



ESSENTIAL ECONOMICS

Employment Planning for C21 Business Park

Economic Input to Precinct Structure Plan

Prepared for

Growth Areas Authority

by

Essential Economics Pty Ltd

August 2010

Authorship

Report stage	Author	Date	Review	Date
Draft report	John Noronha Geof Snell	10/08/2010	Matt Lee	13/08/2010
Final report	John Noronha	27/08/2010	Matt Lee	27/08/2010

Disclaimer

Although every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein, Essential Economics Pty Ltd accepts no liability for any actions taken on the basis of the contents of this report.

Contact details

For further details please contact:

Essential Economics Pty Ltd
96 Pelham Street
Carlton
Victoria 3053
Australia

PH 61 3 9347 5255
FAX 61 3 9347 5355
EMAIL mail@essentialeconomics.com
WEB www.essentialeconomics.com

ABN 38 894 627 397

Job reference: **10090**

Contents

Introduction.....	1
1 Background to C21 Business Park.....	1
1.1 Casey C21	1
1.2 Other Studies.....	2
1.3 Summary.....	6
2 Population and Employment Context	7
2.1 Population Trends	7
2.2 Labour Force Characteristics	8
2.3 Places of Employment	9
2.4 Current Employment Performance	11
2.5 Structure of Employment in the Future.....	14
2.6 Summary.....	16
3 Future Employment Requirements	17
3.1 Population Projections	17
3.2 Current Employment Under-Provision	18
3.3 Labour Force Projections	19
3.4 Total Employment Task	20
3.5 Household Growth	21
3.6 Summary.....	21
4 Employment Land Requirements	22
4.1 Employment Distribution Model	22
4.2 Employment by Location Type	25
4.3 Employment Target for Dedicated Employment Precincts.....	27
4.4 Employment Land Requirements	28
4.5 Summary of Employment Land Requirements	29
5 Employment Land Supply.....	30
5.1 Existing Employment Precincts.....	30
5.2 Planned Employment Precincts	34
5.3 Potential Future Employment Land.....	37
5.4 Summary of Employment Land Supply	38
6 Synthesis of Employment Land Demand and Supply	40
6.1 Summary of Employment Land Demand	40
6.2 Summary of Employment Land Supply	40
6.3 Demand v Supply	41
6.4 Sensitivity Analysis.....	42
6.5 Role of C21 Business Park in Employment Land Supply	43
6.6 Summary.....	44
7 Recommended Development Outcomes for C21 Business Park	45
7.1 Location in Corridor	45
7.2 Residential Development	46
7.3 Constraints to Development of Employment Land.....	46
7.4 Competition from Other Employment Precincts	46
7.5 Opportunity for Niche Development	47
7.6 Base Case Scenario	47
7.7 Employment Maximisation Scenario	49
7.8 Scenario Comparison.....	52
7.9 Recommendations for Precinct Structure Planning.....	53
7.10 Summary.....	54
Key Findings.....	55

INTRODUCTION

Background

This report, commissioned by the Growth Areas Authority (GAA), has been prepared by Essential Economics to examine the potential development outcomes and employment implications for the *C21 Business Park* precinct. The analysis is to inform the preparation of a *Precinct Structure Plan* for the C21 Business Park, and in particular advise on the extent of land to be set aside for employment activities, its location, and the likely community outcomes in terms of employment generation.

The analysis is undertaken in the context of the wider regional employment imperatives, including the broad requirement for employment generation to serve the expanding population in the municipalities of Casey and Cardinia and the extended peri-urban area. In this context, the study has regard for the additional population associated with the implementation of Amendment VC68 to the Victoria Planning Provisions, which modifies the location of the Urban Growth Boundary to include new urban land between Clyde North and Devon Meadows. The study also considers the likelihood that new employment areas will be identified in the Growth Area Framework Plan (GAFP) to guide development in this region.

Objectives

The C21 Business Park has long been identified by the City of Casey as a location for employment activities, and this designation goes back at least to the preparation of the *Casey C21 A vision for our future* report, prepared in 2002. In the C21 Strategy, the C21 Business Park was identified in conjunction with the Casey Technology Precinct in Berwick. The technology park was to be a densely-developed mixed use precinct incorporating research, technology, medical, education and residential development, while the C21 Business Park was to accommodate the supporting business and manufacturing operations in a major new business cluster.

More recently, the shortfall in local employment opportunity has been recognised, and in response a number of major new employment precincts have been identified in the south-eastern region.

This study provides an examination of the C21 Business Park site in terms of its suitability as a major employment site relative to competing precincts in the region, and with particular regard for the amount of land that could be dedicated to employment generation across a range of occupations and industries. The analysis is intended to be a key input into the Precinct Structure Planning process, and a guide to help GAA achieve optimal employment outcomes for the community in the region.

Study Region

For the purposes of analysing the development potential at the C21 Business Park precinct and to assess employment requirements and workforce profiles, a *Study Region* has been adopted which encompasses the local government areas of Casey and Cardinia, and is shown in Figure 1 below. Reference is also made to the wider *South-East Region* which also includes the municipalities of Mornington Peninsula, Frankston and Dandenong.

EMPLOYMENT PLANNING FOR C21 BUSINESS PARK

DRAFT REPORT

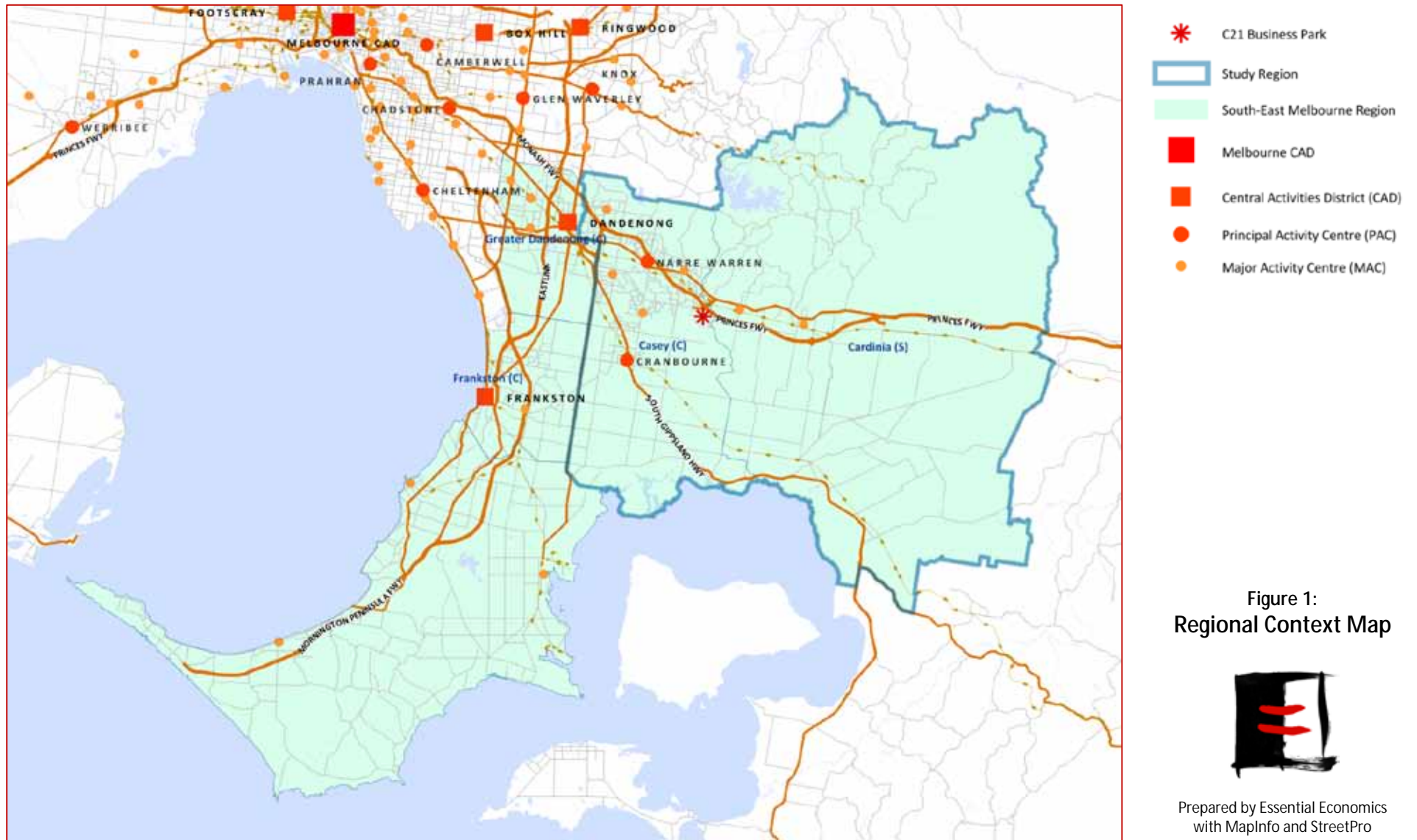


Figure 1:
Regional Context Map



Prepared by Essential Economics
with MapInfo and StreetPro

1 BACKGROUND TO C21 BUSINESS PARK

This Chapter describes the background to the designation of the C21 Business Park as a location for significant employment generation, and includes a description of relevant previous reports, including the original Casey C21 analysis and more recent economic planning work in the region.

1.1 Casey C21

The C21 Business Park was identified in the *Casey C21* strategy, which presents an integrated development plan for the municipal area and was adopted by Council in September 2002.

Casey C21 provides strategic guidance for the future development of Casey using a whole-of-community approach, and was prepared in response to the rapid population growth evident in the municipality. The strategy, which complements Council's Corporate Plan, presents a vision for long-term planning to achieve a 'preferred' future for the region.

A core component of Casey C21 is the recognition that Casey must plan for new employment opportunities if it is to develop a sophisticated economy serving the needs of a diverse community. The creation of new knowledge-based jobs is a key outcome sought by the Strategy, to be supported through a number of themes and specific proposals. One of these themes is the development of the Casey Technology Park (CTP) in Cranbourne as an integrated technology, research, learning, commercial, medical and living precinct, to be the location for in excess of 10,000 jobs.

The C21 Strategy also promotes the establishment of the C21 Business Park to link with and support the successful creation of the CTP. The C21 Park is identified in the C21 Strategy as providing for "*quality business and elaborately transformed manufacturing developments in a high amenity setting*" (Volume 1, p26), and is identified for further investigation.

The establishment of the CTP and the C21 Business Park as a significant employment node for research and development, business innovation and elaborately transformed manufacturing was recommended in the C21 Strategy in response to the following factors:

- An acknowledgement that the region needed to attract knowledge-based jobs in high value-add industry sectors if it is to evolve into a more significant economic sub-region.
- The travel distance to more established commercial office precincts in central Melbourne (including the CBD and inner suburban markets) is in excess of a conformable commute time.
- Casey's economy is tightly integrated with the surrounding municipalities in Melbourne's south-east, with a high proportion of residents travelling to Dandenong, Kingston, and Monash to work.
- An emphasis will need to be placed on employment in information and technological-based jobs and their associated service industries, rather than on relying on growth in traditional manufacturing, which has been important in serving employment demands in Casey until now.
- An understanding that knowledge-based firms prefer to locate in high amenity business part precincts, and with opportunities for attractive residential living in the surrounding region.

The CTP is identified in Casey C21 as having potential to support at least 10,000 jobs, while a further 20,000 jobs might be created in the Fountain Gate/Narre Warren precinct. This critical mass of activity is to support further opportunities along the *C21 jobs corridor*. Along this corridor, a key opportunity is

identified for the C21 Business Park, which is described in Volume 2 of the C21 Strategy as a “*high amenity, integrated research, commercial, learning and living place with freeway access and a focus towards a wetlands and parkland space along Cardinia Creek*” (Vol 2, p147). Further detail on the C21 Business Park concept is represented below:

“This Park is to be linked to the successful development of the Casey Technology Park. It is to provide a high amenity, quality business and elaborately transformed manufacturing park, together with integrated research, commercial, learning and living spaces with freeway access and a focus towards a wide wetlands and parkland space along Cardinia Creek. It is not to be developed for housing as a short term pressure, or for more conventional industry such as warehousing and the like. The Park is to have a very specific C21 jobs purpose” (Vol 2, p148).

The identification of C21 Business Park as a location for employment generation provides the basis for this updated analysis of the prospects for development and the potential economic and employment outcomes that might be generated at the C21 Business Park.

1.2 Other Studies

A range of other studies provide background information for the economic analysis presented elsewhere in this report. A listing of the main previous reports that have been referenced in this study is provided below, with the main findings from some of these reports summarised in subsequent paragraphs:

- Casey Corridor Growth Area Economic Development and Employment Analysis (Essential Economics, November 2008)
- Office Floorspace Planning Budgets; City of Casey's Centres (SGS Economics and Planning, 2005)
- Casey Cardinia Growth Area Study: Economic and Employment Issues (Prosperous Places, 2004)
- Casey Technology and Enterprise Park and C21 Business Park Strategic Planning Paper (Jackson Architecture 2005)
- Cardinia Employment Lands: Stage 1 Assessment (Macroplan, 2007)
- Casey Cardinia Growth Area Plan: Job Diversity Study (SGS Economics and Planning, 2004).

Casey Corridor Growth Area Economic Development and Employment Analysis

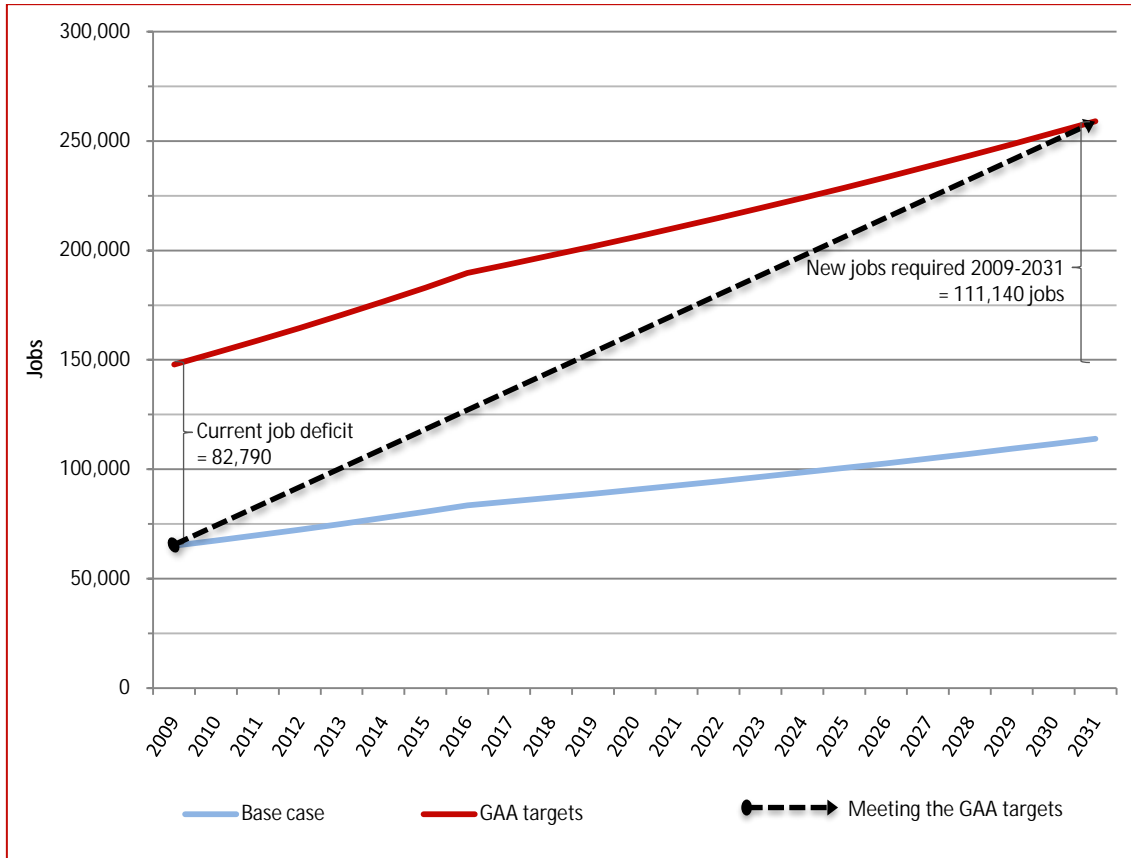
This report was prepared by Essential Economics for the Growth Areas Authority as a wider employment study for the corridor as a whole and to provide more specific input to four precinct structure plans. The report included consideration of the C21 Business Park as one of these PSP areas.

The main conclusions arising from this analysis are as follows:

- 1 The Casey-Cardinia corridor (ie the combined municipalities) performs poorly in terms of employment self-sufficiency. In 2009 the corridor had an estimated 65,120 local jobs for an employed residential labour force of 147,910 residents at that time – this represents an employment self-sufficiency rate of just 44%.
- 2 If employment self-sufficiency is to reach 100% across the corridor (an aspirational target for the GAA), then an additional 193,930 jobs will need to be created, to improve existing employment

self-sufficiency levels and to serve the new employment demands of the growing population (refer Figure 2).

Figure 2: Employment Requirements to Meet GAA Targets, 2009 to 2031



Source: Casey Corridor Economic Development and Employment Analysis, Essential Economics 2008

- 3 A large majority of these jobs will need to be in white-collar occupations in order to meet the GAA target for the occupational structure in growth areas to change over time to more closely reflect metropolitan-wide employment patterns.
- 4 Employment opportunities will occur in a range of locations, including major employment areas (such as C21 Business Park, the Cardinia employment lands, and so on), activity centres, residential areas (home-based employment) and other locations (eg schools and other facilities typically co-located with urban development).
- 5 According to the analysis, sufficient employment land has been planned to accommodate up to 125,000 new jobs. This estimate does not include all jobs that might be generated; in particular, it excludes employment associated with community facilities such as schools, medical centres and so on, and these activities are expected to provide a substantial contribution to total employment levels, having regard for data showing that community-type sectors (health, education, etc) typically accounts for 20% or more of total employment.
- 6 The overall conclusion for the wider region is that the existing employment land be retained, and new ones identified as part of the planning for the extended growth areas, in order to secure sufficient employment opportunities for the projected additional employment demands.

- 7 In relation to the C21 Business Park, a broad analysis was included to identify potential development outcomes. The analysis concluded that the precinct should accommodate:
- A business/corporate park sufficient to accommodate up to 100,000m² of commercial office floorspace
 - A campus-style industrial/commercial park to accommodate a wide range of tenants, often with specific site requirements and with generous office-space components, in a high amenity setting.
- 8 A development of this type would be expected to support up to approximately 7,000 employees.
- 9 The identified development opportunity involves the allocation of up to 100 hectares or so of employment land. Approximately 30ha or so of the remaining land is encumbered because it is flood-prone or required to accommodate road infrastructure, and around 150ha or so of land would be available for residential development.
- 10 A preferred location for employment activities is the northern part of the precinct where connections with the major road network can be more easily provided, while the southern part of the precinct is attractive for residential development having regard for the topography of the site.
- 11 These recommendations were made having regard for the following factors:
- a Employment requirements in the region
 - b New employment lands in Cardinia (the Officer, Cardinia and Pakenham employment land precincts)
 - c Low current rates of commercial office and industrial land development
 - d Planning policy support for commercial office development in activity centres
 - e The special nature of the C21 precinct as a site identified for particular economic uses
 - f The growing importance of Thompsons Road as a route linking Office/Cardinia with Dandenong South
 - g Typical sizes of corporate office parks, particularly in an outer-suburban context.

Office Floorspace Planning Budgets: City of Casey's Centres

This report was prepared by SGS Economics and Planning in 2005, and provides advice to the City of Casey on their expectations for future office development in the municipality's activity centres. The report applied a range of analytical methods to identify potential future office development potential, and concluded that approximately 180,000m² of commercial office development might be accommodated in Casey's activity centres over the period 2005 to 2021.

Major locations for office development include Fountain Gate-Narre Warren (45,000 – 72,000m²) and Casey Central (45,000 – 72,000m²), with lower expectations for precincts such as Cranbourne Town Centre and other activity centres including Berwick.

The analysis refers to the specialised development that is expected to occur in the Casey Technology Park in education, research and industrial-based activity, but no reference is made of C21 Business Park as a potential office development location. It is acknowledged that the report focuses on office development within activity centres.

A feature of the SGS analysis is the commentary on the 'New Economy', and how this might influence the ways that work practises and occupational structures change over time. A key theme is that spatial clustering is likely to lead to emerging opportunities in particular locations where workforce skills, local amenity, delivery of appropriate infrastructure and other factors come together to promote business development. A key issue is that as the size and diversity of the resident labour force in Casey and the wider region grows, more opportunities for local office development are likely to be created.

The SGS analysis concentrates on office development potential within identified activity centres, and the analysis is based on an expectation that 50% of office jobs should be provided in a range of activity centre locations. Potential office development for each centre is assessed having regard for the mix of centre types in the South East Region of Melbourne.

The implication of this analysis is that a further 180,000m² of office type development would be expected to occur elsewhere in Casey, for example in industrial estates and in specialised employment districts such as CTP and C21 Business Park.

Casey Cardinia Growth Area Study: Economic and Employment Issues

This report was prepared by Prosperous Places in 2004, as input to the Smart Committee for Growth workshops that were undertaken at that time. The objectives of the report were to:

- 1 Identify the employment task for the Casey-Cardinia growth corridor, having regard for future population and labour force growth; and
- 2 Explore various future scenarios to determine the amount of land that would need to be set aside for industrial/logistics activities, and the amount of land required for office-type employment.

Some of the key points from the analysis are as follows:

- Casey-Cardinia has a substantial shortfall in local jobs provision, with an estimated requirement for an additional 171,000 new jobs to achieve 100% employment self-sufficiency. Even if a self-sufficiency rate of 70% is achieved (a more realistic target according to the report's author), at least 120,000 local jobs would need to be created.
- Significant land will be needed to accommodate industrial and logistics uses:
 - 370ha of land will be required simply to accommodate local population-driven activities
 - 450ha of land was planned at the time the report was prepared
 - 930-1,250ha of land would be required to make up the current shortfall of jobs
 - As much as 2,050ha of additional industrial land would be required to meet as much of the future employment shortfall as possible
 - An additional allocation of 1,000ha may be required to accommodate larger regional-level activities.
- Some of these industrial and logistics uses may be accommodated in South Dandenong, where substantial new areas of industrial land are planned.
- Significant land would also need to be set aside for white collar and 'new economy' employment:
 - 300ha of land was planned at the time of the report, principally comprising CTP and C21 Business Park (note that elsewhere in the report these precincts are identified as having potential to accommodate 400ha of land development)

- 300ha would be required to match the average per capita provision in metropolitan Melbourne
- 720ha would be required to increase the employment share in new economy jobs to a more typical 24% of total employed residents
- The report examines a range of alternative future development **scenarios** in order to understand the range of outcomes that might possibly be sought. Subsequently, an **options** analysis prepared in order to reflect the potential responses having regard for land constraints on new employment land provision.
- The results of the options analysis can be summarised as:
 - Office areas: from 350ha under the “Minimal office and essential other activities” option, to 530ha under the “Most we can get” option
 - Industrial land: from 350ha under the “Minimal office and essential other activities” option, to 2,050ha under the “Most we can get” option.
- In reference to the C21 Business Park, the report identifies this land to be planned for office-based uses, although specific mention is made of the potential for these precincts to incorporate residential areas.

1.3 Summary

In summary, this background analysis shows that the C21 Business Park employment precinct has been identified for some time as a location to accommodate employment uses, although with a particular focus on uses which reflect the vision for a *high amenity, integrated research, commercial, learning and living place*.

Various studies have identified a significant shortfall in local employment opportunity in the Casey-Cardinia growth corridor. The most recent study, completed by Essential Economics in 2009, shows that up to an additional 193,930 jobs will need to be created in the corridor to improve existing employment self-sufficiency levels and to meet the GAA targets in relation to local employment provision. This implies that substantial land will need to be set aside to accommodate industrial and commercial development associated with this employment target.

This is the context in which the requirement to retain the C21 Business Park precinct for employment uses needs to be considered, although noting that other employment land precincts have been identified in the region (including in Cardinia) and that the extension to the growth area represents an opportunity to introduce new employment precincts.

2 POPULATION AND EMPLOYMENT CONTEXT

This Chapter presents analysis of recent and current population and employment statistics in order to describe the current patterns of employment in the Casey-Cardinia corridor. Relevant comparisons are made with metropolitan benchmarks.

The analysis builds on work already presented in previous reports prepared by Essential Economics, including the *Casey Growth Area Employment Development and Economic Analysis* (November 2009).

2.1 Population Trends

In 2010, the City of Casey has an estimated resident population (ERP) of 258,140 persons, according to the most recent official ABS estimates, updated to 2010 by the consultant. Since 2006, Casey's population has increased by a net total of +35,460 persons, representing an average annual growth rate of +3.8%.

Over the same period, 2006 to 2010, Cardinia's population has increased from 58,540 persons to 73,380 persons, representing a net increase of +14,840 persons at an average annual growth rate of +5.8%.

The Casey-Cardinia growth corridor as a whole has a total population of 331,520 persons in 2010, with 78% of the resident population living in Casey.

These population trends are summarised by SLA in Table 1.

Table 1: Estimated Resident Population, City of Casey and Shire of Cardinia, by SLA, 2006-2010

Statistical Local Area	2006	2007	2008	2009	2010	Population Change 2006-10	Av annual growth 2006-10
Casey (C) - Berwick	90,700	93,780	96,940	98,850	102,210	+11,510	3.0%
Casey (C) - Cranbourne	65,970	69,590	73,770	78,530	85,170	+19,200	6.6%
Casey (C) - Hallam	52,080	52,370	52,610	53,390	53,460	+1,380	0.7%
Casey (C) - South	13,930	14,590	15,600	16,590	17,300	+3,370	5.6%
Total - Casey	222,680	230,330	238,920	247,360	258,140	+35,460	3.8%
Cardinia (S) - North	24,680	24,790	25,150	25,630	25,830	+1,150	1.1%
Cardinia (S) - Pakenham	28,460	30,680	33,710	37,080	41,540	+13,080	9.9%
Cardinia (S) - South	5,400	5,470	5,610	5,930	6,010	+610	2.7%
Total - Cardinia	58,540	60,940	64,470	68,640	73,380	+14,840	5.8%
Total Casey-Cardinia	281,220	291,270	303,390	316,000	331,520	+50,300	4.2%

Source: ABS Regional Population Growth (Cat No.: 3218.0); Essential Economics

Note: AAGR = Annual Average Growth Rate

2.2 Labour Force Characteristics

Size of labour force

According to ABS census data, 100,670 residents in the City of Casey were employed in 2006, while the employed resident labour force in Cardinia Shire was 27,200.

In 2006, the total number of employed residents in the corridor as a whole was 127,870 persons.

Occupational mix

Census data for the City of Casey shows that approximately 56,340 residents (or 60% of the employed resident labour force) hold jobs in 'white collar' occupations, while 39,060 residents (or 40%) hold 'blue collar jobs'. Note that these percentages exclude those residents who did not state their occupation in the 2006 Census questionnaire.

In Cardinia, the figures are 16,610 residents in white collar occupations (62%) and 10,110 residents in blue collar occupations (38%). In other words, the resident labour forces of Casey and Cardinia have a very similar employment profile in terms of the white collar/blue collar ratio.

Across metropolitan Melbourne as a whole, 76% of jobs are held in white collar occupations (excluding those who did not state their occupations). We note that GAA has a target job ratio of 75:25 in favour of white collar occupations for the resident labour force of growth areas.

In Casey-Cardinia, there has been little change in the ratio of white collar and blue collar occupations in recent years. This is shown in Table 2 below. Note that these time series figures refer to the *enumerated population* (ie counted at home on Census night) rather than the *usual resident population*, and for this reason they differ from the data described above in relation to 2006.

In Melbourne as a whole there has been a more marked increase in white collar employment, with the share of all jobs in white collar occupations increasing from 67% in 1996 to 71% in 2006, reflecting the relative decline of manufacturing and the increased prevalence of jobs in 'new economy' sectors (professional and technical services, etc).

Table 2: Resident Labour Force by Occupation, 1996 - 2006

	1996	2001	2006
<u>Casey</u>			
White collar	56%	56%	58%
Blue collar	44%	44%	42%
<u>Cardinia</u>			
White collar	59%	59%	60%
Blue collar	41%	41%	40%
<u>Melbourne</u>			
White collar	67%	69%	71%
Blue collar	33%	31%	29%

Source: ABS Census of Population and Housing 1996, 2001, 2006 (enumerated population)

Note: excludes those who did not state their occupation

In terms of the number of jobs located within the corridor, analysis of Journey to Work data in 2006 (where occupations were stated) shows that approximately 29,320 jobs in Casey (70% of all jobs) were in white-collar occupations, with 12,810 jobs (30%) in blue collar occupations.

In Cardinia, approximately 8,990 jobs were in white collar occupations (66% of all jobs) with approximately 4,720 jobs (34%) in blue collar occupations.

Overall, approximately 69% of jobs in the corridor were in white collar occupations in 2006, and this compares with the GAA benchmark of 75% of white collar jobs.

2.3 Places of Employment

Work locations of the Resident Labour Force

Census data has been used to examine the travel patterns of employed residents in Casey and Cardinia. The main findings are as follows:

- Approximately 34% of employed residents in the corridor (or 40,500 residents) work within the corridor; for residents in Casey, the figure is 30%, while a higher 48% of Cardinia residents work within the corridor. (Note that these percentage figures exclude those who did not state their employment location).
- An additional 19% of residents in Casey-Cardinia (or 22,630 residents) are employed in Greater Dandenong, highlighting the important role that Dandenong plays as an employment location, particularly for blue-collar employment (23%) and for residents in Casey (21% overall, and 26% of blue collar employees).
- Approximately 37% of employed residents in white-collar occupations are employed within the region, compared with 28% for blue-collar occupations.
- Approximately 11% of blue-collar workers have no fixed work address.
- The City of Melbourne (principally likely to represent the Melbourne CBD) is not a significant employment destination for Casey-Cardinia residents, even those in white collar occupations.

This information is presented in Tables 3 and 4.

Table 3: Location of Work for Employed Residents in Casey-Cardinia, 2006 – Number of Residents

Place of employment	Residents in Casey (C)				Residents in Cardinia (S)				Residents in Casey-Cardinia			
	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total
Casey	17,667	7,977	212	25,856	2,474	1,085	15	3,574	20,141	9,062	227	29,430
Cardinia	1,392	717	21	2,130	5,806	3,055	81	8,942	7,198	3,772	102	11,072
Casey-Cardinia	19,059	8,694	233	27,986	8,280	4,140	96	12,516	27,339	12,834	329	40,502
Greater Dandenong	10,235	9,258	256	19,749	1,603	1,238	40	2,881	11,838	10,496	296	22,630
Melbourne (C)	4,718	629	71	5,418	813	108	13	934	5,531	737	84	6,352
Other	21,807	13,994	484	36,285	5,000	2,638	64	7,702	26,807	16,632	548	43,987
No Fixed Address	1,286	3,650	67	5,003	417	1,339	20	1,776	1,703	4,989	87	6,779
Not Stated	2,235	2,837	1,161	6,233	496	643	252	1,391	2,731	3,480	1,413	7,624
Total	59,340	39,062	2,272	100,674	16,609	10,106	485	27,200	75,949	49,168	2,757	127,874

Source: ABS Census 2006 Journey to Work (JTW) unpublished data

Note: NS – Not stated/inadequately described

Table 4: Location of Work for Employed Residents in Casey-Cardinia, 2006 - % of Employed Residents

Place of employment	Residents in Casey (C)				Residents in Cardinia (S)				Residents in Casey-Cardinia			
	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total
Casey	31%	22%	19%	27%	15%	11%	6%	14%	28%	20%	17%	24%
Cardinia	2%	2%	2%	2%	36%	32%	35%	35%	10%	8%	8%	9%
Casey-Cardinia	33%	24%	21%	30%	51%	44%	41%	48%	37%	28%	24%	34%
Greater Dandenong	18%	26%	23%	21%	10%	13%	17%	11%	16%	23%	22%	19%
Melbourne (C)	8%	2%	6%	6%	5%	1%	6%	4%	8%	2%	6%	5%
Other	38%	39%	44%	38%	31%	28%	27%	30%	37%	36%	41%	37%
No Fixed Address	2%	10%	6%	5%	3%	14%	9%	7%	2%	11%	6%	6%
Not Stated	-	-	-	-	-	-	-	-	-	-	-	-
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: ABS Census 2006 Journey to Work (JTW) unpublished data

Note: NS – Not stated/inadequately described

Jobs in Casey-Cardinia

An analysis of jobs located inside the Casey-Cardinia corridor reveals that:

- Approximately 56,260 jobs are located in the Casey-Cardinia corridor, comprising approximately 42,440 jobs in the City of Casey, and 13,820 jobs in Cardinia Shire.
- Approximately 38,300 jobs in the corridor are in white-collar occupations (or 68% of all jobs in the corridor), consisting of approximately 29,320 white-collar jobs in Casey, and 8,990 white-collar jobs in Cardinia.
- Approximately 12,810 blue-collar jobs are located in Casey, with a further 4,720 blue-collar jobs in Cardinia.
- Approximately 72% of all jobs located in the Casey-Cardinia growth corridor are taken by local residents in the corridor, and these figures are similar for white-collar and blue-collar occupations.
- More localised employment patterns are evident in Cardinia Shire, where approximately 80% of jobs are held by residents in the Casey-Cardinia corridor, and 65% of jobs are held by local residents in Cardinia Shire.
- Approximately 8% of jobs in Casey are held by Cardinia residents, while 15% of all jobs in Cardinia are held by Casey residents.

This information is presented in Table 5 and 6.

Table 5: Location of Residence for People Employed in Casey-Cardinia, 2006 – Number of Jobs

Place of residence	Jobs in Casey (C)				Jobs in Cardinia (S)				Jobs in Casey-Cardinia			
	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total
Casey	17,667	7,977	212	25,856	1,392	717	21	2,130	19,059	8,694	233	27,986
Cardinia	2,474	1,085	15	3,574	5,806	3,055	81	8,942	8,280	4,140	96	12,516
Casey-Cardinia	20,141	9,062	227	29,430	7,198	3,772	102	11,072	27,339	12,834	329	40,502
Other LGAs	9,168	3,734	92	12,994	1,781	943	9	2,733	10,949	4,677	101	15,727
No usual address	9	10	0	19	7	5	0	12	16	15	0	31
Total	29,318	12,806	319	42,443	8,986	4,720	111	13,817	38,304	17,526	430	56,260

Source: ABS Census 2006 Journey to Work (JTW) unpublished data

Note: NS – Not stated/inadequately described

Table 6: Location of Residence for People Employed in Casey-Cardinia, 2006 - % of Jobs

Place of residence	Jobs in Casey (C)				Jobs in Cardinia (S)				Jobs in Casey-Cardinia			
	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total	White Collar	Blue Collar	NS	Total
Casey	60%	62%	66%	61%	15%	15%	19%	15%	50%	50%	54%	50%
Cardinia	8%	8%	5%	8%	65%	65%	73%	65%	22%	24%	22%	22%
Casey-Cardinia	69%	71%	71%	69%	80%	80%	92%	80%	71%	73%	77%	72%
Other LGAs	31%	29%	29%	31%	20%	20%	8%	20%	29%	27%	23%	28%
No usual address	-	-	-	-	-	-	-	-	-	-	-	-
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: ABS Census 2006 Journey to Work (JTW) unpublished data

Note: NS – Not stated/inadequately described

2.4 Current Employment Performance

This section uses the data presented in the previous sections to analyse the current performance of the Casey-Cardinia growth corridor in terms of meeting the GAA benchmarks relating to:

- Employment self-sufficiency;
- Employment self-containment; and
- White-collar and blue-collar employment.

The analysis has been undertaken for 2006, using data from the Census of Population and Housing relating to the number of employed residents, and Journey to Work (JTW) data (from the Census) relating to local job provision.

Employment Self-Sufficiency

Information presented in section 2.3 shows that a total of 42,440 jobs were located in the City of Casey in 2006, with a further 13,820 jobs located in Cardinia Shire. The total number of jobs in the corridor was therefore 56,260.

With a total of 100,670 employed residents (refer Table 3), and 42,510 local jobs available, Casey had an employment self-sufficiency rate of 42% in 2006, while the level of employment self-sufficiency was 51% in Cardinia Shire. These figures are summarised in Table 7.

Overall, the Casey-Cardinia corridor had an employment self-sufficiency rate of 44% in 2006. This is well below the GAA's aspirational target of 100% self-sufficiency at the regional level, and is also below the target of at least 70% self-sufficiency at the sub-regional level.

Table 7: Employment Self-Sufficiency, 2006

Location	Employed labour force	Jobs	Self-sufficiency rate
<u>Actual, 2006:</u>			
Casey	100,670	42,440	42%
Cardinia	27,200	13,820	51%
Casey-Cardinia corridor	127,870	56,260	44%
Target (100% self-sufficiency)		127,870	100%
Deficiency		-71,510	

Source: ABS Census 2006; Essential Economics; refer text

In terms of the number of jobs provided locally, the analysis shows that in 2006 there was an employment "gap" or deficit of approximately 71,510 jobs that should be provided locally if the GAA's aspirational target was to have been met.

Employment Self-Containment

Information presented in section 2.3 shows that approximately 25,860 Casey residents held jobs within the City of Casey. When compared against the total number of employed residents in Casey (100,670 persons), and having regard for those people who did not state their employment location, the analysis shows that the level of employment self-containment in the City of Casey was approximately 27% in 2006.

Approximately 8,940 Cardinia residents held jobs within Cardinia Shire, indicating that the level of employment self-containment in Cardinia Shire was approximately 35% in 2006.

Overall, 40,500 jobs in the corridor were held by people living within the corridor, and this represents an employment self-containment level of 34% in 2006.

The GAA target is for an employment self-containment level of 50% for new growth areas. Having regard for the number of employed residents in 2006 (127,870 persons), this implies that a total of 63,930 residents in the Casey-Cardinia growth corridor should be employed locally within the corridor. With 40,500 jobs held by local residents in 2006, a local employment "gap" or deficit of 23,430 jobs is evident.

Table 8: Employment Self-Containment, 2006

Location	Employed labour force	Jobs held within local area	Self-containment rate*
<u>Actual, 2006:</u>			
Casey	100,670	25,860	27%
Cardinia	27,200	8,940	35%
Casey-Cardinia corridor	127,870	40,500	34%
Target (50% self-containment)		63,930	50%
Deficiency		-23,430	

Source: ABS Census 2006; Essential Economics; refer text

Note: * calculation of self-containment rate excludes people who did not state their employment location

White Collar – Blue Collar Employment

The GAA target is for employment in white-collar occupations to approach the metropolitan average of approximately 75%.

This implies that the number of jobs in white collar occupations in 2006 should be approximately 95,900 in the growth corridor as a whole (ie 127,870 x 75%), implying a significant deficit of 57,590 jobs when compared against the current number of jobs in white collar occupations (38,310 jobs in 2006). Note that this calculation does not account for people who did not state their occupation at the time of the 2006 Census.

Table 9: Employment by Occupation, 2006

Location	Employment/jobs	White collar	Blue collar	White collar : Blue collar
<u>Actual, 2006 (jobs):</u>				
Casey	42,440	29,320	12,810	70:30
Cardinia	13,820	8,990	4,720	66:34
<i>Casey-Cardinia corridor</i>	<i>56,260</i>	<i>38,310</i>	<i>17,530</i>	<i>69:31</i>
Target (75% white collar)		95,900	31,970	75:25
Deficiency		-57,590		
Source:	ABS Census 2006; Essential Economics; refer text			
Note:	calculations excludes people who did not state their occupation			

A summary of employment performance, with comparisons against the relevant GAA targets, is provided in Table 10 below.

Table 10: Employment Performance in the Growth Corridor, 2006

Location	Casey	Cardinia	Growth corridor
<u>Actual 2006:</u>			
Employed residents 2006	100,670	27,200	127,870
Jobs	42,440	13,820	56,260
Employed locally	25,860	8,940	40,500
White-collar jobs	29,320	8,990	38,310
<u>GAA targets (applied to 2006):</u>			
Jobs (100% self-sufficiency)	100,670	27,200	127,870
- Deficiency in 2006	-58,230	-13,380	-71,610
Employed locally (50% self-containment)	50,330	13,600	63,930
- Deficiency in 2006	-24,470	-4,660	-23,440
White-collar employment (75%)	75,500	20,400	95,900
- Deficiency in 2006	-46,180	-11,410	-57,590
Source:	Essential Economics; refer text		

2.5 Structure of Employment in the Future

The jobs and the economy of the future will not look like the jobs and the economy of today. Just as the demand side of the labour market has evolved, initially with a reweighting of jobs from primary industries to manufacturing, and then from manufacturing into the service economy; so the next two decades will bring new opportunities in occupations and professions not yet conceived of.

The continuation and intensification of key trends such as globalisation and the off-shore out-sourcing of production to lower cost countries will most likely mean that decline of manufacturing in Australia will continue. There have been a number of high profile factory closures or scale-backs in Victoria and Australia in recent years (eg Kodak, Mitsubishi, Pacific Brands), and it is likely that more will occur in the future as Australian businesses realise that they can gain a significant cost advantage by making products overseas.

As communication technologies improve, the transfer of service sector jobs off-shore (as well as manufacturing jobs) will also increase. Call centres are an example of how services can be 'produced' or provided from elsewhere to Australian customers at a lower cost. In future, this may extend to services such as medical examination and clinical diagnostics, where images or blood tests results can be transmitted overseas in an instant and sent back quickly to Australia with a full analysis.

The future labour market, therefore, will look different from what it is today, and employment planning needs to recognise that this will be the case. With this in mind, Australia's future labour market and industries could possess a competitive advantage in such areas as:

- Niche manufacturing (eg high value-added parts and components and nanotechnology) where it is important to have skilled labour and specialised capital equipment, rather than mass manufacturing (eg cars, textiles and heavy goods), which is likely to continue to go off-shore.
- Food products, like dairy and meat, where a reputation for quality is important.
- Medical supplies, like drugs and syringes, where high standards and strict quality control procedures can be implemented and adhered to.
- Any other areas where Australia develops a reputation as an innovator or market leader, ranging from green technologies to funds management to share brokerage services and transaction processing.

The implication for regional employment in Casey-Cardinia is that the structure of the employed labour force is likely to change substantially, associated with the future trends in manufacturing (heretofore a major influence on employment in Casey-Cardinia), and with new emerging sectors for which the C21 Business Park might possibly be a suitable location.

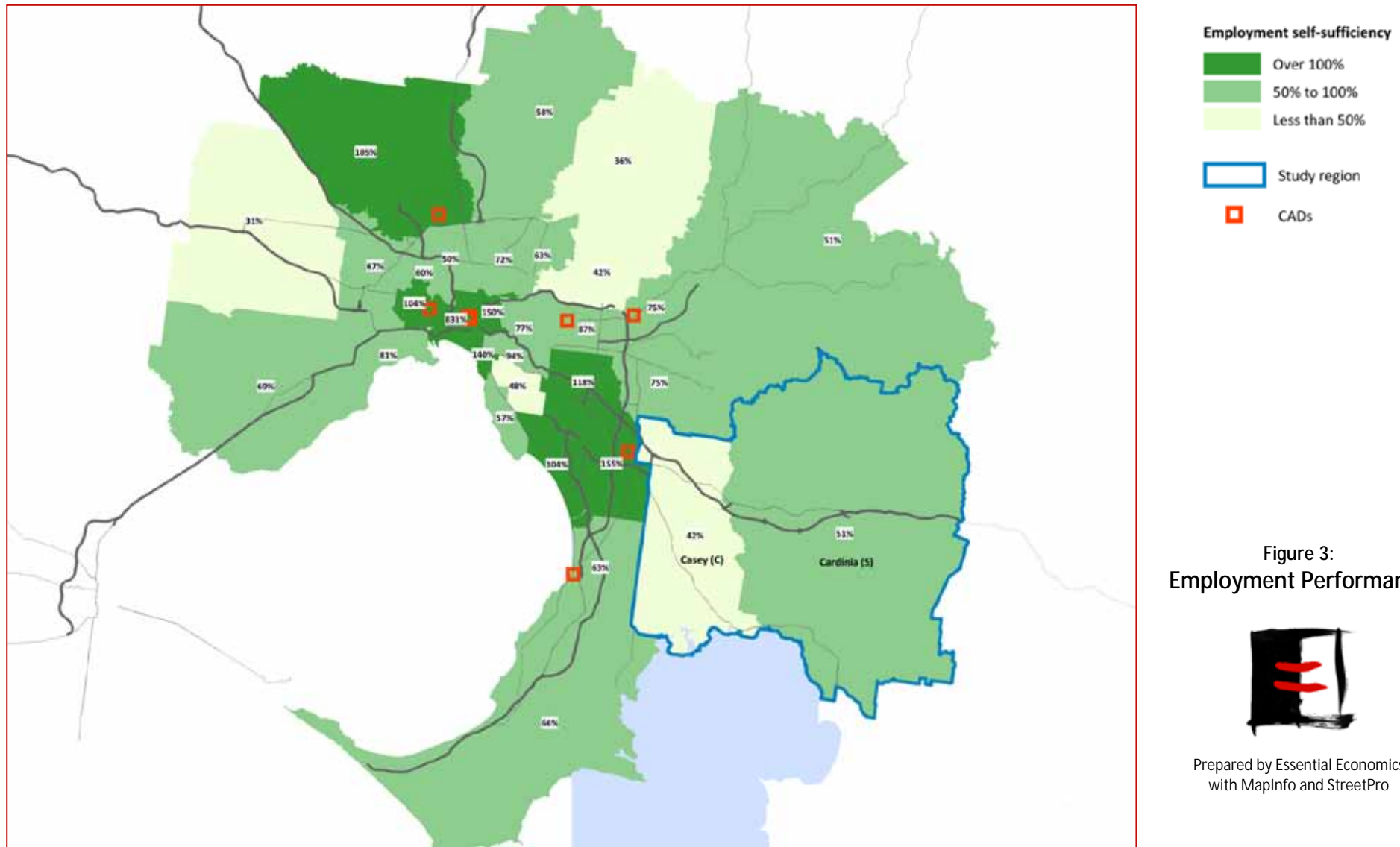


Figure 3:
Employment Performance



Prepared by Essential Economics
with MapInfo and StreetPro

2.6 Summary

This snapshot of population and employment shows that the Casey-Cardinia growth area has been experiencing very rapid population growth, and yet the provision of jobs within the growth area has failed to keep pace with the number of new residents seeking work.

The employment deficit in the corridor as a whole was approximately 71,610 jobs in 2006, and there are substantial deficits in relation to the numbers of jobs taken by local residents (ie relating to employment self-containment) and the relatively low share of jobs in white collar occupations.

Other important points arising from the analysis are:

- The employment profile of residents includes a higher share of 'blue-collar' workers when compared against the metropolitan average (which is also the target that GAA has adopted for the growth areas). Many residents travel to work in the industrial areas of Dandenong, Monash and Kingston.
- The employment profile has hardly changed over the last ten years since 1996.
- The labour force is highly localised, with 72% of all jobs in the Casey-Cardinia corridor being held by corridor residents; that is, the corridor is not an employment destination in a wider regional sense.

3 FUTURE EMPLOYMENT REQUIREMENTS

This chapter presents analysis of the requirement for future employment to serve the growth in the residential population that is projected to occur in the Casey-Cardinia growth area. The analysis has been undertaken on the following basis:

- 1 Prepare population projections for the period 2010 to 2031.
- 2 Prepare projections of the size of the resident labour force in Casey-Cardinia over the period 2010 to 2031.
- 3 Estimate the current under-provision of employment, assuming that the travel-to-work patterns evident from the 2006 Census (as described in Chapter 2) continue.
- 4 Identify the number of new jobs that are required to ensure 100% employment self-sufficiency in 2031, including the current under-provision (from (3) above) and the future requirement over the period 2010-2031 (from (2) above).
- 5 Adopt an alternative approach which is based on application of the overall GAA target that one job be provided for every new dwelling in the growth areas (and applying this target to the number of existing households).
- 6 Assess the likely requirement for employment to be provided in dedicated employment precincts such as the C21 Business Park, based on examination of the distribution of employment by detailed employment sectors. This analysis is derived from work prepared by Essential Economics in the context of employment planning for the GAFP regions, and is based on a benchmark model which adopts a preferred distribution of employment to reflect a sophisticated and diverse economic structure.

Using the methodology described above, three employment scenarios are proposed which identify a range for the number of new jobs to be provided in dedicated employment precincts. These employment targets form the basis for the subsequent analysis of the amount of land in industrial and corporate office precincts that is required to accommodate this employment task.

3.1 Population Projections

For the period 2010 to 2031, the City of Casey is forecast to experience an increase in resident population from 258,140 persons to 374,180 persons, representing an average annual growth rate of +1.8% pa. Net population increase over the period is forecast at +116,040 persons.

Over the period 2010 to 2031, Cardinia Shire is forecast to experience an increase in resident population from 73,380 persons in 2010 to 186,300 persons by 2031. This represents net growth of +112,920 persons and an average annual growth rate of +4.5%.

Overall, population numbers in the Casey-Cardinia growth corridor are expected to increase from 331,520 persons in 2010 to reach 560,480 persons in 2031, or a net increase of +228,960 persons and representing an average annual growth rate of +2.5%. Approximately 51% of the net growth is projected to occur in Casey.

These forecasts are based on population projections published by the Department of Planning and Community Development (DPCD) in *Victoria in Future 2008 (VIF2008)*. The VIF2008 projections are available up to 2026, and Essential Economics have extrapolated the data for the period 2026-2031.

These population projections are shown in Table 11.

Table 11: Population Projections, Casey-Cardinia Growth Area, 2010-2031

Statistical Local Area	2006	2007	2008	2009	2010	Population Change 2010-2031	Av annual growth 2010-2031
Casey (C) - Berwick	102,210	115,130	122,260	127,060	126,970	+24,760	1.0%
Casey (C) - Cranbourne	85,170	117,810	136,940	143,170	143,170	+58,000	2.5%
Casey (C) - Hallam	53,460	54,020	54,360	54,540	54,710	+1,250	0.1%
Casey (C) - South	17,300	21,330	33,440	42,140	49,330	+32,030	5.1%
Total - Casey	258,140	308,290	347,000	366,910	374,180	+116,040	1.8%
Cardinia (S) - North	25,830	26,660	27,300	27,850	28,430	+2,600	0.5%
Cardinia (S) - Pakenham	41,540	65,460	82,480	111,080	148,650	+107,110	6.3%
Cardinia (S) - South	6,010	6,410	6,820	7,510	9,220	+3,210	2.1%
Total - Cardinia	73,380	98,530	116,600	146,440	186,300	+112,920	4.5%
Total Casey-Cardinia	331,520	406,820	463,600	513,350	560,480	+228,960	2.5%

Source: ABS Regional Population Growth (Cat No.: 3218.0); Essential Economics

Note: AAGR = Annual Average Growth Rate

3.2 Current Employment Under-Provision

Analysis of the ABS Census 2006, presented in Chapter 2, identifies the following labour force and employment provision characteristics in the Casey-Cardinia growth area in 2006:

- Casey had a crude labour force participation rate of 49.2%
- Cardinia had a crude labour force participation rate of 48.5%
- Casey had an employment self-sufficiency rate of 42%
- Cardinia had an employment self-sufficiency rate of 51%

The following information on unemployment rates is also used in this analysis:

- The current unemployment rate in Casey is 6.4%, according to information from the Department of Education, Employment and Workplace Relations (March 2010)
- The current unemployment rate in Cardinia is 5.8%, according to information from the Department of Education, Employment and Workplace Relations (March 2010)

This information has been applied to the current estimated resident population in 2010 to provide an estimate of the number of jobs currently provided in the Casey-Cardinia growth area.

The analysis is presented in Table 12, and shows that an estimated 67,010 jobs are currently located in Casey-Cardinia, consisting of 49,910 jobs in Casey and a further 17,100 jobs in Cardinia.

Table 12: Estimated Current Jobs Provision, Casey-Cardinia Growth Area, 2010

Location	2010
Casey (C)	
Population	258,140
Labour Force (LFPR 49.2%)	127,005
Employed labour force (unemployment rate 6.4%)	118,830
Jobs (employment self-sufficiency rate 42%)	49,910
Cardinia (S)	
Population	73,380
Labour Force (LFPR 48.5%)	35,590
Employed labour force (unemployment rate 5.8%)	33,530
Jobs (employment self-sufficiency rate 51%)	17,100
Total employed labour force	152,360
Total Casey-Cardinia jobs	67,010
Employment deficit	-85,350

Source: ABS Census 2006

Note: Crude Labour Force Participation Rate: resident labour force as share of resident population.

If the Casey-Cardinia growth area was to provide sufficient jobs for all employed residents in the region, (ie achieve a 100% employment self-sufficiency rate), a total of 152,360 jobs would be located within the region. On this basis, a current employment deficit of 85,350 jobs is evident in the Casey-Cardinia growth area.

3.3 Labour Force Projections

In 2010 Casey has an estimated 127,005 residents in the labour force, and this number is forecast to increase to 184,095 persons in 2031, representing a net increase of +57,090 residents in the labour force over the period.

For Cardinia, the resident labour force totals an estimated 35,590 persons in 2010 and this number is expected to reach 90,355 persons by 2031, representing a net increase of +54,765 persons in the resident labour force.

In total, the Casey-Cardinia region can expect to see the resident labour force increase by approximately +111,855 persons in the period 2010 to 2031. This figure is a measure of the number of new jobs required to be generated if these residents are to find work, either in the respective municipalities or in other parts of Melbourne or beyond.

Normally, estimates of resident labour force size are based on the size of the population aged 16 years and above, and by applying an appropriate labour force participation rate. However, in this case an estimate of the *crude* labour force participation rate (LFPR) has been applied. The crude LFPR is based on the simple equation of the resident labour force expressed as a share of *total* population at the 2006 Population Census. In Casey the crude LFPR rate in 2006 was 49.2%, and for Cardinia the crude LFPR was 48.5%. These LFPRs are assumed to apply for the forecast period to 2031, noting that changes may occur in the LFPR over time due to changes in age structure and other demographic and socio-economic factors.

While changes in the LFPR can be expected over time, the broad estimates indicate that *in the order of* 112,000 new jobs would need to be generated in Casey-Cardinia by 2031 if the local labour force requirements are to be met (and including people currently unemployed).

Allowing for unemployment to remain at current levels over the forecast period, *in the order of* +105,000 new jobs (net) would be required in order to meet the employment requirements of this expanding regional population in Casey-Cardinia by 2031.

These projections are presented in Table 13.

Table 13: Projected Resident Labour Force, Casey-Cardinia Growth Area, 2010 to 2031

Location	2010	2016	2031	Change 2010-2031
Casey (C)				
Population	258,140	347,000	374,180	+116,040
Labour Force (LFPR 49.2%)	127,005	170,725	184,095	+57,090
Employed labour force	118,825	159,730	172,240	+53,415
Cardinia (S)				
Population	73,380	116,600	186,300	+112,920
Labour Force (LFPR 48.5%)	35,590	56,550	90,355	+54,765
Employed labour force	33,535	53,285	85,135	+51,600
Total Casey-Cardinia Labour Force	162,595	227,275	274,450	+111,855
Employed labour force (6% unemployment)	152,360	213,015	257,375	+105,015

Source: ABS Census 2006

Note: Crude Labour Force Participation Rate: resident labour force as share of resident population. Crude LFPR for 2006 applied to forecast population levels. Crude LFPR for Casey 49.2% and for Cardinia 48.5%, based on ABS Population Census 2006; refer text for explanation.

The above forecast showing a requirement by 2031 for 112,000 new jobs in Casey-Cardinia (or approximately 105,000 or so new jobs when allowance for unemployment is made) forms an important consideration in terms of identifying the need for new employment land to meet this significant future employment task.

3.4 Total Employment Task

The analysis in section 3.2 shows that the Casey-Cardinia growth area has a current employment deficit of approximately 85,000 jobs when compared against the GAA target for 100% employment self-sufficiency.

Section 3.3 shows that an additional 105,000 new jobs will need to be created to serve the needs of the growing population over the period 2010-2031, and all of these jobs will need to be provided within the region if 100% employment self-sufficiency is to be achieved.

Together, these figures mean that a total of 190,000 new jobs will need to be created in the Casey-Cardinia growth area if a target of 100% employment self-sufficiency is to be achieved in 2031.

Clearly this represents a very significant, and potentially ambitious, challenge in terms of promoting new business development opportunities and nurturing business growth. Moreover, these new jobs (if provided locally) will have specific locational requirements depending on the particular sectors and job types that are attracted to the region.

This particular method of measuring the future employment task – by calculating the number of new jobs that would be required to achieve employment self-sufficiency – represents one approach that has been adopted in this report to assess the future employment requirements in Casey-Cardinia. A second

method – adopting the overall GAA target of one job for every new household – is assessed in the following section.

3.5 Household Growth

The GAA has an overall aim of providing one new job for every new household attracted to Melbourne's growth areas. Equally, this target can be applied to the existing developed area (ie the number of households as a measure of the employment task) to calculate an overall jobs target for the region as a whole.

Analysis of projected household growth is presented in Table 14 below to assess the number of new jobs to be provided in the Casey-Cardinia Growth Area if this target is to be met. The analysis is based on household projections that were part of the first release of Victoria in Future 2008, and this information has been updated and applied to the population projections presented in Chapter 2. The analysis makes allowance for people living in non-private dwellings.

The analysis shows that an estimated 114,320 households are present in Casey-Cardinia at the current time (in 2010), and this is projected to increase to 205,760 households in 2031, or an increase of +91,440 households overall.

If the GAA target is applied only to the new households moving into the growth area, the number of new jobs to be provided would be an additional 91,440 jobs. However, a more ambitious outcome would be to apply the GAA target to the total number of households in 2031. On this basis a total of 205,760 jobs would need to be provided in 2031; having regard for the existing estimate of 67,010 jobs in Casey-Cardinia in 2010 (refer Table 12), this implies that an additional 138,750 new jobs to be created over the period 2010-2031.

Table 14: Projected Household Growth, 2006 - 2031

Location	2006	2010	2021	2031	2010-2031
Casey (C)	74,990	88,070	122,440	135,220	+47,150
Cardinia (S)	20,670	26,250	43,130	70,540	+44,290
Casey-Cardinia	95,660	114,320	165,570	205,760	+91,440

Source: ABS Census of Population and Housing 2006; Victoria in Future 2008, DPCD; Essential Economics

3.6 Summary

The number of additional jobs to be created in Casey-Cardinia over the period 2010 to 2031 depends on which approach is taken in calculating an appropriate employment target. The approaches described in this Chapter range as follows:

- An additional 91,440 jobs, associated with the provision of one new job for every new household in the growth area over the period 2010-2031
- An additional 138,750 jobs, representing the target of one job for every household, applied to the total number of households in 2031, and less the current estimated number of jobs (67,010 as shown in Table 12)
- An additional 190,000 jobs, associated with meeting the GAA target for 100% employment self-sufficiency for the growth area as a whole, and with this target applied to the existing employed labour force and the project growth in the labour force over the period 2010-2031.

4 EMPLOYMENT LAND REQUIREMENTS

This Chapter presents an estimate of the amount of land in dedicated employment precincts that will be necessary to accommodate the expected additional employment requirements over the period 2010 to 2031, and is based on the range of employment targets described in Chapter 3.

The approach is based on work recently undertaken by Essential Economics as input to the preparation of new Growth Area Framework Plans (GAFFPs) for the land that has been included within the urban growth boundary as a result of the ratification of Amendment VC68.

The key inputs in this estimate of the employment land requirements are as follows:

- Identify regions of Melbourne that reflect the aspiration that the GAA has for the growth areas, in terms of improving employment self-sufficiency, diversifying of the local economy, encouraging white-collar occupations, and so on.
- Analyse these regions in terms of employment (jobs) provision by detailed industry sector.
- Identify the broad locations for different types of employment provision, with reference to detailed industry sectors and land use zone information. For this analysis, employment location is identified in terms of the following locational categories:
 - Activity centres (differentiated by retail, office/commercial, and other uses)
 - Employment precincts (differentiated by light and heavy industrial uses, transport and storage businesses, and semi-commercial activities)
 - Community uses (differentiated by local uses that are typically accommodated in NACs or embedded throughout the urban area, and higher-order uses that might be stand-alone or associated with PACs, MACs and SACs)
 - Home-based employment.
- Calculate the share of total future employment (ie the employment targets from Chapter 3) that would need to be accommodated in dedicated employment precincts, based on the examination for the benchmark regions of Melbourne.
- Examine the provision of land by zone type in the benchmark regions, and use this as a basis for calculating an appropriate employment density to apply to employment precincts.
- Use the preceding analysis to determine the amount of land that will be required to accommodate the required jobs in employment precincts, in order to reflect typical employment patterns in the benchmark regions and the likely employment densities achieved.

4.1 Employment Distribution Model

Existing employment patterns across Melbourne have been examined with reference to the number of jobs created by type and by location category. This has been done at three levels:

- 1 Census data has been examined to identify the typical extent to which people work from home (ie home-based employment)
- 2 Detailed industry data has been examined and categorised by type to indicate the broad location of employment (as described below)

- 3 Industry data by type has been categorised according to use type and examined with respect to the area of land in different land use zones, in order to provide an assessment of employment density by location.

The analysis uses data from the following sources:

- ABS Census 2006 – ANZSIC06 Industry of Employment Journey To Work data
- ABS Census 2006 – Occupation and Workforce Data
- Metropolitan Melbourne Planning Zone Cadastre.

Information from the Metropolitan Perth Commercial and Industrial Land Use and Employment Survey has also been used to assist in allocating employment type within certain planning zones – for example in indicating the broad share of employment in industrial zones that is used for commercial office, retail and other uses.

In order to examine employment data across the metropolitan area, a standard set of employment and land use categories has been developed, as follows:

- Activity centre:
 - Retail
 - Office/commercial
 - Services/other
- Employment land:
 - Light industry/service business
 - Heavy industry/manufacturing
 - Transport and storage
 - Semi-commercial/corporate business parks
- Community uses:
 - Local health, community and education sectors typically generated in neighbourhoods or embedded in residential areas
 - Larger-scale health, community and education facilities that are typically located on stand-alone sites or associated with higher-order activity centres
- Home based employment.

These categories have been selected to represent the major zone types that are relevant for employment purposes. For example, activity centre type uses occur in a selection of Business zones, while employment/industrial uses mainly occur on Industrial land and Business 3 zoned land.

Both the Journey to Work (JTW) data and planning zone information has been re-classified using these employment zone type categories, to enable the combination of the two spatial data sources.

Journey to Work Industry Data

In order to provide a workable and realistic benchmark, very significant (and non-replicable) employment generation precincts, such as the Melbourne CBD, airports, major universities (Melbourne/Parkville, Monash at Clayton, and Latrobe at Bundoora), and major military facilities have been removed from the employment data.

Home-based employment (classified by industry type) has also been removed and is examined separately (refer section 11.2), and the remaining employment data (by LGA) distributed into employment zone categories.

Planning Zones

Very significant employment areas (eg Melbourne CBD, major University campuses, Port of Melbourne, etc) have been removed from the GIS-based planning information before the area of zoned land in each LGA has been calculated and subsequently categorised according to planning zone type. As the planning zones do not precisely correlate to the employment zone categories, data from the Perth Commercial and Industrial Land Use and Employment Survey has been used to calibrate the results.

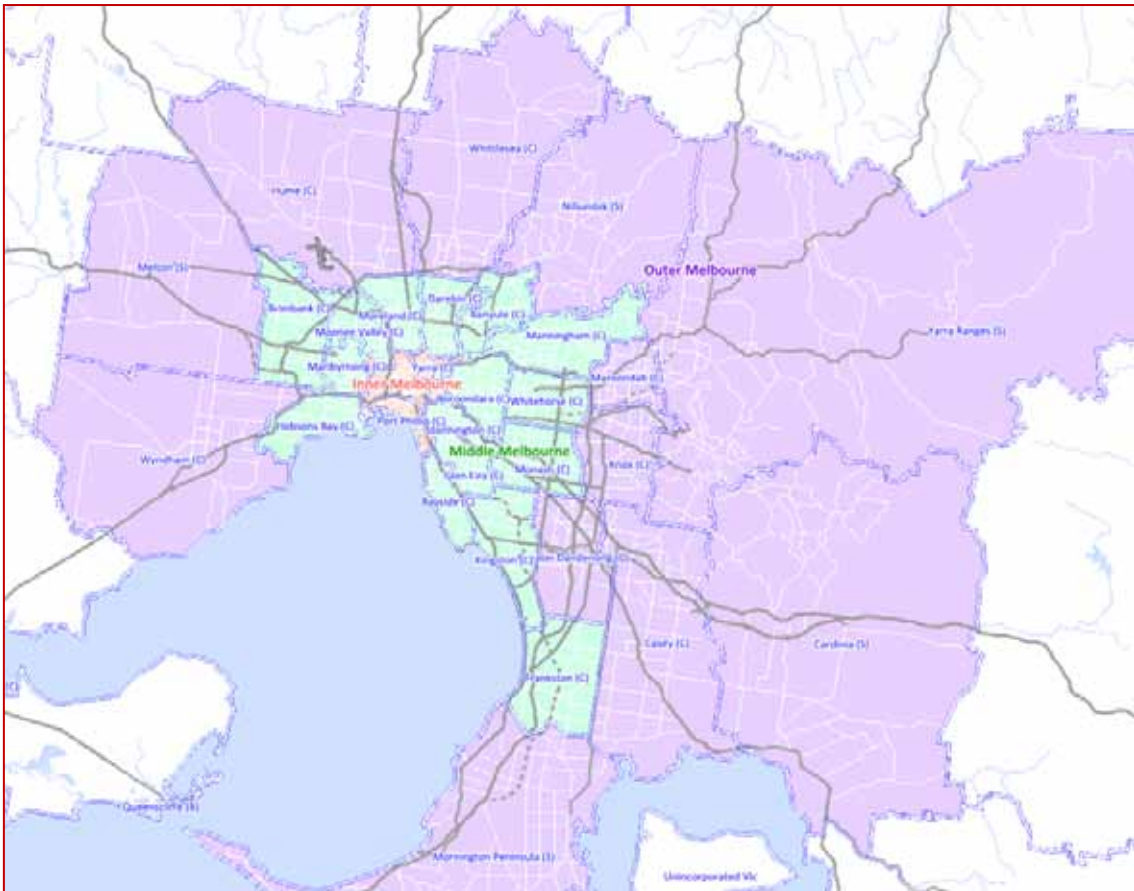
The two data sources (Journey to Work data and planning zone information) have then been combined to generate the number of jobs per hectare of employment zone type land (ie employment intensity).

Melbourne Urban Area Classification

The employment intensity analysis has been constructed across the metropolitan area for individual LGAs. However, for the benchmarking exercise the metropolitan area was aggregated by broad urban region, consisting of Inner, Middle and Outer Melbourne. This structure is intended to represent the three distinct urban forms that characterise Melbourne:

- **Inner Melbourne** incorporates the high density CBD and bayside areas of Melbourne
- **Middle Melbourne** includes the band of LGAs that extend from Hobson Bay in the west through Moreland in the North to Kingston in the South. These middle ring LGAs include industrial areas as well as a range of residential densities from higher densities around activity centres to low-density residential areas near the green wedges. This structure is considered to be the most appropriate as a representation of a sustainable suburban area, with high levels of employment self-sufficiency and a diverse occupation structure.
- **Outer Melbourne** represents the LGAs on the outer fringe of Melbourne and includes all of the existing growth areas. These LGAs are characterised by low levels of employment self-sufficiency, a more blue-collar workforce and high car dependency. These areas are the type of urban form that the GAA employment targets are aiming to alter through appropriate PSP planning to ensure local employment provision.

Figure 4: Metropolitan Melbourne – Inner, Middle and Outer LGAs



Source: ABS, MapInfo and Essential Economics

4.2 Employment by Location Type

Journey to work data showing detailed employment by industry sector and by location (ie LGA) has been analysed in order to identify the proportion of employment generated in different employment locations. As noted in section 4.1, the broad locational categories include Activity centres, Employment areas, and Community uses. A further 5-10% of employment typically occurs as home-based employment. More detailed sub-components of these area types are used in the analysis, as shown in Table 15 below.

The employment data from the Census 2006 has been classified by four-digit industry codes (ANZSIC2006) and then assigned to location categories. For example, employment in detailed retail sectors (eg 'fruit and vegetable retailing') is allocated to the *Activity centres – retail* location category, while employment in 'higher education' is allocated to the *Large-scale community - education* location category.

An important consideration is that some of the local community uses are typically 'embedded' throughout the urban area, for example associated with provision of primary schools, maternal child and health centres, and so on. Some other community uses are sometimes located in or adjacent to activity centres.

Table 15: Employment Distribution by Location Type

Location type	Inner Melbourne	Middle Melbourne	Outer Melbourne	Metropolitan Melbourne
Activity Centres	32.6%	24.9%	25.9%	28.3%
- Retail	13.3%	15.6%	17.8%	15.2%
- Office/commercial	16.3%	7.1%	5.8%	10.6%
- Other/Service	3.0%	2.1%	2.3%	2.5%
Employment	38.4%	43.5%	42.8%	41.2%
- Light Industry	2.8%	4.9%	5.3%	4.1%
- Heavy/large scale Industry	9.8%	20.4%	22.2%	16.5%
- Transport/storage	7.5%	12.6%	12.0%	10.3%
- Corporate/professional ¹	18.5%	5.6%	3.3%	10.4%
Community	26.0%	28.1%	24.2%	26.2%
<u>Local Community</u>	<u>10.0%</u>	<u>14.0%</u>	<u>15.0%</u>	<u>12.6%</u>
- Health	2.6%	3.4%	3.2%	3.0%
- Community	4.1%	4.4%	4.2%	4.2%
- Education	3.3%	6.2%	7.6%	5.3%
<u>Large Scale Community</u>	<u>14.3%</u>	<u>13.5%</u>	<u>8.2%</u>	<u>12.4%</u>
- Health	5.3%	5.8%	3.8%	5.0%
- Community	5.7%	4.3%	3.2%	4.6%
- Education	3.3%	3.4%	1.2%	2.8%
<u>Other Community</u>	<u>1.7%</u>	<u>0.7%</u>	<u>1.1%</u>	<u>1.2%</u>
Other²	3.1%	3.5%	7.1%	4.3%
Total Employment	100.0%	100.0%	100.0%	100.0%

Source: Essential Economics; ABS Census of Population and Housing 2006 (Journey to Work)

Note: 1 includes industry sectors which located in Melbourne CBD (ie activity centre) but which are more likely to locate in dedicated business parks when in suburban locations

2 'Other' refers to resource industries, dispersed highway-related activities, etc

The figures in Table 15 show that the distribution of employment by type is broadly similar in middle ring suburbs and in outer suburbs of Melbourne, but with the following main differences:

- Employment in retailing is higher in outer Melbourne (noting that this may reflect the lower employment base in outer suburbs)
- Employment in office and business sectors in activity centres is slightly lower in outer Melbourne
- Employment in higher-order education, health and community facilities is substantially lower in outer Melbourne.

A broad principle is that the employment profile in the GAFP regions should be planned to reflect a mature and diverse economic region such as that typified by the middle ring suburbs of Melbourne.

On the basis of the information presented above, employment is typically distributed in the following way across the different location types:

- Activity centres:
(including retail and commercial services, shopfront offices entertainment, recreation services, and other uses) 25-30% of total employment
- Employment precincts:
(including industrial areas, corporate/business parks, service business precincts) 40-45% of total employment
- Community uses:
(including local services that are embedded in residential areas or located adjoining activity centres, and higher-order uses that need to be planned for MACs and PACs, including larger medical precincts, education campuses, etc) 25-30% of total employment
- Home-based employment: 5-10% of total employment

In relation to dedicated employment land precincts, the analysis of detailed industrial employment data suggests that the majority of the employment requirement is in industry types that would typically locate in land that is placed in industrial zones (ie Industrial 1, Industrial 2, Industrial 3 and Business 3).

Approximately 10-15% of the total jobs requirement in employment precincts would be for corporate or business park activities that might require a Business 2 zone or other land use designation. Some of the likely future activities in C21 Business Park, if retained as an employment precinct, would come under this type of use.

In relation to the assessment of the C21 Business Park, the analysis shows that 40-45% of the employment requirement would be likely to locate in a dedicated employment precinct, including a mix of industrial and logistics operations and more intense corporate office uses.

These findings are subsequently used to identify the potential number of jobs located in dedicated employment precincts, and then to calculate the amount of land that would be required to accommodate this number of jobs.

4.3 Employment Target for Dedicated Employment Precincts

According to the analysis in Chapter 3, the total number of jobs to be generated within the Casey-Cardinia growth area over the period 2010-2031 ranges from 91,440 to 190,000, depending upon the approach taken in interpreting the GAA targets as they relate to future employment generation.

The lower end of this range is associated with applying the overall GAA target of one new job for every new household accommodated within the region.

The higher end of the range is associated with meeting an employment self-sufficiency target of 100%, and for this target to be applied to the current resident labour force as well as new employed residents in Casey-Cardinia.

According to analysis undertaken by Essential Economics and summarised in section 4.2 above, an estimated 40-45% of total employment in Casey-Cardinia would be associated with jobs that typically locate in dedicated employment precincts, including industrial estates and corporate office parks. The

remaining 55-60% of jobs would be located in activity centres, throughout the urban area in community facilities, or are associated with home-based employment.

An estimate of the requirement for jobs to be located in dedicated employment precincts is summarised in Table 16 for each of the employment targets.

Table 16: Employment Targets for Jobs in Dedicated Employment Precincts (2010-2031)

Employment target	Total employment requirement	Jobs in employment precincts (@ 40%)	Jobs in employment precincts (@ 45%)
Target 1: jobs for new households	91,440	36,580	41,150
Target 2: jobs for every household	138,750	55,500	62,440
Target 3: achieve 100% self-sufficiency	190,365	76,150	85,660

Source: Essential Economics

According to the analysis, dedicated employment precincts such as the C21 Business Park are expected to accommodate the following employment outcomes, depending upon the target that is adopted:

- Target 1: Achieve one job for each new household in the growth area:
 - 36,580 – 41,150 jobs to be provided in dedicated employment precincts
- Target 2: Achieve one job for every household in the growth area in 2031:
 - 55,500 – 62,440 jobs to be provided in dedicated employment precincts
- Target 3: Achieve an employment self-sufficiency rate of 100% in 2031:
 - 76,150 – 85,660 jobs to be provided in dedicated employment precincts.

Overall, the analysis shows that a very significant employment population is expected to be accommodated in employment precincts if the GAA targets are to be met, and this is the context in which the amount of employment land in C21 Business Park is to be calculated.

4.4 Employment Land Requirements

An estimate of employment land requirements for each of the employment targets is presented in Table 17, based on the application of an average 20 jobs per hectare (gross land).

This estimate of employment density is derived from analysis undertaken throughout Melbourne, involving the spatial assessment of Journey to Work data (ie jobs) for individual destination zones, and its concordance with areas of land in relevant planning zones.

The analysis shows that employment density ranges from 35 jobs per hectare of employment land in inner suburbs, to 18 jobs per hectare in middle suburbs, and just 3 jobs per hectare in outer suburbs. It is noted that the figure for the outer suburbs is likely to reflect large stocks of vacant land in some regions, as well as difficulties in matching the different spatial datasets.

By applying a broad average of 20 jobs per hectare, the following estimates of employment land requirements can be made. It is acknowledged that actual employment densities will vary widely, depending upon the types of uses attracted to each employment precinct. For example, corporate office parks have a much higher employment density (often over 40 jobs per hectare across such precincts),

while industrial and logistics operations can have employment densities that are well below 20 jobs per hectare.

Table 17: Land Area Requirements for Dedicated Employment Precincts (2010-2031)

Employment target	Employment land (40% of total jobs)	Employment land (45% of total jobs)
Target 1: jobs for new households	1,830 ha	2,060 ha
Target 2: jobs for every household	2,780 ha	3,120 ha
Target 3: achieve 100% self-sufficiency	3,810 ha	4,280 ha
Source:	Essential Economics	

4.5 Summary of Employment Land Requirements

According to the analysis presented in this Chapter, an estimated 1,830 hectares to 4,280 hectares of employment land would need to be required to meet a range of employment targets for the Casey-Cardinia growth area.

The low range of land area requirement would be associated with a situation in which residents in the Study Region would continue to travel outside the region to access jobs in other parts of Melbourne, with subsequent implications in terms of required investment in transport infrastructure.

The high range of employment land provision would imply that local residents have a wide range of employment possibilities within the Casey-Cardinia growth corridor, and therefore the potential to reduce travel outside the region is maximised.

It is acknowledged that these figures relate to the achievement of particular employment targets, rather than a continuation of the current pattern of employment provision in Casey-Cardinia. Clearly a range of associated policies and employment strategies will be required to achieve any of the identified employment targets, and these strategies would include setting aside sufficient employment land, as well as providing appropriate infrastructure, including 'hard' infrastructure such as new and upgraded transport linkages, and 'soft' infrastructure such as business development support, appropriate local training facilities and so on.

5 EMPLOYMENT LAND SUPPLY

This Chapter presents a summary of the existing supply of dedicated employment precincts in Casey-Cardinia, including existing industrial estates and business precincts, as well as areas of land that have already been set aside for employment purposes.

The analysis includes a description of the size and locational attributes of each of these employment precincts, as well as an indication of potential future uses. Potential future areas of employment land that might be identified in the new urban growth area (for which a Growth Area Framework Plan will be prepared) are also identified. Mention is also made of major employment precincts that are located outside the Casey-Cardinia growth area but which are likely to be potential sources of jobs for local residents.

This information is provided in order to identify the importance or otherwise of ensuring that the C21 Business Park (in whole or in part) is retained for employment activities.

The precincts that are identified include:

- C21 Business Park
- Casey Technology Park
- Fountain Gate-Narre Warren CBD precinct and surrounds
- Proposed Cranbourne North Service Industry Precinct
- Cranbourne West Industrial Precinct
- Officer Employment Precinct
- Cardinia Road Employment Precinct
- Pakenham South Employment Precinct
- South Gippsland Highway Service Business Precinct
- Potential employment land in GAFP region
- Vacant industrial land
- Dandenong South expansion

5.1 Existing Employment Precincts

C21 Business Park

The C21 Business Park is located just south of the Princes Freeway in near Berwick, and comprises 290ha of land of which approximately 205ha is estimated to be developable.

As noted earlier, the C21 Business Park is identified in the C21 Strategy as a future location for accommodating value-added and higher order activities within a high amenity environment. C21 Business Park is also anticipated to have strong synergies with the Casey Technology Park (see below).

The site has a number of important attributes which could support a mix of land uses, including:

- Excellent access to the Princes Freeway and key regional activity nodes such as Narre Warren.
- Residential potential of the site in view of its unique topography which might to deliver a range of housing products that might not be available elsewhere in the Corridor.
- The 'inbound' location of the C21 precinct compared with other sites in the Corridor which facilitates easy access to metropolitan Melbourne and key regional industry nodes such as Dandenong and Monash.
- The potential for the site to deliver a distinct/unique product mix rather than more traditional industrial product that is likely to be developed in the broader Corridor.
- The location of C21 in relation to the Casey Technology Precinct which provides the opportunity for synergies between the sites, for example associated with research and development and the related industrial and commercial business opportunities.

Importantly, with the C21 parcel abutting residential uses to the west of the site, the potential exists for a unique form of commercial/residential development which incorporates a residential component that synergises with the neighbouring use. In particular, the large, flat expanses to the north and east of the site may suit a form of niche employment development, and this would be enhanced by excellent infrastructure connections via Princes Freeway.

It is important to appreciate that the C21 Business Park site was always identified as a potential location for both employment and residential development, and material in the C21 Strategy refers to the opportunity for a living/working precinct.

Casey Technology Park

The Casey Technology Park is located in Berwick and is principally aimed at attracting 'knowledge-based' businesses to the region through strong synergies with Casey Hospital, Chisholm Institute and Monash University. The precinct is intended to be a high-intensity mixed-use environment combining residential living, education, health services, research and development and other economic activities.

The identification of the technology park, and its relationship with employment generation in the Casey CBD and the C21 employment corridor (including the C21 Business Park), is described in *Casey C21*, which provides Council's vision for the future development of the municipality.

Casey C21 identifies a structural change in the way regions develop, with a far greater emphasis on knowledge and information and associated service industries (refer Casey C21, Volume 2, p21). According to the strategy, the successful regions of the future will be those that manage to create a cluster of modern high technology activity, thereby attracting a knowledge-intensive workforce with specialist skills.

In order to attract these types of activity, regions need to provide the right investment environments, with well-designed business park precincts being critically important to attract new knowledge-intensive industries. The precinct at Berwick, involving Monash University, Chisholm Institute and the health precinct, is intended to become the basis for the Casey C21 jobs strategy.

CTP has a number of positive attributes to achieve the intended development outcome over time, including:

- The accommodation of existing major institutional investment (Monash University, Chisholm TAFE, Casey Hospital)
- Very good public transport service provision, with Berwick railway station located on the edge of the precinct
- Good vehicle transport access along the Princes Freeway
- A central location with respect to wider urban growth patterns
- A location close to the higher-order business services that are provided in Fountain Gate-Narre Warren.

The precinct has a total land area of 100 hectares, and Casey C21 identifies an opportunity to create at least 10,000 jobs in the Casey Technology Park precinct in the long term.

It is likely that the vision for CTP will be achieved over a lengthy time period, having regard for the current rate of business development, and the relatively scarce opportunities to attract specialist investment in research and development sectors.

Fountain Gate-Narre Warren CBD and Surrounds

The Fountain Gate-Narre Warren CBD is identified as the Casey CBD in *Casey C21*, and its future development is now guided by the Fountain Gate-Narre Warren CBD Incorporated Plan (2006).

The centre is planned to become a significant economic resource for the municipality and the wider region, and is designated as a Principal Activity Centre (one of two identified for the corridor - the other is at Cranbourne Town Centre).

Development proposed for the centre includes:

- A substantial increase in retail activity in the Retail Core, Town Centre and Urban Heart precincts, with associated commercial uses
- Continuation of restricted retail immediately to the east of Narre Warren North Road
- High intensity development of the business park precinct (on the eastern side of the CBD) over time, to include commercial office, personal services, service businesses, and some residential uses
- Light industry to continue in identified precincts on the periphery of the activity centre.

The Incorporated Plan identifies a very significant increase in retail floorspace provision over the life of the plan, involving an additional 130,000m². Further expansion of retail activity is likely to occur over the longer term. The precinct is already a significant employment location, with current employment levels of approximately 6,000 people. A substantial number of these existing jobs are retail-related, but further opportunities for dedicated office space is likely to diversify the employment base.

The precinct has strong policy support and is well-located with respect to the wider urban growth patterns. Moreover, it currently operates as a significant retail destination, and this may lead to a significant increase in commercial office investment over time. Most future commercial uses are likely to

be associated with general business and professional service, with some potential for larger corporate tenants if appropriate sites can be identified. Nevertheless, substantial competition in this commercial office sector is likely to come from government-leveraged development in Central Dandenong, which is identified as a Central Activities District (CAD) in *Melbourne @5 Million*.

The total land area associated with dedicated employment land is approximately 40 hectares.

Pakenham Industrial Precinct

The Pakenham Industrial precinct comprises land currently zoned Industrial 1 and located to the south of the Pakenham Township. The existing zoned land comprises approximately 420 hectares of land, with approximately 275 hectares located south of the Pakenham Bypass.

A significant part of this land area, totalling approximately 160 hectares has been developed as the SouthEast Business Park, which is a joint development by Parklea Pty Ltd, McMullin Group and Cardinia Shire Council.

It is anticipated that the main focus of this precinct will be industrial activities including logistics, although some provision is made in the SouthEast Business Park for bulky goods retailing.

Positive attributes of the site are as follows:

- The land is flat and easily developed at low cost
- It is well-located with respect to major road infrastructure
- It is located in close proximity to existing industrial estates in Pakenham
- It has potential to serve the growing population in Cardinia Shire
- It has strong policy and financial support from Cardinia Shire Council.

Although the land is well-suited to industrial land, it is likely that over time it will face substantial competition from other planned new employment precincts.

The total amount of vacant land in the existing industrial zones in Pakenham South is approximately 270 hectares, according to information from the Urban Development Program 2009. This figure is incorporated into the assessment of total vacant industrial land provision as described below.

Vacant Industrial Land

Existing vacant industrial land also has potential to accommodate some of the employment task that has been identified in Chapter 4 of this report.

Estimates of existing vacant industrial land are derived from examination of data from the Urban Development Program 2009, noting that some changes to these figures might have occurred over the last 6 to 12 months since preparation of the data.

According to the UDP, a total of 77 hectares of vacant industrial land is located in the City of Casey, with a further 295 hectares of vacant land in Cardinia Shire (including 270 hectares located to the south of the township).

Outside the region, significant stocks of vacant industrial land are located in Dandenong and at Hastings in Mornington Shire. In Greater Dandenong, for example, a total of 905 hectares of vacant land is located around the Dandenong CBD and in Dandenong South (note that this does not include industrial land in the northern part of the municipality around Springvale). In Mornington Shire, a total of 897 hectares of vacant land is associated with the future designation of a container port at Westernport Bay.

Although these stocks of vacant land outside the study region, they are likely to have role in meeting the employment demands generated by Casey-Cardinia residents; importantly, however, these major industrial precincts have a wider metropolitan (and state or even national) role in providing economic activities and jobs to a wider labour force market, and should not be relied upon to serve the employment task in Casey-Cardinia.

Summary

This analysis has identified a total of 512 hectares of existing industrial land to serve the employment demands in Casey-Cardinia, with a further 1,800 hectares of vacant industrial land located beyond the study region but with some future role in serving the Casey-Cardinia region.

5.2 Planned Employment Precincts

A number of future industrial areas have already been planned within the study region, with these precincts at varying stages of planning.

Cranbourne West

The Cranbourne West Precinct Structure Plan provides for a total of 331 hectares of employment land across the following uses:

- Industrial: 179 hectares
- Business Park / light industrial & servicing: 111 hectares
- Mixed Use: 29 hectares
- Commercial / Office Park: 12 hectares

According to analysis undertaken by MacroPlan (*Cranbourne West Urban Growth Plan Employment Land Sizing*, 2009), the development outcomes are likely to involve a mix of:

- Business park
- Office park
- Industrial
- Mixed use/service

The role of the precinct is likely to be mainly related to the ongoing demands for a range of industrial and related business activities to serve the existing and future population in Cranbourne West and the surrounding region. In this regard, the land has the following positive attributes:

- It is located in close proximity to a significant urban population in the surrounding region that will generate demand for a range of industrial and semi-industrial activities
- The precinct has potential to act as an 'over-flow' for demand from Dandenong South, and to provide an alternative location for businesses seeking different land characteristics; in particular, the precinct is likely to have a different profile in terms of lot size, with an emphasis on smaller properties compared with the larger-scale industrial and logistics uses in Dandenong South.
- It is understood that land in Dandenong South is currently tightly held, and so Cranbourne West has potential to attract a range of developers who have not yet secured sites in Dandenong South.

Cranbourne North Service Business Precinct (Amendment C113)

Amendment C113 facilitates the development of land on the northern side of Thompsons Road in Cranbourne North as a service business precinct, and applies the Industrial 3 Zone to the land.

The size of the land is approximately 50 hectares (or approximately 40 hectares net developable area), and the emphasis is on providing an opportunity for smaller scale uses which serve the surrounding sub-region and which would seek sites on a major arterial road. In this context it is important to appreciate that Thompsons Road is expected to become a very significant route linking the Officer/Cardinia Road employment precincts (refer below) with Dandenong South.

Because of its location, the site is likely to be attractive for a range of uses requiring highway exposure.

The status of Amendment C113 is currently unknown, and it is not known with certainty that the rezoning to Industrial 3 Zone will proceed as planned.

South Gippsland Highway (Cranbourne East PSP)

The Cranbourne East Precinct Structure Plan identifies land at the intersection of South Gippsland Highway and Ballarto Road for employment activities, consisting of approximately 34 hectares (gross).

The land is identified for a range of smaller-scale service business type activities that would typically seek a location with frontage to a major arterial road, and comprising a range of businesses serving the local, district and sub-regional catchment. Opportunities for rural services and other types of uses relating to the agricultural activities to the south-east are also likely to be possible candidate uses.

For the purposes of this report, the available developable area is estimated at approximately 25 hectares.

Officer Employment Precinct

The Officer Employment land is located on the eastern edge of Cardinia Shire and to the south of the Pakenham Bypass.

This precinct is an irregular shaped parcel of land located between the C21 Business Park site (to the west) and the Cardinia Road Employment precinct (to the east). The land has a gentle gradient which generally slopes from north to south, and the existing vegetation on the site is relatively sparse, making for an easily-developable land parcel.

The Officer Employment Precinct contains approximately 770 hectares of land (in gross terms) identified as future industrial land and has been nominated for a range of employment uses. Detailed employment planning has not yet been completed, but preliminary work undertaken for VicUrban has previously identified a range of potential end users, including:

- Traditional industry sectors including local manufacturing firms
- Regional suppliers of construction materials and services
- Wholesalers of a range of locally-sourced products or as part of distribution chains servicing the south-east region
- Service industries and businesses serving more localised regional and sub-regional population catchments, and ranging from automotive services to building supplies, manufacturers of building products, and so on.

The precinct has a number of attractive attributes as a location for industrial and related development, including:

- Its linkages with the road transport network including Princes Freeway and Thompsons Road (which eventually is likely to provide a link between this region and Dandenong South)
- Linkages with the designated Office Major Activity Centre which has potential to provide higher-order business services
- The characteristics of the land (flat and easily developable), which imply that development costs will be relatively low and therefore make it attractive for general industrial activities.

The total size of the precinct is approximately 730 hectares, which represents a likely net developable area of approximately 510 hectares (on the basis of applying a net yield of 70%). However, in more detailed planning for the site some of the land might be used for non-industrial activities including mixed use development and the establishment of a small activity centre serving the industrial land.

Cardinia Road Employment Precinct

The Cardinia Road Employment precinct is located adjacent to the Officer Employment land, approximately 51km (direct distance) south-east of the Melbourne CBD. The site is bordered to the north by the Pakenham Bypass, and EastLink is located approximately 23km to the west along Princes Freeway. In the future, Thompsons Road will provide a direct link to the major industrial node in Dandenong South.

A draft Cardinia Road Employment Precinct Structure Plan (PSP) (March 2010) has recently been completed by Cardinia Shire Council.

According to the PSP, the Cardinia Road Employment Precinct will be:

"A multi-functional regional employment node that delivers a diverse mix of jobs to Casey–Cardinia, interconnected with regional transport routes and rapidly growing communities. An intensively developed commercial core and residential precinct is set amid extensive wetlands and biodiversity corridors, establishing a high amenity business park setting to attract investment".

The Cardinia Road Employment Precinct contains some 600ha of gross land; however, the PSP indicates that 350 ha of this land is developable, of which 230 ha is designated for industrial purposes, with other areas of land accommodating mixed industry and services, commercial activities and retail/commercial activity in activity centres.

The precinct is the first of the series of employment precincts south of the Pakenham Bypass to be planned, and therefore has an advantage in establishing an early take-up of industrial land. Development costs are also expected to be relatively low in view of the ease of development on the site.

The precinct is anticipated to accommodate a wide variety of uses, ranging from traditional industrial activities, to business and professional services in parts of the precinct that are integrated with a mixed use pattern of development.

Pakenham South Employment Land

The Pakenham South Employment Land precinct is located east of the Cardinia Road precinct and west and south of the existing Pakenham South industrial precinct. The total land area is approximately 350 hectares (gross), or an estimated 250 hectares of developable land.

A PSP for the eastern part of the Pakenham South Employment Area is currently under preparation, and this also covers the existing industrial land precinct south of the Princes Freeway. The remaining part of the employment area is at pre-planning stage.

The development outcomes in this precinct are not known at this stage, but it is likely that the precinct will mainly be developed as an extension to the existing industrial land provision in Pakenham South, serving a mixture of locally-generated demand for service industry, wholesaling, construction services, etc, as well as possibly attracting more substantial industrial and logistics activities that are attracted to its location adjoining the Princes Freeway. It has positive attributes associated with its close proximity with existing urban areas and its potential to act as a natural extension to the existing industrial area.

As with the Cardinia Road precinct, there is some potential that not all land will be retained for employment purposes, with other mixed use activities possibly accommodated within the precinct, including residential development.

5.3 Potential Future Employment Land

During preparation of a Growth Area Framework Plan to guide development of land brought into the urban growth boundary as part of Planning Scheme Amendment VC68, potential exists for substantial new areas of land to be identified to accommodate employment uses.

The preliminary planning work for the GAFP has only just begun; however, at this early stage it is likely that the following locations might be particularly attractive as possible employment land precincts:

Thompsons Road

Thompsons Road is designated as a major arterial road linking the employment precincts in Officer and Cardinia Road with the existing industrial node in Dandenong South (and then onwards to the metropolitan area via EastLink). It is likely to be particularly attractive for a wide variety of industrial and commercial businesses, ranging from major industrial uses to service businesses, wholesalers, logistics services and highway-related activities (including possible bulky goods retailing). The attractiveness of the site is likely to increase over time as development occurs in Cardinia Shire south of Princes Freeway,

and as congestion constraints on Princes Freeway mean that more traffic would be seeking an alternative route.

Although a detailed analysis of the potential additional employment land in this location has not been prepared as part of this study, a simple calculation of available land areas suggests that up to 400-500 hectares of employment could easily be identified on the southern side of Thompsons Road. This represents up to approximately 350 hectares of net developable land. A more significant land area could be identified if necessary to accommodate future employment needs.

South Gippsland Highway

An extension of the service business precinct already planned for South Gippsland Highway (refer Cranbourne East PSP) could be identified in Devon Meadows, to allow for an increase in demand for a range of industrial and service business activities in this location.

This precinct is less attractive for such uses, as it has fewer direct linkages with the wider metropolitan economy, and would be limited mainly to serving local and sub-regional demand, and rural-type uses associated with agricultural activities further to the south and east.

The potential land area in this location is probably limited to approximately 150 hectares or so (or approximately 100 hectares of net developable area), although detailed planning has not been undertaken to support this figure.

Other locations

During preparation of the GAFP, smaller employment land designations are likely to be made in accordance with recommendations prepared by Essential Economics to the GAA. The actual size and locations of these land parcels has not been confirmed.

5.4 Summary of Employment Land Supply

In summary, a range of existing and potential future locations for employment land provision have been identified, and these are summarised in Table 18, including land located in the C21 Business Park precinct.

The analysis shows that a total of 2,100 hectares of existing and planned employment land can be identified in the Casey-Cardinia growth area to satisfy long-term employment needs. Furthermore, a further 500 hectares or more of additional employment land can readily be identified in the extended urban growth area, with a particular opportunity focussing on the Thompsons Road corridor.

Outside the study region, a total of 1,800 hectares of vacant industrial land can be identified in Dandenong South and in Hastings, although this land provision has wider role in serving a metropolitan labour market.

Table 18: Employment generating potential in competing Employment Precincts

Site/location	Indicative Potential Land Uses	Estimated Net Developable Area
<u>Existing employment precincts</u>		
Casey Technology Park (CTP)	High tech development in health and allied sectors	100ha
Fountain Gate-Narre Warren CBD	Office and related businesses in Business Park component, industrial and related businesses in other precincts	40ha
Pakenham Industrial Precinct	Industrial, diverse activities, bulky goods	270ha
Vacant Industrial Land	Expansion of existing industrial area	100ha
<i>Sub-total existing precincts</i>		<i>510ha</i>
<u>Planned employment precincts</u>		
C21 Business Park	Niche commercial/industrial activities as per C21 Strategy	205ha
Cranbourne West	Business employment land identified in PSP	330ha
Cranbourne North	Service business precinct	40ha
South Gippsland Hwy	Land identified for mixed use employment.	25ha
Officer Employment Precinct	Wide range of industrial-related employment activities.	510ha
Cardinia Road Employment Precinct	Diverse mix of uses including industrial, mixed business, commercial and retail.	230ha
Pakenham South Employment Area	Expansion of industrial area, wide variety of industrial, service business and related use	250ha
<i>Sub-total planned precincts</i>		<i>1,590ha</i>
Total existing and planned in growth area		2,100ha
Potential future industrial land in GAFF		500ha+
Total land identified within Casey-Cardinia		2,600ha+
Vacant industrial land in surrounding region		1,800ha

Source: Various sources; Essential Economics

6 SYNTHESIS OF EMPLOYMENT LAND DEMAND AND SUPPLY

This Chapter synthesises the analysis of long-term employment land demands in the Casey-Cardinia corridor associated with satisfying a range of GAA targets in relation to employment provision (refer Chapter 4) and the identification of locations in which this employment task can be accommodated (refer Chapter 5).

The role of the C21 Business Park precinct as a possible location for employment land provision is considered with regard to the overall long-term employment land demand and supply.

6.1 Summary of Employment Land Demand

According to the analysis presented in Chapter 4 of this report, the total demand for employment land over the period 2010 to 2031 ranges from 1,830 hectares to 4,280 hectares, depending upon the success in meeting a range of employment targets adopted by the GAA. These estimates are based on an average yield of 20 jobs per ha of developable employment land.

The low range of land area requirement would be associated with a situation in which residents in the Study Region would continue to travel outside the region to access jobs in other parts of Melbourne, with subsequent implications in terms of required investment in transport infrastructure. The high range of employment land provision would imply that local residents have a wide range of employment possibilities within the Casey-Cardinia growth corridor, and therefore the potential to reduce travel outside the region is maximised.

In planning for the future provision of employment land, it is prudent to adopt the upper range of employment land requirements as an aspirational target, while recognising that this target is only likely to be achieved over the very long term, and would require significant policy support across all levels of government.

6.2 Summary of Employment Land Supply

As shown in Table 18 (refer p39), a total of 2,100 hectares of existing and planned employment land can be identified in the Casey-Cardinia growth area to satisfy long-term employment needs. A further 500 hectares or more of additional employment land can readily be identified in the extended urban growth area, with a particular opportunity focussing on the Thompsons Road corridor. More extensive areas of employment land could be provided in the extended growth area if required.

Outside the study region, a total of 1,800 hectares of vacant industrial land can be identified in Dandenong South and in Hastings, although this land provision has wider role in serving a metropolitan labour market.

6.3 Demand v Supply

An analysis of the adequacy of the existing and planned supply of employment land is presented in Tables 19 and 20, with Table 19 presenting the analysis associated with a 40% share of total employment located in employment lands, and Table 20 presenting the same analysis assuming that 45% of jobs are located in employment lands.

The analysis is undertaken for the following three employment targets:

- Target 1: Achieve one job for each new household in the growth area
- Target 2: Achieve one job for every household in the growth area in 2031
- Target 3: Achieve an employment self-sufficiency rate of 100% in 2031

**Table 19: Adequacy of Employment Land in Casey-Cardinia Corridor
(Assume 40% of total employment in employment land precincts and a yield of 20 jobs per ha)**

Employment target	Jobs Target 1	Jobs Target 2	Jobs Target 3
Existing land supply		510ha	
Planned land supply		1,590ha	
Total identified land supply		2,100ha	
Estimated land demand	1,830ha	2,780ha	3,810ha
Balance of surplus/deficit	270ha	-680ha	-1,710ha
Plus potential future industrial land in GAFP region		500ha	
Balance of surplus/deficit	770ha	-180ha	-1,210ha
Plus vacant land in surrounding region		1,800ha	
Balance of surplus/deficit	2,570ha	1,620ha	590ha

Source: Essential Economics

**Table 20: Adequacy of Employment Land in Casey-Cardinia Corridor
(Assume 45% of total employment in employment land precincts and a yield of 20 jobs per ha)**

Employment target	Jobs Target 1	Jobs Target 2	Jobs Target 3
Existing land supply		510ha	
Planned land supply		1,590ha	
Total identified land supply		2,100ha	
Estimated land demand	2,060ha	3,120ha	4,280ha
Balance of surplus/deficit	40ha	-1,020ha	-2,180ha
Plus potential future industrial land in GAFP region		500ha	
Balance of surplus/deficit	540ha	-520ha	-1,680ha
Plus vacant land in surrounding region		1,800ha	
Balance of surplus/deficit	2,340ha	1,280ha	120ha

Source: Essential Economics

Overall, the calculations in Tables 19 and 20 show that the existing and planned employment land supply is only sufficient to meet the employment requirements associated with Target 1, to provide one job for every new household in the growth areas.

Even with the inclusion of potential new employment land in the GAFP region, substantial employment land deficits are evident when compared against the more ambitious employment targets 2 and 3.

6.4 Sensitivity Analysis

A sensitivity analysis has been prepared to examine the employment land demand-supply balance if a more intense use of land is achieved, such that an average of 30 jobs per hectare of land can be provided across all employment land allocations. This analysis is presented in Tables 21 and 22.

The analysis shows a significant improvement in the employment land demand-supply balance, with the jobs Target 2 achieved when future employment land in the GAFP region is included. Under the higher jobs forecast (assuming 45% of total employment would be accommodated in dedicated employment land precincts), the 100% self-sufficiency target (Target 3) would not be achieved even with a more intense employment yield.

Table 21: Adequacy of Employment Land in Casey-Cardinia Corridor – Sensitivity Analysis (Assume 40% of total employment in employment land precincts and a yield of 30 jobs per ha)

Employment target	Jobs Target 1	Jobs Target 2	Jobs Target 3
Existing land supply		510ha	
Planned land supply		1,590ha	
Total identified land supply		2,100ha	
Estimated land demand	1,220ha	1,850ha	2,540ha
Balance of surplus/deficit	880ha	250ha	-440ha
Plus potential future industrial land		500ha	
Balance of surplus/deficit	1,380ha	750ha	60ha
Plus vacant land in surrounding region		1,800ha	
Balance of surplus/deficit	3,180ha	2,550ha	1,860ha

Source: Essential Economics

Table 22: Adequacy of Employment Land in Casey-Cardinia Corridor – Sensitivity Analysis (Assume 45% of total employment in employment land precincts and a yield of 30 jobs per ha)

Employment target	Jobs Target 1	Jobs Target 2	Jobs Target 3
Existing land supply		510ha	
Planned land supply		1,590ha	
Total identified land supply		2,100ha	
Estimated land demand	1,370ha	2,080ha	2,860ha
Balance of surplus/deficit	730ha	20ha	-760ha
Plus potential future industrial land		500ha	
Balance of surplus/deficit	1,230ha	520ha	-260ha
Plus vacant land in surrounding region		1,800ha	
Balance of surplus/deficit	3,030ha	2,320ha	1,540ha

Source: Essential Economics

Overall, the conclusion from this analysis is that opportunities to secure employment land (including C21 Business Park) will need to be pursued if the GAA employment targets for employment land provision are to be met. In a commercial sense, however, it need to be acknowledged that 100% employment self-sufficiency is an aspirational target for growth areas located on the fringe of Melbourne. In the Casey-Cardinia corridor, where in-board opportunities are available in Dandenong South and elsewhere in south-east Melbourne, the employment land provision identified in this analysis is relatively generous.

This confirms the need to retain at least some part of the C21 Business Park for employment land purposes. However, it is acknowledged that the total land area in the C21 precinct – at approximately 290 hectares in total gross land area, and approximately 205 hectares available for development having regard for encumbered land, internal roads, open space etc – would make only a relatively small difference overall in terms of total employment land provision.

The following section provides more detailed discussion of the potential role that the C21 Business Park precinct might play as a location for employment activities, having regard for its underlying attributes, its competitive position with respect to other employment land precincts, and its value in accommodating other land uses.

6.5 Role of C21 Business Park in Employment Land Supply

The supply and demand analysis indicates that insufficient employment land is available to meet the GAA target of achieving 100% employment self-sufficiency across the Casey-Cardinia corridor.

In this context that the C21 precinct land can have an important role in providing another source of employment land to serve the needs of residents in the corridor.

Although the C21 Business Park precinct was originally planned as an important location for supporting activities associated with the CTP jobs corridor, other factors need to be considered in assessing its current and future potential for industrial and commercial development:

- Very significant tracts of land have been identified in the Officer-Pakenham corridor to accommodate a wide range of commercial and industrial land uses.
- This competing land is well-located with regard to transport infrastructure, and can be developed relatively cheaply given that it is generally very flat and unencumbered.
- In contrast, the C21 Business Park is encumbered by its topography, with a west to east gradient on the site resulting in the location of flood-prone land to the east of the site.
- Moreover, the rate of development in the Casey Technology Park has been relatively slow due to unfavourable underlying market fundamentals.

While the primary motivator of land developers' decisions is the return on capital investment, their decisions are also shaped by the factors including:

- Land availability
- Low development and land costs
- Adequately sized parcels
- Land that is not adversely protected by zoning
- Proximity to public transport

- Proximity to employment centres
- Land without geographic limitations, such as a significant slope, wetlands, valleys, etc
- A receptive and predictable local regulatory system.

Often the sites which meet these criteria are located on the urban fringe, as is the situation with C21 Business Park. Factors that can alter land use away from its original intended purpose include a change in:

- Market forces (including an increase in competition)
- Transport routes
- Financial markets
- Tax law
- Dynamic human aspects, including the simple desirability of an area for housing or business.

In the situation of C21 Business Park, the advantages of the site as a provider of employment opportunities are matched and, in some regards, bettered by a number of nearby (and recently designated) competing employment land precincts. In this circumstance, it may be necessary for the C21 Business Park establish a point of differentiation in order to successfully compete with neighbouring land.

Overall, it is recommended that the C21 Business Park precinct be retained as one of the options for employment land development, although with its own particular niche as expressed above (and as foreshadowed in past strategies for developing the site.

Recommendations for the type and scale of employment development in C21 are provided in the following Chapter 7, which also assesses the potential employment outcomes associated with such development.

6.6 Summary

This analysis of the demand and supply of employment land in the Casey-Cardinia corridor shows that insufficient employment land provision has been made to be able to meet the GAA targets, and in particular the target for 100% employment self-sufficiency by 2031.

In these circumstances, the C21 Business Park precinct can play an important role (though this role is small in the wider regional context) in providing an opportunity to accommodate a range of employment uses. This role needs to be balanced against the potential competing demands for the site; in particular its attractiveness for residential development on the south-facing land fronting towards Grices Road and on land overlooking Cardinia Creek. Further advice on potential development outcomes is presented in Chapter 7.

7 RECOMMENDED DEVELOPMENT OUTCOMES FOR C21 BUSINESS PARK

This Chapter provides recommendations for the development of the C21 Business Park precinct, including recommended allocations of land for various land uses under the following two development scenarios:

- Base Case Scenario – which is based solely on anticipated long-term market considerations
- Employment Maximisation Scenario – which involves additional targeted actions to stimulate the take-up of employment land in the C21 Business Park precinct.

Land allocations are based on locational considerations, site characteristics and constraints, and the competitor analysis presented in earlier sections of this report. In the case of the Employment Maximisation Scenario, allocations also consider strategies and interventions which might facilitate a higher level of commercial investment than would otherwise occur under the Base Case Scenario.

Estimated employment outcomes and other policy recommendations for each development scenario are also provided.

7.1 Location in Corridor

A number of important locational considerations are relevant that will influence the need for and amount of employment land provided on the site. These factors include the following site attributes:

- Relative proximity to metropolitan Melbourne compared to other employment precincts in the Corridor.
- Easy access to regional industry/employment nodes including Narre Warren CBD, Dandenong CBD, Dandenong South Industrial Precinct, Monash Specialist Activity Centre etc.
- Proximity to Casey Technology Precinct (CTP) with the potential for synergies between the two employment nodes. For example, the C21 site might support R&D activities at the CTP including manufacturing, distribution etc.
- High profile location on the Princes Freeway.
- Easy access to labour in view of the significant population growth projected at a local and regional level.

7.2 Residential Development

The subject site has a number of specific attributes that are attractive for residential development, including:

- A prime location which provides easy access to established (and future) employment nodes; and retail, medical, educational and other key services at Narre Warren, Berwick, Dandenong etc.
- Site topography which includes the potential for hilltop development on part of the site and south-facing development towards Grices Road. This would allow for the development of some higher quality housing product affording views which could not be easily replicated elsewhere in the corridor.
- Ability of the site to deliver a broad mix of housing product targeting a range of price points due to differing characteristics across the site (eg mix of flat and undulating land).

7.3 Constraints to Development of Employment Land

A number of site development constraints are relevant when considering the future form of development at the C21 Business Park precinct:

- The site has an undulating topography which might restrict development (or at least lead to additional development costs) for employment purposes on part of the site.
- The site suffers from a lack of access to rail transport infrastructure, although it is envisaged that a major bus route would serve the residential communities to the south, with connections into Fountain Gate-Narre Warren and eastwards to Pakenham.
- Some land areas will be lost as appropriate access arrangements from Princes Freeway are implemented.
- Interfaces with residential development on the site will need to be managed, particularly in circumstances where employment activities occur on the higher land in the central part of the site.

7.4 Competition from Other Employment Precincts

An examination of competing employment land precincts (refer Chapter 5) highlights the following relevant factors:

- Most of the competing employment precincts are likely to be developed at lower cost, having regard for the physical characteristics of these sites.
- The employment precincts in the Officer-Pakenham corridor have better access to heavy rail infrastructure which is likely to be especially important for some industrial operators.
- In the corporate office market, strong competition will come from more established commercial office locations such as Dandenong, Narre Warren, and Casey Technology Park, noting that these precincts may be fully developed prior to the establishment of commercial businesses at C21, and many businesses seeking office accommodation prefer locations that are well-integrated with retail and entertainment districts.

7.5 Opportunity for Niche Development

The location and specific attributes of the site present an opportunity for the subject site to attract niche activities that might not easily be captured by other employment precincts in the Corridor. These opportunities might include:

- Supporting manufacturing capacity for R&D activities at CTP and other areas such as Monash
- Manufacture and distribution of green products eg solar panels, water tanks
- Hi-tech / value added manufacturing
- Biotechnology
- Medical research facilities or providers of specialist equipment
- Scientific research laboratories or suppliers of specialist equipment.

7.6 Base Case Scenario

Scenario Overview

The Base Case Scenario reflects development outcomes based on long-term market conditions (supply, demand, competition etc) and with regard to the specific attributes of the subject land.

Despite the residential potential of the site, in our view it would be prudent to secure part of the C21 precinct for employment purposes.

This reflects the long-term land supply situation that shows that insufficient land supply is available to meet the employment needs in the Casey-Cardinia corridor over the next 20-25 years or so, particularly if the GAA targets in relation to job provision and employment self-sufficiency are to be met.

It will be important to ensure a range of sites are available throughout the Corridor that cater for different types of employment activities.

Approximately 205 ha of the 290 ha site is estimated to be available for development once roads, open space, biodiversity, drainage, schools, community facilities and other encumbered land is removed. Having regard for the physical attributes of the site and the particular opportunities for residential development to the south, under the Base Case Scenario an allocation of 100 hectares of land (net developable area) is made for employment purposes.

The remaining 105ha of developable land would be available for residential development.

Commercial office

It is recommended that sufficient employment land is allocated to support a medium-sized office precinct (say, approximately 70,000m²). The office precinct might consume 10 ha of gross land.

An allocation of this size provides flexibility for greater office development should market demand be stronger or a large 'one off' opportunity emerges. Additional office floorspace could be achieved through higher density development on the allocated land (eg two-story development which could yield approximately 140,000m² of commercial office floorspace).

This allocation of land represents a substantial commercial office precinct when compared against other corporate office parks in Melbourne. As a comparison, the land area devoted to corporate activities in University Hill is approximately 20 hectares, while Tally Ho Business Park is 24 hectares. The proposed allocation at the C21 Business Park is similar in size to Salta Properties' Nexus Corporate Park in Mulgrave which is planned to accommodate 60,000m² of commercial office floorspace.

Industrial and other employment

Approximately 85 hectares of land should be allocated for industrial activities and other employment uses which might include research and development and niche activities. This allocation would support 490,000m² of floorspace, which is likely to support a mix of traditional industrial activities and knowledge-based/new economy opportunities incorporating a much higher level of office/administration floorspace and lower production/storage requirements.

Activity Centre

It is recommended that in the order of 3-5 ha of land (rounded) should be allocated for a small activity centre, which would be developed over time. This activity centre might support up to 9,000m² of total floorspace at full development, with uses including retail (small convenience centre supported by a mid-sized supermarket), community services (eg medical, child care, etc) and business support facilities for the site. Planning for the precinct should allow for the integration of the activity centre with employment activities, as well as with the residential community in the precinct.

A summary of recommended employment land allocations and estimated floorspace yield for the Base Case Scenario is shown in Table 23.

Table 23: C21 Business Park Employment Land Allocation – Base Case Scenario

Location	Net developable area ha	Site coverage %	Floorspace m ²
Dedicated office	10 ha	70%	70,000m ²
Industrial land	45 ha	55%	250,000m ²
Other employment land (niche)	40 ha	60%	240,000m ²
Activity centre and other supporting activities	3-5 ha	30%	9,000m ²
Total	100 ha		569,000m²

Source: Essential Economics; refer text

Note: Figures rounded

Employment outcomes

Based on the Base Case Scenario, an estimated 8,575 jobs will be supported at the C21 Business Park at full development. This estimate comprises 3,500 or so commercial office jobs, 4,850 industrial and other jobs, and 225 jobs associated with the activity centre.

In terms of employment yields, this job outcome represents an average of approximately 85 jobs per gross hectare of employment land. This relatively high employment yield is consistent with the intended role of C21 Business Park as a higher density employment precinct that is focused on attracting significant commercial office, research and development and niche activities.

Estimated employment outcomes for the Base Case Scenario are included in Table 24.

Table 24: C21 Business Park Estimated Employment Outcome – Base Case Scenario

Location	Developable area	Floorspace	Floorspace/ employment Ratio	Estimated Jobs	Jobs / ha
Commercial office	10 ha	70,000m ²	20m ² /job	3,500 jobs	350
Industrial land	45 ha	250,000m ²	150m ² /job	1,650 jobs	37
Other employment land (niche)	40 ha	240,000m ²	75m ² /job	3,200 jobs	80
Activity centre and associated activities	5 ha	9,000m ²	40m ² /job	225 jobs	75
Total	100 ha	569,000m²	55m²/job	8,575 jobs	85

Source: Essential Economics; refer text

Note: Figures rounded

7.7 Employment Maximisation Scenario

Scenario Overview

The Employment Maximisation Scenario provides an outcome which delivers a higher level of commercial investment, land development and employment. This scenario closely reflects the objectives of *Casey C21* with regard to the site including the objective to create a substantial employment node at this location which integrates residential and working activities.

In order to achieve an employment maximisation outcome, market-led strategies and interventions will be required. These might include:

- Leveraging State Government assistance in the planning, servicing and development of the site to reduce site development costs and position the site more competitively against other low cost development sites in the Corridor.
- Casey Council identifying C21 Business Park as a preferential site in terms of Government agencies, educational establishments, and R&D organisations seeking to locate to the municipality.
- Implementing a range of planning and infrastructure-related actions or strategies (including for example negotiating with the land owner) that can 'bring forward' the development of the site – that is, deliver employment land to the market before competitor locations in the Corridor.
- Council providing financial incentives such as offsets on development contributions, concessional commercial rates for operators locating to the site, and so on.
- Council implementing specific marketing initiatives that promote the site's special attributes and unique opportunities for commercial operators, Government agencies and institutional organisations.
- Council to actively engage with stakeholders (hospitals, educational providers, Government agencies etc) to develop relationships and synergies that may facilitate development on the site.

Even acknowledging the desire to secure high employment outcomes for the site, it needs to be recognised that the land has always been envisaged as a mixed use precinct that accommodates high quality residential living. It is therefore important to ensure sufficient land is retained for residential development that will support a sustainable community; that is, a large enough population to support local services.

In general terms, a population of 3,000 to 4,000 persons provides the critical mass necessary to support the range of community infrastructure that can develop as a sustainable community. In this regard the allocation of approximately 70ha of net developable land for residential development would accommodate a community of between 3,000 persons (@ 15 dwellings per ha and 2.8 persons per household) and 4,000 persons (@ 20 dwellings per ha and 2.8 persons per household).

Assuming the market led initiatives outlined above are effective, the Employment Maximisation Scenario differs from the Base Case Scenario in the following ways:

- Higher allocation of employment land (135ha) and lower allocation of land for residential development (70ha).
- Greater provision made for commercial office floorspace to allow for the accommodation of a major Government agency (s) and/or educational establishment(s).
- Greater allocation of land for industrial and other employment which has the potential to capture a broad spectrum of industrial and other activities.
- Focus on attracting higher density industrial uses (eg attraction of more high-tech / value added industry and less transport, storage, manufacturing etc). This would ensure a higher employment floorspace ratio is achieved.
- Attraction of significant R&D, training and educational facilities to the site through synergies with Casey Technology Park and regional education and training organisations.
- Attraction of a greater level of 'niche' knowledge-based businesses to the site.
- Greater provision of retail and business support services, noting a higher floorspace requirement associated with greater on-site employment under this scenario.

Specific land allocations by use are as follows.

Commercial office

Allocate sufficient land to support a large-sized office precinct (say, approximately 100,000m²). This scale of office precinct might consume 20 ha of gross land (again, allowing additional land to capture a major 'one-off' opportunity).

Industrial and other employment

Allocate 110 hectares of land for industrial, research and development and niche activities. For example 60ha of land might be used for more traditional industrial uses (warehousing, manufacturing) which are likely to remain strong sectors into the future, while the remaining 50ha could be focused on knowledge/new economy opportunities incorporating a much higher level of office/administration floorspace and lower production/storage requirements.

Assuming a reasonable mix of high, medium and low density activities, the 110 ha allocation would support 630,000m² of floorspace.

Activity Centre

Allocate 5ha of land for a medium sized activity centre, which would be developed over time. This activity centre might support up to 15,000m² of total floorspace at full development, with uses including

retail (convenience centre supported by a mid-sized supermarket), community services (eg medical, child care, etc) and business support facilities for the site.

A summary of recommended employment land allocations and estimated floorspace yield for the Employment Maximisation Scenario is shown in Table 25.

Table 25: C21 Business Park Employment Land Allocation – Employment Maximisation Scenario

Location	Gross Area ha	Site coverage %	Floorspace m ²
Dedicated office	20 ha	70%	140,000m ²
Industrial land	60 ha	55%	330,000m ²
Other employment land (niche)	50 ha	60%	300,000m ²
Activity centre and other supporting activities	5 ha	30%	15,000m ²
Total	135 ha		785,000m²

Source: Essential Economics; refer text

Note: Figures rounded

Employment outcomes

Based on the Employment Maximisation Scenario, an estimated 13,575 jobs will be supported at the C21 Business Park at full development. This estimate comprises 7,000 commercial office jobs, 2,200 industrial jobs, 4,000 knowledge/new economy jobs (R&D, communications, high-tech manufacturing etc), and 375 jobs associated with the activity centre.

In terms of employment yields, this job outcome represents an average of approximately 100 jobs per gross hectare of employment land.

Estimated employment outcomes under the Employment Maximisation Scenario are included in Table 26.

Table 26: C21 Business Park Estimated Employment Outcome – Employment Maximisation Scenario

Employment Type	Developable area	Floorspace	Floorspace/ employment Ratio	Estimated Jobs	Jobs / ha
Commercial office employment	20 ha	140,000m ²	20m ² /job	7,000 jobs	350
Industrial employment	60 ha	330,000m ²	150m ² /job	2,200 jobs	37
Other employment	50 ha	300,000m ²	75m ² /job	4,000 jobs	80
Activity centre and associated activities	5 ha	15,000m ²	40m ² /job	375 jobs	75
Total	135 ha	785,000m²	45m²/job	13,575 jobs	100

Source: Essential Economics; refer text

Note: Figures rounded

Issues and constraints to employment maximisation

A number of matters need to be considered in relation to the potential to deliver the Employment Maximisation Scenario:

- It is unclear whether Council has the opportunity to provide financial incentives on a site-specific basis (rather than on a municipal basis) – equity issues may be involved.
- While preferential status might be conferred on C21 Business Park regarding the location of certain activities, in the absence of specific policy or planning guidelines for the site commercial factors will ultimately drive locational decisions for developers and businesses.
- It is unclear how much support would be forthcoming from the State Government regarding the development of the site given that similar assistance might be requested for the development of other employment lands in the Corridor (or across metropolitan growth areas more generally).

7.8 Scenario Comparison

A comparison of each scenario shows the following differences in outcomes:

- An additional 35 hectares of employment land under the Employment Maximisation Scenario
- An additional 216,000m² of floorspace development
- An additional 5,000 jobs

Moreover, the Employment Maximisation Scenario would achieve a more intense employment outcome, averaging 100 jobs per net developable hectare, compared with 85 jobs per hectare under the Base Case scenario.

The Employment Maximisation Scenario will also deliver a significantly higher white collar component (compared to outcomes under the Base Case Scenario) in view of the larger commercial office, R&D and new economy type jobs located on the site.

A comparison of scenario outcomes is provided in Table 27.

Table 277: Comparison of Scenario Outcomes

	Base Case Scenario	Employment Maximisation Scenario
Residential land (net developable)	105ha	70ha
Employment land (net developable)	100ha	135ha
Floorspace	569,000m ²	785,000m ²
Jobs per hectare (net developable)	85	100
Total employment	8,575 jobs	13,575 jobs

Source: Tables 23, 24, 25 and 26

Note: Figures rounded

7.9 Recommendations for Precinct Structure Planning

Retention of employment land

- While the development of the C21 Business Park is a long-term proposition, it is important to protect employment land allocations, under either scenario, from other development pressures, having regard for the important regional employment role of the site.
- The most likely pressure will be associated with the alternative development of the land for residential use, noting that demand might be stronger for this use in the shorter-term.

Location of employment land

- Employment-related land use in the C21 Business Park precinct should be focussed on the northern part of the land where good access to Princes Freeway can be achieved.
- The southern part of the site should be retained for residential uses, taking advantage of the south-facing slopes in order to create a highly-amenable residential living precinct.
- Sensitive treatment of the interface between the employment land and the residential areas and with Cardinia Creek should be implemented.

Utilisation of highway frontage

- The employment land should be designed to take advantage of the frontage with Princes Freeway, in order to provide sites with good exposure for future tenants.

Location of residential development

- The residential land should be located on the southern part of the site, and designed take provide view lines to the south and the east.
- Road design should provide good access to the Clyde North activity centre to the south.

Location of activity centre

- The activity centre should be located with a joint function to serve the employment land precinct as well as providing a convenient activity centre for residents in the precinct.

Efficient integration of activities across the Site

- Although these recommendations are provided for the individual parts of the precinct, there may be opportunities to create an integrated working-living precinct, with some higher-density housing located close to the activity centre and other business precincts.

7.10 Summary

In summary, this analysis shows that the C21 Business Park precinct provides an opportunity to deliver a niche product which can be differentiated from other employment lands in the surrounding region.

Two potential development scenarios have been identified, and outcomes under each scenario are outlined as follows:

Base Case Scenario

Having regard for the features of the site, its competitive position and competing land demands, an appropriate development scenario is to retain approximately 100 hectares of land for employment uses. The mix of uses in the precinct is recommended to include a dedicated corporate business park of approximately 10 hectares, with an additional 85 hectares devoted to other types of employment activities, including specialist manufacturing, supporting business service, and niche roles in medical and research-related manufacturing and distribution. The emphasis is on attracting particular types of businesses that seek a high-amenity environment that may not be created in other precincts in the region. The remaining land will provide an opportunity to deliver a high-quality residential product taking advantage of the physical characteristics of the site.

An employment yield of approximately 8,575 jobs is anticipated across the precinct under this scenario.

Employment Maximisation Scenario

Under this scenario 135ha of land would be allocated for employment purposes to be developed over time. At full development this would deliver 785,000m² of floorspace development including a 20ha business park, 60 ha of industrial development and 50ha of land supporting niche/ high value activities.

The remaining land (80ha) would be used for residential development and this allocation would be sufficient to support a sustainable community of approximately 3,000-4,000 persons.

Employment outcomes are expected to be substantial, with approximately 13,575 jobs located in the precinct.

The Precinct Structure Plan should ensure the protection of allocated employment land, and also have regard for the location of employment land, utilisation of highway frontage, location of residential development, location of activity centre and integration of activities across the broader precinct.

KEY FINDINGS

The main findings from this analysis of the employment land opportunities at the C21 Business Park precinct can be summarised as follows:

- 1 The precinct has been identified as having a significant importance in contributing to the employment potential in the Casey-Cardinia region, with a particular role envisaged that combines high-amenity residential development with a range of specialist 'new economy' activities including corporate office, specialist manufacturing and business support services.
- 2 Analysis shows that the demand for employment land in Casey-Cardinia is very substantial, especially if the GAA targets in relation to employment self-sufficiency are to be met. Overall, an estimated 1,830ha to 4,280ha of dedicated employment land will be required over the period 2010-2031 to accommodate the future employment task, with the upper estimate associated with delivering 100% employment self-sufficiency.
- 3 The existing and planned employment lands (but excluding C21) include an identified 1,385ha of land within the Casey-Cardinia, and with a further 500ha or more of land potentially able to be accommodated in the GAFP region. A further 1,800ha of land is available in the wider region, but will serve other labour market catchments as well as providing an opportunity to deliver employment land for Casey-Cardinia residents.
- 4 In these circumstances, the C21 Business Park precinct can play an important role (though this role is small in the wider regional context) in providing an opportunity to accommodate a range of employment uses. This role needs to be balanced against the potential competing demands for the site; in particular its attractiveness for residential development on the south-facing land fronting towards Grices Road and on land overlooking Cardinia Creek.
- 5 Two development scenarios have been constructed to explore potential land use and employment outcomes for the site:
 - The Base Case Scenario provides likely outcomes based on long-term supply and demand considerations and with regard to competitor sites.
 - The Employment Maximisation Scenario more closely aligns with Casey's C21 policy for the site and involves actions and interventions required to support higher employment generation.
- 6 Under the Base Case Scenario the following outcomes are anticipated:
 - Residential development of 105ha
 - Employment land allocation of 100ha,
 - Floorspace development of 569,000m²
 - Employment of 8,575 jobs.
- 7 Under the Employment Maximisation Scenario the following outcomes are anticipated:
 - Residential development of 80ha
 - Employment land allocation of 135ha,
 - Floorspace development of 785,000m²
 - Employment of approximately 13,575 jobs.

- 8 The Precinct Structure Plan should have regard for the following:
- Protection of identified employment land
 - Location of employment land, residential land and activity centre
 - Utilisation of highway frontage
 - Opportunities to provide an integrated working-living precinct