Investing in Melbourne's West: A Region in Transition

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Executive Summary

This report has been prepared by the Victoria University Centre for Strategic Economic Studies and Institute for Community Engagement and Policy Alternatives to inform future investment choices for the western region of Melbourne. Its purpose is to bring together existing data and research on trends and prospects for the region, to provide an analytical starting point for a more integrated and strategic approach to future regional policy development and investment priorities.

As the principal Higher Education and TAFE provider in Melbourne's West, Victoria University is firmly committed to a strong leadership role in supporting the actions needed to drive the western region towards a prosperous and sustainable knowledge economy. The University is also clear that a partnership approach – working closely with public, private and community sector organisations – will be an essential foundation for achieving this objective.

The main findings of the report are outlined below.

i) **During the 1990s the western region of Melbourne began a period of transition from a depressed post-industrial region, with limited jobs and services available within its boundaries, to a more balanced and dynamic knowledge based economy.**

ii) **This transition has been initially driven by population movements and private sector investment decisions, reflecting the availability of relatively low cost land for residential and industrial development.**

The movement of population into the region, making use of abundant supplies of low cost land, has been one trigger of renewed growth. Between 1991 and 2003 the population of Melbourne's West increased by 1.6 per cent per annum, double that for the rest of Victoria or for the rest of Melbourne. There has been particularly rapid growth in Brimbank, Melton and Wyndham. This rapid growth is expected to continue over the next three decades, with 20 per cent of Victoria's population growth occurring in the region over this time. By 2030 the western region is expected to have a population of about 850,000 persons, and one in five Melbournians will live in the West.

Growth has also been driven by private investment to service the increasing population and to utilise the region's strategic advantages, especially in relation

to transport and trade. For example, over the four years to 2003-04 private non-residential construction approvals for warehouses, factories, and wholesale and retail trade premises amounted to $1.1 billion in the western region. This was 19.2 per cent of the total for Victoria as a whole. Reflecting these factors, employment by enterprises within the region grew by 2.3 per cent per annum between 1991-2001, nearly double the rate for the rest of Victoria. Gross regional product also grew more rapidly than in many other regions of the State, and in Australia as a whole.

While population movements and private sector responses to the region's strategic advantages have driven growth, the transition is being held back by a low level of investment in high quality services. In 2001, in spite of being home to about 12 per cent of Victoria's population, only 8.5 per cent of Victoria's jobs were located in the western region. Even so, the West provided 12.3 per cent of the State's jobs in manufacturing, transport and storage. But in knowledge based services – technical business services, health, education, communications, and finance and insurance – the region provided only 6.5 per cent of all Victorian jobs. In these as in other areas, residents of the region have to go outside it to find jobs.

In large part, and contrary to the popular impression of the West as a bastion of the public sector, this trend reflects low levels of investment and provision by the public sector in the region. Whereas 11.4 per cent of private sector non-residential construction approvals for the four years 2000-01 to 2003-04 inclusive were in the region, only 6.5 per cent of those for the public sector were in the West. Only 4.1 per cent of Victorian public sector approvals for health (excluding aged care) were in the western region, while in education the proportion was 6.9 per cent.

This low level of public investment in recent years is consistent with an historical trend for residents of the West to obtain many of the services they need outside the region, and especially in central Melbourne. For example, in spite of a population share of 12 per cent, hospitals in the region account for only 8 per cent of Victorian hospital separations and provide only 5.9 per cent of intensive care beds. The Victorian Government also spends about $30 million less per annum on schools in the western region than it would on state-wide per capita averages. This is largely because of the low proportion of students (60 per cent) in government schools and the high proportion (30 per cent) in Catholic schools, together with the low level of State support for non-government schools.

iii) The region is increasingly diverse with a growing gap between areas of high and low employment and income growth.

Pursuing the transition to knowledge intensive growth is of great importance for the region and will also bring significant benefits to the broader Victorian

and Australian economies. However this pursuit of greater prosperity must also recognise that there remains a great deal of diversity and areas of deep disadvantage within the western region. Several areas within the region are among the most disadvantaged in Victoria. Strategic action to address disadvantage including through employment and training opportunities, improved health and community services, and investment in local physical and social infrastructure will be essential if the region is to maximise the full economic and social potential of all its communities and citizens.

In recent years there has been increasing investment in neighbourhood renewal and community building in the West, and further expansion of these long term programs is of real importance is addressing areas of disadvantage.

iv) A significant and sustained increase in public sector investment in infrastructure and services will be needed to maximise the region's potential for generating high productivity growth – and in generating the regionally located jobs needed to keep pace with regional population growth.

The process of renewed growth in Melbourne's west is still in its *extensive* phase – expansion of output and employment at existing productivity levels, with relatively low rates of productivity growth. Indeed, growth in output and employment in the decade to 2001 was accompanied by relatively low productivity growth. In spite of strong growth in employment within the region, GDP growth within the West was still below that in a number of other Victorian regions over this period. Thus it is a further challenge to bring this transition to an *intensive* phase, with increasing knowledge intensity and rising output per head leading to higher real incomes per capita.

Given the forces that have driven the re-emergence of the West, it is natural that public sector investment should be lagging at the present time. But, over the next two to three decades, the region's growth should receive further impetus from the development of a full range of services within the region, and from the new jobs that they bring. It is important that governments and their agencies respond with the expanded programs – in areas such as health, education and transport – necessary to bring the supply and quality of the services available within the region to a par with other regions of Melbourne.

This policy development and public investment will be necessary at many different levels, from Federal and State Governments to local councils and to institutions such as Victoria University. The Victorian Government, the various regional authorities and the University have, in their own spheres, began to take specific actions to address these issues. Further sustained and cooperative action, involving these and other parties, offers great benefits to the region in the current stage of its development.

In broad terms the criteria for the next phase of regional investments should include:

- building the human, social and physical capital needed to enable the region to participate fully in the knowledge based economy;
- providing high quality infrastructure and services to match the rapidly expanding population growth; and
- targeted action to strengthen communities and to reduce disadvantage and inequality.

v) Specific priority areas for the next phase of investment in regional infrastructure and services include:

- education and training – to strengthen human and social capital;
- health, community services and bio-medical research;
- transport and communications infrastructure and logistics;
- advanced manufacturing (particularly in small scale technologies);
- physical activity, sport and recreation; and
- creative and performing arts.

These areas are detailed further below. It should be stressed, however, that these are not independent areas for investment, and that integrated processes of investment across several areas are likely to be most effective.

Education and training – to strengthen human and social capital

By several measures, the level of knowledge capital and social capital relevant to education is fairly low in Melbourne's West. For example, in 2001 28.7 per cent of all employed persons in Victoria were engaged as managers, administrators or professionals. But in the West the proportion was only 21.7 per cent, and in some areas it was much lower (e.g. Brimbank 14.7 per cent, Melton 16.3 per cent). To take another measure, 20 per cent of Victorian families speak a language other than English at home, but in the West 35 per cent of families do so, and in Brimbank 53 per cent do so. It is also clear that literacy and numeracy levels for children commencing school are lower in the Western region than in many other areas of Melbourne.

In spite of these disadvantages, and lower average financial resources per student than the Victorian average, the schools in the West achieve reasonably strong educational outcomes, particularly in addressing the initial low levels of literacy and numeracy, and in improving retention rates. Nevertheless, outcomes in several areas, and in particular VCE completion rates and study scores, remain of concern. It is essential that educational outcomes be strengthened further if the West is to be a dynamic region in the knowledge economy.

Schools serving regions with low levels of social capital need increased teaching and other educational resources to offset this deficiency. This applies to all schools – public and private – seeking to achieve excellence with equity in education. The Victorian Government has started a process of reallocation of increased resources, on a continuing basis, to schools in less advantaged regions. The Catholic Education Commission of Victoria has also begun to redistribute more of its Commonwealth Government funding to schools in more disadvantaged communities. Given the role of Catholic schools within the West, this region could become a pilot program for a joint approach across all schools to address more effectively the needs of disadvantaged schools.

In terms of post-secondary education the role of Victoria University, the region's only dual sector provider, will continue to be crucial. The expansion of high quality TAFE and higher education programs, and of a smooth transition between them, will contribute strongly to the knowledge capital of the West.

Health, community services and bio-medical research

Faced with a growing mismatch between population growth in the south-east and a concentration of health services and biomedical research in inner Melbourne, the Victorian Government in the 1980s decided to establish the Monash Medical Centre, in conjunction with Monash University. This decision was critical in providing much better access to high quality health services for the people in the south-east and also in stimulating the development of a world class biotechnology and biomedical research precinct.

This situation is similar in Melbourne's West today. Access to high quality health services has become of even greater social importance over the past twenty years, but remains limited in the West. The biomedical industries are now the prime focus of global technological change, and hence vital for long run growth. It is time for this process of providing much better access to high quality health services and of developing a world class biotechnology and biomedical research precinct to begin in the western region. It should involve:

- establishing the Western Hospital as an A1 teaching hospital, with substantially expanded facilities, and strengthening the provision of advanced health service facilities in the region generally;
- establishing a health and biomedical teaching and research precinct linking the St Albans campus of Victoria University with the Western Hospital; and
- continuing to explore the possibility of significant investment in partnerships to expand biomedical research in the region in general and in the St. Albans health and biomedical research precinct in particular.

Advanced health services and leading edge biomedical research services cannot be created overnight. But, as the Monash experience has shown, great strides

can be taken over two decades or so. While a long term view is necessary, the start should not be delayed any longer. It is also vital that this process not involve further fragmentation of either health services delivery or of biomedical research in Victoria. There is no reason whatsoever why expanded facilities in the West cannot be developed in close collaboration with those elsewhere, especially in central Melbourne and in the Parkville strip. Such collaborative development would allow the energies of the West to be harnessed while preserving the economies of scale and of scope that are vital to international competitiveness.

Transport and communications infrastructure and logistics

The current economic strengths of the region lie in manufacturing and in transport and storage, and it has good access to air and sea transport and to the Melbourne CBD. But these strengths need to be enhanced and further developed, especially having regard to global trends in manufacturing and trade, to the opportunities and threats posed by the emergence of Asia and to the developing role of small scale technologies. Further attention to transport infrastructure within the region, and to facilitating increased use of advanced computing and communications facilities, should be part of this process.

The draft Victorian Government Transport Strategies for the Inner and Outer West note the need for significant new investment in western region transport infrastructure to meet the challenges of a rapidly growing population and to facilitate the expansion of industry and employment. The draft Strategies also note that an effective response to managing transport demand will be aided by increasing the proportion of western region residents employed in the region.

Key transport challenges facing the western region include:

- relatively low levels of public transport patronage, reflecting limited access to rail and bus services, particularly in outer region areas where population growth trends and projections are highest;
- increasing road traffic volumes and congestion;
- low quality of arterial road links across the region;
- increasing volumes of freight transport through the region – a trend which will be accelerated if the decision is made to deepen the Port of Melbourne shipping channel; and
- limited bicycle network infrastructure.

Initial priorities identified as central to an integrated transport strategy for Western Melbourne include rail track upgrades and several new stations (particularly on the Sydenham Northern line and Werribee lines); the development of an integrated Transit City project at Footscray, improved bus service coverage; investment in transport interchanges; various road upgrades

and extensions and further development of bicycle networks. The strategies also note several more fundamental issues that need to be addressed:

- the capacity of the rail network between Sunshine, Newport and Spencer St Station;
- the capacity of the West Gate Bridge and the junction of the Calder and Tullamarine Freeways; and
- the ability, suitability and impact of the east-west arterials through the inner western suburbs in catering for growth in traffic to the outer west and in providing access from the outer west to the inner suburbs and central Melbourne.

Vigorous action to address these various transport issues will be critical for the continuing economic and social development of western Melbourne. The draft transport strategies for inner and outer western Melbourne will provide an important basis for prioritising the next steps in regional transport investment.

The relatively low level of knowledge intensive service jobs in the West is reflected in lower rates of usage of computers and the internet. The proportion of the population using the internet is 15 per cent lower – and the proportion using a computer is 12 per cent lower – in the western region than in Melbourne as a whole.

It will be important for Victoria University to contribute to the integrated planning of regional transport infrastructure in order to maximise student access to campuses and to improve linkages between campuses, local communities and industries. The University is also particularly keen to support rapid progress on the development of the proposed Transit City development at Footscray station. The newly established Victoria University Institute for Transport and Freight Logistics will provide a focus for bringing together the University's teaching and research expertise in this area, as a basis for future regional partnership projects. The University also has an important role to play in exploring and supporting innovative strategies for expanding student and community access to internet and computer services.

Advanced manufacturing and small scale technologies

One of the present strengths of the West is its manufacturing capabilities. Businesses in the region provide 13.6 per cent of Victoria's manufacturing gross output and 11.6 per cent of the State's manufacturing jobs. On National Institute of Economic and Industry Research (NIEIR 2004) estimates, the West is the home to nearly one in seven Victorian firms employing more than 50 employees. Thus how the region's existing manufacturing firms respond to the dramatic changes taking place globally, and how successful the region is in attracting new firms engaged in advanced manufacturing, will be central to the region's transition to the knowledge economy.

Perhaps the most important long term change is the emergence of small scale technologies. We use the phrase 'small scale technologies' to refer to technologies with feature sizes less than 1000 nanometers, where a nanometer is one millionth of a millimetre. In other words, they are technologies with feature sizes less than one thousandth of a millimetre. The term thus covers both *micro technologies*, operating down to about 100 nanometers, and *nano technologies*, operating at or about the nanometer scale.

Small scale technologies are already having a significant economic and social impact. Over the next two decades they will have profound effects on industrial products and processes, on the lives of individuals and on the nature of human society. As the next major wave of global technological change, they offer vast potential benefits but carry serious economic, social and ethical risks (CSES 2003).

These technologies will have a pervasive impact on the competitive position of western region firms in a wide range of industries, from health and food to transport, energy and the environmental industries. There is little doubt that developing high-level capability in small scale technologies will become increasingly central to the competitiveness of many industries over the next decade, and indeed to the survival of many firms.

The current review of Victoria University's engineering and technology teaching and research priorities provides a timely basis for identifying the actions needed to ensure the University is well equipped and positioned to build and support regional industry partnerships in advanced manufacturing and small scale technologies.

Physical activity, sport and recreation

The expansion of investment in the infrastructure required to support increased participation in physical activity, sport and recreation has the potential to provide an important basis for improving the quality of life and health outcomes for regional communities, as well as to be an important area of employment growth. The proportion of the population participating in organised sport and recreation was 13 per cent lower in the West in 2001-02 than in Victoria as a whole, and this is likely to be partly due to the direct and indirect effects of limited facilities. There is considerable evidence that low levels of physical activity contribute to health problems, such as obesity, which in turn have economic and social implications.

Victoria University has a long standing commitment to teaching and research activities in the field of human movement, physical activity and sport as well as extensive infrastructure and facilities. This could provide the basis for the development of one or more partnerships building on linkages with staff,

students and facilities, possibly with a particular focus on the Footscray and Sunbury campuses.

Creative and performing arts

There is considerable potential for the University to work in partnership with government agencies and non government organisations – such as the Footscray Community Arts Centre – to significantly expand investment in the physical and social infrastructure required to support increased participation in the creative and performing arts. Such investment has the potential to both improve the opportunities and facilities available to western region communities and to continue to create an attractive environment for a broader range of high skilled workers.

vi) As the principal focus for regional knowledge generation and dissemination, Victoria University can and should play a vital role in supporting further regional investment in each of these areas. It should also seek to develop strategic partnerships with major public and private sector institutions to help build a dynamic economy and a more equal and vibrant society in the western region of Melbourne.

A wide range of initiatives which the University can take to support the achievement of regional economic and social priority objectives has been noted above, and are documented in more detail in the body of the report. This process should build on a wide range of initiatives that the University and other parties are taking, through a cooperative process of further analysis, policy formulation and assessment, and implementation.

vii) Improving the knowledge base needed to monitor and predict regional economic and social trends will be an important ongoing priority, and will underpin a well informed regional development strategy.

Achieving a better knowledge base will require significant improvements in the availability of regularly updated data on regional trends as well as more rapid progress towards common Commonwealth and State government program boundaries. Victoria University is well placed to make a contribution here, as a major source of applied research on regional trends, policy options and priorities.

1. Introduction

This report has been prepared by the Victoria University Centre for Strategic Economic Studies and Institute for Community Engagement and Policy Alternatives to inform future investment choices for the western region of Melbourne.

As the principal Higher Education and TAFE provider in Melbourne's West, Victoria University is firmly committed to a strong leadership role in supporting the actions needed to drive the western region towards a prosperous and sustainable knowledge economy. It is clear that a partnership approach, working closely with public, private and community sector organisations, will be an essential foundation for achieving this objective.

The University's commitment to the Region is at the core of the Victorian University 2004-2008 Strategic Plan mission statement, one central element of which is:

> *To transform the lives and develop the capacities of industry and communities within the western Melbourne region and beyond through the power of vocational higher education.*

In order to provide an informed basis for setting priorities among the actions needed to deliver on this commitment, the University has conducted a strategic audit of current educational, research and community engagement activities and of the roles of each of its campuses. As part of this process it also commissioned a report by David Phillips and Peter Noonan on the implications of regional demographic and labour market trends for the future of the University's teaching and research profile. The Phillips/Noonan report provided clear evidence of the need for the University to continue to provide the broad range of programs needed to serve the needs of a diverse and growing region. The report also noted that 'VU can only fulfil its regional mission effectively if it offers programs of national and international standing, meets industry needs and conducts research and engages in scholarship in ways that provide a bridge of communication, understanding and opportunity between western Melbourne and the world'.

Investing in Melbourne's West: A Region in Transition, provides a further contribution to the evidence base underpinning strategic choices about future investment choices for all the public, private and community sector partners, including the University, working to improve social, economic and environmental outcomes across Melbourne's West.

The purpose of the Report is to bring together existing data and research on trends and prospects for the western Melbourne region in order to provide a stronger analytical base for a more integrated and strategic approach to future regional policy development and investment priorities. The Report draws on and is informed by an extensive range of existing regional research publications (summarised in the Bibliography).

2. A region in transition – driven by population and private investment growth

The western region of Melbourne has been through various phases in its history. During the second half of the 20th century, and especially during the decline of manufacturing in Australia in the 1970s and 1980s, it came to be a depressed region, and to be seen as such. Unemployment was high, and the region itself generated few jobs. In 1991 about 11 per cent of Victoria's population lived in the western region, but the regional economy provided only 7.7 per cent of the State's jobs. Thus, a high proportion of those living in the region had to go outside it to find work. As with many older industrial areas around the world, the regional economy stagnated in the wake of industrial decline.

2.1 Population trends

That situation has now changed in some important respects. During the 1990s the western region began a new stage of transition, towards a more dynamic and balanced economy, more comparable with that of other prosperous regions of Victoria. Between 1991 and 2003 the rate of population growth in the western region was much greater than that of the rest of Victoria. The annual average rate of growth was 1.6 per cent in the western region, by comparison with 0.9 per cent for Victoria (Table 1) and 1.0 per cent for Melbourne as a whole. This expansion is driven in particular by very rapid growth in Melton and Wyndham, together with some population growth in all local government areas (LGAs) other than Maribyrnong. Several of the LGAs surrounding the western region, notably Macedon Ranges and Moorabool, are also experiencing rapid growth.

Table 1. Population Trends in the Region

LGA	Actual 1991	Actual 2003	Projected 2031	Annual Average Change 1991 to 2003	Annual Average Change 2003 to 2031
Brimbank	144,277	172,983	185,087	1.52	0.24
Hobson's Bay	74,412	83,852	95,151	1.00	0.45
Maribyrnong	62,413	61,859	81,783	-0.07	1.00
Melton	36,170	65,502	161,018	5.07	3.26
Moonee Valley	108,747	109,559	119,731	0.06	0.32
Wyndham	63,415	99,604	208,208	3.83	2.67
Western Region	***489,434***	***593,360***	***850,977***	***1.62***	***1.30***
Greater Geelong	181,277	200,103	270,749	0.83	1.09
Macedon Ranges	31,349	38,961	59,273	1.83	1.51
Moorabool	20,796	25,772	38,244	1.80	1.42
Surrounding Regions	***233,422***	***264,836***	***368,266***	***1.06***	***1.18***
Melbourne	**3,155,576**	**3,559,408**	**4,538,462**	**1.01**	**0.87**
Victoria	**4,420,373**	**4,917,394**	**6,225,477**	**0.89**	**0.85**

Source: Department of Sustainability and Environment 2004b, *Victoria in Future 2004*, Melbourne.

Over the period to 2031 the above average growth of the population in the western region is expected to continue, with regional population growth nearly 60 per cent above the State average. This will be associated with growth in all LGAs and with the emergence of Melton and Wyndham, along with Brimbank, as large population centres. By 2031 it is anticipated that the western region will have a population of about 850,000 people, with nearly one in five Melbournians and one in seven Victorians living in the West.

2.2 Employment trends

In considering employment it is important to distinguish the number of jobs provided by employers in the region ('employment in the region') from the number of jobs filled by individuals who live in the region ('resident employment'). Individuals who live outside a region will fill some of the jobs provided by employers within the region, while many individuals who live in the region will find employment outside it. A region with a strong economy will typically draw employees from other regions, on a net basis, while a weak local economy will imply net employment outside the region.

Table 2. Employment Flows Into and Out of the Western Region, 2001

	Resident employment in region	Total resident employment	Transfers out (persons)	Transfers in	Net transfers	Share of resident employment outside region (%)
Manufacturing	25,504	45,051	19,547	11,908	7,639	43.4
Construction	9,094	15,424	6,330	4,655	1,675	41.0
Transport and Storage	7,520	15,186	7,666	4,476	3,190	50.5
Total	**42,118**	**75,661**	**33,543**	**21,039**	**12,504**	**44.3**
Wholesale Trade	6,839	13,529	6,690	4,413	2,277	49.4
Retail Trade	23,061	34,522	11,461	6,965	4,496	33.2
Accommodation, Cafes and Restaurants	4,191	9,939	5,748	1,374	4,374	57.8
Property and Business Services	9,293	26,910	17,617	4,672	12,945	65.5
Education	9,260	14,177	4,917	4,838	79	34.7
Health and Community Services	10,155	18,563	8,408	4,666	3,742	45.3
Cultural and Recreational Services	3,123	6,436	3,313	1,820	1,493	51.5
Personal and Other Services	4,142	7,574	3,431	1,622	1,809	45.3
Total	**70.065**	**131,650**	**61,585**	**30,370**	**31.215**	**46.8**
Electricity, Gas and Water Supply	388	994	606	312	294	61.0
Communication Services	1,240	5,796	4,556	672	3,884	78.6
Finance and Insurance	1,778	10,129	8,351	615	7,736	82.4
Government Administration	3,742	7,901	4,159	2,179	1,980	52.6
Total	**7,148**	**24,820**	**17,672**	**3,778**	**13,894**	**71.2**
Agriculture	917	1,338	421	270	151	31.5
Mining	96	303	207	45	162	68.3
Total Employment	**120,344**	**233,772**	**113,428**	**55,502**	**57,926**	**48.5**

Source: ABS, 2001 Census of Population and Housing, Journey to Work data.

In 2001 only 51.5 per cent of employed persons living in the western region found employment in the region, and the other 48.5 per cent found employment outside the region (Table 2). As is evident from Table 2, this is true in all industries, including industries in which the western region is particularly strong, such as manufacturing and transport and storage. For example, 45,000 persons living in the West are employed in manufacturing, but nearly 20,000 worked outside the region. With some 12,000 persons from outside the region working in manufacturing jobs in the West, the region was a substantial contributor of manufacturing employees to other parts of Melbourne. This is even more so for many service industries – in finance and insurance 82.4 per cent of employed residents were employed outside the region, while for communications services and property and business services the proportions employed in other regions were 78.6 per cent and 67.5 per cent respectively. Even in such an apparently localised industry as accommodation, cafes and restaurants, 57.8 per cent were employed outside the region.

In the analysis below we concentrate on employment within the region as the relevant indicator of the strength of the regional economy, rather than on the employment of residents. While most of the standard labour force indicators, such as unemployment, are based on the labour force status of residents, the creation of jobs within the region is a critical measure of the performance of the regional economy.

Over the decade 1991-2001 employment in enterprises within the western region grew at 2.33 per cent per annum, nearly twice the rate of the rest of Victoria (1.21 per cent). In 1991 employers in the western region provided 7.7 per cent of Victorian jobs, but they provided 14.4 per cent of all additional Victorian jobs created in the decade, so that the western regional share rose to 8.5 per cent (Table 3). With resident employment increasing at a slower rate, the extent to which individuals living in the region were dependent on jobs outside it has declined. But, as we have seen, there was still net employment of nearly 60,000 outside the region in 2001.

Table 3. Employment within the Region, 1991 and 2001

	1991	2001	Change		Share of total Victorian	
	(no.)	(no.)	Absolute	% per	employment (%)	
			('000s)	annum	1991	2001
Western Region	***139,609***	***175,846***	***36.2***	***2.33***	***7.7***	***8.5***
Rest of Victoria	1,674,310	1,888,913	214.7	1.21	92.3	91.5
Victoria	1,813,919	2,064,759	250.9	1.30	100	100

Source: NIEIR 2004, *Growing Melbourne's West*, pp. 46-47.

Table 4 illustrates some of the dynamics of employment within the region by industry. For two areas in which the western region has relatively strong employment levels - manufacturing and transport and storage – employment rose in this region but fell in the rest of Victoria. For these two industries plus construction, described in the table as 'core industries', employment growth was a full one percentage point above that for the rest of Victoria. While this reinforced the position of the region, the overall increase in employment in the core industries was modest. In four other industries[1]

[1] That is, four industries other than mining, employment in which is very low in the region but which also fell over the 1991-2001 period.

employment fell in the region over the decade, and in three – utilities, finance and insurance, and government and defence – also fell for Victoria as a whole (see Table 4). In the four industries taken as a whole, western region employment fell by 3.1 per cent per annum over the decade, this decline being more rapid than the fall for the rest of Victoria of 2.5 per cent. But the relatively low starting share of the western region insulated it somewhat from impact of this decline on overall employment levels.

Table 4. Employment by Industry, 1991 and 2001

	Western Region Share		Change 1991-2001	
	1991	2001	Western Region	Rest of Victoria
Core Industry	(%)		(% per annum)	
Manufacturing	11.17	11.58	0.36	-0.04
Construction	8.05	9.86	4.50	2.19
Transport and Storage	12.22	15.00	2.22	-0.17
Total	*10.66*	*11.64*	*1.47*	*0.48*
Areas of Services Growth				
Wholesale Trade	8.36	9.59	1.67	0.15
Retail Trade	8.43	9.70	3.67	2.08
Accommodation, Cafes and Restaurants	5.31	5.96	4.95	3.67
Real Estate, Property and Leasing	7.92	8.06	1.33	1.13
Technical Business Services	4.90	5.51	7.23	5.91
Education	8.59	9.36	2.12	1.17
Health and Community Services	6.11	7.19	3.91	2.12
Cultural and Recreational Services	6.16	9.17	9.44	4.83
Personal and Other Services	6.26	8.16	4.72	1.77
Total	*7.17*	*8.08*	*3.85*	*2.52*
Areas of Decline				
Electricity, Gas and Water Supply	6.43	5.35	-9.17	-7.37
Communication Services	5.41	4.51	-0.99	0.94
Finance and Insurance	3.92	2.87	-3.80	-0.65
Government Administration and Defence	7.40	9.53	-2.35	-5.01
Total	*5.79*	*5.44*	*-3.11*	*-2.46*
Other Areas				
Agriculture	1.33	1.60	1.41	-0.49
Mining	3.67	3.27	-4.52	-3.35
Total Employment	**7.70**	**8.52**	**2.33**	**1.21**

Source: ABS, 2001 Census of Population and Housing, Journey to Work data.

In a wide range of service industries, however, the region's growth was well in advance of the rest of Victoria. For the nine service industries shown in Table 4, overall employment grew by 3.9 per cent per annum, by comparison with 2.5 per cent for the rest of Victoria. In each case western region growth was significantly above the State average, and appears to involve some 'catch–up' in service provision within the region. In 1991 jobs in these nine industries amounted to only 7.1 per cent of total Victoria jobs in the industries, and by 2001 this had risen to 8.1 per cent of Victorian jobs, for a region that had 12 per cent of total State population. Thus there is room for substantial further 'catch-up' over the next few decades.

Health and community services is a case in point. In 1991 only 6.1 per cent of Victoria's jobs in health and community services were in the western region. This low share presumably reflects the fact that people living in the region travel elsewhere, and particularly to central Melbourne, to get the services they need. Between 1991 and 2001 employment in this industry in the region rose by 3.9 per cent per annum, by comparison with 2.1 per cent for the rest of Victoria, but still only accounted for 7.1 per cent of total Victorian employment in the industry. Thus there is plenty of scope for further relative growth in western region employment in the health area in the decades ahead.

2.3 Gross regional product and productivity trends

No official data are available in Australia on gross product by region, but estimates have been prepared by the National Institute of Economic and Industry Research, and these estimates are used here. Table 5 shows gross regional product estimates from the Institute for the western region, other regions in Melbourne and for Australia. Gross regional product grew more rapidly in the western region than in three of the five other regions of Melbourne over the 1991-2001 period, and significantly faster than in Australia as a whole. The only regions of Melbourne to show more rapid growth were inner Melbourne and the southern region, which has benefited in part from knowledge intensive growth around Monash University and associated technology and around the Mitcham Frankston freeway corridor (NIEIR 2004).

Table 5. Real Gross Regional Product (GRP) by Region, 2001, $ million

Region	GRP 1991	GRP 2001	Growth p.a. (%)
Western region	***8,135***	***11,615***	***3.6***
Melbourne East	15,640	21,963	3.5
Melbourne Inner	29,192	43,432	4.1
Melbourne North	10,211	13,693	3.0
Melbourne South	6,131	8,938	3.8
Melbourne Westernport	9,620	13,612	3.5
Melbourne Metro	78,929	113,253	3.7
Australia	426,661	586,745	3.2

Source: NIEIR 2004, *Growing Melbourne's West*, p. 48.

Table 6. Productivity by Region, Real GRP per employee by region, 2001, $ thousand

Region	1991	2001	Growth p.a. (%)
Western Economy	**58.3**	**66.1**	***1.26***
Melbourne East	56.0	65.8	1.64
Melbourne Inner	68.0	92.1	3.08
Melbourne North	52.2	62.3	1.77
Melbourne South	58.2	68.2	1.60
Melbourne Westernport	52.0	58.9	1.25
Melbourne Metro	59.2	72.4	2.04
Australia	59.2	70.8	1.81

Source: NIEIR 2004, *Growing Melbourne's West* and authors' estimates.

While growth in regional product has been strong, we noted above that growth in employment within the region has been even stronger, growing faster than in any other region of Melbourne. This implies relatively low productivity growth in the region. Indeed, as shown in Table 6, productivity growth in the West was well below that in any other region of Melbourne other than Westernport, and well below that for Melbourne as a whole or for Australia. We interpret this as evidence of the extensive nature of growth in the West, involving expansion of output and employment at existing productivity levels, with relatively low rates of productivity growth, and return to this theme below.

2.4 The diversity of the western region

The discussion to date has focused on the western region as a whole, but it is important to note the diversity of the region, both within itself and in relation to the rest of Victoria. Some aspects of this diversity are documented in this section of the report.

Diverse social and economic outcomes

The diversity of the local government areas (LGAs) within the western region, and their relationship to the Victorian average, is shown in Table 7, which shows a number of standard social indicators for recent years. This diversity is well illustrated by the cases of the adjacent LGAs of Maribyrnong and Moonee Valley. Maribyrnong, which is the smallest LGA in the region, is also the most disadvantaged, being well above the Victorian average in terms of all five indicators. In 2002 it had an unemployment rate double the Victorian average, and on a number of indicators is one of the most disadvantaged LGAs in Victoria. Moonee Valley, by contrast, is below the State average on all indicators other than the proportion of one-parent families.

Table 7. Social Characteristics of Western Melbourne, per cent

	Victoria	Brimbank	Hobson's Bay	Maribyrnong	Melton	Moonee Valley	Wyndham
One-parent headed families, 2001	14.80	16.10	15.80	20.60	16.10	15.10	15.50
Unemployment rate, Mar Qtr 2002	6.30	10.10	7.30	12.60	11.20	5.60	5.90
Individual income less than < $300 per week	38.90	44.30	39.30	42.90	36.30	37.70	35.00
Clients receiving family tax payment A – max rate	26.50	37.80	27.00	40.70	29.50	22.00	22.60
% of pre-school children receiving funding subsidy	28.40	36.70	28.10	40.30	28.70	17.40	30.90

Source: Department of Human Services 2003, *Victorian Local Government Areas, Statistical Profiles*.

The structure of families within the western region is shown in Table 8. Relative to the Victorian average, the region has a greater concentration of couple families, with Brimbank and the developing regions of Melton and Wyndham having an especially high proportion. Again the structure of families differs greatly across the region, with the proportion of couple families in Hobson's Bay (41.4 per cent) being well below,

and that in Brimbank, Melton and Wyndham (all above 57 per cent) being well above, the Victorian average of 48.8 per cent.

Table 8. Characteristics of Families, Western Region and Victoria, 2001, proportion of regional population

	Brimbank	Maribyr-nong	Hobson's Bay	Melton	Moonee Valley	Wyndham	Total WMR	Victoria
Couple family	57.7	48.9	41.4	57.7	47.8	57.2	52.8	48.8
Couple family without children	24.5	33.5	34.1	25.1	34.2	25.9	29.0	34.4
One parent family	16.1	15.8	20.6	16.1	15.1	15.5	16.2	14.8
Other family	1.7	1.8	3.9	1.1	2.9	1.3	2.0	1.9
Total	100	100	100	100	100	100	100	100

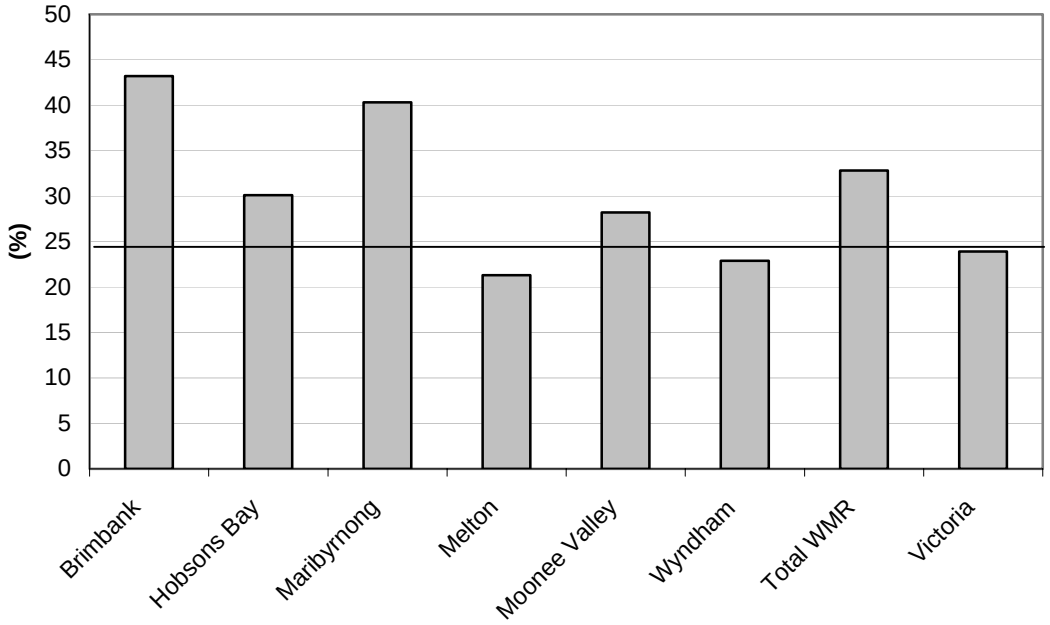
Source: ABS 2001 Census of Population and Housing.

Diverse cultural backgrounds and languages

Generally speaking, the West remains a region with a strong migrant focus, with 33 per cent of the region's population being born overseas, by comparison with a Victorian share of 24 per cent. Again, however, there is strong variation within the region, with the proportion born overseas being greater than 40 per cent in Brimbank and Maribyrnong, and below the State average in Melton and Wyndham (Chart 1). These differences are further accentuated in terms of languages spoken at home. In 35 per cent of households in the western region a language other than English is spoken, by comparison with a Victorian average of 20 per cent. But in Brimbank the figure is 54 per cent and in Maribyrnong it is 44 per cent, with proportions above 30 per cent in both Hobson's Bay and Moonee Valley, and being again below the State average in Melton and Wyndham (Chart 2). Thus four of the six LGAs in the region, accounting for 72 per cent of the region's population, are important centres for migrants to this country, with indicator levels well above the State and national averages.

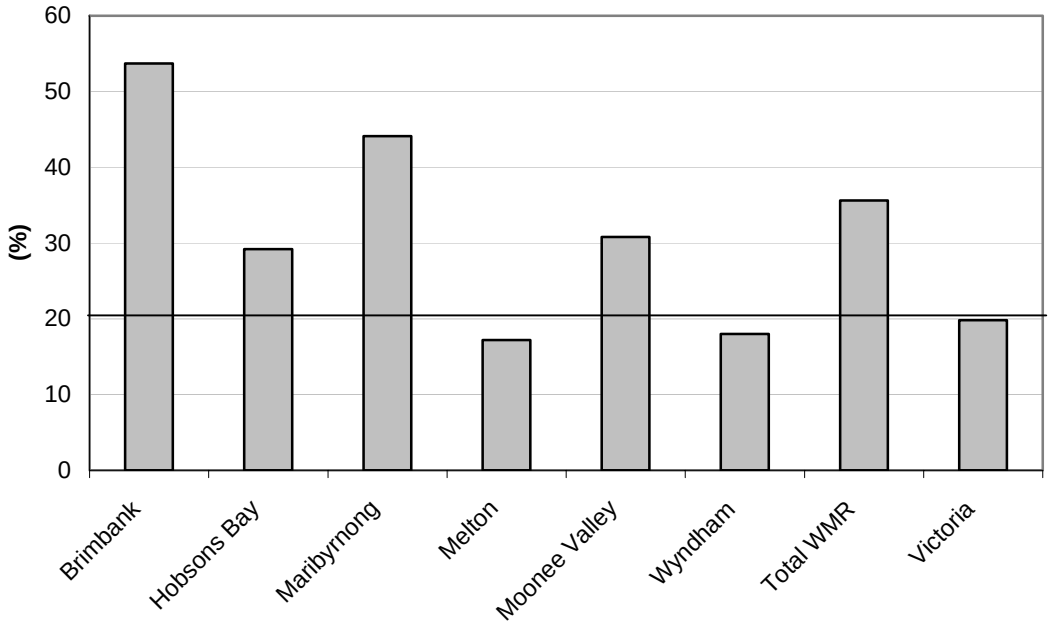
Cultural and linguistic diversity brings a range of both challenges and opportunities. It can, for example, be an excellent resource for businesses seeking to invest in the western region of Melbourne. Businesses who seek to capitalise on Australia's cultural diversity have been able to increase overseas trade, improve their services to domestic markets and markedly improved workforce harmony, efficiency and productivity. International and local research has shown that utilising the resources of a diverse workforce also brings out a number of advantages for businesses (Bertone, Esposto and Turner 1998, pp. 31-34).

Chart 1. Proportion of Population Born Overseas, 2001



Source: ABS 2001 Census of Population and Housing.

Chart 2. Proportion of Population with Language other than English Spoken at Home, 2001



Source: ABS 2001 Census of Population and Housing.

Diverse employment status

One common indicator of economic and social structure is the occupational distribution of employment within a region. Information on the occupational structure of total employment within the region and within the six LGAs is provided in Table 9 and Chart 3. For the western region, the central theme is the lower than average proportion of persons employed in advanced knowledge service activities – managers and administrators, professionals and associate professionals. In the West 32.1 per cent of employees were in these categories, by comparison with 40.1 per cent for Victoria as a whole. Within the region, the shares vary from 23.3 per cent in Brimbank to 44.1 per cent in Moonee Valley. Hobson's Bay and Moonee Ponds have above average shares of professionals (but not of managers and administrators), while the other regions generally have above average shares of persons employed in intermediate transport and production occupation, and in elementary clerical and sales and in labouring occupations. The data for the shares in the first two knowledge worker categories – managers and administrators, and professionals – are shown in Chart 3.

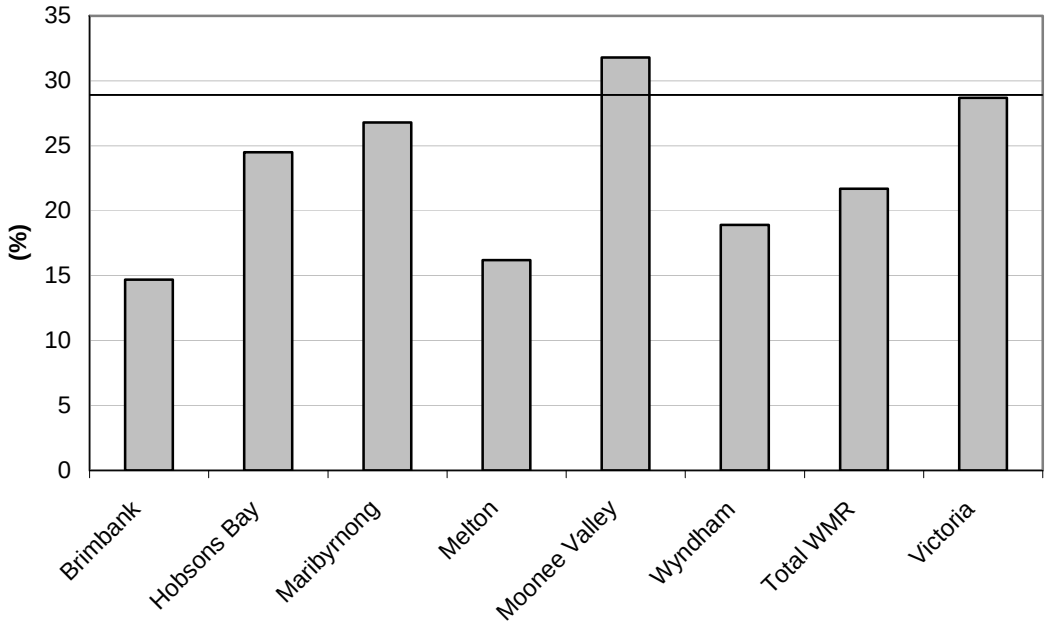
In a knowledge based economy, the occupational structure of a region is an important indicator of the level of knowledge capital within the region. It is therefore an indicator not only of the structure of employment but of knowledge resources that families in the region bring to education, work and community activities.

Table 9. Employment by Occupation, Western Region and Victoria, 2001, proportion of regional population

	Brimbank	Maribyr-nong	Hobson's Bay	Melton	Moonee Valley	Wyndham	Total WMR	Victoria
Managers and Administrators	4.4	7.2	5.9	5.6	7.9	6.9	6.2	9.5
Professionals	10.3	17.2	20.9	10.7	23.9	12.0	15.5	19.2
Associate Professionals	8.6	11.0	10.6	10.3	12.3	10.4	10.4	11.4
Tradespersons and Related Workers	14.3	12.6	9.8	15.0	10.3	14.6	12.9	12.2
Advanced Clerical and Service Workers	3.0	3.6	2.9	3.7	4.5	3.8	3.6	3.6
Intermediate Clerical, Sales and Service Workers	17.0	17.7	16.3	19.2	17.7	19.4	17.8	16.1
Intermediate Production and Transport Workers	15.4	10.5	11.4	13.0	6.2	11.9	11.5	8.1
Elementary Clerical, Sales and Service Workers	11.6	8.9	9.8	11.2	9.5	10.3	10.3	9.6
Labourers and Related Workers	12.8	9.0	9.9	8.9	5.6	8.7	9.4	8.2
Inadequately described	0.9	0.8	1.0	1.0	0.8	0.9	0.9	0.8
Not stated	1.8	1.4	1.5	1.5	1.2	1.2	1.5	1.3
Total	100	100	100	100	100	100	100	100

Source: ABS 2001 Census of Population and Housing.

Chart 3. Employment by Occupation, Share of Managers and Professionals: LGAs, Western Region and Victoria, 2001



Source: ABS 2001 Census of Population and Housing.

Diverse recreational, sport and cultural participation

Indicators of social capital, and more generally of the resources availability within communities to support individual and social activities, are very difficult to come by, although increasing efforts are being made to assemble indicators of social capital. One commonly used indicator both of individual welfare and of community resources is the extent of participation in sport and recreation, especially organised participation. Some data on this issue are provided in Table 10.

Table 10. Sport and Recreation Participation, Western Melbourne and Victoria, 2001-02, per cent of population

		Fitness, leisure or indoor sports centre	Sport or recreation club or association	Work	School	Other	Total organised participation
Western Melbourne	Males	8.0	25.2	0.8	2.7	4.0	33.7
	Females	16.4	17.5	0.8	2.0	4.3	34.8
	Persons	12.3	21.3	0.8	2.3	4.2	34.3
Total Victoria	Males	11.8	30.9	1.2	2.3	3.3	40.9
	Females	17.3	21.5	0.6	3.1	3.4	37.9
	Persons	14.6	26.1	0.9	2.7	3.4	39.4

Source: Sport and Recreation Victoria 2002, *Exercise, Recreation and Sport Survey 2001-02*.

The proportion of the population participating in organised sport and recreation in the West in 2001-02 was 34.3 per cent, 13 per cent (or 5.1 percentage points) lower than for Victoria as a whole (39.4 per cent). The difference was particularly marked in terms of participation in sport or recreation through a club or association, which was 18 per cent lower than the Victorian average. This is yet another sign of the need to

build both social structures and community facilities to provide adequate support for individuals and families living in the West.

2.5 Private and public sector investment trends and impacts

Private sector investment trends

The strong extensive growth in the western region, noted above, has been led not only by population growth but also by the business decisions of the private sector. While data remains limited, these decisions appear to have been driven by the role of the western region as a transport and distribution hub, with very good access to national and international transport routes, as well as by the availability of relatively cheap land.

Only limited regional data are available on business investment, especially private business investment, but one of the best sources is the data on non-residential construction approvals (Tables 11 and 12). Approvals data are lumpy, and not too much should be read into data for an individual year. But for two of the last three years total approvals for the western region have been very strong and, for the three years 2001-02 to 2003-04 as a whole, average about 11 per cent of overall Victorian approvals. Approvals in the western region were 64 per cent higher in 2003-04 than in 2000-01, by comparison with an increase of 13 per cent for the rest of Victoria.

It is clear from Tables 11 and 12 that this growth in non-residential construction approvals is being driven from the private sector. In 2003-04, for example, private approvals were more than ten times public sector, approvals, and amounted to 14.1 per cent of all Victorian approvals. For the public sector approvals in the west accounted for only 5.9 per cent of the Victorian total in that year. For the four years 2000-01 to 2003-04 taken as a whole, private sector approvals in the West accounted for 11.4 per cent of all private approvals in Victoria, while for the public sector the figure was only 6.5 per cent.

Table 11. Non-Residential Construction Approvals

Region	2000-01	2001-02	2002-03	2003-04	Total 2000-01 to 2003-04
Western Region ($'000)					
Total	362.6	575.0	377.2	594.8	1,909.6
Public	56.1	94.4	48.4	55.9	254.8
Private	306.5	480.6	328.8	538.9	1,654.8
Victoria ($'000)					
Total	4,062.8	4,519.0	5,037.6	4,771.9	18,391.4
Public	1,022.0	1,147.4	791.3	948.2	3,908.9
Private	3,040.8	3,371.6	4,246.3	3,823.7	14,482.5
Western Region Share (%)					
Total	8.9	12.7	7.5	12.5	10.4
Public	5.5	8.2	6.1	5.9	6.5
Private	10.1	14.3	7.7	14.1	11.4

Source: ABS 2004, *Buildings Approvals: Non-residential for Melbourne LGAs*, Cat. No. 9941.0, unpublished data.

The main areas of private non-residential building approvals in the western region have been warehouses, factories and wholesale and retail trade premises, where the West provided 31 per cent, 16 per cent and 13 per cent of the Victorian total respectively. For these three industries taken together, approvals in the western region totalled $1109.2 million over the four year period, or 19.2 per cent of all private approvals in Victoria in these industries. By contrast, both private and public approvals of office buildings in the West were very low – only $169.2 million or 3.8 per cent of the Victorian total over the four years. This again shows the low share of the region in the office-based service industries, particularly those that are knowledge intensive.

In health and entertainment and recreation the share of approvals in the West remains very low, with the region providing only 3.3 per cent and 4.2 per cent of total Victorian approvals in these industries over the four years. In education, where the expanding population might have led one to expect strongly growth in approvals, the western region share over the period is only 7.8 per cent, with the private sector having a higher share of the Victorian total (9.3 per cent) than does the public sector.

Table 12. Non-Residential Construction Approvals, by Type: Public and Private Sectors, total for years 2000-01 to 2003-04

	Public ($'000)		Private ($'000)		Share of Victoria (%)		
Type	*Western Region*	*Victoria*	*Western Region*	*Victoria*	*Public*	*Private*	*Total*
Educational	110.7	1,598.8	80.8	871.0	6.9	9.3	7.8
Entertainment and recreation	27.5	540.0	34.6	922.0	5.1	3.7	4.2
Factories and other secondary production buildings	0.0	6.3	174.7	1,067.8	0.0	16.4	16.3
Health facilities (non-aged care medical services)	30.3	747.0	11.7	509.3	4.1	2.3	3.3
Offices	8.1	360.9	161.1	4,125.8	2.2	3.9	3.8
Retail and wholesale trade buildings	2.2	61.4	400.9	2,975.7	3.5	13.5	13.3
Warehouses (excluding produce storage)	20.8	55.2	533.6	1,732.5	37.6	30.8	31.0
All Others	55.2	539.2	257.5	2,278.5	10.2	11.3	11.1
Total Victoria	254.8	3,908.9	1,654.8	14,482.5	**6.5**	**11.4**	**10.4**

Source: ABS 2004, *Buildings Approvals: Non-residential for Melbourne LGAs*, Cat. No. 9941.0, unpublished data.

Public sector investment trends

Public sector investment appears to have been growing at a slower rate than private sector investment in the region. To illustrate this we use two sources of data, in addition to the employment by industry data discussed earlier: the non-residential construction data of Tables 11 and 12 and an analysis undertaken of the Government

of Victoria's Public Sector Asset Investment Program for the years 2000-01 to 2004-05, based on data by suburb provided in the Victorian Budget Information Paper No. 1 (Table 13).

The data in Tables 11 and 12 cover, all elements of the public sector – state, local and federal. By contrast, the data in Table 13 cover identified investment in the western region within the Asset Investment Program of the Victorian Government for the years in question, for the two key departments of Education, Employment and Training and Health and Human Services. A significant proportion of investment within the Program is not identified by suburb, but is said to have a state-wide impact – this investment is excluded from both totals. It is also difficult to identify the direct regional impact of other important categories of investment, such as transport.

As noted above, over the four years 2000-01 to 2003-04 only 6.5 per cent of all public non-residential construction approvals related to construction activities in the West, with the level being uniformly low over the period and slightly lower in 2003-04 than in 2000-01. In the main areas of public sector activity – health, education and entertainment and recreation – public sector approvals in relation to the West over the four years amounted to only 5.8 per cent of all such approvals in Victoria. This represents less than half of the region's share of Victoria's population.

Table 13. Capital Spending by Victorian Departments of Education, Employment and Training and Human Services, by Region, 2001-02 to 2003-04

	Education			Health and Human Services			Total – Both Departments		
	Western Region	Victoria	Western Share	Western Region	Victoria	Western Share	Western Region	Victoria	Western Share
	($m)		(%)	($m)		(%)	($m)		(%)
2001-02	22.0	274.4	8.0	15.4	156.1	9.9	37.4	430.5	8.7
2002-03	25.9	192.4	13.4	15.8	186.5	8.5	41.7	378.9	11.0
2003-04	31.3	302.8	10.3	20.0	218.5	9.2	51.3	521.3	9.8
2004-05	30.1	206.8	14.6	11.9	244.1	4.9	42.0	450.9	9.3

Source: Government of Victoria, various years, *Public Sector Asset Investment Program 2000-01 to 2004-05*, Budget Information Paper No. 1.

The analysis that has been undertaken of the Public Sector Asset Investment Program suggests a similar, if somewhat more muted, position in terms of Victorian Government investment in the two key departments. The share of identified State investment spending going to the West in the education portfolio has risen over the period shown, to be 14.6 per cent of proposed spending in 2004-05, but is still only 11.2 per cent over the four-year period. For health the western region share of proposed spending in 2004-05 was only 4.9 per cent, and the average over the four-year period was 7.8 per cent. For a region whose population is growing at nearly twice the State average, these levels of investment are unlikely to be adequate enough to provide improved services.

3. Strategic challenges and opportunities – economic and social investment priorities for Western Melbourne

The process of renewed growth in Melbourne's West is still in its *extensive* phase – expansion of output and employment at existing productivity levels, with relatively low rates of productivity growth. Indeed, growth in output and employment in the decade to 2001 was accompanied by relatively low productivity growth. It is a further challenge to bring this transition to an *intensive* phase, with increasing knowledge intensity and rising output per head leading to higher real incomes per capita. At the same time it will be important to ensure that productivity growth is accompanied by levels of regional employment growth which at least keep pace with the expanding regional population.

Recent international research on the key drivers of regional productivity and economic growth has clearly demonstrated the central importance of knowledge based wealth creation. As the UK Department of Trade and Industry has noted, a knowledge driven economy is:

> …one in which the generation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge: it is also about the more effective use and exploitation of all types of knowledge in all manner of economic activity. (1998, p. 2)

There is a wide body of evidence indicating that the generation and application of knowledge plays a key driving force not only at the national but also at the regional level, with many instances of increasing divergence between regions related to their knowledge capabilities.

Pursuing the transition to knowledge intensive economic and employment growth is of great importance for the region, and will also bring significant benefits to the broader Victorian and Australian economies. However this pursuit of greater economic prosperity must also recognise that there remains a great deal of diversity and areas of deep disadvantage within the western region. Several areas, most notably parts of Maribyrnong and Brimbank, are among the most disadvantaged in Victoria. Strategic action to address disadvantage, including through employment and training opportunities, improved health and community services, and investment in local physical and social infrastructure, will be essential if the region is to maximise the full economic and social potential of all of its communities and citizens.

The three linked areas of action needed to meet the challenges – and take advantage of the opportunities – facing the region are:

- building the human, social and physical capital needed to enable the region to participate fully in the knowledge based economy;
- providing high quality infrastructure and services to match the rapidly expanding population growth; and
- targeted action to strengthen communities and to reduce disadvantage and inequality.

Victoria University, as the principal focus and gateway for regional knowledge creation and educational provision and as a major regional employer, has a significant role and responsibility in supporting regional communities and industries in meeting these challenges. Drawing on the strengths of the region, the university and its public, private and community partners, key priorities for future regional investment partnerships can be identified as:

- education and training to improve human and social capital;
- transport and communications infrastructure and logistics;
- health, community services and biomedical research;
- advanced manufacturing, particularly small scale technologies;
- physical activity, sport and recreation; and
- creative and performing arts.

3.1 Education and training – building human and social capital

As the evidence presented below indicates, improvements in regional education and training outcomes remain crucial drivers of regional productivity and employment opportunities.

Recent analyses have made use of the concept of 'educationally relevant social capital', resources embedded in social relations that individuals can access and use to advantage in educational activities. These resources include values and traditions emphasising the importance of knowledge and promoting forms of life and discipline conducive to study; intellectual and cultural experiences within social networks that stimulate personal growth; access to information sources; and informal networks used by individuals for educational enrichment.

One of the most widely documented features of schooling in Australia, as in many other countries, is the existence of a pronounced social gradient, that is a high correlation between educational outcomes and socio-economic status. Children of families that are above average in terms of education, occupation and income tend to achieve above average educational outcomes, such as retention to Year 12, final year test and exam results and university entrance. Similarly, schools that educate the children of such families achieve better than average outcomes, and the overall educational results for the areas in which such families live are also better than average.

There are a number of reasons why such a result is to be expected. First, as Teese (2000) eloquently describes, the families of groups such as professionals, senior managers and academics tend to provide an environment in which the practices, disciplines and values of the educated person are embedded, and to be involved in extensive social networks and informal associations in which these practices, disciplines and values are reinforced. Families with different educational and occupational backgrounds may not be able have access to such rich social resources relevant to education. There will be, in other words, a substantial difference in the social resources on which students from different types of family can draw to support educational activities.

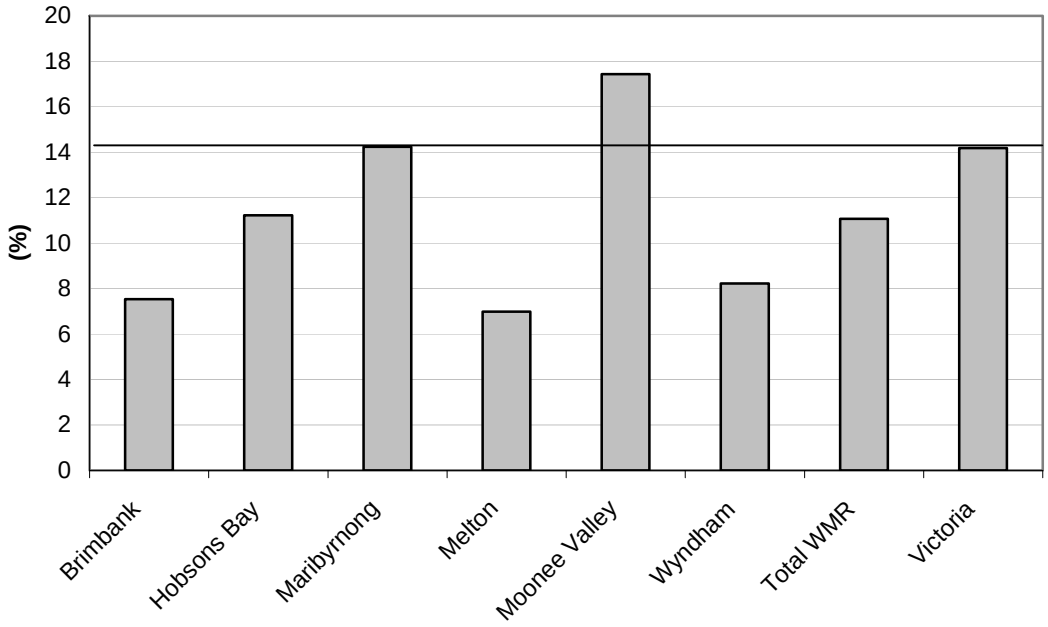
One way of characterising this fact is that the family, and the immediate networks of friends, relations, colleagues and acquaintances in which the family is embedded, can be an important source of educationally relevant social capital, of 'resources embedded in social networks and used by actors for actions' in an educational context. Access to such social resources is unequally distributed across the community.

Second, given that families bring different attitudes, different social networks and different levels of financial and educational resources to the schooling process, there will inevitably be a tendency for the children with greater access to educationally relevant social capital to cluster together, and also for those from groups with lower access to such social capital, to be found in clusters. Peer group effects are known to be strong in schooling, so that participation in a committed, high achieving group can enhance individual outcomes, while there can also be strong, anti-educational peer group effects. These peer group effects will also be set in the context of the accumulation of social networks and social resources that the families provide, and hence of intensified social capital effects. Thus self-reinforcing processes are likely to be set in train, with clustering and peer group effects reinforcing, in particular schools and locations, the advantages of the social capital associated with home background.

Third, if these advantages of high levels of relevant social capital are not sufficient, they are reinforced in many Victorian schools by higher levels of income and of expenditure per student in schools serving students from higher SES areas. In this context, it is not at all surprising that educational outcomes are highly correlated with socio-economic status, and that this finding is robust across different measures of outcomes and of socio-economic status, and across many countries. While this fact has been widely noted, its implications for the analysis of school performance have not been fully explored, nor has it been systemically reflected in educational policy within Australia or Victoria.

Within this broad framework of analysis the West in general, and specific regions within it in particular, clearly start from a position of lower than average social capital. This is apparent from the analysis of the occupational structure of employment noted above and also from simple indicators of educationally qualifications, such as that provided in Chart 4. The proportion of the population of the western region who have a Bachelor's degree is substantial lower than for Victoria as a whole, and in areas such as Brimbank, Melton and Wyndham the proportion is only about half the Victorian average.

Chart 4. Proportion of Population with Bachelor's Degree, 2001



Source: ABS 2001 Census of Population and Housing.

Given the lower than average levels of educationally relevant social capital, and the high proportion of families in the region speaking a language other than English, it is clear that parents and schools face a real challenge in achieving high educational outcomes. The nature of this challenge is evident in the data for early literacy, reported in Table 14. In 1999, for example, the proportion of prep students in the West achieving 90-100 per cent performance in literacy at Level 5 was 18 per cent or 12 percentage points below the Victorian average (54.2 per cent as against 66.2 per cent). While this difference has declined somewhat in recent years, by 2002 the disparity was 12.6 per cent or 9.6 percentage points.

Table 14. Indicators of Early Literacy (proportion of students achieving 90-100 per cent)

	Prep (Level 5)		First Grade (Level 15)		Second Grade (Level 20)	
	Western Region	Victoria	Western Region	Victoria	Western Region	Victoria
1999	54.2	66.2	63.4	76.4	84.2	90.3
2000	61.3	70.6	70.2	79.9	88.7	92.9
2001	64.5	74.1	74.6	83.1	90.2	93.5
2002	66.3	75.9	75.5	84.5	92.0	94.6

Source: Department of Education and Training 2003a, *Western Metropolitan Region Annual Report 2003*.

The success of primary school programs in seeking to overcome these starting limitations appears to be significant, although average achievement rates in schools in the western region remain below the state average. Thus by Grade 2 the literacy differential had been substantially reduced for all years shown in Table 14, being only 2.7 per cent or 2.6 percentage points in 2002.

Table 15. Primary and Secondary School Outcome Measures, 2002

	AIM Score Grade 3		AIM Score Grade 5			VCE Scores	
	Western Region	Victoria	Western Region	Victoria		Western Region	Victoria
Reading	3.26	3.42	3.96	4.13	Further Maths	25.69	28.62
Writing	3.27	3.39	4.06	4.21	English	26.38	28.29
Number	3.22	3.36	4.19	4.29	All studies	26.62	28.63

Source: Department of Education and Training 2003a, *Annual Report 2002-2003*; and 2003b, *Western Metropolitan Region Annual Report 2003*.

Other measures of primary school outcomes, such as the AIM tests for reading, writing and numerical proficiency taken in Grades 3 and 5, also show a significant closing of the gap between outcomes for the western region and for the state as a whole (Table 15). For the Grade 3 tests, the AIM results for Grade 3 were on average about 4 per cent lower than the state average, while for Grade 5 they were on average about 3 per cent lower.

Table 16. Year 7-12 Retention Rates (per cent)

	WMR	Metropolitan Melbourne	Victoria
1999	79.3	81.5	76.5
2000	79.7	83.7	77.4
2001	81.2	85.2	79.6
2002	83.3	85.6	80.7
2003	83.0	87.1	81.2

Source: Department of Education and Training 2003a, *Annual Report 2002-2003*; and 2003b, *Western Metropolitan Region Annual Report 2003*.

While there is thus evidence that schools in the West do much to offset the lower educational capital possessed by the families and communities in the West, and although apparent retention rates to Year 12 appear to be reasonably good in a state-wide if not a metropolitan Melbourne context (Table 16), it is clear that overall outcomes at the final years of high school are far from satisfactory for students in the West. In 2002 the average VCE score for students in the western region on all studies was 7 per cent below the Victorian average, and for Further Maths the shortfall was more than 10 per cent (Table 15). The difference between average scores for students from the West and those from the better performing regions of Melbourne (such as the inner east) would be much greater than this.

Table 17. VCE Completions, total number of students

	1998	1999	2000	2001	2002
Western Melbourne	5080	5083	5088	5356	5594
Metropolitan Melbourne	31061	31700	31994	33401	35043
Victoria	42778	43758	44387	46414	48582
Western Region as a share of (%):					
Metropolitan Melbourne	16.4	16.0	15.9	16.0	16.0
Victoria	11.9	11.6	11.5	11.5	11.5

Source: ABS, *State and Regional Indicators, Victoria*, Cat. No. 1367.2, June Quarter 2003.

These figures on VCE scores relate to those who actually complete VCE. But a perhaps more important indicator is the level of VCE completions within the region. As shown in Table 17, the West has in recent years accounted for about 11.5 per cent of total VCE completions in Victoria, a proportion below the region's share both of total population and of student population.

It is beyond the scope of this report to explore in any detail the complex mosaic of strengths and limitations of schooling in the western region. While there is evidence of many substantial achievements, it is clear that further initiatives are necessary to provide acceptable outcomes for all of the region's students at the final years of high school. In designing those initiatives due consideration needs to be given to the specific characteristics of schooling in the West. For example one relevant characteristic is the high proportion of students attending Catholic schools in this region. As shown in Table 18, just on 30 per cent of all school enrolments in the western region are in Catholic schools, a figure 7.5 percentage points higher than for Victoria as a whole. Much of this reflects a lower share in government schools, the government share in the western region being 5 percentage points lower than for Victoria as a whole.

These differential enrolments rates mean that, given average levels of State funding for enrolments in government and Catholic schools, the Victorian Government spends about $30 million less per annum on schools in the western region than it would on state-wide per capita averages. This is largely because of the low proportion of students (60 per cent) in government schools and the high proportion (30 per cent) in Catholic schools, together with the low level of State support for non-government schools.

Table 18. School Enrolments by Sector, proportion of total in each region, 2001 (per cent)

	Brimbank	Maribyr-nong	Hobson's Bay	Melton	Moonee Valley	Wyndham	Total WMR	Victoria
Government	61.1	61.2	63.2	68.7	47.1	61.7	60.0	65.1
Catholic	29.4	30.2	30.3	20.9	39.1	28.2	29.9	22.4
Other Non-Govt	9.5	8.7	6.5	10.4	13.8	10.1	10.1	12.5

Source: ABS 2001 Census of Population and Housing.

The evidence on post-school transitions, summarised in Tables 19 and 20 and Chart 5, suggests the students from the West, especially those that complete VCE, have a solid post-school transition experience, but one which reflects their lower than average performance at VCE. While the West has a lower proportion of the population aged 17-24 years engaged in higher education, and a lower proportion of VCE completers going on to university, than Inner East or Southern Melbourne, the proportions for both these indicators are higher in the West than in many other regions of Melbourne. There is much to be done, but much has already been achieved, and Victoria University has an important role to play in those further achievements.

Table 19. Participation Rate by Region for all Higher Education Students aged 17 to 24 years, 1999

Region	Total number of students	Participation rate (%)
Inner Easter Melbourne (SR)	20578	27.8
Inner Melbourne (SR)	6097	15.6
Mornington Peninsular (SR)	3153	13.1
North Eastern Melbourne (SR)	9443	18.5
North Western Melbourne (SR)	4878	15.5
Outer Eastern Melbourne (SR)	7668	17.6
Outer Western Melbourne (SR)	***10934***	***16.7***
South Eastern Melbourne (SR)	5601	14.0
Southern Melbourne (SR)	9924	23.7
Total Melbourne (SD)	78276	19.1
Barwon (SD)	4397	16.0
Central Highlands (SD)	2402	15.3
East Gippsland (SD)	972	14.3
Gippsland	2074	14.1
Goulburn (SD)	2494	14.9
Loddon (SD)	2701	16.0
Mallee (SD)	1107	14.3
Ovens-Murray (SD)	1076	12.0
Western District (SD)	1554	16.5
Wimmera (SD)	702	16.8
Total Non-metropolitan (SD)	19479	15.1
Interstate	3271	na
Overseas	17511	na
Unknown	649	na
Total	119186	18.2

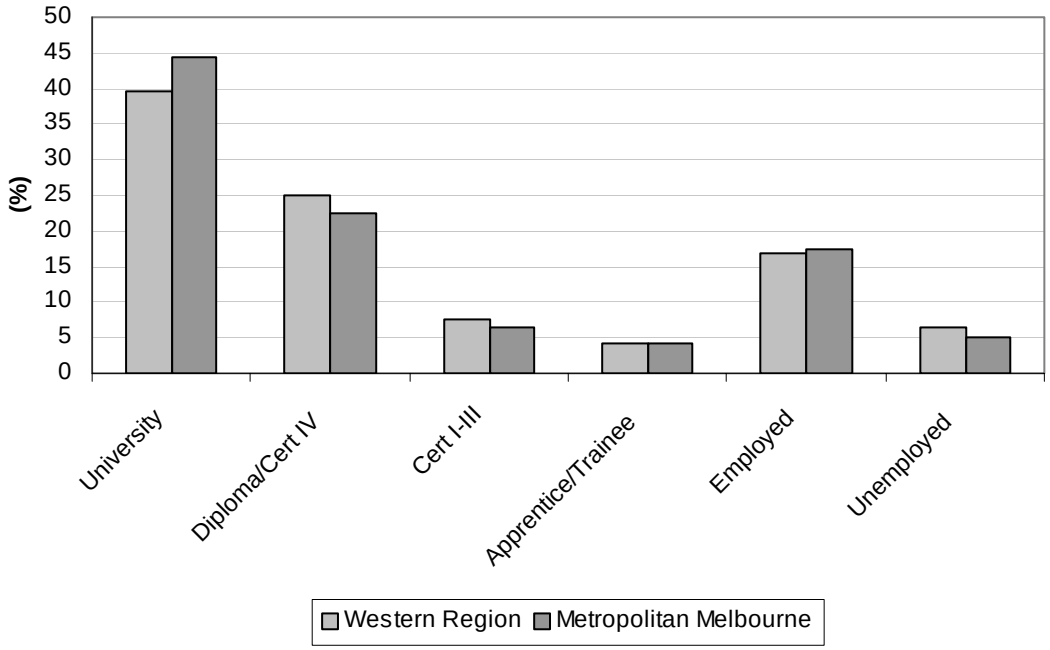
Source: Department of Education and Training 2004c, *Statistical Tables – Higher Education*, Table 6.

Table 20. Main Destinations of VCE Completers by Labour Force Region, 2003

	University	Diploma/ Cert IV	Cert I-III	Apprentice/ Trainee	Employed	Unemployed	Total
Inner-east	61.7	17.6	3.9	2.2	11.8	2.8	100
Inner Melb	55.8	15.4	7.1	0.9	16.5	4.3	100
Southern	52.4	20.2	5.2	2.6	15.7	3.9	100
Outer-west	***39.7***	***24.9***	***7.6***	***4.2***	***16.9***	***6.5***	***100***
North-east	39.5	26.2	7.7	5.3	16.5	4.8	100
Outer-east	37.6	21.8	6.8	6.0	23.4	4.4	100
South-east	32.8	25.1	8.1	6.0	21.0	6.9	100
North-west	32.7	25.5	8.8	5.9	18.6	8.6	100
Metro-Melb	44.3	22.4	6.6	4.3	17.3	5.1	100
Victoria	40.9	19.8	6.9	6.0	20.8	5.6	100

Source: Department of Education and Training 2004a, *On Track 2004*.

Chart 5. Main Destinations of VCE Completions, Western Region and Metropolitan Melbourne, 2003



Source: Derived from Table 20.

Building the Knowledge Capital of the Western Region

The evidence reviewed above suggests that, in spite of starting from a low base of educationally relevant socially capital, the schools and other educational institutions in the West achieve reasonably strong educational outcomes, better than those in some other comparable regions within Melbourne but still well below those in eastern Melbourne. They achieve those outcomes not only with lower social capital but with lower average financial resources per student – given the reliance of the West on Catholic schools and the absence of many high resource independent schools, the

average resource level per student in the western region is well below that of the Victorian average.

There is a strong, and increasingly recognised, case for disadvantages in terms of educationally relevant social capital to be offset by increased teaching and other educational resources in schools (Teese 2004; CSES 2004). That is, where students can draw fewer learning resources from their families and from the networks of social relations in which they are embedded, stronger learning resources are required in schools if acceptable outcomes are to be achieved. Addressing this issue will require reallocating substantial resources to disadvantaged schools on a continuing basis, with this reallocation going far beyond that currently proposed by the Victorian government. There is also a widespread view that it is time for a new agreement – between governments and those independent schools that are willing to cooperate in achieving the public purpose of excellence with equity – to improve educational outcomes in less privileged regions. Given the importance of Catholic schools within the West, this region could become a pilot program for this approach.

As the principal provider of regional post secondary education, and as a major source of undergraduate and postgraduate teacher education, Victoria University has a long-standing commitment to working in partnership with primary and secondary schools to improve regional education and training outcomes. The University is currently finalising a detailed partnership agreement with the Western Melbourne Region office of the Department of Education and Training, which identifies a range of priorities for joint action including teacher professional development, curriculum design, school leadership programs and exploring the potential for further joint use of facilities and infrastructure. At the same time the University will be continuing to build and strengthen pathways between school, TAFE and higher education, to further expand education and training opportunities for the western region residents and to enhance the skills of the regional workforce.

3.2 Health and community services, industries and research

Effective innovation in health care – whether in medicines, devices, procedures or in public health processes – continues to produce major improvements in human welfare. For both men and women, age-standardised death rates have fallen rapidly in Australia over the past two decades. This improvement has been particularly striking for men, for whom age standardised death rates fell by 35.7 per cent between 1981 and 2000, nearly as much as they did in the six decades from 1921 to 1981 (AIHW 2002).

At the present time, the biomedical industries are the main focus of global technological change. Progress in basic science and in the application of new technologies – from high throughput screening and computational chemistry to genomics and proteomics – offers a wide array of new drugs and treatments. Massive resources are being devoted to these new products, especially in the centre of this revolution, the USA. US pharmaceutical companies spent US$30.3 billion on R&D in 2001, a level 3.6 times the 1990 figure of US$9.4 billion. This represents a sustained average annual increase in real terms of over 10 per cent per annum.

However, this revolution has a long way to run, and further major impacts will be felt as genomics, proteomics and other emerging sciences lead to new applications. Indeed, biomedicine has in the past five years replaced information technology as the central focus of global technological change. Over the medium term biotech and information technology will increasingly converge at the nano scale, opening up radical new medical options. The new products that emerge will further accentuate the shift from services to technology in health.

For all countries and regions, including Melbourne's western region, these facts raise important issues on several fronts. One relates to health policy, and how the institutions and policies of the health system can be adapted to ensure that individuals benefit as much as possible from these changes, while containing costs. The challenge to health policy is widely seen as accentuated by the population ageing that is taking place in many developed countries. Another relates to science, technology and industry policy, and hence to the region's ability to participate in the emerging biomedical industries.

Regional Health and Hospital Services

It is difficult to measure, in a simple manner, either the health of people of the western region or their degree of access to health services. So here we rely on two measures: disability adjusted life years, as a measure of health status, and hospital statistics for the region, as a measure of access to advanced health services.

Table 21. Disease Burden in the Region, 1999

Disease	All of Victoria	Western Region	Brimbank	Hobson's Bay	Maribyrnong	Melton	Moonee Valley	Wyndham
DALY Rates* for Males by LGA per 1000 population								
All causes	140.0	145.0	150.0	147.0	170.0	132.0	136.0	135.0
DALY Rates* for Females by LGA per 1000 population								
All causes	124.0	124.0	129.0	122.0	137.0	121.0	120.0	119.0

Note: * DALY = Disability Adjusted Life Years per 1000 population.
Source: Department of Human Services Victoria, 2004, *Burden of Disease Estimates*.

The Disability Adjusted Life Years per 1,000 population (DALY) is a measure of the incidence of disease calculated by the Department of Human Services, and can be used to compare the health status of LGAs with one another or the State average. A high DALY rate is indicative of a high incidence of disease, and a low DALY rate of a low incidence of disease.

The information provided in Table 21 indicates that in terms of health status the six LGAs in the western region divide into two groups of three. In Maribyrnong, Brimbank and Hobson's Bay DALY rates for men are well above the Victorian average, and for the first two the rates for women are also above average. Indeed, Maribyrnong has the highest DALY rate for men (170) of any LGA in Victoria. By contrast, Melton, Moonee Valley and Wyndham have below average DALY rates for both men and women, and are in the lowest quartile of LGAs in terms of disease incidence. These differences reflect many social and economic factors, including but going beyond socio-economic status and age structure, but indicate the complexity of the task facing health services in the region.

In terms of the availability of hospital services, Table 22 summarises some of the available indicators. These indicators must be interpreted with care, because some do not contain information for one of the region's hospitals, Mercy at Werribee, and in some cases this may provide a distorted picture. Nevertheless, the broad picture is clear, with hospitals in the region providing a much smaller share of all services provided in Victoria than the region's 12 per cent population share. Thus, for example, 8 per cent of Victorian hospital separations are from hospitals in the western region, while only 5.9 per cent of intensive care beds (HDU and ICU) are in the region. It is still true that, for many advanced hospital services, residents of the West must depend on the facilities of inner Melbourne.

Table 22. Hospital Activity, various years

	Western Region	Victoria	Western Region share (%)
Hospital Admissions (no.) (a)	65,449	1,144,782	5.7
Emergency Admissions (no.) (a)	31,241	394,476	7.9
Emergency Patients Treated (no.) (a)	87,586	770,154	11.4
Total Open ICU & HDU beds (% of Vic) (b)	8.2	139.3	5.9
Total Separations 2002-03 (no.) (c)	95,346	1,184,737	8.0

Notes: (a) Western Region = Western Hospital and Sunshine Hospital only.
(b) Western Hospital only, March Qtr 2004.
(c) Western Health and Mercy Werribee.
ICU = Intensive Care Units; HDU = High Dependency Unit.
Source: Department of Human Services, various years, *Hospital Services Reports*, June Quarter 2003 to March Quarter 2004.

Building Advanced Health and Biomedical Research Services

Among the strengths of Melbourne's knowledge base are a range of leading medical research institutes and the great teaching hospitals with which they are associated. A brief description of Melbourne's biotechnology precincts is provided in Table 23. At the present time the western region has no substantial biomedical research centre, although the Werribee precinct is being developed as a leading centre for animal and food science.

Table 23. Summary of Biotechnology Precincts in Melbourne

Precinct	No. Universities	No. Research Institutes	Description
Parkville	3	12	A leading centre for medical and bioscientific research, education, clinical practice, clinical trials and production of pharmaceuticals and biotechnology products.
Alfred Medical Research and Education Precinct	3	2	This precinct houses a number of world renown research teams from various Monash University departments, The Alfred Hospital, The Baker Heart Research Institute and The Burnet Institute.
Monash Health Research Precinct (MHRP)	1	10	Major biomedical and biotechnology research centre.
Werribee	2	4 *	Principally focused on animal and food research.
Bundoora	2	1	Specialist agriculture and biomedical research. Contains one of Australia's largest (50ha) Technology Parks (La Trobe Research and Development Park)
Austin Biomedical Alliance Precinct	3	7	The focus of the Biomedical Alliance is fostering and encouraging closer links between researchers and clinicians who are located at the A&RMC to achieve better health outcomes through national and international collaboration.

Note: * The research institutes in Werribee are the CSIRO-Division of Animal Health Food Science Australia, the Victorian Institute of Animal Science, and the Analytical Laboratories: State Chemistry Laboratory. Victoria University with other partners, proposes to establish the Victoria Institute of Biotechnology.
Source: State Government of Victoria 2004, 'Biotechnology Research, Education and Industry Precincts', webpage, available at: http://www.biotechnology.vic.gov.au/info/precincts.asp

Building Regional Health Services and Research Capability

There are some parallels between the current situation of the West in health services and that of the south-east of Melbourne in the 1980s. Faced with a growing mismatch between population growth in the south-east and a concentration of health services and biomedical research in inner Melbourne, the Victorian Government decided to establish the Monash Medical Centre, in conjunction with Monash University. This decision was critical in providing much better access to high quality health services for the people in the south-east and also in stimulating the development of a world class biotechnology and biomedical research precinct. It is time for this process to begin in the western region with key initial priority actions including:

- establishing the Western Hospital as an A1 teaching hospital, with substantially expanded facilities, and strengthening the provision of advanced health service facilities in the region generally;
- establishing a health and biomedical teaching and research precinct linking the St Albans campus of Victoria University with the Western Hospital; and

- continuing to explore the possibility of significant investment in partnerships to expand biomedical research in the region in general and in the St. Albans health and biomedical research precinct in particular.

3.3 Transport and communications infrastructure

The core finding of the 2004-05 Australian Local Government Association/NIEIR *State of the Regions Report* (2004) is that infrastructure investment in general, and transport and communications infrastructure investment in particular, is the cornerstone of successful regional development in the global knowledge economy. As the *State of the Regions Report* argues, infrastructure investment 'makes social networks more efficient, minimises production costs, increases the scale and efficiency of labour markets and promotes sustainable growth' (Preface, p. 6).

Research carried out to inform the development of the Melbourne metropolitan strategy, *Melbourne 2030*, and the draft Victorian Government transport strategies for the Inner and Outer West (DOI 2004a, 2004b and forthcoming), has noted the need for significant new investment in western region transport infrastructure to meet the challenges of a rapidly growing population and to facilitate the expansion of industry and employment. At the same time it is clear that an effective response to managing regional transport congestion and demand growth will require action to increase the proportion of western region residents employed in the region.

Key transport challenges facing the western region include:

- relatively low levels of public transport patronage, reflecting limited access to rail and bus services, particularly in outer region areas where population growth trends and projections are highest;
- increasing road traffic volumes and congestion;
- low quality of arterial road links across the region;
- increasing volumes of freight transport through the region – a trend which will be accelerated if the decision is made to deepen the Port of Melbourne shipping channel; and
- limited bicycle network infrastructure.

The four key elements identified in the Victorian Government's draft regional transport strategy as essential in managing transport demand are:

- enhance mode share of public transport by improving services;
- a more flexible transport network offering opportunities to minimise unnecessary travel;
- development of land uses and patterns associated with a reduced reliance on motorised travel; and
- mechanisms to moderate growth in transport demand for finite infrastructure resources.

Initial priorities identified as central to an integrated transport strategy for western Melbourne include: rail track upgrades and several new stations (particularly on the Sydenham Northern line and Werribee lines); the development of an integrated Transit City project at Footscray; improved bus service coverage; investment in transport interchanges; various road upgrades and extensions and further development

of bicycle networks. The strategies also note several more fundamental issues that need to be addressed:

- the capacity of the rail network between Sunshine, Newport and Spencer St Station;
- the capacity of the West Gate Bridge and the junction of the Calder and Tullamarine Freeways; and
- the ability, suitability and impact of the east-west arterials through the inner western suburbs in catering for growth in traffic to the outer west and in providing access from the outer west to the inner suburbs and central Melbourne.

Vigorous action to address these various transport issues will be critical for the continuing economic and social development of western Melbourne. The draft transport strategies for inner and outer western Melbourne will provide an important basis for prioritising the next steps in regional transport investment.

The relatively low level of knowledge intensive service jobs in the West is reflected in lower rates of usage of computers and the internet (Tables 24 and 25). The proportion of the population using the internet is 15 per cent lower – and the proportion using a computer is 12 per cent lower – in the western region than in Melbourne as a whole.

Table 24. Internet usage (per cent)

	Brimbank	Hobsons Bay	Maribyr-nong	Melton	Moonee Valley	Wyndham	Total WMR	Melbourne	WMR as prop of Vic
At home	16.4	17.4	13.8	19.7	17.7	20.9	17.5	19.7	11.1
At work	3.8	5.9	5.9	4.9	7.8	5.1	5.4	6.4	11.1
Elsewhere	3.6	3.4	4.8	4.2	3.8	4.0	3.9	3.9	11.0
At home & at work	3.4	6.6	5.9	4.9	8.2	5.9	5.6	7.7	9.8
At home & elsewhere	1.5	1.9	1.8	2.1	2.2	2.4	1.9	2.5	9.7
At work & elsewhere	0.1	0.1	0.2	0.1	0.3	0.1	0.2	0.2	9.9
At home & work & elsewhere	0.3	0.4	0.6	0.3	0.7	0.4	0.4	0.7	9.2
Total	29.1	35.6	33.1	36.2	40.6	38.7	34.9	41.1	10.7

Source: ABS 2001 Census of Population and Housing.

Table 25. Computer use (per cent)

	Uses a computer at home	Does not use a computer at home	Not stated	Total
Brimbank	34.3	61.9	3.8	100
Hobsons Bay	39.0	56.9	4.0	100
Maribyrnong	33.4	59.3	7.2	100
Melton	43.9	52.7	3.4	100
Moonee Valley	42.1	53.6	4.3	100
Wyndham	45.4	50.7	3.9	100
Total WMR	39.1	56.6	4.3	100
Melbourne	44.6	51.5	3.9	100
Victoria	43.4	52.8	3.8	100
WMR as a prop of Vic	10.6	12.7	13.4	11.8

Source: ABS 2001 Census of Population and Housing.

It will be important for Victoria University to contribute to the integrated planning of regional transport infrastructure in order to maximise student access to campuses and improve linkages between campuses, local communities and industries. The University is also particularly keen to support rapid progress on the development of the proposed Transit City development at Footscray station. The newly established Victoria University Institute for Transport and Freight Logistics will provide a focus for bringing together the University's teaching and research expertise in this area as a basis for future regional partnership projects. The University also has an important role to play in exploring and supporting innovative strategies for expanding student and community access to internet and computer services.

3.4 Advanced manufacturing and small scale technologies

One of the present strengths of the West is its manufacturing capabilities. Business in the region provided 13.6 per cent of Victoria's manufacturing gross output and 11.6 per cent of the State's manufacturing jobs in 2001. On National Institute of Economic and Industry Research (NIEIR 2004) estimates, the West is the home to nearly one in seven Victoria firms employing more than 50 employees. Thus how the region's existing manufacturing firms respond to the dramatic changes taking place globally, and how successful the region is in attracting new firms engaged in advanced manufacturing, will be central to the region's transition to the knowledge economy.

Perhaps the most important long-term change is the emergence of small scale technologies. We use the phrase 'small scale technologies' to refer to technologies with feature sizes less than 1000 nanometers, where a nanometer is one millionth of a millimetre. In other words, they are technologies with feature sizes less than one thousandth of a millimetre. The term thus covers both *micro technologies*, operating down to about 100 nanometers, and *nano technologies*, operating at or about the nanometer scale.

Small scale technologies are already having a significant economic and social impact. Over the next two decades they will have profound effects on industrial products and processes, on the lives of individuals and on the nature of human society. As the next major wave of global technological change, they offer vast potential benefits but carry serious economic, social and ethical risks (CSES 2003). These technologies will have a pervasive impact on the competitive position of western region firms in a wide range of industries, from health and food to transport, energy and the environmental industries. There is little doubt that developing high-level capability in small scale technologies will become increasing central to the competitiveness of many industries over the next decade, and indeed to the survival of many firms.

The current review of Victoria University engineering and technology teaching and research priorities provides a timely basis for identifying the actions needed to ensure the University is well equipped and positioned to build and support regional industry partnerships in advanced manufacturing and small scale technologies.

3.5 Physical activity, sport and recreation

The expansion of investment in the infrastructure required to support increased participation in physical activity, sport and recreation is important for several reasons. First, as indicated in Table 10 (Section 2.4 above), there is compelling evidence of the

relatively low level of regional participation in physical activity with a proportion of the 34.3 per cent of the population participating in organised sport and recreation in the West in 2001-02 compared to 39.4 per cent for Victoria as a whole. This relatively low level of participation in physical activity is likely to be a significant cause of the higher level of obesity related illnesses among Western region residents.

On the other hand Table 4 (Section 2.2 above) shows that employment in recreational and cultural services is growing at almost twice the rate in the western region as it is for Victoria as a whole, but this is from a very low base.

Victoria University has a long standing commitment to teaching and research activities in the field of human movement, physical activity and sport as well as significant infrastructure and facilities. This could provide the basis for the development of one or more partnerships, perhaps with a particular focus on linkages with staff, students and facilities at the Footscray and Sunbury campuses.

3.6 Creative and performing arts

Investment in the physical and social infrastructure required to support increased participation in the creative and performing arts also has the potential to both improve the opportunities and facilities available to western region communities and to continue to create an attractive environment for a broader range of high skilled workers.

As the *State of the Regions Report 2004-2005* (ALGA and NIEIR 2004) argues, 'to be a successful knowledge based region, regions need to have a high concentration of high skilled (scientists, engineers, designers) global knowledge workers. These workers tend to migrate to regions with scale and diversity of social and community infrastructure and cultural and lifestyle choices' (Preface, p. 4).

There is considerable potential for the University to work in partnership with government agencies and non government organisations – such as the Footscray Community Arts Centre – to significantly expand activity in the creative and performing arts within the region.

4. Completing the transition – towards regional prosperity in the global knowledge economy

During the 1990s the western region of Melbourne began the long transition from a depressed post-industrial region, with limited jobs and services for its people available within its boundaries, to a more balanced and dynamic economy. This transition, which has been accomplished by many regions around the world, is still at an early stage in Melbourne's West, driven initially by population movements and private business decisions. Creating a balanced and dynamic economy in the region will be a major achievement, with important economic and social benefits.

There is now a major opportunity for innovative public policy, working with a resurgent private sector and key institutions, to create a dynamic economy in Melbourne's West. Some of the key steps to realise this opportunity include:

- increased public investment, by all levels of government, in education, including cooperative programs to build social capital, to support poorer students and to make intelligent, integrated use of available facilities;
- systematic, long term programs to provide advanced health services and to develop biomedical research and training programs;
- combined efforts to improve the economic and social infrastructure, in terms of transport, communications, community facilities and access to knowledge-based services;
- initiatives to assist firms, especially small firms, to respond to global economic change and new technologies, and to utilise the strengths of the region to access world markets, and especially those in Asia; and
- the development of partnership activities to expand opportunities and build on the region's potential strengths in sport and recreation services and in the creative and performing arts.

As the principal focus for regional knowledge generation and dissemination, Victoria University can and should play a vital role in supporting further regional investment in each of these areas and in developing strategic partnerships with major public and private sector institutions to help build a dynamic economy and a more equal and vibrant society in the western region of Melbourne.

Key initiatives which the University can take to support the achievement of regional economic and social priority objectives include:

- continuing to strengthen and support educational pathways and partnership activities with primary, secondary and adult education providers across the region;
- developing a health, community services and biomedical teaching and research precinct at St. Albans;
- developing an integrated package of initiatives to support teaching and research in the field of Advanced Manufacturing and Small Scale Technologies;

- supporting the development of the Footscray Transit City proposal in ways which maximise linkages with University programs and resources;
- exploring innovative ways of improving internet access for students, and their communities across the region;
- exploring the potential for major partnership initiatives at the Footscray Park and Sunbury campuses to support the development of new initiatives in relation to Sport and Recreation, and the Creative and Performing Arts; and
- maximising the educational, research and regional engagement potential of the four new University-wide Institutes:
  - Sustainability and Innovation;
  - Health and Diversity;
  - Transport and Freight Logistics; and
  - Community Engagement and Policy Alternatives.

Finally, an informed approach to the design and implementation of a well informed regional development strategy will depend on further strengthening the knowledge base needed to monitor and predict regional economic and social trends. This will require significant improvements in the availability of regularly updated data on regional trends, as well as more rapid progress towards common Commonwealth and State government program boundaries. Again the University is keen make a strong contribution as a major source of applied research on regional trends, policy options and priorities.

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