each of the selected growth areas – primarily at the Local Government Areas (LGA) level, but also for one SLA – for the Melbourne metropolitan area and for Victoria as a whole have been used in the tables and figures below. Projections have been calculated at individual age levels and for each year from 2010 to 2025.

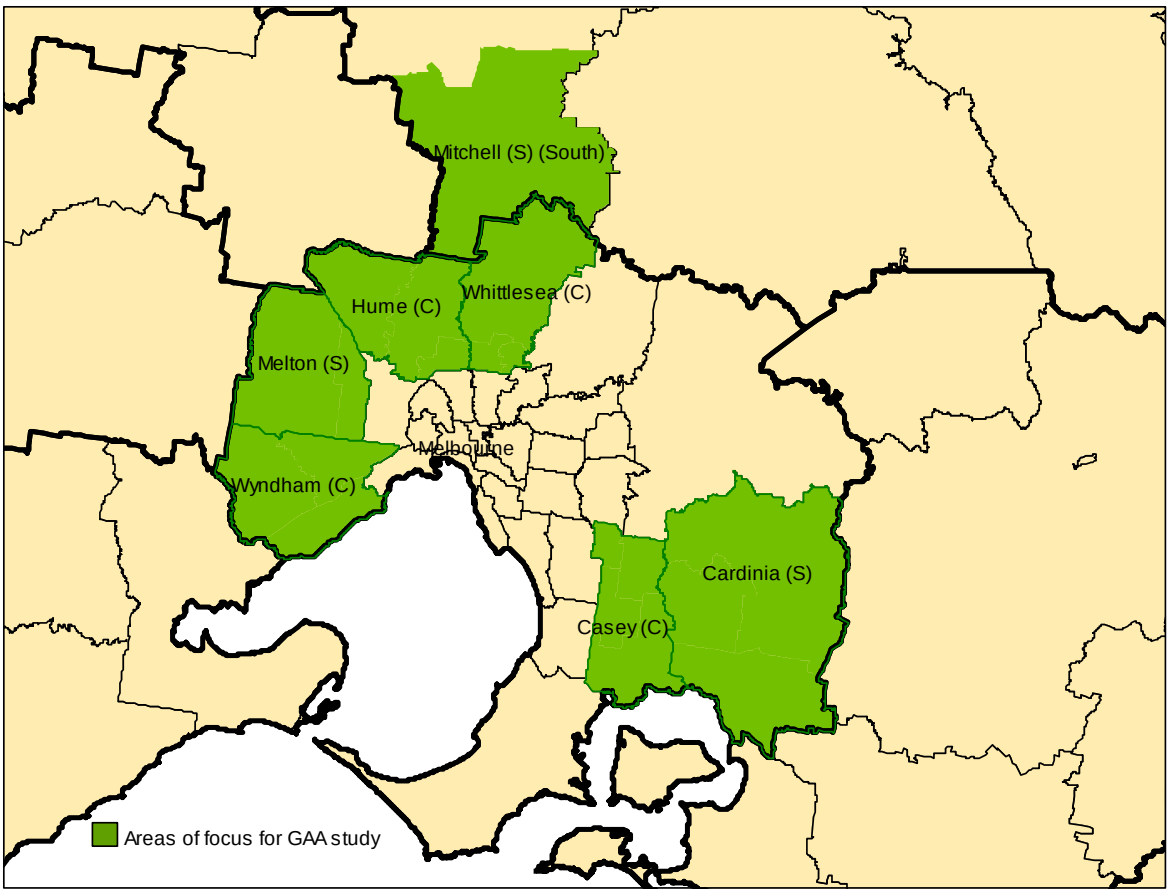


Figure 1: Map of focus areas for GAA study

In order to calculate possible levels of demand for tertiary education in the future, participation rates have been applied to the population projections. The participation rates applied here are based on figures calculated from the 2006 ABS Census of Australian Population and Households. For each of the individual growth areas of focus and for every year of age, the rate of persons enrolled in VET or higher education has been calculated. These participation rates form the basis for assumptions made about future enrolment numbers.

Three participation-based scenarios have been modelled in this analysis. The first scenario is based on a situation whereby the participation rates in tertiary education remain at the levels recorded in the 2006 Census at both the higher education and VET level and across all age groups from 2010 to 2025.

The second scenario builds in some assumptions about growth in tertiary education participation rates. These growth assumptions are based on the relative age-based

changes in participation evident in the Census data from 1996, 2001 and 2006 and other assumptions relating to policy targets. Over this time period, the only group where participation rates for tertiary education increased were for the 18 to 24 year age groups in higher education. VET participation rates and higher education participation in the older age brackets remained relatively stable over this time. Note that this does not mean there has been a decline in numbers in VET or mature-aged higher education students. It means that in the context of a growing population, the enrolments among these groups have increased at a similar rate to the population growth.

For the second participation rate scenario, the level of participation in higher education for the age cohorts from 18 to 24 year olds has been incrementally increased by 0.5 percentage points per year from 2010 to 2025. The participation levels of other groups remain stable. For VET qualifications, a growth rate has been estimated assuming that up-skilling or re-skilling among the older age cohorts will produce the most participation rate growth in this sector over the coming years. As such, participation rates for the 24 to 39 year age groups have been raised between 2015 and 2019 by 0.1 percentage points and by 0.2 percentage points from 2020 to 2025, Also between 2020 and 2025 a growth of 0.1 percentage points in participation among the 40 to 49 year age group has been factored into the calculations.

The third growth scenario has been calculated for higher education only and is considered a more extreme level of growth to the second scenario. It is based on growth in the 18 to 24 year age groups, with a yearly 0.5 percentage point increase in participation between 2010 and 2015, annual percentage point increases of 0.75 between 2016 and 2020 and increases of 1 percentage point between 2021 and 2025.

The level of growth in higher education participation forecast in the second scenario approximately matches the modelling work undertaken for the Victorian Tertiary Education Plan advisory committee which sees Victoria overall achieve a bachelor degree attainment rate of about 47 per cent of the population aged 25 to 34 by 2025 (Lee Dow, Adams, Dawson, & Philips, 2010). The third scenario pushes the increase in attainment in the growth area LGAs so that the disparity in attainment between those areas and the rest of metropolitan Melbourne is reduced.

Population forecasts and the application of participation rates and other measures into such forecasts do not provide 'predictions' or definitive figures. They are based on a wide range of assumptions and provide an *indication* of the future population and enrolment figures if the calculated assumptions in the model eventuate. Given the complexities of our population, the ability of Government to alter policy, the impact of macroeconomic success or failure on educational attendance patterns and the changeable nature of the main tertiary education age cohort, the findings here are to be used with caution and as a guide only.

2 Population growth

The figures and graphs provided here are intended to offer some initial insight into the anticipated change in population in these areas over the coming fifteen years. Particular focus has been made in relation to the 15 to 29 year age groups, which is the core market for tertiary education, particularly that which is provided on-campus. However, in recognition of the wide variety of ages engaged in tertiary education in Victoria, full population figures are also included in the discussion.

The full population projections for the focus areas in this report are displayed in Table 1. The figures in the far right column show that each of the growth areas is projected to expand notably faster than the Melbourne average (23 per cent) between 2010 and 2025. Further to this, these particular areas are expected to grow at a substantially higher rate than other areas of the metropolitan area. The population growth within these specified areas located within the metropolitan boundary (all those listed except Mitchell) is expected to account for almost 60 per cent of the total population growth for the whole of Melbourne during this period.

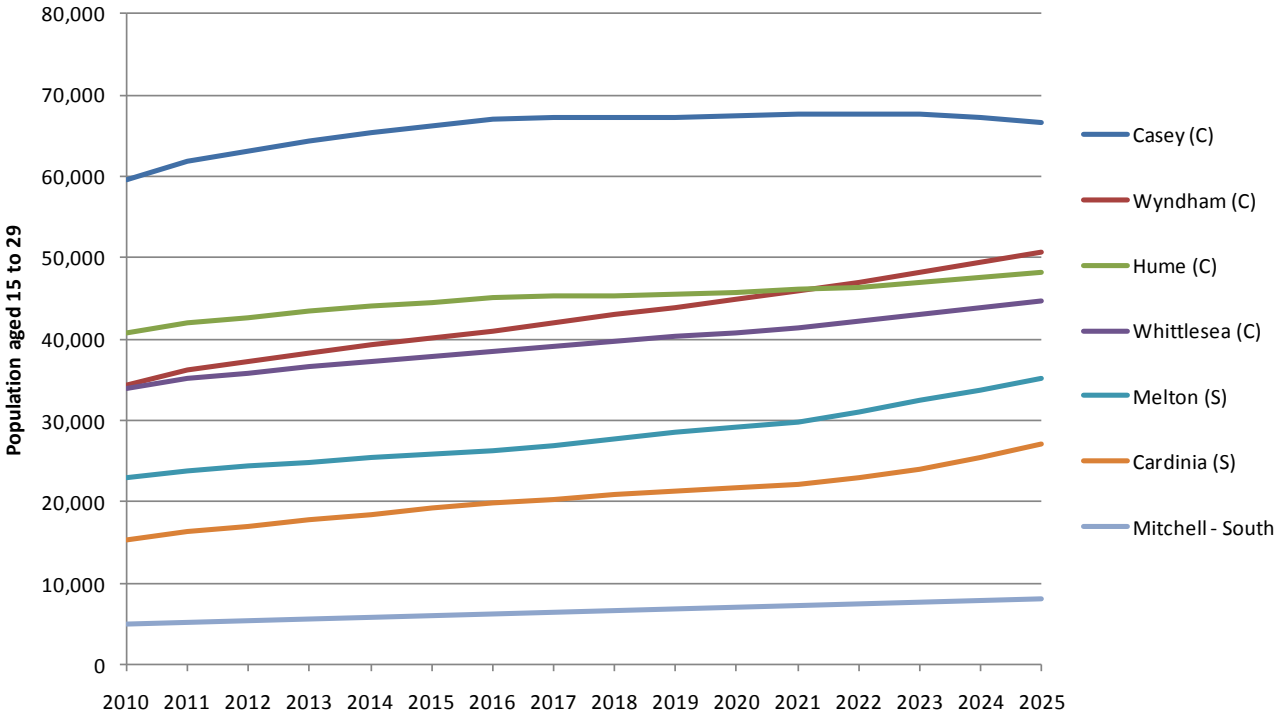
Among the GAA target areas, the largest growth in proportionate terms is expected in Cardinia, followed by Melton. In terms of actual population numbers, Wyndham and Casey are projected to expand by more than 100,000 people over the coming fifteen years. The data here also provide an indication of the current and future relative size of these areas, with Casey having the largest population, followed by Wyndham, Hume and Whittlesea.

Table 1: Population projections for selected growth areas, 2010 to 2025 – Total Population

Area	'000 persons				Change 2010 to 2025	
	2010	*2015*	*2020*	*2025*	*Number*	*Per cent*
Cardinia (S)	74.9	96.0	115.1	139.7	64.8	86.4
Casey (C)	261.5	303.8	342.5	369.3	107.8	41.2
Hume (C)	176.1	199.3	220.9	245.2	69.1	39.3
Melton (S)	106.9	137.9	166.7	193.1	86.2	80.6
Mitchell (S) - South	24.8	29.9	35.7	42.1	17.3	69.6
Whittlesea (C)	155.2	189.3	220.9	244.8	89.7	57.8
Wyndham (C)	152.9	194.7	234.2	270.9	118.0	77.2
Balance of Melbourne*	3,090.9	3,213.4	3,343.7	3,479.1	388.2	12.6
Melbourne Total	*4,018.3*	*4,334.3*	*4,644.1*	*4,942.1*	*923.8*	*23.0*
Victorian Total	*5,469.0*	*5,864.2*	*6,255.5*	*6,636.8*	*1,167.8*	*21.4*

* Balance of Melbourne figure includes all LGAs in the metropolitan area which are not specified here (note that Mitchell is not in the metropolitan area)
Source: *Victoria in Future* projections, DPCD, Oct 2009

Figure 2 charts the population for Victorians between 15 and 29 years from 2010 to 2025 for each of the key GAA areas. It shows that there are different sizes and different growth trajectories for each of these areas over the coming fifteen years. It clearly shows that Casey has the largest cohort among these areas, but that this growth is projected to slow by about 2015. The figure also helps to highlight that the population growth in Wyndham is expected to be substantial over the coming decade and a half, with this area having a particularly steep line.



Source: *Victoria in Future* projections, DPCD, Oct 2009

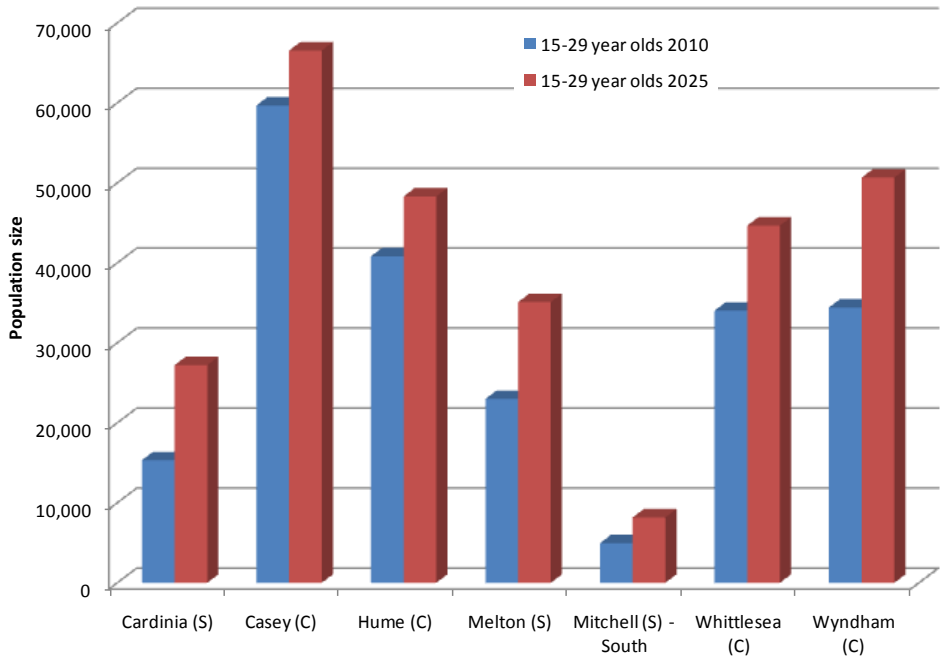
Figure 2: Population projections for selected areas, 2010 to 2025, 15 to 29 year olds

The figures in Table 2 also help to highlight the differences between the growth areas revealed in the figure above. They show that largest proportionate growth in this group is expected in Cardinia, while the largest growth in terms of numbers is anticipated in Wyndham. Figure 3 provides a graphical representation of the size of the 15 to 29 year old population in each of the growth areas in 2010 and in 2025.

Table 2: Population projections for selected growth areas, 2010 to 2025 – 15 to 29 year olds

Area	'000 persons				Change 2010 to 2025	
	2010	*2015*	*2020*	*2025*	*Number*	*Per cent*
Cardinia (S)	15.3	19.2	21.7	27.2	11.9	77.7
Casey (C)	59.7	66.2	67.4	66.6	6.9	11.5
Hume (C)	40.8	44.6	45.7	48.3	7.5	18.4
Melton (S)	23.0	25.8	29.2	35.1	12.1	52.7
Mitchell (S) - South	4.9	6.0	7.1	8.2	3.2	65.3
Whittlesea (C)	34.0	37.9	40.9	44.7	10.6	31.2
Wyndham (C)	34.4	40.2	44.9	50.7	16.2	47.2
Balance of Melbourne*	685.5	686.4	680.0	683.4	-2.1	-0.3
Melbourne Total	*892.7*	*920.3*	*929.7*	*955.9*	*63.2*	*7.1*
Victorian Total	*1,157.4*	*1,191.7*	*1,200.3*	*1,226.7*	*69.2*	*6.0*

* Balance of Melbourne figure includes all LGAs in the metropolitan area which are not specified here (note that Mitchell is not in the metropolitan area)
Source: *Victoria in Future* projections, DPCD, Oct 2009



Source: *Victoria in Future* projections, DPCD, Oct 2009

Figure 3: Projected population of 15 to 29 year olds in 2010 and 2025 for selected areas

Within the general age bracket of 15 to 29 year olds, the projections show that there are some differences in the growth patterns that are notable. For the youngest cohort, aged 15 to 19 years, Table 3 provides an indication of the size and growth of the population in the selected areas for this analysis. The figures show that all of these key areas are expected to have growth in the 2010 to 2025 period for this age group. The growth within this age cohort is of particular interest given that among the other areas of Melbourne, there is a projected net decline in 15 to 19 year olds over this period of time. Therefore, it is the GAA areas which will be contributing much of the growth in this age group over the coming years. This has policy implications not only for the 2010 to 2025 period, but for the years beyond this as the younger ages in this cohort reach the end of their schooling.

Table 3: Population projections for selected growth areas, 2010 to 2025 – 15 to 19 year olds

Area	'000 persons				Change 2010 to 2025	
	2010	*2015*	*2020*	*2025*	*Number*	*Per cent*
Cardinia (S)	5.3	6.3	7.2	9.0	3.7	70.3
Casey (C)	19.1	20.2	20.7	23.7	4.6	23.8
Hume (C)	13.5	14.1	14.3	15.7	2.2	16.7
Melton (S)	6.8	8.3	10.5	13.8	7.0	102.1
Mitchell (S) - South	2.3	2.6	2.9	3.3	1.0	43.7
Whittlesea (C)	10.2	11.4	12.6	15.5	5.3	52.4
Wyndham (C)	10.3	11.5	13.6	17.2	6.9	67.3
Balance of Melbourne*	189.6	181.9	180.7	189.3	-0.3	-0.1
Melbourne Total	*254.8*	*253.7*	*259.5*	*284.3*	*29.5*	*11.6*
Victorian Total	*360.1*	*354.8*	*356.6*	*387.1*	*27.0*	*7.5*

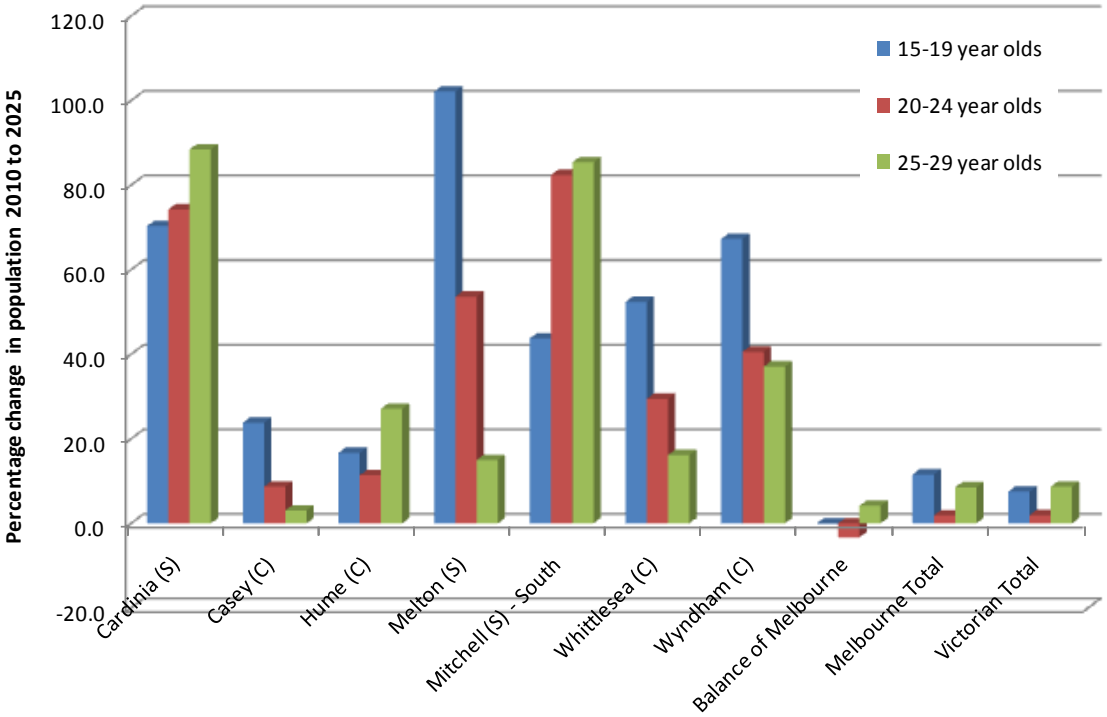
* Balance of Melbourne figure includes all LGAs in the metropolitan area which are not specified here (note that Mitchell is not in the metropolitan area)
Source: *Victoria in Future* projections, DPCD, Oct 2009

In this table there are also some notably stark differences within the growth areas of focus. For example, the number of 15 to 19 year olds in Melton LGA is projected to double between 2010 and 2025, while in other areas such as Hume and Casey, the growth in this age group is substantially more modest (16.7 and 23.8 per cent respectively). It is possible that the reason for this disparity is that the areas with slower growth in this younger age group are those that are slightly more established than those with higher expected growth for this age group. The areas such as Casey and Hume have substantially expanded in the previous decade or so and it is likely that the children from the young families that moved into this area during this time are now moving into their teens and by 2025 will not fit into this category. Conversely, in Melton, development is relatively new and continuing to expand,

therefore shifting the demographics of this area to a slightly younger cohort than seen elsewhere and essentially growing in a similar fashion to how Casey and Hume have grown in the past decade. However, despite these growth patterns, by 2025 Casey is expected to still have the largest population in this age group of all the areas represented here, while Hume will have the third largest.

Some of these issues are further discussed in relation to Figure 4 and Figure 5 below.

Figure 4 displays the percentage growth projected for three key age groups (15 to 19, 20 to 24 and 25 to 29) between 2010 and 2025 in the GAA areas to explore further the issues relating to demographic change within these areas. In general, the areas in this graph which show an upward taper (i.e. the growth projected for the 25 to 29 year group is larger than that for the younger groups) have moved into a pattern of slowing growth in the younger age group by 2025. Those with the opposite trajectory (i.e. the growth in the younger age groups is larger than the older) show that there will still be a fast growing youth population in 2025. Melton, Wyndham and Whittlesea are clearly in the latter category, with substantially large growth in the 15 to 19 year age groups, but smaller expansion of the other age groups. Casey too is in this group, although the overall growth is much smaller. Cardinia and Mitchell South and Hume are examples of the opposite trend.



Source: *Victoria in Future* projections, DPCD, Oct 2009

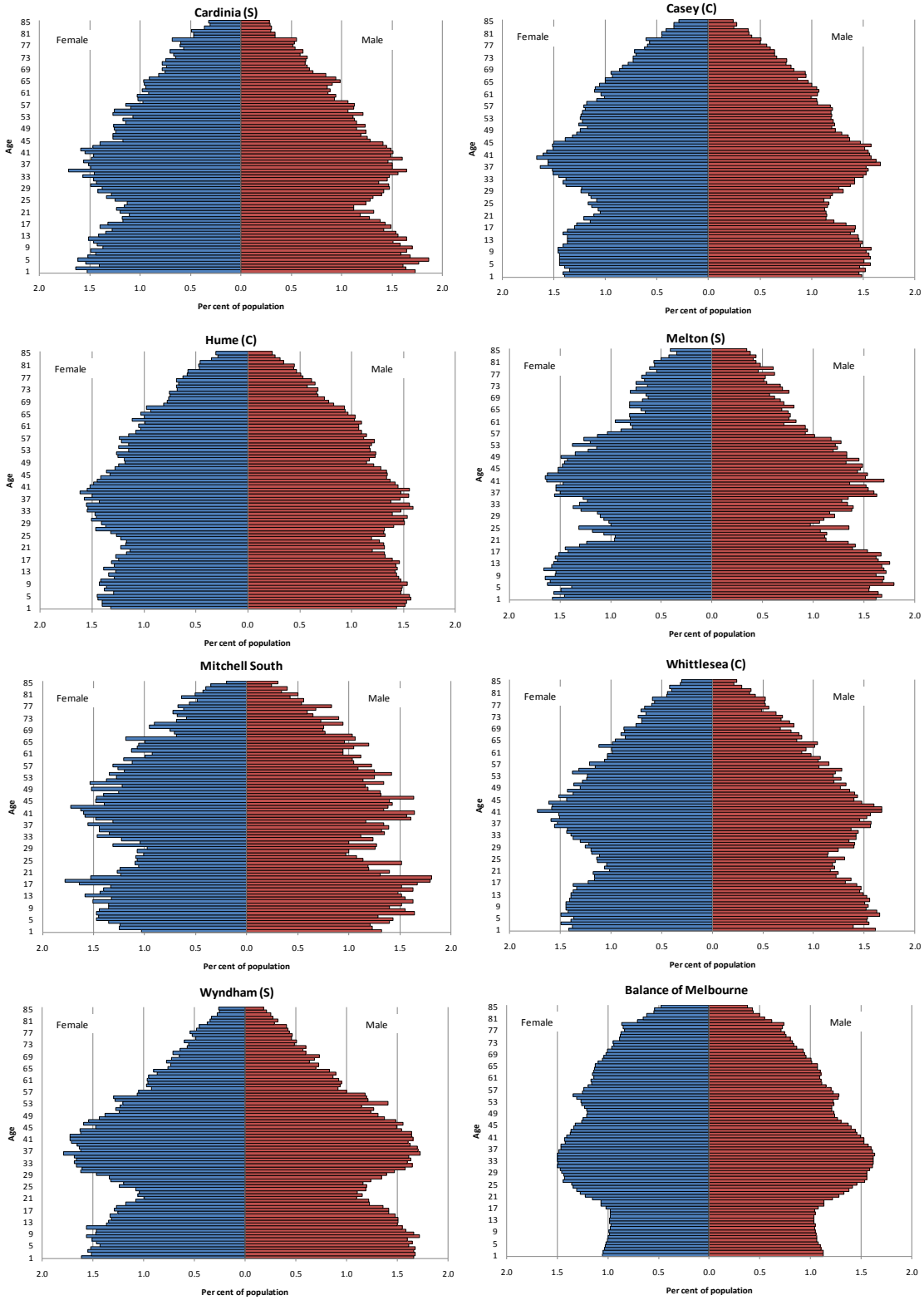
Figure 4: Growth (%) in population between 2010 and 2025 by age group, for selected areas

The DPCD projections for 2025 have been converted into population pyramids in Figure 5. These pyramids help to emphasise the differences in the age distribution among the selected growth areas and in comparison with the other parts of metropolitan Melbourne. The basic shape of these figures for the growth areas is shown to be vastly different to that of the shape of the balance of Melbourne figure. In all the growth areas, there is a notable spread of population within the younger age brackets represented by a tapering out of the bars on the graph towards the bottom. The figure for other parts of Melbourne (bottom right) does not taper out anywhere near as much as those for the growth areas.

The other large difference between the rest of Melbourne figure and the general pattern in the growth areas is the extent to which there is large population distribution in the older age groups. The graph for the other parts of Melbourne bulges at the 30 to 45 year ages, but still remains relatively wide into the later ages. The growth area pyramids tend to become more pointed towards the top as a result of the smaller distribution of older persons in these populations. However, there is some difference in the distribution of older age groups among the growth areas, with areas such as Wyndham in particular having a notably small distribution of population in the oldest age groups, indicated by the steep slope on the population pyramid. In 2025, about 7 per cent of the Wyndham population is expected to be aged above 70, compared with about 10 per cent for the other growth areas and 14 per cent for the rest of Melbourne.

In general, the population pyramids for 2025 suggest that for most of the growth areas, the population bulge at the bottom of the graphs (i.e. in the younger years) is just beginning to hit the late teens and early 20s, suggesting a substantial growth in demand especially in the decade following 2025.

These age distributions and the earlier figures and tables all suggest that these growth areas will have substantial growth in the main tertiary age cohort over the coming decades. In addition, the growth trajectories of these populations will be in stark contrast to the average growth patterns across the remainder of the Melbourne metropolitan area. Therefore, the needs of these communities in terms of educational provision, support and encouragement will grow in these areas at a disproportionate rate to that in other parts of the city. This suggests that specific plans need to be designed and implemented to facilitate the educational needs of these parts of Melbourne as their populations change over the coming decades.



Source: *Victoria in Future* projections, DPCD, Oct 2009

Figure 5: Projected age distributions (proportion of population by individual age and sex) for selected areas, 2025

3 Existing demand for tertiary education

Previous research relating to transition into tertiary education has highlighted the differences in participation between the outer fringes of Melbourne and the more established areas of the city (see for example Edwards, 2007, 2008a, 2008b, 2009; Edwards, Birrell, & Smith, 2005; Lamb, 2007; Marks, N., Long, & McMillan, 2001; Stevenson, Evans, Maclachlan, Karmel, & Blakers, 2000; Teese, 2000; Teese & Polesel, 2003). In particular, this research has generally shown that participation levels of young people in higher education are substantially lower than those from elsewhere in Melbourne. There are numerous explanations attributed to these differences, including socioeconomic disadvantage, differences in cultural capital and aspirations, relative isolation from tertiary campuses, lower academic achievement and school quality.

The brief analysis here does not go into the nuanced detail to try to explain the different participation rates for these areas, but uses two sources of data to compare outcomes with the Melbourne and Victorian averages. These are the On Track survey, charting the post-school destinations of Year 12 completers from these areas and the 2006 Census, which provides an idea of the participation rates in tertiary education across a range of age groups.

These two sets of data provide two distinct analyses. The participation rates in each are not directly comparable because they deal with different populations. The On Track data provides a good indication of the destinations followed by the cohort of students who complete their secondary education, therefore honing in on a particular group of young people with a relatively high likelihood for participation in tertiary education. The Census data on the other hand provides a level of participation measured across a broad population and even though this is at an age-specific level, it encompasses all persons. For example, the 18 year old group here includes both those who have completed Year 12 and those who may have left school early. The key purpose of this section therefore is to provide comparisons between the GAA areas and the rest of Melbourne using these two data sources.

The Census participation figures displayed here are those that have been used in the subsequent modelling of future tertiary enrolments.

3.1 Year 12 graduate destinations

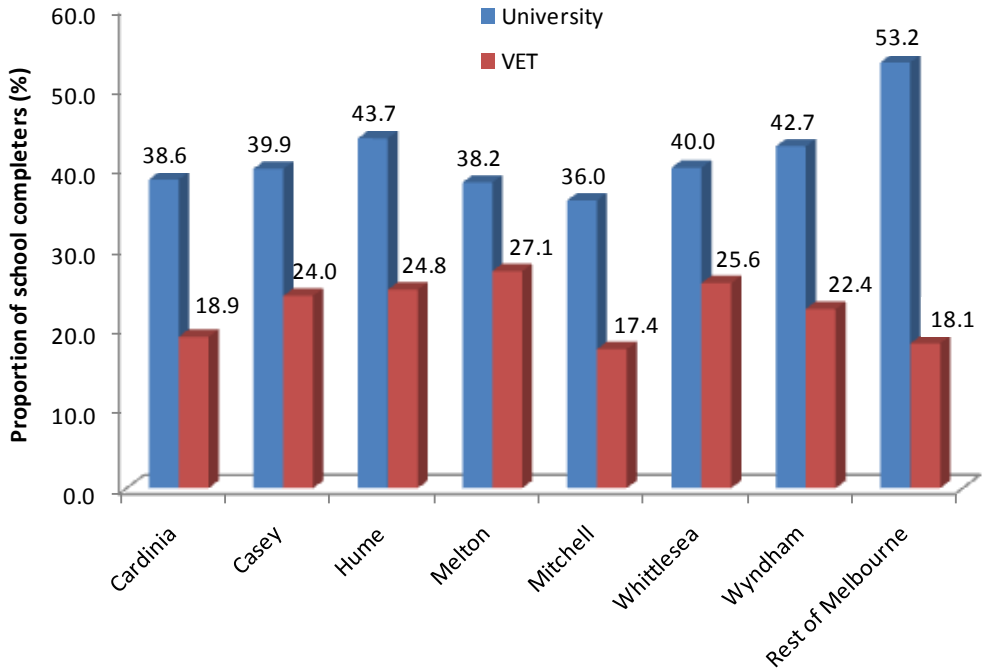
Data from the cohort of Year 12 completers who entered tertiary education or the workforce in 2009 is used here to provide some indication of the current demand for tertiary education among young people in the areas of focus in this report. As noted earlier, the Victorian On Track survey data has been used here for this purpose.

Figure 6 shows the proportion of Year 12 completers from each area who went on to university or Vocational Education and Training (VET) in 2009. The GAA areas are compared with the average for the remainder of Melbourne. The figure shows that university is a key destination followed by those who complete Year 12 and live in

these areas. VET is also an important pathway, but is less commonly followed among this cohort than university.

Among the seven LGAs focussed on for this study, transition to university is most common among students living in Hume (43.7 per cent of Year 12 completers) and Wyndham (42.7 per cent). Lower levels of transition are recorded in Mitchell (36 per cent, Melton (38.2 per cent) and Cardinia (38.6 per cent). Notably, all of these areas have a lower rate of articulation into university than is the case in other areas of Melbourne (53.2 per cent).

In relation to VET transition, the rates for the GAA areas are higher than for the rest of Melbourne in all but one LGA. In the case of Melton (27.1 per cent), Whittlesea (25.6 per cent), the difference in comparison to the rest of Melbourne is substantial.



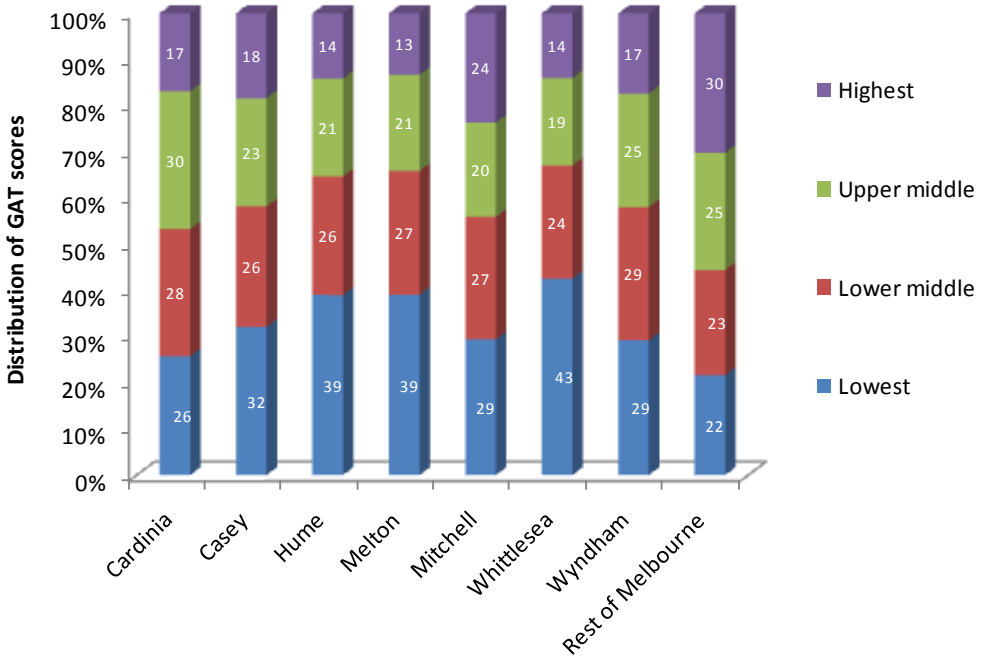
Source: 2009 On Track Survey, DEECD

Figure 6: Destination of Year 12 completers, by residential location and tertiary sector, 2009

As mentioned in the earlier discussion, there are a range of factors that influence post school destinations. In relation to access to university, one key factor is academic achievement. The On Track data matches students' responses with their General Achievement Test (GAT) score. The GAT is a test taken during the final year of school in Victoria. These scores are used to monitor and moderate Year 12 outcomes and estimate subject scores for students who are unable to complete due to illness or other issues. They do not form any part of the ENTER rank that students are given at the end of Year 12 and universities use as an important tool for selection. Nonetheless, the GAT score provides a useful indication of aptitude and

achievement at the Year 12 level and is therefore a good proxy for academic outcomes.

The GAT scores have been distributed across quartiles and aggregated into the GAA areas and the rest of Melbourne in Figure 7. A completely even distribution of outcomes would see each area with 25 per cent of each quartile. However, the outcome shows that students from the GAA areas had a greater proportion of students among the lowest scoring GAT quartile and fewer in the highest quartile than would be expected with an even distribution. The figures for the rest of Melbourne reveal a much higher proportion of the cohort with GAT scores in the highest quartile when compared with the other areas. While these are not the final Year 12 achievement measures, they are reasonably indicative of academic outcomes, suggesting that the students from the GAA areas perform at a lower academic level compared with their peers on other parts of Melbourne. This goes some way towards helping to explain the lower university articulation discussed in relation to Figure 6.



Source: 2009 On Track Survey, DEECD

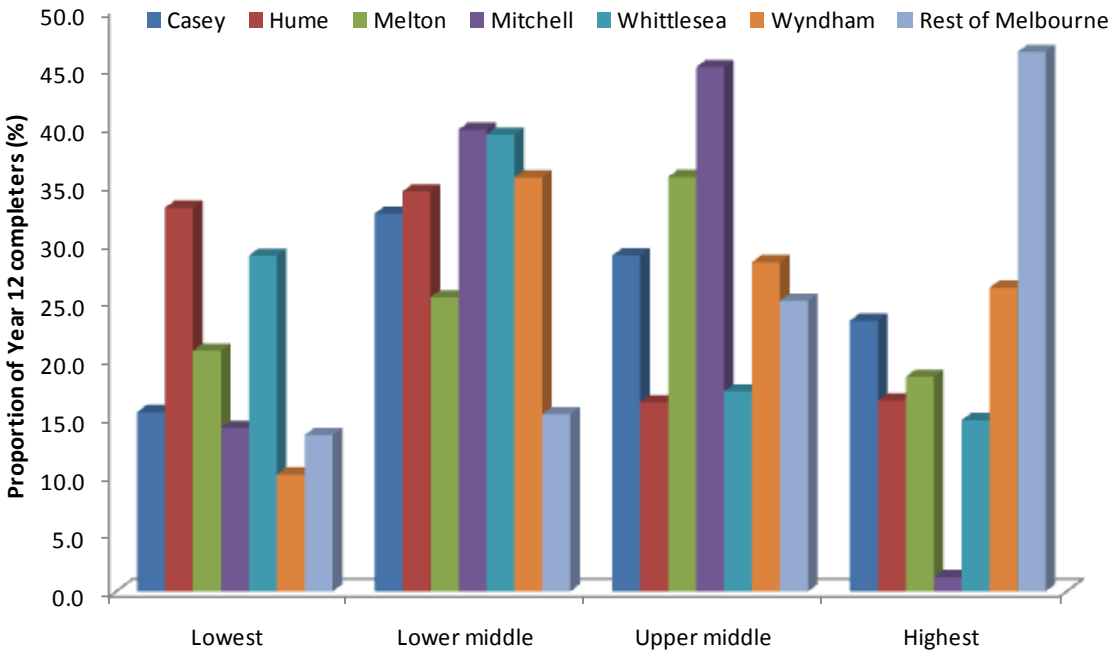
Figure 7: GAT score distribution by residential location, Year 12 completers, 2008

A factor which has been shown to influence both Year 12 achievement and post school destinations is socioeconomic status (SES). While the discussion in this report does not cover the range of evidence and debate in this regard, figures from the On Track survey are used here to highlight the differences in SES of Year 12 completers among the GAA target areas and in comparison with the rest of Melbourne.

Figure 8 shows that a substantially larger share of the Year 12 students from other areas of Melbourne are in the highest SES quartile when compared with the GAA

areas. Consequently, school completers from most of the GAA areas are much more likely to be in the lower SES quartiles than those from other areas of Melbourne. This evidence can help to facilitate the argument that SES is closely related to post school destinations.

However, there are some anomalies apparent in the cases explored here. This is particularly pertinent in the case of student from Hume. As shown in Figure 8, students from this area have the highest prevalence in the lowest SES group and lower representation in the higher SES groups than most other areas shown here. But despite this, as shown in Figure 6, Hume students have the highest university articulation rates of all the GAA areas. It is therefore likely that there are factors other than SES influencing student transition to university in this area. The issue of close proximity to university campuses has been raised as a hypothesis to explain this difference in previous research (Edwards, 2009).



Source: 2009 On Track Survey, DEECD

Figure 8: Socioeconomic Status distribution of Year 12 completers, by residential location, 2008

3.2 *Tertiary education participation across the population*

The most comprehensive data available for examining educational participation across the whole population at the level of geographic detail required for this research is the most recent Australian Census. The 2006 Census data has been used in the analysis below to explore the patterns in tertiary education participation across the GAA areas by age.

Table 4 and Table 5 provide comprehensive participation rate figures for residents of each of the selected LGAs as well as for Melbourne as a whole by age. In general,

for higher education attendance, the participation rates are highest between the ages of 18 and 22, whereby they drop off considerably. For VET, the prime participation age range shown here is generally between 18 and 21.

The higher education participation rates of residents from the GAA areas here are shown to be substantially lower than that for the Melbourne average. These lower rates are in part a reflection of the fact that there are few higher education places offered nearby these areas and therefore university students often move out of these localities to be closer to their campus. However, as shown in the On Track figures, there are substantially lower progression rates to higher education from school students who lived in these areas and therefore the low rates here are not simply attributable to a lack of geographic access to campuses.

Table 4: Higher education participation rates by age and location, 2006 (%)

Age	Cardinia	Casey	Hume	Melton	Mitchell	Whittlesea	Wyndham	Melbourne Total
18 years	11.8	17.1	20.1	17.0	7.6	23.2	17.2	27.4
19 years	20.3	23.9	24.7	21.1	11.5	28.1	27.1	40.2
20 years	16.4	22.4	23.9	21.4	10.2	28.7	25.3	41.9
21 years	15.4	20.8	21.3	18.0	9.9	26.1	22.2	39.3
22 years	14.9	14.2	15.0	12.7	9.9	19.5	14.2	31.9
23 years	8.7	11.0	11.6	8.8	3.6	13.6	11.9	24.8
24 years	4.2	7.8	7.5	7.3	5.3	9.6	8.8	18.8
25-29 years	4.6	3.9	3.7	4.0	3.4	5.1	4.7	10.3
30-34 years	2.4	2.1	2.1	2.5	2.3	2.3	3.3	5.3
35-39 years	1.8	1.7	1.7	2.1	2.2	1.5	2.9	3.4
40 and above	0.7	0.6	0.6	0.7	0.9	0.5	1.1	1.1

Source: ABS Census 2006, customised data

The VET participation rates for the GAA areas are in general higher than for the Melbourne average (especially in the 18 to 21 ages). This is a substantially different pattern to that for the higher education participation and is likely to be a combination of a number of factors, including geographic access and school outcomes (as discussed in relation to the On Track data). If transition to higher education increases in these areas there will be pressure on these VET participation rates.

It is also interesting that conversely for those aged 24 to 34 the VET participation rates are mostly lower than for Melbourne overall, perhaps due to less take up of retraining and work based opportunities. Increasing the participation in these age groups in these regions will be important to achieving positive outcomes for residents of the growth areas.

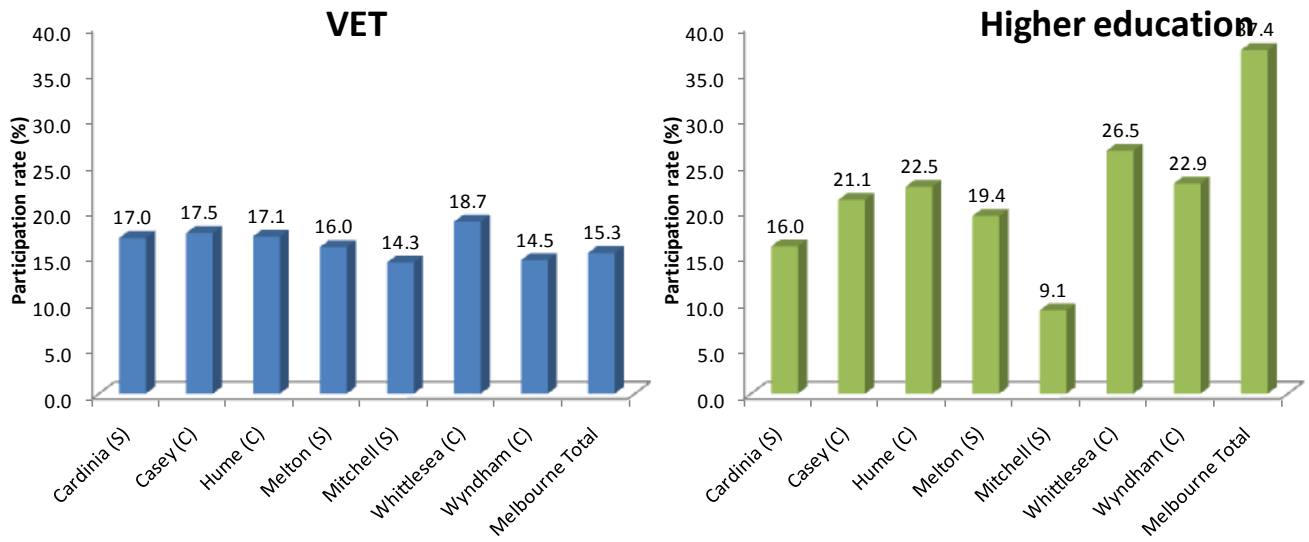
Figure 9 displays the participation rates of the 18 to 21 year age groups for each areas and both sectors. This figure allows comparison within sectors and between the sectors and provides a focus on the core ages where participation in tertiary

education is highest. It helps to highlight the stark differences in participation in higher education and the more even participation distribution for VET. It also shows that some of the areas of focus here have higher VET participation rates than higher education rates (Cardinia and Mitchell). For the others the higher education participation rates (while still low) are higher than the VET rates.

Table 5: VET participation rates by age and location, 2006 (%)

Age	Cardinia	Casey	Hume	Melton	Mitchell	Whittlesea	Wyndham	Melbourne Total
18 years	17.3	19.9	19.5	20.5	12.9	23.0	16.9	16.2
19 years	23.1	23.2	20.9	20.4	18.7	23.8	19.8	19.8
20 years	17.5	16.0	16.7	13.4	14.8	18.6	12.9	15.1
21 years	10.6	10.8	11.0	9.4	11.5	10.0	8.7	10.5
22 years	7.1	8.8	6.8	5.7	6.0	7.7	6.3	7.9
23 years	7.3	6.0	6.3	3.9	4.9	6.8	4.8	6.5
24 years	4.6	5.0	5.6	3.7	3.1	5.2	3.6	5.6
25-29 years	3.4	3.7	3.5	2.3	3.1	3.4	2.9	3.9
30-34 years	2.4	2.6	2.6	1.5	1.6	2.1	2.0	2.6
35-39 years	2.1	2.2	2.4	1.2	2.6	2.0	1.5	2.1
40 and above	1.0	1.0	0.9	0.7	1.1	0.8	0.8	0.9

Source: ABS Census 2006, customised data

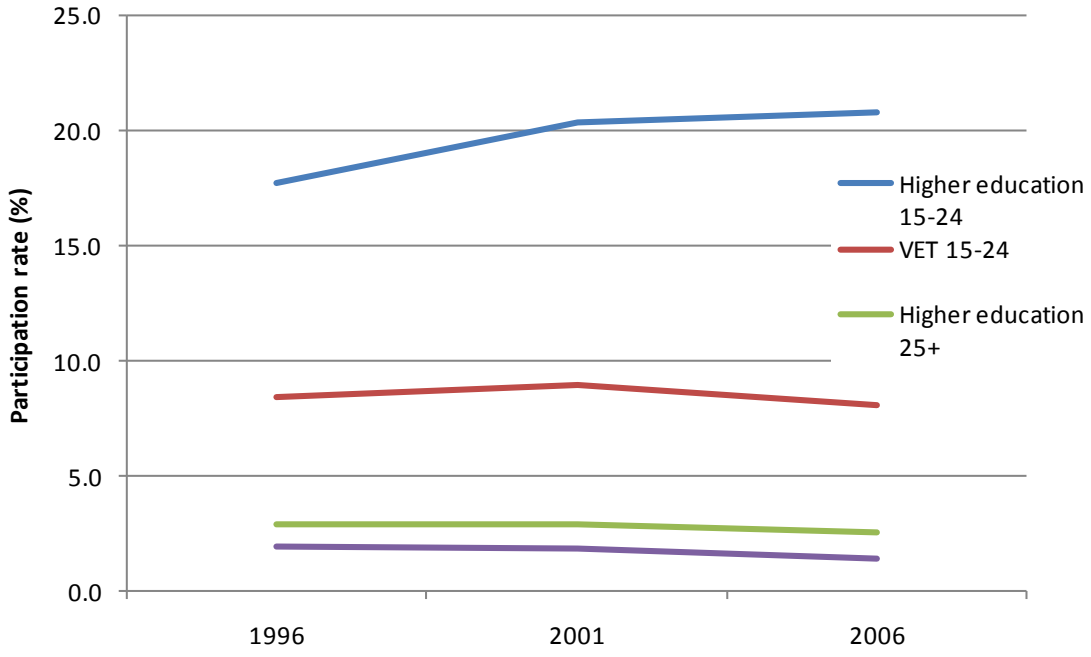


Source: ABS Census 2006, customised data

Figure 9: Tertiary education participation rates of 18 to 21 year olds, selected areas, 2006

Exploration of data from the previous three Australian census collections provides an indicator of the change in participation rates in tertiary education over recent years. For this report, this comparison has been undertaken looking at the Melbourne average across two broad age-groups. This level of analysis is notably broad and has been restricted by data availability and time. However, it does allow for a general pattern of participation to be explored. As shown in Figure 10, the only rate increase apparent in the data for the previous three census collections is in the higher education participation for the 15 to 24 year group. For this age cohort, there was a slight decrease in VET participation rates, as was also apparent for both sectors among people aged 25 and above.

These trends are interesting in the context of modelling for future demand within Melbourne. It is possible that these trends have changed since the 2006 Census. However, broad analysis of the ABS Survey of Education and Work data from 2001 to 2009 for Australia (ABS, 2009) is consistent with the findings from the Census analysis. As discussed in the following section and outlined in the methodology section, the trends identified here have been adjusted and applied to the second enrolment projection scenario.



Source: ABS Census 2006, customised data

Figure 10: Participation rate changes from 1996 to 2006 by sector and age group, Melbourne

3.3 *Part-time study*

Studying at university, TAFE or other tertiary providers while engaged in the labour force or other interests is not uncommon. The estimates in this part of the report have focussed on absolute numbers of people studying, not whether these people are engaged in study at a full-time load. The extent to which people study full or part-time does impact on the infrastructure of educational institutions and it is therefore pertinent to examine the trends among the populations of interest to this discussion. Census data is used for this analysis. For those studying part-time, this data does not identify the fraction of time spent studying, or whether this study takes place after hours. As a result the discussion is broad and intended to provide an indication of the patterns of enrolment in this regard.

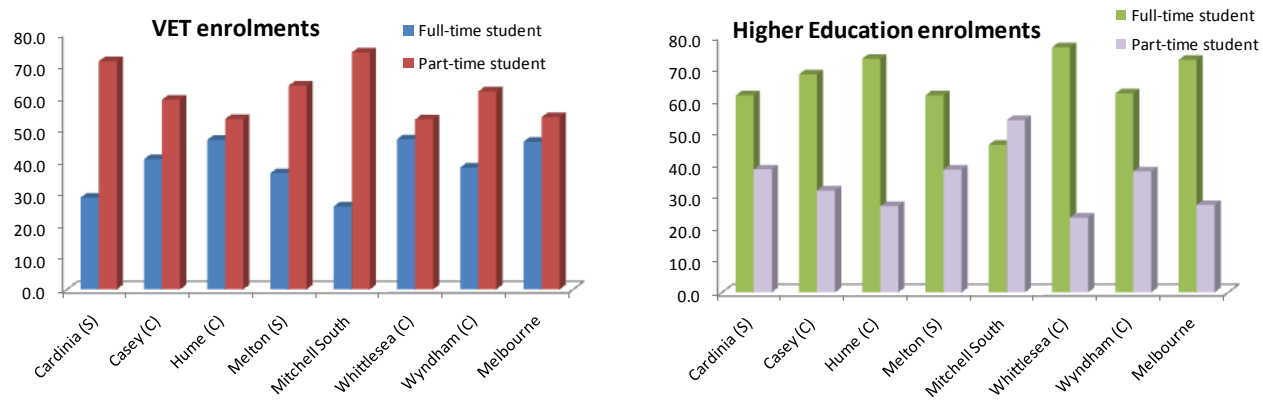
Table 6 and Figure 11 show the proportion of students enrolled part-time and full-time for both VET and higher education in the key areas and for Melbourne as a whole. In general, VET students are more likely to be studying part-time than higher education students. There is some variation in the levels of part-time attendance across the areas examined here for both VET and higher education. Students living in Mitchell are substantially more likely to be studying part-time (both at the higher education and VET levels) than those in other areas. This is possibly linked to the fact that this area is outside the metropolitan area and therefore further from campuses than any other area explored here.

With the exception of Mitchell, the attendance pattern for VET tends to be between 50 per cent and 60 per cent part-time and for higher education between 25 and 40 per cent part-time.

Table 6: Attendance type and sector of institution by selected areas, enrolled students only, 2006

LGA	VET			Higher Education		
	Full-time	Part-time	Total	Full-time	Part-time	Total
Cardinia (S)	28.7	71.3	100.0	61.5	38.5	100.0
Casey (C)	40.7	59.3	100.0	68.1	31.9	100.0
Hume (C)	46.7	53.3	100.0	73.1	26.9	100.0
Melton (S)	36.3	63.7	100.0	61.6	38.4	100.0
Mitchell (S)	25.9	74.1	100.0	46.1	53.9	100.0
Whittlesea (C)	46.9	53.1	100.0	76.6	23.4	100.0
Wyndham (C)	38.1	61.9	100.0	62.2	37.8	100.0
Melbourne	46.2	53.8	100.0	72.7	27.3	100.0

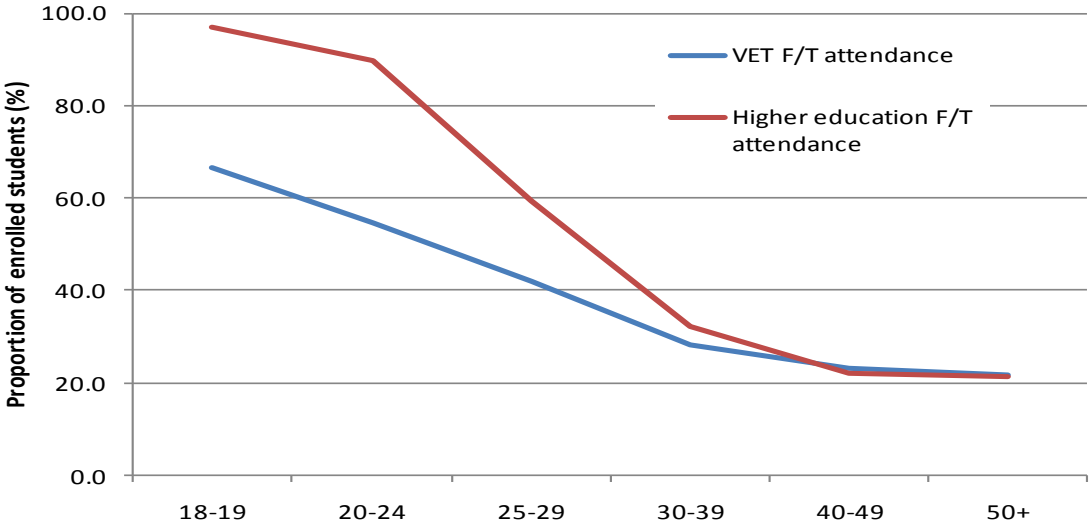
Source: ABS Census 2006, customised data



Source: ABS Census 2006, customised data

Figure 11: Attendance type and sector by selected areas, 2006

Attendance type also differs substantially by age, which is an important factor given the generally young demographic that predominate these growth areas. The rate of full-time attendance by age for the Melbourne average is mapped in Figure 12. The figures for each of the areas of focus are not provided here, but the pattern is essentially the same across these areas. That is, as the age of students increases, the likelihood of them studying full-time declines. For higher education, this decline is dramatic, from almost universal full-time enrolment among 18 and 19 year old students to about 20 per cent among students aged 40 and above. VET levels of full-time attendance are lower in the younger age groups when compared to higher education, but are similar once students reach the age of about 30.



Source: ABS Census 2006, customised data

Figure 12: Proportion of students enrolled full-time by sector of enrolment and age, Melbourne 2006

For the growth areas of Melbourne, where a larger proportion of the population is in the younger age groups, these findings suggest that a relatively large proportion of higher education enrolments can be expected to be at a full-time level in the future, while VET full-time enrolments will likely be higher in these areas than in other parts of Melbourne.

4 Future demand for tertiary education

The mere fact that the core tertiary education age cohort is growing rapidly in the GAA areas immediately suggests that there will be a growing demand for higher education and VET among the residents of these areas in the coming decade. If participation rates in these areas also increase, the result in terms of tertiary education demand will be even more profound.

In this section, two scenarios for future enrolments in VET and three scenarios for enrolments in higher education are outlined. The first assumes that participation rates remain at the 2006 levels as detailed in the section above. The second assumes:

- in higher education, a growth of 0.5 percentage points per year in the participation rates of the younger age groups (18 to 24 years) and steady participation by other age groups; and
- for VET, participation rates for the 24 to 39 year age groups will grow annually between 2015 and 2019 by 0.1 percentage points and by 0.2 percentage points from 2020 to 2025. Also, between 2020 and 2025, annual growth of 0.1 percentage points in participation among the 40 to 49 year age group has been factored into the calculations. The younger age groups are assumed not to increase in participation due to the competition from higher education for school leavers and noting that the rates in these regions is currently higher than average.

The third growth scenario extends scenario two for higher education. It is based on growth in the 18 to 24 year age groups, with a yearly 0.5 percentage point increase in participation between 2010 and 2015, annual percentage point increases of 0.75 between 2016 and 2020 and increases of 1 percentage point between 2021 and 2025.

4.1 Scenario one low – stable participation rates

As shown in the two figures below, even in a scenario where participation rates across ages and sectors remain steady, enrolment demand is likely to grow substantially between 2010 and 2025 in these specific areas. For VET enrolments (Figure 13 and Table 7), the projections suggest that as many as 7,300 people will be enrolled at VET in Casey in 2025. Other areas will have smaller overall enrolments, but their growth will be more substantial than Casey, for example, Cardinia is projected to experience growth of 76 per cent or an additional 1,200 VET enrolees by 2025. In terms of overall growth numbers, Wyndham is projected to have nearly 1,600 additional VET enrolees living in the area by 2025.

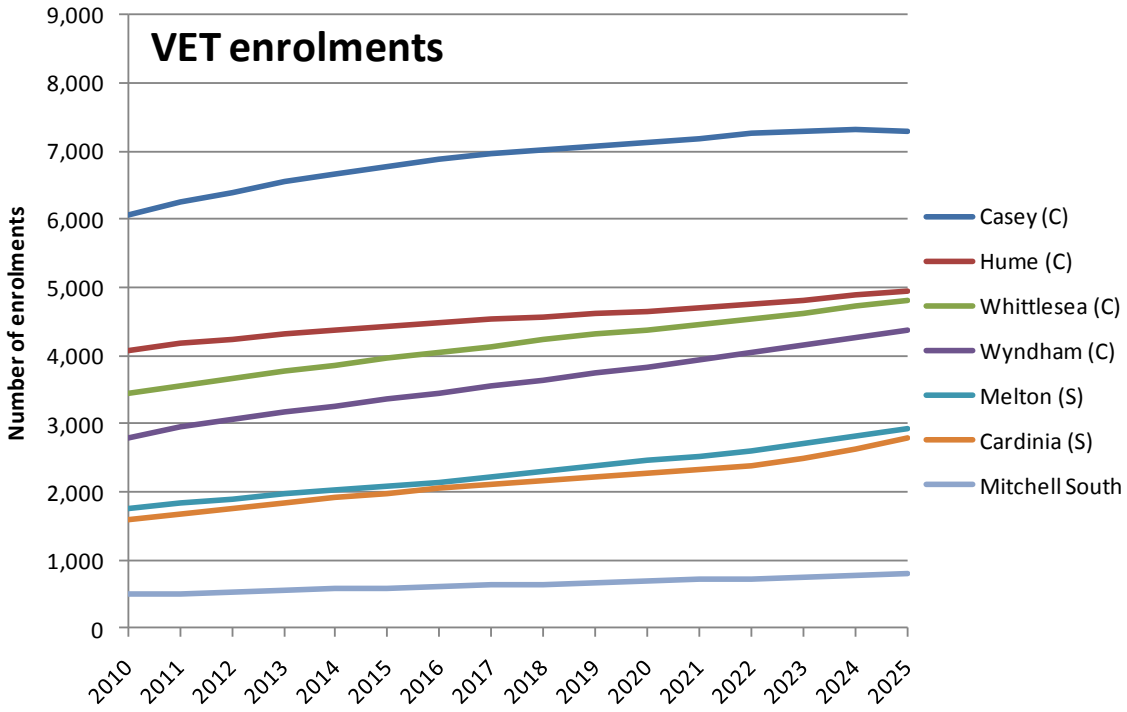


Figure 13: Enrolment projections for VET, 2010 to 2025, selected areas

For the Scenario One higher education enrolment projections (Figure 14 and Table 8) the growth patterns projected in a number of areas are substantial While Casey again has the largest enrolment cohort in this regard, its growth in higher education enrolments over the 15 year period (16.5 per cent) is relatively modest in comparison to all other areas except Hume (where growth of 18 per cent is projected). Wyndham stands out in terms of the growth trajectory and size that is shown in Figure 14. The model projects that, in this area, there will be more than 2,500 additional higher education enrolees in 2025 when compared with 2010 estimates, an overall growth of 54 per cent. Other areas with notably large numerical increases include Whittlesea (growth of over 1,500), Melton (over 1,400) and Cardinia (over 1,200).

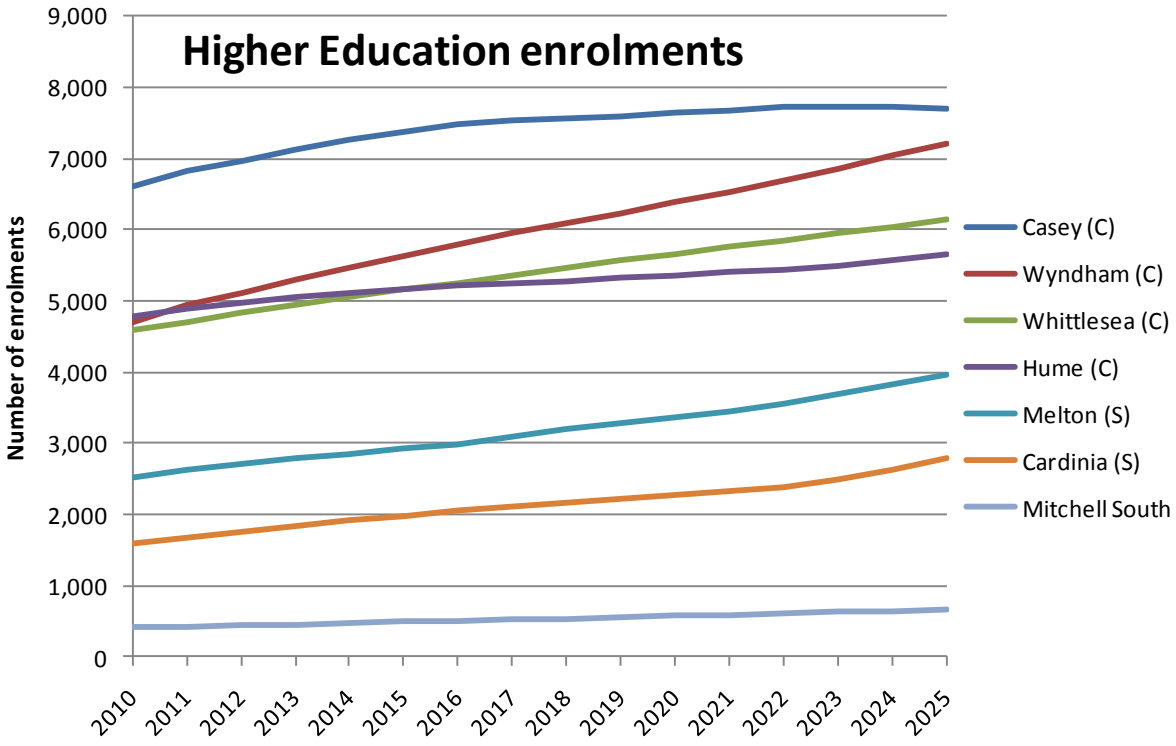


Figure 14: Enrolment projections for higher education, 2010 to 2025, selected areas – Scenario One

4.2 *Scenario two medium – growth in participation for higher education and VET*

In the second scenarios modelled here different growth rates have been applied to higher education and VET participation rates. The higher education rates are discussed first, followed by the VET growth scenario.

4.2.1 Scenario two medium – higher education

As noted earlier in the report, the growth in participation levels for the higher education growth scenario is only applied to the 18 to 24 year olds in each area and is incrementally increased at 0.5 percentage points per year through the time series. This growth calculation is based on achieving a match with the modelling work undertaken for the Victorian Tertiary Education Plan expert panel which sees Victoria achieve a bachelor degree attainment rate of about 47 per cent of the population aged 25 to 34 by 2025 (Lee Dow et al., 2010).

As shown in Figure 15 (and detailed in Table 9) the growth scenario results in a forecast of about 10,000 higher education students residing in Casey by 2025 and about 9,000 in Wyndham. The differences in the growth outcomes between this growth in participation scenario and the steady participation scenario for some of the target LGAs are displayed in Figure 16 for each of the GAA areas. These figures

help to provide some perspective on the cumulative difference that changing participation rates can have on enrolment numbers.

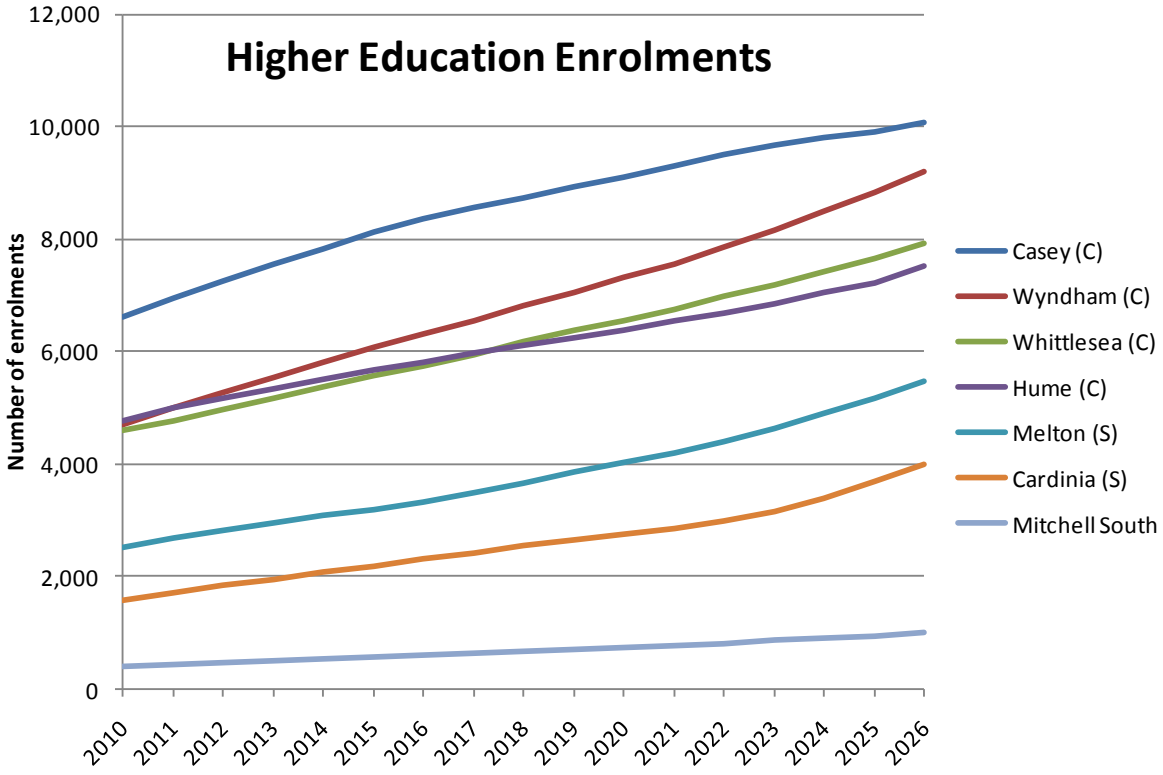


Figure 15: Enrolment projections for higher education, 2010 to 2025, selected areas – Scenario Two

The axes on the graphs that comprise Figure 16 have been standardised to also offer a comparative picture of the different sizes of higher education enrolment populations across the seven areas of focus in this analysis. Without exception, these graphs show that the differences between the base participation model and the growing participation model result in the gap between these figures substantially widening over the time period. This is illustrated well in the case of Casey LGA, where for the scenario one model the enrolment numbers begin to flatten out in the 2020s, whereas in scenario two the growth in enrolments continues to climb.

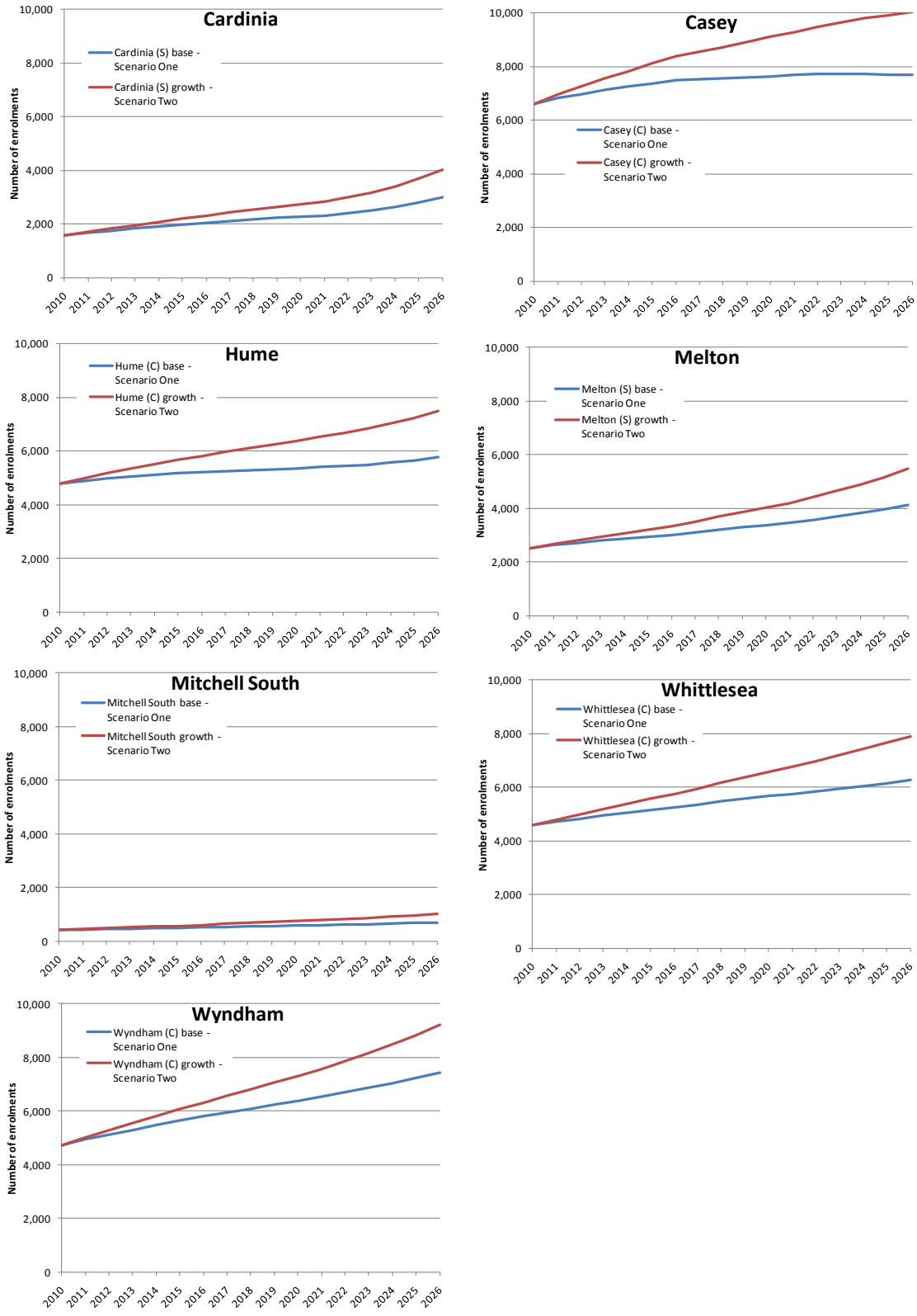


Figure 16: Comparison of higher education enrolment scenarios for selected areas, 2010 to 2025

4.2.2 Scenario two medium - VET

Although the trend data shown in Figure 10 shows no growth in the participation rates for VET, the second scenario has been calculated on the assumption that the Victorian Government's policy for raising attainment of higher level VET qualifications increases participation. The VET growth estimates here assume that up-skilling or re-skilling among the older age cohorts will produce the most participation rate growth in this sector over the coming years. As such, participation rates for the 24 to 39 year age groups have been raised between 2015 and 2019 by 0.1 percentage points and by 0.2 percentage points from 2020 to 2025. In addition, between 2020 and 2025 there is growth of 0.1 percentage points in participation among the 40 to 49 year age group.

The outcomes of this growth projection for VET enrolments is displayed in Figure 17 and also shown in Table 10. The figure shows continued and strong growth in all areas of focus here, especially in the later years of the time series.

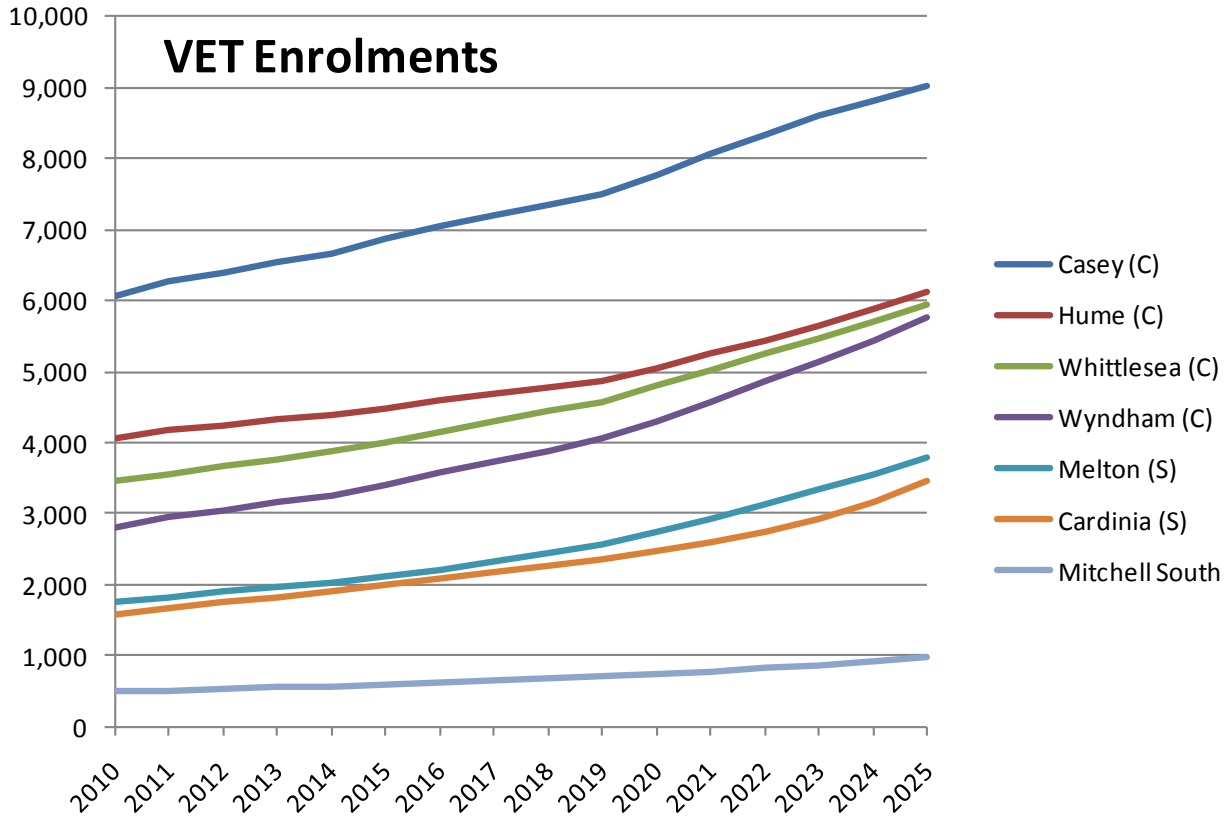


Figure 17: Enrolment projections for VET, 2010 to 2025, selected areas – Scenario Two

The graphs in 16 show the relative change in enrolment figures for the two enrolment scenarios for VET. As shown, the differences in projected enrolments begin to make an impact from 2015 onwards as a result of the participation rate adjustments.

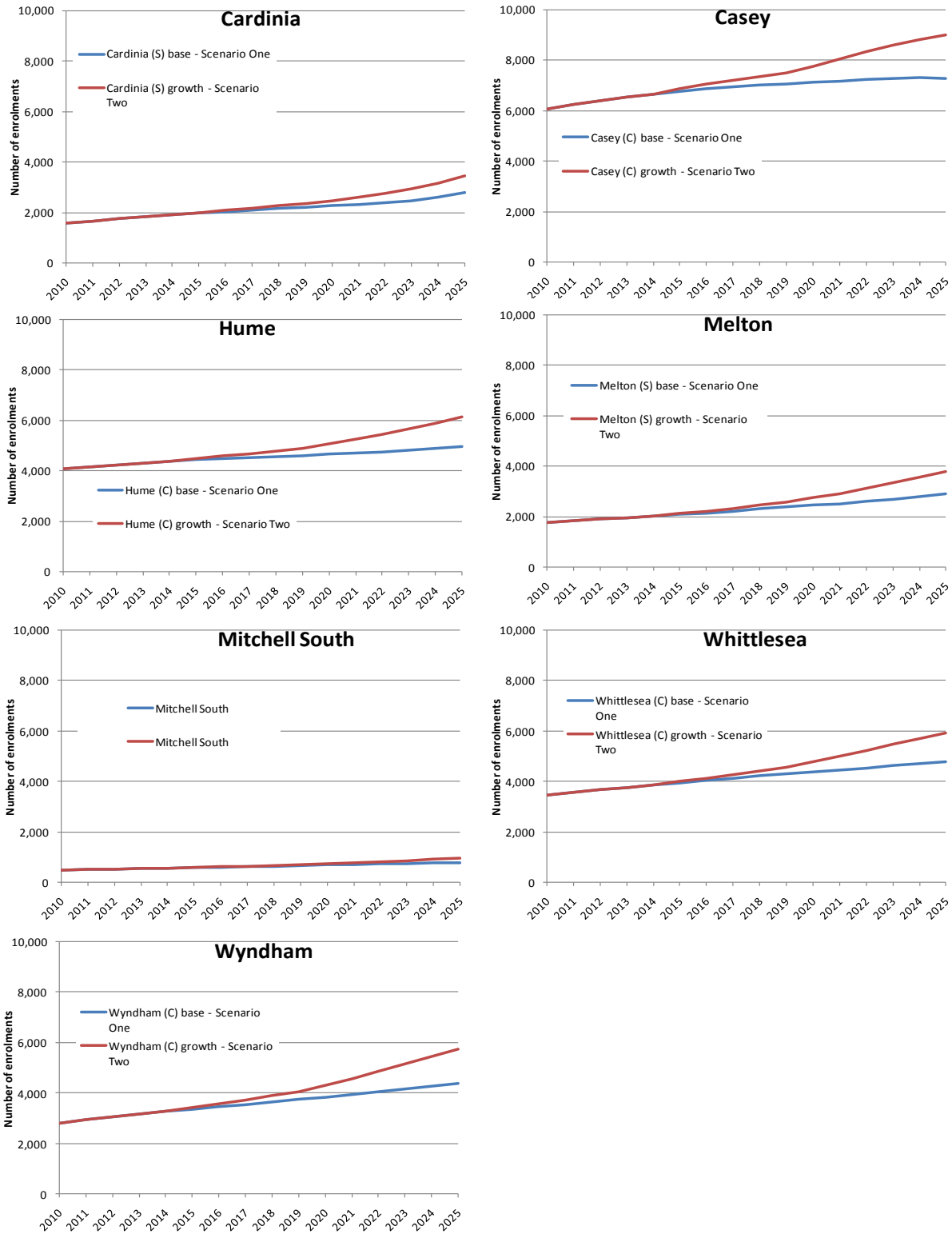


Figure 18: Comparison of VET enrolment scenarios for selected areas, 2010 to 2025

4.3 *Scenario three high – substantial growth in participation in higher education*

The third growth scenario is calculated for the higher education participation only. The modelling is based on relatively substantial increases in participation levels over the coming decades, with the intent of showing the impact of reducing the gap in participation between these regions and inner and mid Melbourne. These patterns give a 'high growth' estimate for the sector, that are aspirational more than perhaps likely.

Figure 19 shows notable growth in higher education enrolments in all areas, with particularly sharp and continuing growth in the last five years of the time series. Notable upturns are evident in Cardinia and Wyndham in particular. The numbers that form the basis of this figure can be seen in Table 11.

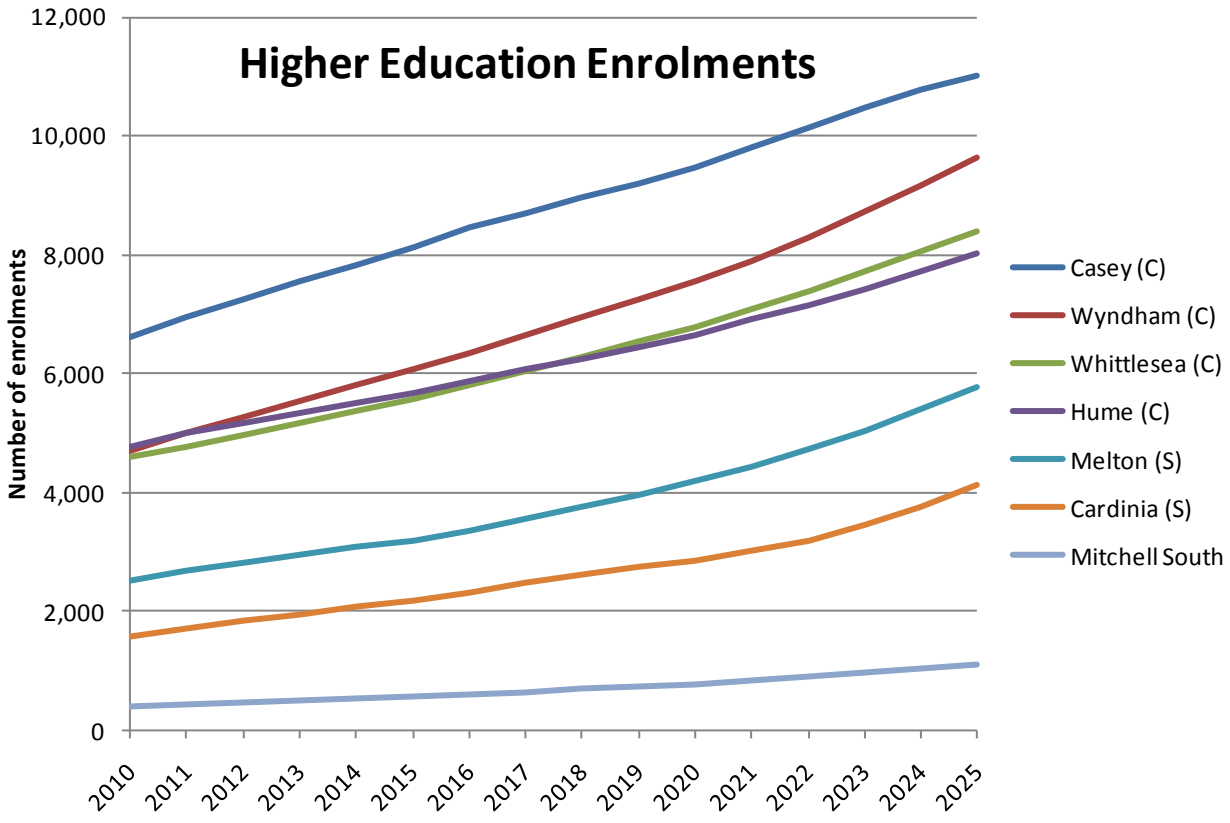


Figure 19: Enrolment projections for higher education, 2010 to 2025, selected areas – Scenario Three

Figure 20 displays the relative growth of enrolments according to the three scenarios considered in this report. As is clear from these models, increasing participation from the 2006 recorded levels in these areas will have a substantial impact on the number of higher education attendees who live in these areas.

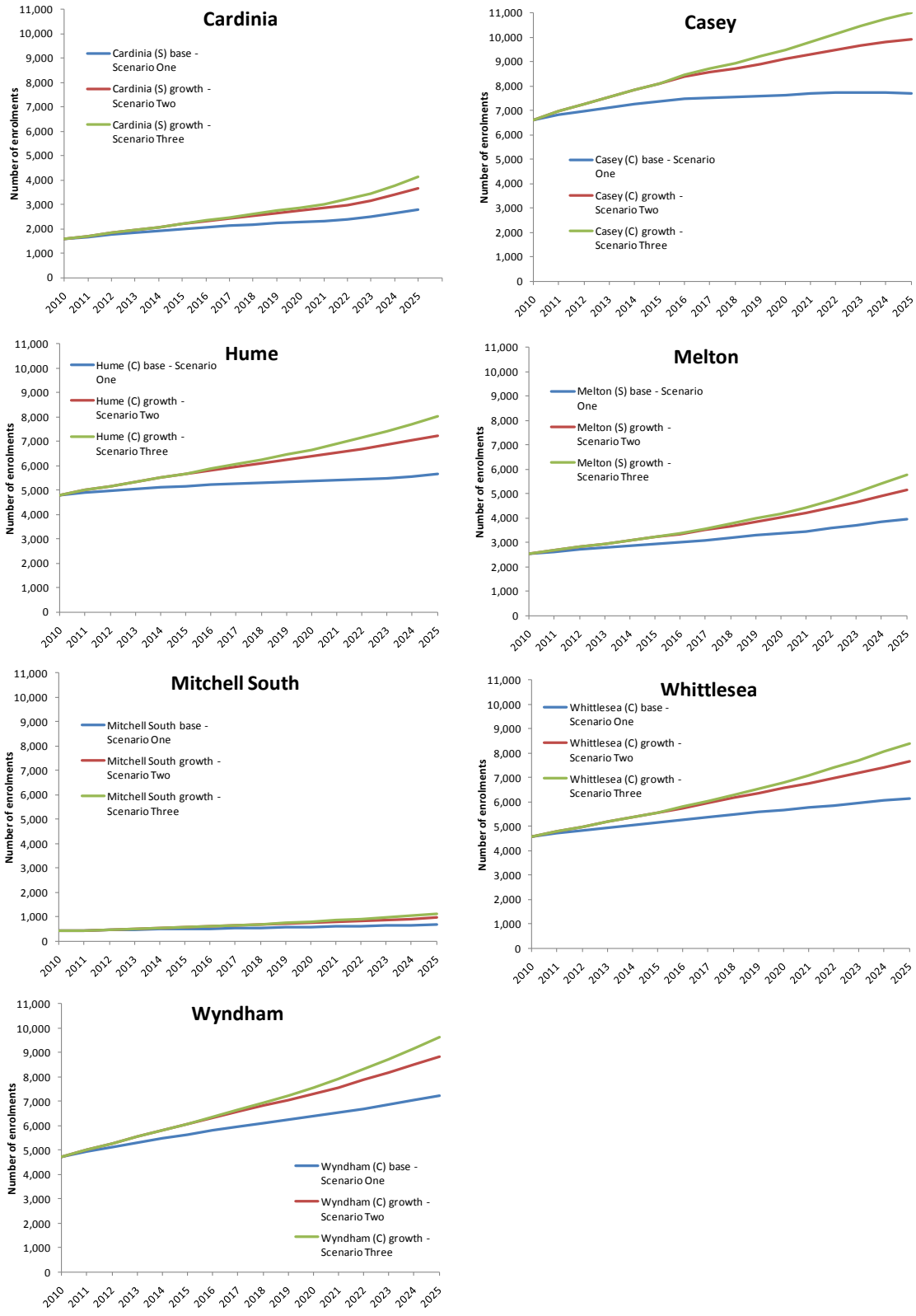


Figure 20: Comparison of higher education enrolment scenarios for selected areas, 2010 to 2025

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6 Detailed tables

Table 7: Projected enrolment numbers in VET for selected areas 2010 to 2025 - Scenario One (stable participation rates)

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010	1,584	6,061	4,070	1,757	495	3,459	2,802
2011	1,673	6,258	4,171	1,832	515	3,563	2,944
2012	1,754	6,405	4,248	1,903	534	3,667	3,052
2013	1,833	6,550	4,322	1,972	554	3,773	3,163
2014	1,906	6,672	4,384	2,031	572	3,866	3,265
2015	1,976	6,786	4,441	2,087	590	3,955	3,363
2016	2,045	6,890	4,493	2,143	608	4,040	3,455
2017	2,109	6,950	4,537	2,223	628	4,130	3,553
2018	2,173	7,008	4,575	2,305	649	4,224	3,649
2019	2,229	7,069	4,617	2,383	670	4,308	3,742
2020	2,276	7,128	4,658	2,453	689	4,383	3,838
2021	2,320	7,188	4,702	2,522	708	4,454	3,931
2022	2,387	7,251	4,747	2,612	726	4,540	4,038
2023	2,487	7,287	4,805	2,708	744	4,624	4,145
2024	2,619	7,310	4,881	2,815	766	4,715	4,260
2025	2,784	7,300	4,960	2,921	790	4,801	4,374

Table 8: Projected enrolment numbers in higher education for selected areas 2010 to 2025 - Scenario One (stable participation rates)

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010	1,580	6,611	4,772	2,514	407	4,584	4,700
2011	1,673	6,824	4,891	2,620	425	4,706	4,937
2012	1,755	6,977	4,970	2,706	442	4,827	5,113
2013	1,834	7,126	5,044	2,787	459	4,947	5,295
2014	1,910	7,259	5,107	2,860	475	5,056	5,470
2015	1,981	7,379	5,163	2,930	491	5,157	5,637
2016	2,052	7,487	5,213	2,996	507	5,252	5,793
2017	2,114	7,523	5,251	3,093	524	5,359	5,943
2018	2,174	7,558	5,282	3,191	542	5,469	6,089
2019	2,227	7,597	5,320	3,287	560	5,570	6,231
2020	2,273	7,639	5,361	3,372	577	5,663	6,381
2021	2,315	7,683	5,407	3,454	595	5,752	6,525
2022	2,388	7,722	5,442	3,568	611	5,850	6,694
2023	2,492	7,734	5,493	3,690	628	5,945	6,861
2024	2,626	7,732	5,565	3,823	646	6,049	7,039
2025	2,796	7,702	5,644	3,957	666	6,152	7,219

Table 9: Projected enrolment numbers in higher education for selected areas 2010 to 2025 - Scenario Two (growing participation rates for 18 to 24s)

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010	1,580	6,611	4,772	2,514	407	4,584	4,700
2011	1,709	6,961	4,988	2,670	437	4,782	5,014
2012	1,830	7,256	5,167	2,809	467	4,982	5,271
2013	1,952	7,552	5,343	2,946	499	5,185	5,538
2014	2,072	7,834	5,507	3,076	531	5,378	5,802
2015	2,190	8,109	5,667	3,205	563	5,566	6,061
2016	2,310	8,372	5,820	3,332	596	5,750	6,313
2017	2,424	8,554	5,962	3,501	631	5,954	6,560
2018	2,537	8,734	6,098	3,676	669	6,164	6,808
2019	2,644	8,917	6,241	3,852	707	6,366	7,054
2020	2,744	9,102	6,386	4,019	744	6,562	7,310
2021	2,842	9,294	6,543	4,190	784	6,760	7,568
2022	2,982	9,489	6,683	4,406	821	6,972	7,867
2023	3,167	9,654	6,845	4,640	861	7,186	8,172
2024	3,396	9,803	7,033	4,894	904	7,416	8,496
2025	3,676	9,915	7,233	5,157	951	7,647	8,829

Table 10: Projected enrolment numbers in VET for selected areas 2010 to 2025 - Scenario Two

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010	1,584	6,061	4,070	1,757	495	3,459	2,802
2011	1,673	6,258	4,171	1,832	515	3,563	2,944
2012	1,754	6,405	4,248	1,903	534	3,667	3,052
2013	1,833	6,550	4,322	1,972	554	3,773	3,163
2014	1,906	6,672	4,384	2,031	572	3,866	3,265
2015	1,998	6,862	4,489	2,124	596	4,004	3,417
2016	2,092	7,048	4,593	2,217	621	4,141	3,569
2017	2,183	7,192	4,689	2,337	647	4,285	3,728
2018	2,275	7,338	4,781	2,458	676	4,434	3,888
2019	2,360	7,489	4,880	2,577	704	4,576	4,048
2020	2,481	7,772	5,062	2,752	744	4,795	4,311
2021	2,599	8,061	5,249	2,927	786	5,012	4,577
2022	2,747	8,345	5,443	3,126	827	5,243	4,861
2023	2,937	8,595	5,655	3,335	870	5,472	5,149
2024	3,170	8,826	5,890	3,558	918	5,707	5,449
2025	3,451	9,011	6,133	3,782	970	5,936	5,752

Table 11: Projected enrolment numbers in higher education for selected areas 2010 to 2025 - Scenario Three

	Cardinia (S)	Casey (C)	Hume (C)	Melton (S)	Mitchell South	Whittlesea (C)	Wyndham (C)
2010	1,580	6,611	4,772	2,514	407	4,584	4,700
2011	1,709	6,961	4,988	2,670	437	4,782	5,014
2012	1,830	7,256	5,167	2,809	467	4,982	5,271
2013	1,952	7,552	5,343	2,946	499	5,185	5,538
2014	2,072	7,834	5,507	3,076	531	5,378	5,802
2015	2,190	8,109	5,667	3,205	563	5,566	6,061
2016	2,332	8,446	5,871	3,359	604	5,791	6,356
2017	2,468	8,702	6,064	3,559	646	6,038	6,649
2018	2,605	8,955	6,250	3,767	692	6,294	6,942
2019	2,736	9,211	6,445	3,977	739	6,543	7,237
2020	2,862	9,468	6,643	4,181	785	6,787	7,543
2021	3,010	9,806	6,905	4,424	844	7,081	7,900
2022	3,205	10,152	7,149	4,720	900	7,393	8,307
2023	3,453	10,466	7,416	5,042	960	7,712	8,727
2024	3,753	10,765	7,715	5,392	1,024	8,050	9,172
2025	4,116	11,022	8,027	5,757	1,094	8,394	9,634