Australian Government
Infrastructure Australia
Major Cities Unit

State of Australian Cities 2010

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Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
BITRE	Bureau of Infrastructure, Transport and Regional Economics (post-2007)
BOM	Bureau of Meteorology
BTRE	Bureau of Transport and Regional Economics (pre-2007)
CBD	Central Business District
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEWHA	Department of Environment, Water, Heritage and the Arts
DFAT	Department of Foreign Affairs and Trade
DIAC	Department of Immigration and Citizenship
DIISR	Department of Innovation, Industry, Science and Research
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
GaWC	Global and World Cities
GDP	Gross Domestic Product
IPCC	Intergovernmental Panel on Climate Change
LGA	Local Government Area
NATSEM	National Centre for Social and Economic Modelling
NEPM	National Environment Protection Measure for Ambient Air Quality
NHS	National Health Survey
NHSC	National Housing Supply Council
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity - A comparison based on an exchange rate such that a representative basket of goods in country A costs the same as in country B
SEIFA	Socio-economic Index for Areas
SLA	Statistical Local Area
TAFE	Technical and Further Education (institution)
TEU	Twenty-foot Equivalent Unit—the standard unit for measuring shipping container volume
UN	United Nations
UN-HABITAT	United Nations Human Settlements Programme

Executive summary

While the struggles and passions of rural life are often used to define the Australian spirit, for the vast and overwhelming majority of Australians, life in the cities is the reality.

Some city dwellers may yearn for a sea change or a tree change, but few of them will take such a step. For Australians, living in the nation's major cities will be the norm both for the present and for the future.

Australia is one of the world's more urbanised nations, with just over three-quarters of the population living in 17 major cities of 100,000 people or more and the majority of urban dwellers living in five cities—Sydney, Melbourne, Brisbane, Perth and Adelaide. The population of Australia is projected to be 35 million by mid-century, with our capital cities becoming home to the vast majority of this increased population.

Within the largest capitals, urban areas are growing rapidly, with net overseas migration seen as the main contributor to population growth. The local government areas of Wyndham, Melton and Whittlesea in Melbourne; Wanneroo, Swan and Rockingham in Perth and Ipswich in Brisbane are among the fastest and largest growth areas in the nation. In 2007–08 they experienced growth rates above 4 per cent and population increases of 4,000 or more for the year.

Australian urban life provides extensive economic, social and cultural benefits for residents. Large net migration and the concentration of overseas-born people in the cities have created a cultural and linguistic diversity that has helped further define and enhance modern urban life.

While Australian cities perform relatively well in terms of quality of life and other social issues, they are confronted by significant challenges including population growth and demographic change, transport congestion, living affordability, infrastructure development, productivity growth, climate change and ecological sustainability. Australian cities will need to respond effectively to these challenges in order to sustain the high quality of life enjoyed by urban communities into the future, and remain globally competitive.

Overcoming the negatives and enhancing the positives to improve the lifestyles of Australia's urban residents requires discussion and debate, which can only be initiated on a national level, in national forums and with research and data collected and presented uninhibited by local concerns and/or prejudices.

Depictions and studies of individual cities—capital and/or major—are commonplace. However, a holistic study of the phenomena of Australian cities, measuring economic, environmental, social and demographic changes, has never before been undertaken. Systematic data compilation, which can reveal trends and provide a platform of knowledge for the development and implementation of future urban policies, has been deficient.

The *State of Australian Cities Report 2010* begins to redress that information deficiency and sets the scope and context for Australian Government involvement in urban policy and planning, which has as its focus improved living standards for the people who live in the nation's major cities.

The economic strength of Australia's major cities is evident. They contribute nearly 80 per cent of national Gross Domestic Product and the employment of 75 per cent of the nation's workforce. The major cities are also responsible for some 84 per cent of Australia's economic growth in the period 2003 to 2008 and 81 per cent of employment growth between 2001 and 2006. There is nothing to suggest that those trends will change.

Stronger, more sustainable and more liveable Australian cities mean a stronger Australian economy and an enhanced lifestyle for all Australians.

In the economic and lifestyle context, the well-being of urban communities also need to be understood to support policy development and delivery.

The report found that the past outward urban expansion has meant a greater distance between residential and employment areas with a resultant greater use of cars, higher transport costs, more vulnerability to oil price rises and the loss of agricultural land or habitat. More recently, however, the pattern of growth has seen an increasing proportion of population growth accommodated in existing inner and middle suburban areas, most notably in Sydney.

The level of car dependency in Australian cities has increased at a faster rate than population growth, creating traffic congestion problems as infrastructure and public transport have failed to keep pace with population growth.

Congestion, the bane of urban dwellers, if not addressed will continue to grow as a serious negative not only for lifestyle but also for the negative economic impacts. Quoting the Bureau of Infrastructure, Transport and Regional Economics, the report estimates that the avoidable cost of congestion for the Australian capitals was approximately $9.4 billion in 2005. Projections show that by 2020 this cost will rise to $20.4 billion, impacting adversely on Australian productivity and national, state and territory and local economies.

Congestion not only lengthens working hours but also tilts the work/family balance contrary to the aspirations of the majority of Australians. In addition, congestion leads to productivity declines. In Australia's eight capitals, the freight task—the movement of goods—is expected to grow by 70 per cent between 2003 and 2020 and, as trucks compete with other traffic in ever more congested roads, productivity will decline and costs to business increase.

Congestion and growing vehicle numbers result in air quality declines. Transport emissions are one of the strongest sources of emissions growth in Australia. That growth is expected to continue, with direct CO_2-equivalent emissions projected to increase 22.6 per cent between 2007 and 2020—or around 1.58 per cent a year.

Declining air quality is linked to commonly reportable health conditions among children and young adults, with respiratory conditions and exposure to urban air pollution now accounting for 2.3 per cent of all deaths.

All three spheres of Australian government—national, state and territory, and local—have roles to play in addressing and meeting the key challenges and opportunities to improve the productivity, liveability and sustainability of Australia's cities. This can only be achieved by working in partnership with communities and the private sector.

The design of urban environments can contribute to the health and wellbeing of communities by supporting active living, active and passive recreation opportunities, public transport and social connectivity. Evidence suggests that well-designed public open space is restorative for the community, reducing the mental fatigue and stress of urban living.

Australian cities can provide many opportunities to lead the nation towards a more sustainable future. The way cities are planned, built and function can promote more efficient use of resources, including water, energy and land, minimise the production of waste and encourage more reuse and recycling, reduce greenhouse gas emissions, and support biodiversity in and around urban areas through better management of open and green space.

State and territory governments lay down strategic planning frameworks, and local governments implement planning policies that ideally reflect local aspirations. However, while the eight state or territory governments and 155 local governments will significantly influence the future direction of Australia's major cities, there is an inherent need for a coordinating and oversight role for the Australian Government, given its primary economic, social welfare and infrastructure roles. Fitting the policies—sometimes allied, sometimes conflicting—of state, territory and local government into a national framework can only be achieved by a national collaborative approach.

In the rollout of new infrastructure, local, state and territory governments increasingly look to the Australian Government for the necessary capital to supplement their own financial inputs.

In meeting growing local, state and territory demands, the Australian Government, however, must ensure that taxpayer funds are allocated to deliver improved living standards and quality of life for all Australians, as well as the national economic good, rather than satisfying particular local demands.

The data and material presented in the *State of Australian Cities Report 2010,* will assist the Australian Government, in cooperation with state, territory and local government, and in partnership with the community and industry, to improve Australian urban policies. This will not only continue to provide the major cities contribution to the nation's economy but also enhance the living standards and life quality for our communities.

Introduction

Chapter 1

There is a growing international movement to conduct audits of metropolitan centres and introduce monitoring systems to inform, measure and communicate urban policy. A number of 'State of the Cities' type reports have subsequently emerged from Europe, the United Kingdom, Canada, South Africa and New Zealand.

Concurrently, consensus has been increasing on the need to standardise indicator sets to enable comparison and sharing of national urban data and information through international organisations such as the United Nations, the OECD and the World Bank.

To date, there has been no systematic data compilation at a national level to measure economic, environmental, social and demographic changes in the cities of Australia. This is partly because there has not been an acknowledged national requirement to capture these data, and partly because the systems being measured are highly complex and dynamic.

This is the first 'State of Australian Cities' report.

The purpose of this report

The *State of Australian Cities Report 2010* seeks to answer the central questions of where are our cities now, and how are they progressing. The report draws together existing data and information across a range of economic, social and environmental subjects to provide a national snapshot of Australia's cities.

The *State of Australian Cities Report 2010* highlights established and emerging trends and issues to promote discussion and debate on the future directions of development in our urban centres. How will population growth impact upon our cities? Is quality of life improving for urban residents? What contributions do cities make to national growth and productivity in a globalised economy? How will climate change affect our cities?

This information will be used to inform actions and policies to address key challenges and take advantage of opportunities to improve the productivity, liveability and sustainability of Australia's cities. The report sets the context and scope for further Australian Government involvement in urban policy and planning to help improve the lives of people in the major cities of the nation.

The importance of cities

The city reflects the contemporary form of living, with more than half of the world's population now living in urban settlements. With 75 per cent of our population living in cities of more than 100,000 people, Australia is one of the most urbanised countries in the world.

The major cities of Australia host many of the important international gateways and contain economic infrastructure critical to national productivity. These cities make an increasingly important contribution to national economic growth and prosperity. They house major national institutions, and, as centres of population, they are where many of our national goals and priorities take effect.

In many parts of the world, unplanned urban settlements are arising faster than uniform organised settlements. In Australia, however, our governance, planning and regulatory arrangements have ensured that: most of our urban populations have adequate shelter, water and sanitation as well as access to employment, services and social and recreational opportunities; that natural and cultural heritage is protected and conserved; and that our cities have become thriving centres of enterprise, creativity and cultural diversity.

However, the nation is confronted by significant long-term challenges, including population growth and demographic change, climate change, energy and resource limitations, technological changes and the influences of the global economy.

Australia's cities will be particularly affected by these drivers of change. By nature of their composition, organisation and function, they will respond to these challenges in ways different to the regions.

Some distinguishing features of the major cities are outlined below (and see Appendix A). (More information on the classification of major cities is provided in the sections following.)

- Over 71 per cent of people aged over 65 in Australia are residents of the major cities.
- 89 per cent of those born overseas reside in the major cities.
- 93 per cent of residents who speak another language other than English live in the major cities.
- The major cities are home to over 74 per cent of all Australian families.
- People with tertiary qualifications are highly concentrated in the major cities.
- The major cities have a significantly higher proportion of people living in semi-detached and terrace housing, and an even greater proportion living in apartments.
- The major cities have a lower proportion of home ownership than the rest of Australia.
- The major cities have a substantially higher median and mean average income, with significantly greater proportions in the highest two income deciles.
- The major cities have significantly lower car-ownership rates than the rest of Australia, with public transport use concentrated in the larger cities.
- Labour force participation is substantially higher in major cities than in the rest of Australia.
- Based on relative industry sector employment share, the major cities are dominated by finance and business services, retail and manufacturing industries.

- Among occupation sectors the major cities dominate in professional and managerial occupations.
- The major cities in the year to June 2009 generated expenditure from overseas visitors of $15 billion out of the total overseas visitor contribution of $17 billion.

Our cities are centres of national economic, social and cultural activity, but they will need to respond to long-term challenges to maintain the quality of life enjoyed by our communities and secure the nation's productivity in a more sustainable way.

For this task, policy-makers, businesses and the community need baseline and trend data and information on our cities to understand what is happening in them and to take informed action. This report reflects the Australian Government's commitment to evidence-based policy.

An indicator framework for our cities

The *State of Australian Cities Report 2010* aims to shed light on the central questions of where are our cities now, and how are they progressing. How can we best describe the current status of our cities and the changes affecting them, and what dimensions should be included? What indicators best capture and provide measurements of these dimensions? And how can we best organise the collection and analysis of data and information?

Cities are highly complex systems. It is therefore difficult to measure every aspect of an urban environment, especially given the variation between and within cities.

The framework applied in this report was constructed with reference to examples of national and international state-of-the-city reports from around the world. Several key themes were identified to help organise material in the report. These themes were selected as they encompass a broad range of activities and outcomes experienced by urban centres, as well as highlighting major policy issues and areas of national concern. The themes include:

- Australian cities in an international context
- Population growth and change
- Urban settlement
- Productivity
- Sustainability
- Liveability
- Social inclusion
- Governance.

Sets of indicators compiled under these themes were determined based on a number of criteria, including their relevance to the themes, representativeness, measurability, comparability and consistency.

The selected indicators were restricted to published statistics and information available in the public realm. Most importantly the indicators were selected from authoritative sources, and to provide comprehensive coverage of the major cities of Australia as far as possible.

The indicators include a mix of outcomes and drivers and therefore incorporate both 'leading' and 'lagging' indicators. These indicators reflect a balance between the information required for the development of long-term strategy and short-term needs for informing immediate action.

It should be stressed that these are not performance measures but robust and transparent assessments over time of what things are changing and in what directions, and how each city differs from another. While the data indicate significant gaps, particularly in information available at the city level, they provide a basis for further discussion on how our cities are progressing, and to guide policy and actions towards more productive, liveable and sustainable cities.

Defining our cities

The *State of Australian Cities Report 2010* applies the Australian Bureau of Statistics (ABS) 2009 Australian Standard Geographical Classification statistical divisions for capital cities and statistical districts for regional cities. Statistical districts are defined as predominantly urban areas, the boundaries of which are designed to contain the anticipated urban spread of the area for at least 20 years. They are generally defined as containing an urban centre population of 25,000 or more.

The major cities defined in this report are made up of many local government areas. Appendix B provides maps for each of the major cities described in this report. These maps outline the local government areas contained within each major city.

In this report the following distinctions between cities are made, based on data from the ABS 2006 Census.

Major cities

- Major cities are all Australian cities with populations of over 100,000 people.

Capital and regional cities

- Capital cities are the state and territory capitals—Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart, Darwin and Canberra.
- Regional cities are other cities with populations of over 100,000 people.

Size distinctions (Table 1.1)

- Global cities are cities that have a population of over 3 million.
- Large cities are cities that have a population between 1 and 3 million.
- Medium cities are cities with a population between 250 thousand and 1 million.
- Smaller cities are cities with a population between 100 and 250 thousand.

Table 1.1 City categories by size, 2006

Population	Category	City	Population	Percentage of Australia's population
> 3 million	Global Cities	Sydney	4 399 722	20.52
		Melbourne	3 892 419	18.16
		sub-total		**38.68 %**
1–3 million	Large Cities	Brisbane	1 945 639	9.08
		Perth	1 602 559	7.48
		Adelaide	1 105 841	5.47
		sub-total		**22.03 %**
250 thousand–1 million	Medium Cities	Gold Coast	558 888	2.61
		Newcastle	531 191	2.48
		Canberra	345 257	1.84
		Wollongong	284 169	1.33
		sub-total		**8.26 %**
100–250 thousand	Smaller Cities	Sunshine Coast	237 562	1.11
		Hobart	209 287	0.98
		Geelong	172 300	0.8
		Townsville	162 730	0.76
		Cairns	142 001	0.66
		Toowoomba	125 339	0.58
		Darwin	105 990	0.56
		Launceston	104 649	0.5
		sub-total		**5.95 %**

Australian cities in an international context

Chapter 2

Introduction

As the world becomes more urbanised and economic activity more globalised, trade between cities is growing at a faster rate than trade between nations.

Through agglomeration economies—that is, the benefits that result from the clustering of activities—and their flow-on effects on innovation and specialisation, cities can achieve a considerable productivity premium. Such a premium may be expanded through strategic city management of land use, amenity, infrastructure and labour market skill development.

To realise this productivity potential, businesses in Australian cities need to be globally competitive—not merely in cost terms but also in terms of access to the benefits of innovation and skilled labour markets that cities can provide. Cities are competing against each other to attract scarce globally skilled labour, harness creativity and innovation, and enhance their attractiveness as places to live, visit and do business.

National governments around the world have recognised the increasing significance of global comparison in influencing decisions to migrate, locate and relocate businesses. They are making substantial investment in infrastructure necessary to maintain or increase their attractiveness as world cities.

The global competitive imperative has seen the development of a number of global city indicators that enable cities to assess their relative global ranking. These indicators range from comprehensive indices measuring overall competitiveness to indices that measure relative performance in key areas such as economic size, global connectivity, financial significance, relative cost of living and quality of life.

It is important that Australian cities monitor and benchmark themselves not just against their national counterparts but also against other world cities, particularly their perceived competitors in the Asia-Pacific regions of the global economy, such as Singapore and Shanghai.

This chapter compiles a selection of available indices that measure the performance of Australian cities in this international context.

Summary indicators

Dimension	Indicators
Comprehensive global city indicators	Global City Index Report
	Global Power City Index
	PricewaterhouseCooper Cities of Opportunity
Economic outcomes and size	City Gross Domestic Product (GDP) based on Purchasing Power Parity (PPP)
	Gross Domestic Product (GDP) per capita of world cities based on Purchasing Power Parity (PPP)
Commerce and finance	Global and World Cities project
	Global Financial Centres Index
	MasterCard Centres of Commerce Index
Relative cost of living	Mercer Cost of Living report
	Union Bank of Switzerland City Purchasing Parity
	The Economist Worldwide Cost of Living
Quality of life	Mercer Quality of Living report
	The Economist Quality of Living
Economic inequality	UN-HABITAT State of the World's Cities: Harmonious Cities
Global perceptions and branding	Anholt-GfK Roper City Brands index

Key findings

Australian cities rank highly on an international comparison, particularly on indices that measure quality of life and global connectivity, and measures related to the social condition of people. There is evidence to suggest that Australian cities suffer with respect to infrastructure. Of concern is the evidence that suggests a decline in international relative performance and perception in the past five years.

Global city indicators

Every city, no matter how small in population terms, increasingly has a global component. Sydney and Melbourne are frequently referred to as Australia's global cities. Increasingly Perth, Brisbane and the other Australian major cities have a larger global imperative and are appearing in global comparative analyses.

One problem in compiling a global city indicator set is the availability of the data on a comparable and consistent basis—at a city level—across nations. The consequence is that many supposed city-based comparisons end up using national data, which negates the city basis of the analysis.

Several other national governments from Europe, United Kingdom, Canada, South Africa and New Zealand have compiled 'State of the Cities' type reports from domestic data sources. Unfortunately, these are often ad hoc and the data are not readily comparable between cities globally because the data can often relate to different classifications, definitions and methodologies applied during development.

The United Nations HABITAT, the European Commission and the OECD have begun to collect and publish material at a city level through expanded programs highlighting the importance of consistent global databases.

This chapter looks at these global data sources and current results as they impact on Australian cities. Because these studies are global in scope, generally they require a selection of what are defined as global cities from each nation—not all cities are included. In the case of Australia, most of these studies select Sydney and, possibly, Melbourne. Occasionally, Brisbane, Perth, Adelaide and Canberra are also incorporated. However, the datasets are not comprehensive in their treatment of all major cities in Australia. Nonetheless, the inclusion of Sydney and Melbourne at least provides a touchstone for other cities in respect of global engagement.

Global City Index Report

The Urban Land Institute (2008) released a Global City Index report which reviewed approximately 30 major indices that measure factors ranging from investment prospects to climate change mitigation to overall community liveability. The emphasis of this report was not a 'ranking' of global cities, but an understanding of the drivers of global city success.

The report divides the indices into four key clusters that illustrate the core strengths and weaknesses of cities: Global Economic Reach; Quality of Life; Investment and Fiscal; Image and Attractiveness. Sydney (the only Australian city included) is clustered with Paris and London, together with Vancouver, Venice and Vienna in equal third place in the Image and Attractiveness criteria.

Global Power City Index

Given the increased global competition among cities economically, the Japan-based Mori Memorial Foundation (2009) has released a comprehensive ranking of the world's major cities in its Global Power City Index (GPCI). The Global Power City Index examines a variety of functions representing the strengths of cities to create a comprehensive ranking of the world's cities.

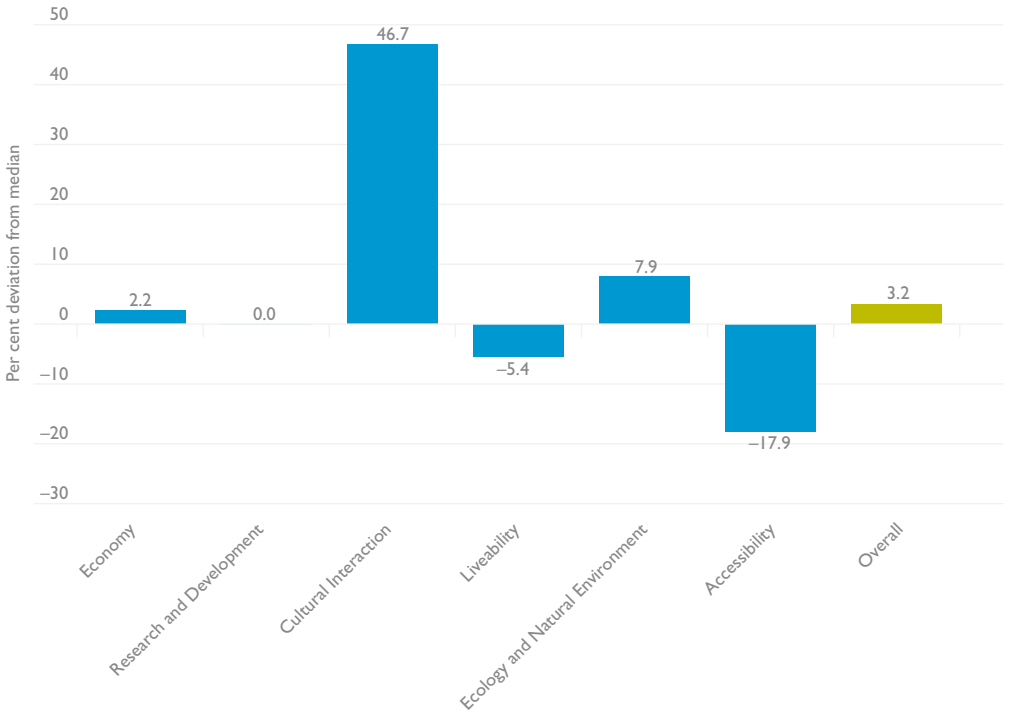
Thirty-five of the world's major cities (including Sydney) are objectively evaluated on six main functions: Economy, Research and Development, Cultural Interaction, Liveability, Ecology and Natural Environment, and Accessibility. The study also examines these cities from the subjective perspectives of Managers, Researchers, Artists, Visitors and Residents—that is, those related to the perspectives of business, science, the arts, those not from the city and those that live in the city. A total of 69 indicators are used for the functional analysis.

Among the 35 cities studied, Sydney ranked 14th overall, in the company of Toronto, Frankfurt and Los Angeles, behind the familiar New York, London, Paris and Tokyo leaders. Within the Asia-Pacific region, Sydney ranked 5th behind Tokyo, Singapore, Hong Kong and Seoul, but ahead of Shanghai, Osaka and Beijing.

However, the study points to several key aspects of concern for Sydney (and, indirectly, for all Australian cities), highlighted in Figure 2.1 which shows the deviation from the median score for Sydney on each of the six function-specific scores. Sydney ranks relatively highly on a global scale for Cultural Interaction functions (resources for attracting visitors, volume

of interaction and 'trendsetting' potential) and in the Ecology and Natural Environment score. However, it ranks relatively poorly on the Accessibility score reflecting international and inner-city transportation infrastructure. It also ranks below the median on Liveability, which incorporates a number of indicators related to 'life support functions', security and safety, and the working environment.

Figure 2.1 Function-specific ranking of Sydney, deviation from the global medians



Source: Power City Index (GPCI) 2009

PricewaterhouseCooper Cities of Opportunity study

In partnership with New York City, PricewaterhouseCooper (PwC) (2007a) conducted a comprehensive study of 20 world hubs of finance and commerce. This study included Sydney in its examination of 51 variables classified into 10 overall indicators: Intellectual Capital; Technology IQ and Innovation; Transportation and Infrastructure Assets; Demographic Advantages; Cost; Financial Clout; Lifestyle Assets; Health, Safety and Security; Ease of Doing Business; and Sustainability.

The objective of the study was to analyse how cities are moving to take advantage of the opportunities offered by an interconnected world. The study noted that Sydney's natural strengths and forward-looking policies pull it up from the lowest third in power (16th) to the highest grouping when size is removed from the equation (6th). Sydney also attained a competitive advantage in terms of cost versus purchasing power (7th out of the 20 cities examined).

Sydney lagged in terms of economic strength to attract global business (18th) but rose to 3rd in terms of 'rolling out the welcome mat for a global economy'. In terms of the quality characteristics to build tomorrow through intellect and innovation, Sydney ranked 6th.

However, in terms of Infrastructure Assets, Sydney ranked 20th of the 20 cities examined. This result needs to be qualified by the fact that many of the variables used in the study are absolute measures that favour the largest cities in the study. However, Sydney is assessed as still performing relatively poorly on a number of 'Quality' infrastructure variables. It should be noted that the infrastructure variables utilised are predominantly related to transport, and are not as broad as variables used in other comparative studies.

Conversely, Sydney ranked relatively highly (4th) on a number of Sustainability indicators and only marginally behind the score for the three equal top ranked cities: Frankfurt, New York and Paris.

Economic outcomes and size

Based on estimated City Gross Domestic Product (GDP), the Sydney Metropolitan area ranks 26th among the world's 150 major cities (PricewaterhouseCooper 2007). To adjust for price differences between cities, comparison is based on the concept of Purchasing Power Parity (PPP). Expressed in $US billion, Sydney produced a total of $172 billion output in 2005. This put it in the company of Moscow, Madrid and Seattle. It was ranked in the top 10 (5th) among Asia-Pacific cities.

Melbourne's estimated GDP of $US135 billion ranked it 33rd in the world. This places it in the company of Barcelona, Shanghai and Istanbul. Based on estimates using a similar methodology to the PricewaterhouseCooper study, Brisbane and Perth would rank relative to Athens, Manchester and Hamburg, and Adelaide in the company of Oslo and Prague.

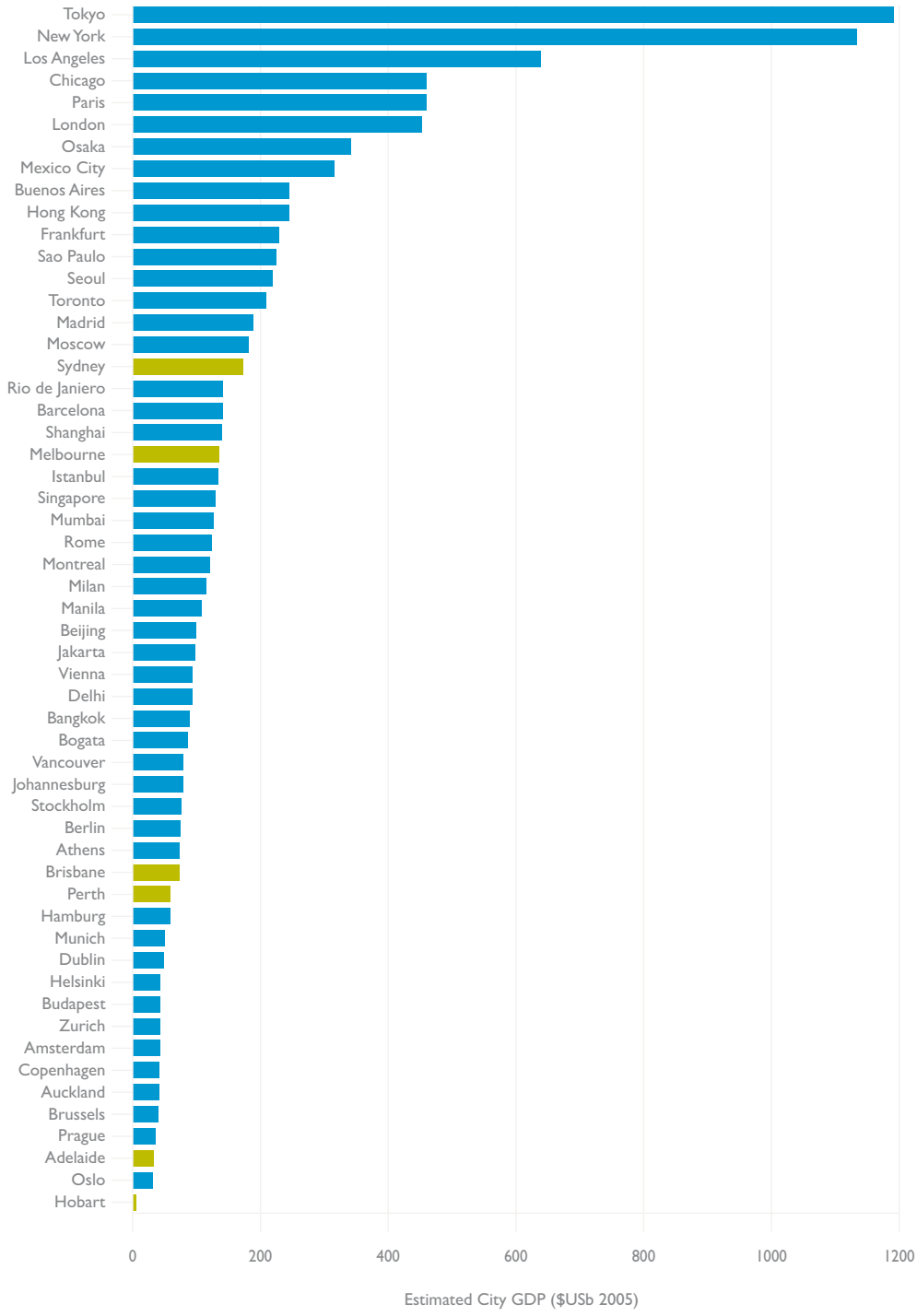
As outlined in Figure 2.2, in comparison, New York and Tokyo are the world cities producing the most output, at approximately $US1150 billion each on a comparative basis. London, Paris and Chicago each produced approximately $US460 billion. Between them the 50 largest cities in the world produced 20 per cent of the world's economic output, and the top 20 more than one-eighth of world output.

To account for mere differences in population size, per capita output is used as a more valid basis of comparison of the economic performance of world cities. As outlined in Figure 2.3, Sydney and Melbourne rank slightly higher in such comparison behind New York and other US cities as well London, Paris and the European finance city of Frankfurt.

This comparative economic study used 2005 data. The current global economic recession may well have substantially altered these rankings as the cities in different nations have been impacted and responded to changed economic circumstances. Similarly, changes in population growth, urbanisation and per capita income growth could well alter these output results into the future, particularly with the emergence of a number of global cities in China and India.

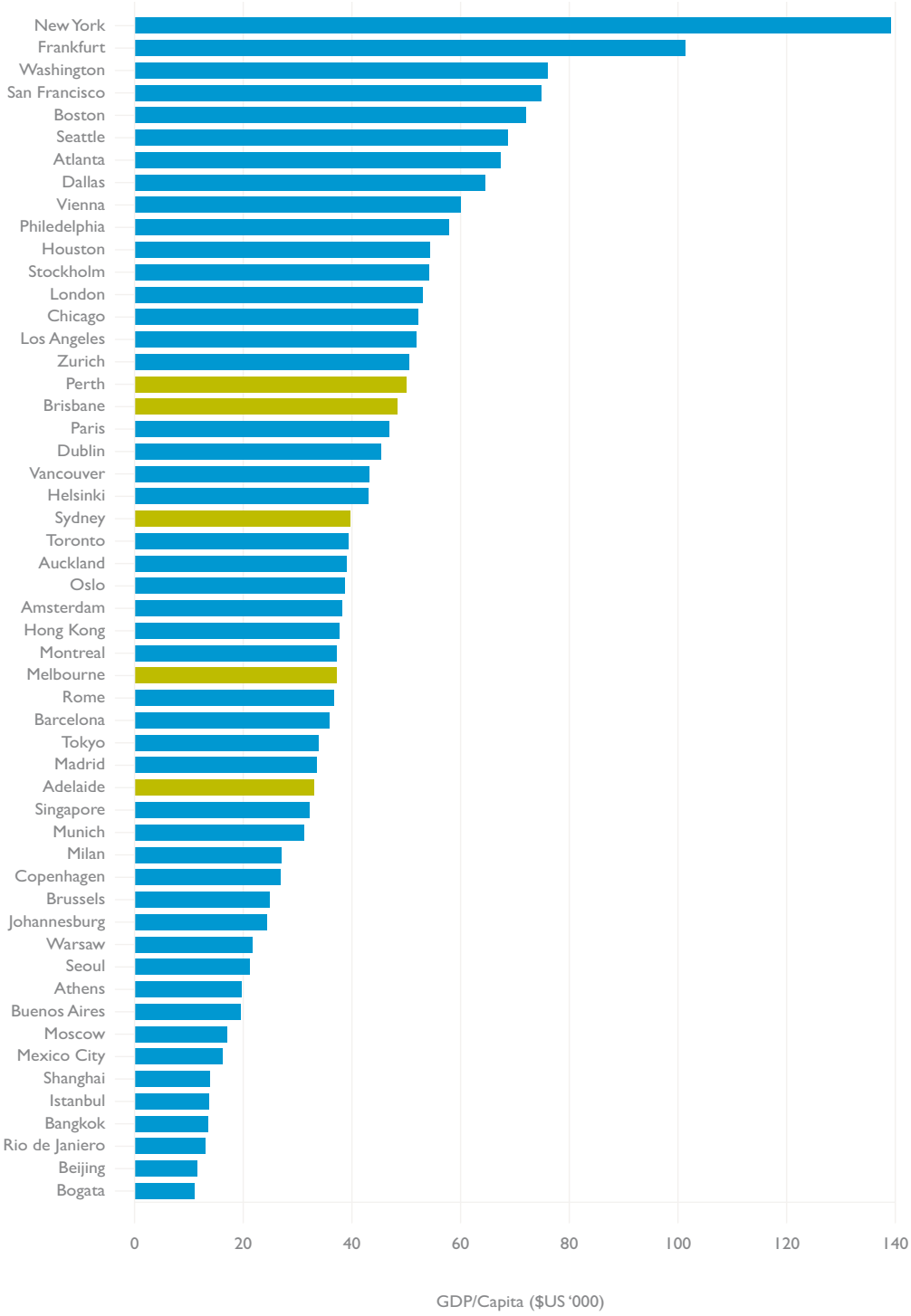
The OECD (2006) in its *Competitive Cities in the Global Economy* report undertook an analysis that suggested that the additional productivity of major cities in Australia (over and above national labour productivity) was one of the lowest of the OECD member nations examined. Note that the OECD report are derived from state estimates of GDP and productivity for Australia and, for Sydney and Melbourne, use New South Wales and Victorian productivity estimates which are then compared to city-specific productivity estimates for cities in other countries. According to the OECD, the rankings under this criterion were led by the central European nations of Austria, Hungary and the Czech Republic, as well as Portugal and the United States.

Figure 2.2 GDP of international and Australian cities



Note: Figure only shows a subset of cities that were included in the study.
Source: PricewaterhouseCooper 2007b and estimates derived from Australian Bureau of Statistics, National Accounts

Figure 2.3 GDP per capita of world cities



Source: Derived from PricewaterhouseCooper 2007b

Commerce and finance

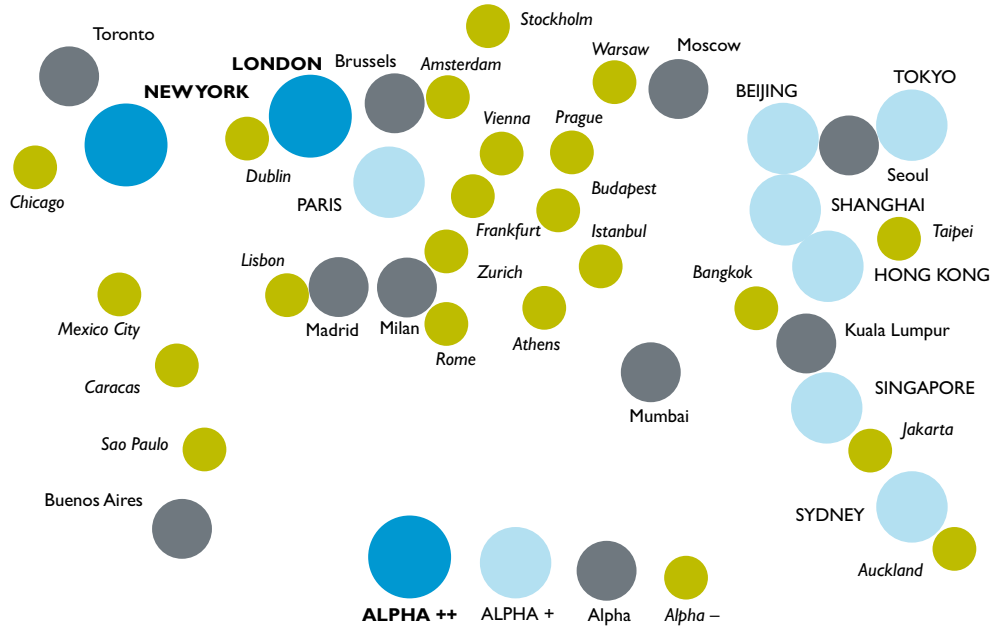
Given the significance of the advanced producer services sector, including finance, in the global economy, many studies have concentrated upon these industries as a basis for global city comparison.

Global connectivity

The most comprehensive of these comparisons is the database built by the Global and World Cities project (GaWC) (2008), originating from Loughborough University in the United Kingdom. Studies in this project have examined the degree of connectivity of cities to the global economy through analysing activity by global firms operating in the areas of finance, law, accountancy and business services.

The 2009 update of this information (Taylor et al. 2009), incorporating data from Asia and China in particular, has resulted in a substantial re-assessment of each city's degree of global connectivity. In particular, cities based on the East Asian arc, including Sydney, Singapore, Shanghai and Beijing, have risen considerably in relative ranking as shown in Figure 2.4.

Figure 2.4 The world according to the Global and World Cities project



Source: Global and World Cities Project 2008.

In this ranking of global connectivity, Sydney is classified as an 'Alpha +' city, with the 7th highest level of connection to the global economy behind New York, London, Tokyo, Paris, Hong Kong and Singapore.

Melbourne is rated a 'Beta +' city (ranked approximately 41st in connectivity, in the company of Barcelona and Los Angeles) and Brisbane as 'Gamma+' (ranked approximately 88th, with Stuttgart and Vancouver). Perth is designated a 'Gamma' city (in the company of Rotterdam, Philadelphia and Manchester). Adelaide and Canberra also feature as cities of 'high sufficiency' in terms of global connectivity.

Financial centres

The annual MasterCard (2008) survey of what it considers the world's 75 major commercial and financial centres placed Sydney 12th in 2008, an increase in its ranking of 14th in 2007. This placed it adjacent to Madrid and Toronto. In 2008, Melbourne was ranked 34th, ahead of Bangkok and just behind Barcelona. No other Australian cities are included in this annual survey.

Half of the variables used to construct a score for ranking are based upon national and not city-based data. Conversely, information on national regulatory and legal frameworks clearly has an influence on comparative competitiveness of cities in terms of international standards of transparency, corruption and macro-economic policy settings.

The financial services workforce of Sydney is nearly half the size of London's and more than 40 per cent of the size of New York City's. A number of studies based on capital flows and transactions have placed Sydney about 10th and 11th in significance as a financial centre. Increasingly, as they expand and diversify, Melbourne and Brisbane are considered as emerging financial centres.

The City of London (2009) issues a six-monthly Global Financial Centres Index (GFCI) of competitiveness between 75 of the world's financial centres. This is based on five areas of competitiveness—people, business environment, market access, infrastructure and general competitiveness.

The index confirms London and New York as the dominant global financial centres, well ahead of the two Asian centres of Hong Kong and Singapore. In 2009, Sydney ranked 11th and Melbourne 34th—the only two Australian cities included in the study. The notable result was the rise of Asian cities. In the 2007 report, where Sydney ranked 7th, the authors made the comment:

> A strong national centre with good regulation, offering a particularly good quality of life. Sydney is strong in four of the key competitiveness areas but falls outside the top ten for people—many financial professionals leave for large English-speaking centres (City of London 2007).

One of the key messages here is the need to retain skilled labour and avoid a 'brain drain' to other global centres.

Given the concentration of such advanced producer industries within the central business districts of Australia's major cities, a broader proxy indicator of global activity can be obtained from the stock of Premium and A-Grade office stock in international cities from global real estate organisations, such as Colliers, CBR Ellis, Knight Frank and Jones Lang LaSalle. Generally, Australia's mainland state capital cities are included in such comparison. In this index, Sydney's central business district ranks 14th in terms of office floorspace stock, and its metropolitan area 23rd. Office rents in Australian cities are in the middle range of the rankings produced by these agencies.

Relative cost of living

The Mercer Human Resource Consulting Corporation (2009a) conducts an annual cost of living survey. This survey is designed to collect prices of over 200 standard goods and services in more than 250 cities in 39 countries. These data are then used to calculate a cost of living index that accommodates differences in shopping habits.

Since the basis of Mercer's analysis is to advise clients on appropriate remuneration adjustments for US expatriates, New York is used as the base city for the index and scores 100 points. All cities are then compared against New York and currency movements are measured against the US dollar. This means that significant variations can occur between years based on currency movements. For instance, in the latest 2009 cost-of-living survey Sydney remains the most expensive city in the Australasian region but has dropped from 15th in 2008 to 66th. Melbourne follows in 92nd place, down from 36th. Auckland has moved down to 138th place from 78th. The principal reason for such dramatic falls lies in the significant exchange rate variation of Australian and New Zealand dollars against the US dollar at the time of the survey.

The Economist Intelligence Unit (2010) does a similar Worldwide Cost of Living survey based on 160 products and services in over 130 cities across 86 countries, as does ECA International. However, currency movements again play a major role in cost-of-living ranking movements.

Notwithstanding such currency fluctuations, Australian cities are generally perceived as being considerably cheaper than European cities, but relatively expensive compared to Asian cities, although Tokyo generally vies with London for 'most expensive city' ranking. Australian cities have tended to cluster in the middle of the rankings.

The Union Bank of Switzerland (UBS) (2009) produces a tri-annual comparison of purchasing power in 73 cities around the globe that is more geared towards companies than consumers. This includes detailed information on both prices and wage-levels for specific occupations and data on hotel accommodation. Based on a similar methodology to the other studies in relating cities to a New York standard, the results confirm that Sydney lies in the middle of rankings of world cities for price levels, while its wages for specific occupations tend to be in the higher side of the middle. For 2009, the UBS Survey ranked Sydney 38th out of 73 world cities for relative price expensiveness, 20th for gross wage levels and 16th for after-tax income levels.

In summary, while Sydney is generally at the high, more expensive end of the ranking for cost of living among major cities within Australia, it is reasonably competitive in terms of international price levels for both businesses and consumers. Thus, Australian cities are generally competitive internationally as far as domestic costs are concerned.

There are, however, important exceptions to this—particularly in the area of housing affordability. Similarly, these international cost-of-living studies rarely include international costs of transport for both freight and passengers, which may adversely affect the ability of Australian cities to compete effectively with other world cities over cost/price.

Quality of life city ranking

Increased globalisation of the national economy and ageing of the population on the global scale is resulting in a demand for increasingly scarce skilled labour able to participate in that global economy. Education programs are an important adjunct to training this new workforce but immigration and attracting skilled workers are becoming increasingly important aspects of a city's global competitiveness. For that reason business and governments around the world are recognising the economic value of quality-of-life indicators.

As a global remuneration consultant, the Mercer Human Resources Consulting group (2009b) conducts an annual quality-of-living survey designed to provide an objective assessment of the quality of living in 235 cities worldwide. The aim of the survey is for multinational operating companies to use it to determine where they will open offices or plants and to assess how much to pay their global employees.

The outputs of the research are used to produce a quality-of-living city ranking. The ranking is based on an assessment and evaluation of 39 quality-of-life determinants grouped into various categories. These include the natural environment; political and social environment; public services; infrastructure and transportation; schools and education; housing; economic environment; consumer goods; socio-cultural environment; medical and health considerations; and recreation opportunities and facilities. New York is again used as a base with a score of 100 points.

Recent studies have revealed that the five Australian cities included in the survey (Sydney, Melbourne, Perth, Brisbane and Adelaide) have remained at the top of the list of most liveable cities.

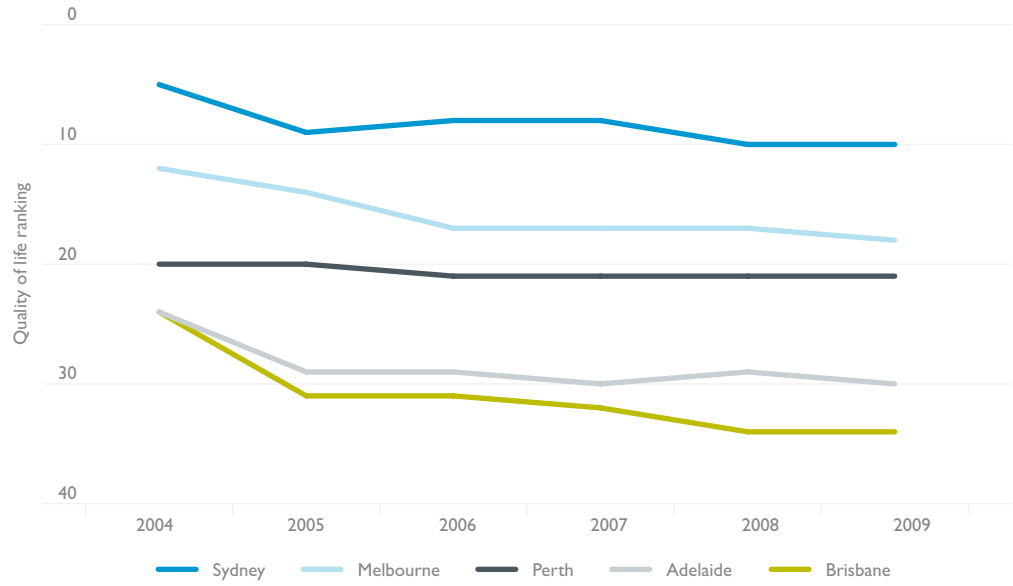
Australian cities have been ranked in the top 35 of these 235 cities for each year for the past 5 years. For 2009, Sydney is ranked 10th, Melbourne 18th and Perth 21st on the Mercer Quality of Living index. Adelaide ranks 30th and Brisbane 34th.

The upper echelons of the rankings are dominated by cities in Germany, Switzerland and Austria, with some Canadian and New Zealand cities in the top 20. However, closer analysis reveals that many of these cities are of a population range between 500,000 and 1 million. Sydney, Melbourne and Brisbane are among the few, along with the German cities (Munich, Frankfurt and Berlin) and Canadian cities (Toronto and Montreal), that are in the order of 2 million and above population.

Each year Mercer undertakes a more specific examination of one aspect of city quality. For 2009, this was infrastructure. Mercer identified cities with the best infrastructure based on electricity supply, water availability, telephone and mail services, public transport provision, traffic congestion and the range of international flights from local airports. The results of this saw Sydney ranked 11th, Melbourne 35th and the other major Australian cities—Adelaide, Brisbane and Perth—ranked equal 38th. Singapore was at the top of this index followed by Munich in second place and Copenhagen third.

However, despite their high ranking, Australian cities are slipping in comparison to other international cities (Figure 2.5).

Figure 2.5 Declining quality-of-life rankings of selected major cities



Source: Mercer Human Resource Consulting 2004–2009.

Compared to 2004, Sydney has slipped in this quality-of-living ranking from 5th to 10th; Melbourne from 12th to 18th; Perth from 20th to 21st; Adelaide from 24th to 30th; and, Brisbane from 24th to 34th. Mercer (2009b) attributes the rise of cities that have supplanted the Australian cities to investment in infrastructure such as transport and housing.

The other major quality-of-living survey of international cities is conducted by The Economist Intelligence Unit (EIU) (2009). The study assesses cities on the basis of stability, health care, education, infrastructure, and culture and environment.

This annual report also consistently places Australia's major cities as among the world's most liveable cities. For the 2009 study, Australian cities occupy five of the top 20 places in the ranking of the liveability of 140 of the world's major cities. The other top places are dominated by cities from Canada, Switzerland and Austria. Melbourne ranked third in the world, behind Vancouver and Vienna. Perth was equal 5th with Calgary in Canada, with Sydney sharing 9th place with Zurich, Adelaide in 11th place and Brisbane 16th on the list.

Cities that score best in the research tend to be mid-sized, in developed countries with a low population density, benefiting from cultural or recreational availability but with lower crime levels or infrastructure problems that can be caused by large populations.

Again, it is notable that it is only the Australian and Canadian larger cities that make the top rankings of this study. However, as with the Mercer study, while still ranking highly, Australian cities have slipped in ranking in recent years. Compared to 2004, all the Australian cities have slipped backwards. Melbourne has gone from equal 1st with Vancouver to 3rd; Perth from 4th to 5th; Sydney from equal 6th to 9th; Adelaide from 6th to 11th; and, Brisbane from 6th to 16th. Generally, the rising cities are those from Canada, including Toronto and Calgary.

Economic inequality

While economic inequality is essentially established structurally at a national level, cities, through urban pattern, accessibility and infrastructure can act to either exacerbate or mitigate economic inequality outcomes among their residents. There may be significant income distribution differences among cities, even within the same country, which shows that national aggregates are not necessarily reflected at the local level. Given the connection between economic and social inequality, this can reflect the level of social capital among those citizens and therefore represent an important component of social cohesion in global terms.

The United Nations Human Settlements Programme (UN-HABITAT) (2008) has begun to compile a database of estimated inequality of cities of the world, with results first published in the *State of the world's cities 2008/09: Harmonious cities*. The inequality measure utilised is the Gini Coefficient (which ranges from 0 for absolute equality to 1 for absolute inequality, with 0.4 being an international alert line) and the data relate to household income and the years 2003–2006.

However, because the data differs slightly in the concepts of income used, the results can only be reported in broad terms. With that caveat, the data show that Western European cities tend to be the most equal in the world, followed by East Asian cities. Both Sydney and Melbourne are in the top 20 among European cities. Canadian cities are slightly more unequal, and US cities even more so. Finally, large cities in South America and South Africa head up the inequality list. Generally, this reflects a national ranking of economic inequality. Moreover, there are suggestions that inequality tends to be greater in cities of greater population size.

Global perceptions and branding

The final set of global city indicators centre around perceptions that overseas people have of our cities. Since these are based on panel or reader assessments, they are highly subjective. However, they can reveal important elements of our cities' strengths and weaknesses as perceived by others.

Various international travel magazine surveys have consistently placed Sydney and other Australian cities at the very top of 'favourite city destination' surveys. While they could readily be discounted as serious research, there is an economic value in the in-bound tourism industry. All of these readers' surveys consistently refer to the warmth and friendliness of the people, complemented by natural climatic attributes and the variety of available experiences. Again, the latest 2009 results of these surveys show a decline in Sydney's dominance, although this could be a response to the distance and cost of Sydney from the market for such surveys (USA and UK) at a time of economic recession (Conde Naste Traveler 2009).

However, of greater relevance for this report is the Anholt-GfK Roper City Brands index (2010) based on interviews with more than 10,000 people from 20 countries across the globe. The index attempts to measure the quality of the City's 'brand' globally. This survey asks participants to judge cities on the basis of Presence (knowledge of city and perception of its global contribution); Place (cleanliness, aesthetic qualities and climate); Prerequisites (affordable accommodation and quality of public amenities); People (friendliness, personal encounters and cultural diversity); Pulse (interesting events, activities and lifestyles); and Potential (perception as a good place to do business, to find a job and go to school).

Sydney was ranked as the top city brand in 2007 and 2008, ahead of Paris, London, New York, Rome and Barcelona. According to the survey directors, this was largely due to Sydney's ability to score highly on perception in all categories, rather than being outstandingly good or bad in any—its 'well-rounded' perception. However, they noted that most of the study participants had not actually visited Sydney but their perceptions had been formed by the memory of the 2000 Olympics.

For 2009, Sydney has been overtaken by Paris for the top City Brand spot.

Sydney was still ranked in first place in the People, Place and Pre-requisites categories. Melbourne also ranked third in the People brand category. However, Paris' big lead over Sydney in the Presence and Pulse dimensions were sufficient to push Paris into the top position overall.

These dimensions relate to perceptions of a city's global contribution and knowledge of a city's diversity of interesting events and activities. They highlight the challenge that Sydney and all the Australian cities have to affect perceptions of them on a global scale and their ability to realise their potential.

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Population and settlement

Chapter 3

Introduction

Australia's major cities are home to around three-quarters of all Australian residents. Australia's population is growing and changing as explained in the Australian Government's 2010 Intergenerational Report *Australia to 2050: future challenges* (The Treasury 2010). Most of the growth will occur in the major cities and, combined with rapid ageing of the population, will greatly affect the social and demographic profiles of each of the cities over the coming decades.

This chapter presents some features of the population of the major cities and describes some of the changes occurring at the household level as a result of population ageing.

Summary indicators

Dimension	Indicators
Population	Number of persons
	Population distribution:
	– Urban Indigenous population
	– Population growth
	– Overseas-born population in major cities
Ageing	Proportion of persons aged over 65 years
Household size	Number of persons in household by age
Household composition	Family households by age of youngest child
	Couple-only households by age
	Lone-person households by age
Dwelling stock	Proportion of housing stock by dwelling type
	Average dwelling size
	Dwelling approvals

Key findings

- Just over three-quarters of all Australians live in 17 major cities with populations over 100,000 at the 2006 Census.
- The majority of urban Australians live in the five largest cities of Sydney, Melbourne, Brisbane, Perth and Adelaide.

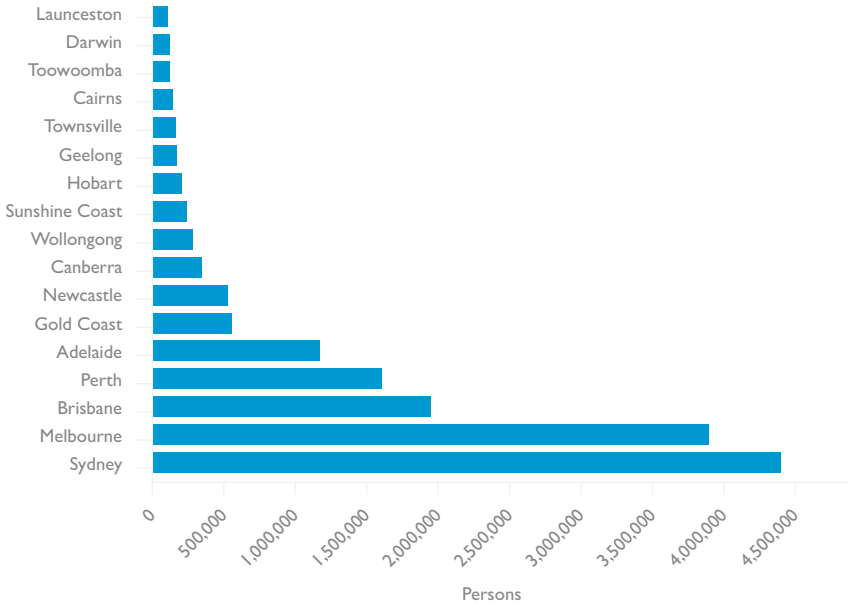
- Australia's population is projected to reach more than 35 million people by around mid-century according to both ABS and Treasury projections. Most of this growth (72 per cent) will be in the capital cities.
- Treasury projections in the 2010 Intergenerational Report estimate that there will be 8.1 million people aged over 65 years by 2050, representing 23 per cent of the population compared to 2.6 million people or 13.3 per cent in 2006.
- The number of households in Australia is projected to increase from 7.4 million in 2001 to at least 10.2 million in 2026 while the average household size is expected to decline from 2.6 people per household in 2001 to less than 2.3 people per household in 2026.

Total population

In June 2008, an estimated 16,056,000 people were living in Australia's 17 major cities (ABS 2009a)—that is, in cities with populations above 100,000 as at the 2006 Census. This represents just over three-quarters (75.2 per cent) of the Australian population.

Australia's major cities range in size from the largest capital cities—Sydney with 4.4 million people and Melbourne with 3.9 million people—to the smaller regional cities like Townsville, Cairns and Toowoomba (Figure 3.1) (ABS 2009a).

Figure 3.1 Estimated Resident Population of Australia's major cities, 2008



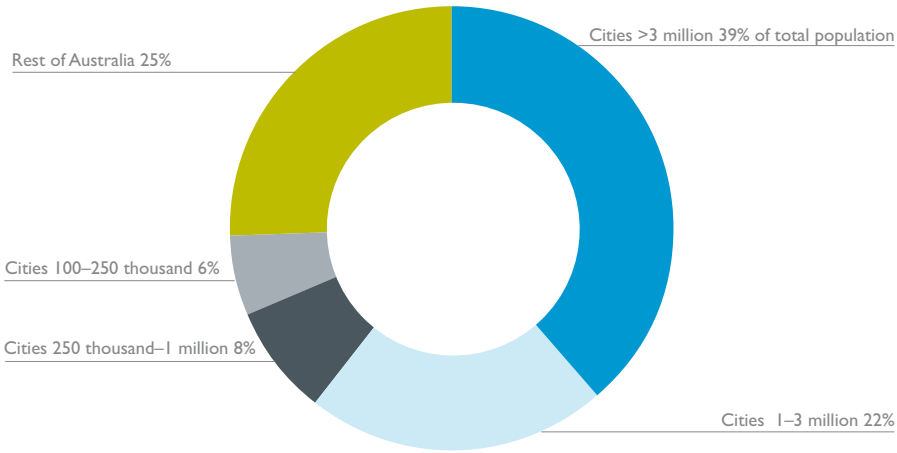
Source: ABS 2009a

There are other rapidly growing regions that did not have a population over 100,000 at the 2006 Census but are likely to reach or surpass that figure by the 2011 Census. Among them is Albury-Wodonga, an important regional centre and an emerging city that straddles the state boundary between New South Wales and Victoria along the Murray River. The estimated resident population of Albury-Wodonga in June 2008 reached 102,894 people. However, as it had not reached a population of 100 000 at the 2006 Census it is not incorporated as a major city in this report.

Population distribution

Australia's population is highly concentrated in urban centres. Nearly two-thirds (63.9 per cent) or 13,687,640 people were living in the capital cities in June 2008 (ABS 2009a). The majority of Australian people live in large cities of 1 million or more people. The five largest capital cities of Sydney, Melbourne, Brisbane, Perth and Adelaide, each with over 1 million people, account for 60.8 per cent of the total Australian population. As shown in Figure 3.2, the proportion of the Australian population living in cities of between 1 and 3 million people is 22 per cent, while 39 per cent of Australians are living in cities of more than 3 million people. In contrast, almost 70 per cent of Europe's total urban population live in medium and smaller sized cities of fewer than 500,000 people (UN-HABITAT 2008).

Figure 3.2 Population distribution, Australia, 2008

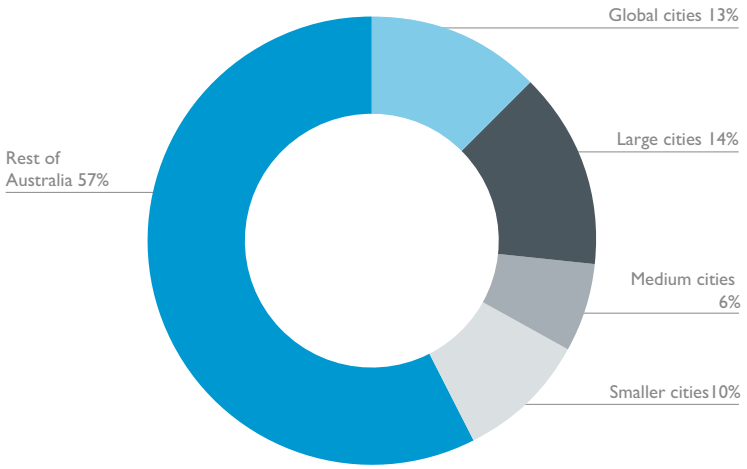


Source: ABS 2009a.

Urban Indigenous population

A far greater proportion of Australia's Indigenous people live in non-urban areas than non-Indigenous. Nevertheless, Australia's 17 major cities are home to 43 per cent of Australia's Indigenous population (Figure 3.3).

Figure 3.3 Indigenous population in Australian cities, by category, 2006



Source: ABS 2006.

Although Australia's Indigenous people represent a much higher proportion of the population in rural and remote areas than in the cities, there are large numbers of Aboriginal and Torres Strait Islander people in metropolitan areas (Table 3.1).

At the 2006 Census, urban Indigenous people comprised less than 2 per cent of the populations of most of the capital cities. The exceptions were in Darwin where the Indigenous population represents 11.1 per cent and in Hobart where 3 per cent of the population identified as being Indigenous.

Table 3.1 Indigenous Australians in capital cities, 2006

City[a]	Number	Indigenous people as a proportion of city population (%)
Sydney	34 515	1.0
Melbourne	13 309	0.4
Brisbane	29 249	1.8
Perth	20 910	1.5
Adelaide	12 443	1.2
Hobart	4 587	3.0
Darwin and Palmerston	9 002	11.1
Canberra/Queanbeyan	4 757	1.4

(a) Urban centres
Source: ABS 2006

The urban Indigenous populations tend to be concentrated in particular localities and regions within cities, except for Melbourne, where they are more dispersed across the city (ABS 2008a).

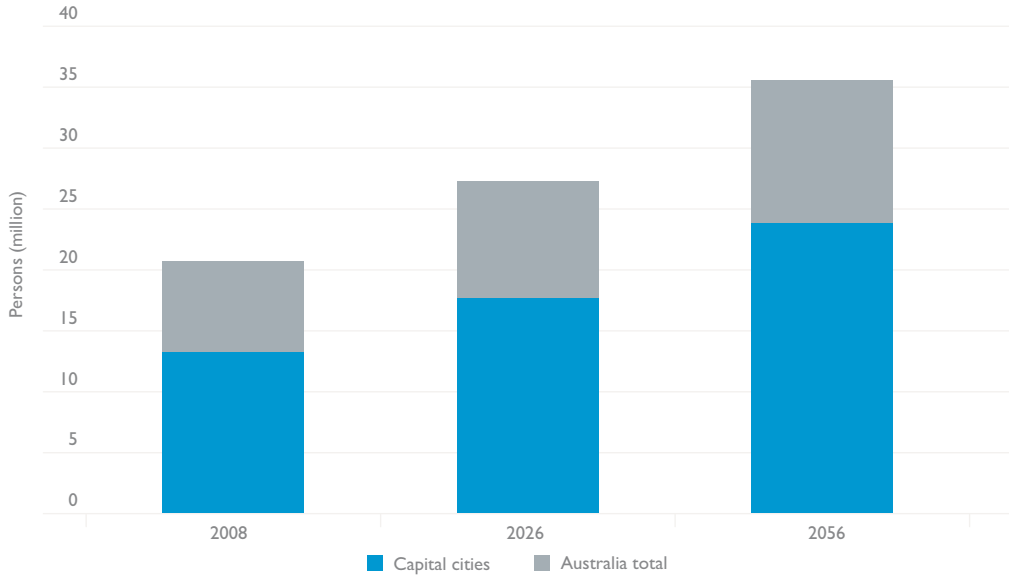
Population growth

Under the Australian Bureau of Statistics population projections, using a medium growth scenario, Australia's population is projected to grow to 35.5 million by 2056, based on recent trends in fertility, net overseas migration and life expectancies (ABS 2008b).[1] It is projected that 72 per cent of this growth will be in the capital cities, an increase of more than 10 million people (Figure 3.4).

Population projections released in the 2010 Intergenerational Report by The Treasury (2010) reflect slightly higher life expectancies, levels of overseas net migration and fertility rates, which suggest that the population of 35.9 million will more likely be reached sooner, by 2050.

This represents a lower average annual rate (1.2 per cent) of population growth than has been experienced over the past 40 years (1.4 per cent).

Figure 3.4 ABS Population projections to 2056



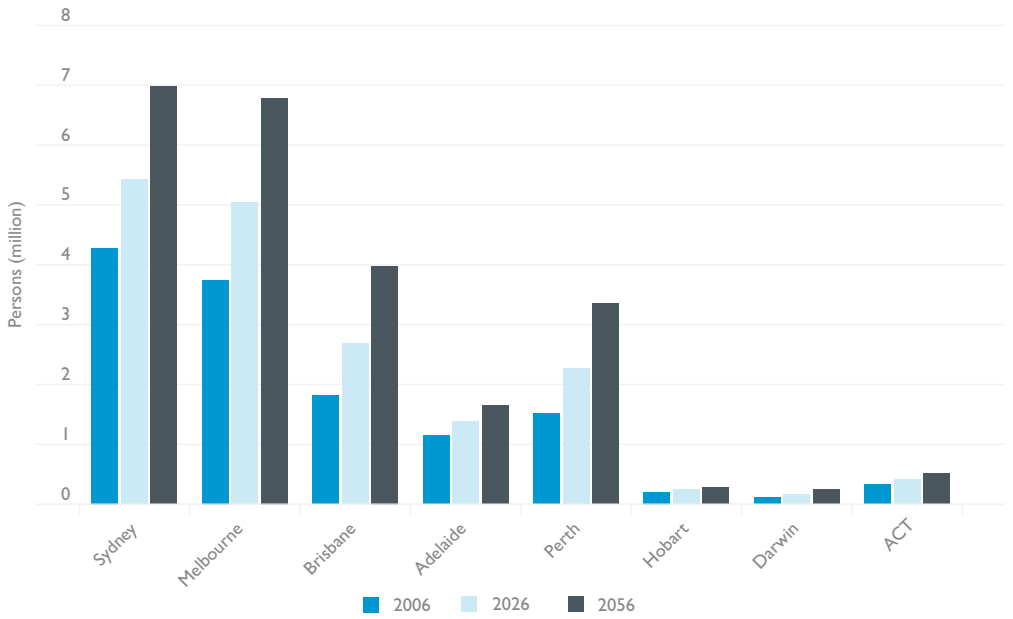
Source ABS 2008b. Medium growth assumptions (series B).

1 Australia Bureau of Statistics, Series B population projections are based on final estimated resident populations at 30 June 2006 assuming a fertility rate of 1.8, net overseas migration of 180,000 a year and life expectancies of 85 years for males and 88 years for females.

Distribution of population growth

Population growth is projected to not be evenly distributed between cities. Perth and Brisbane are projected to more than double in size by 2056 growing by 116 per cent and 114 per cent respectively (Figure 3.5). Perth's population is projected to increase from 1.6 million people at 30 June 2007 to 3.4 million in 2056. Brisbane's population is projected to increase from 1.9 million people to 4.0 million people in that period. While Sydney and Melbourne will not grow as rapidly, their populations are projected to approach 7 million each. On the other hand, cities like Hobart and Adelaide are projected to have more limited population growth.

Figure 3.5 ABS Population projections for capital cities to 2056



Source: ABS 2008b. Medium growth assumptions (series B).

Rapidly growing areas within capital cities

Major urban centres within the largest capital cities are growing rapidly. The local government areas (LGAs) of Wyndham, Melton and Whittlesea in Melbourne; Wanneroo, Swan and Rockingham in Perth and Ipswich in Brisbane were among the fastest and largest growth areas for 2007–08 in the country, with growth rates above 4.0 per cent and population increases around 4,000 or more for the year. Other LGAs that already have populations over 200,000 people and experienced increased population over 5,000 for the year to 2008 but at slower rate were Casey in Melbourne, Blacktown in western Sydney, and Logan in Brisbane (ABS 2009b). This large growth in population in major urban centres will put pressure on existing infrastructure systems, facilities and services within capital cities.

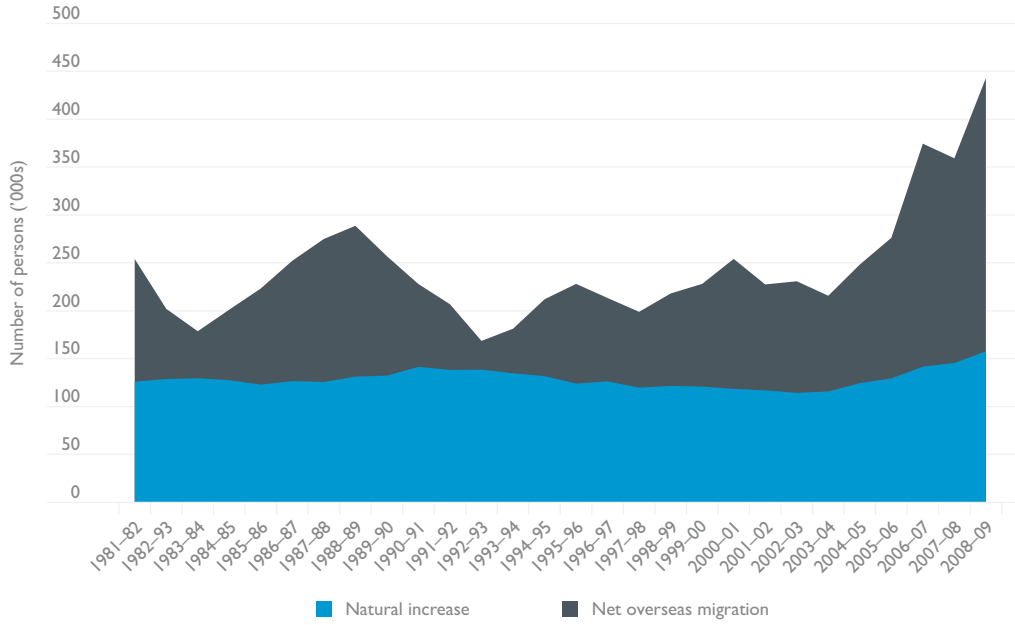
Components of population growth

The main components of population growth are net overseas migration, natural increase (births less deaths) and internal migration (population movement between locations). Australia's population growth in 2007–08 was made up of 145,000 people through natural increase and 213,500 through net overseas migration (DIAC 2009a).

Net overseas migration

Since the turn of this century a greater proportion of Australia's population growth has been attributable to Australia's migration program more than to natural increase (Figure 3.6).

Figure 3.6 Components of population growth to Australia, 1981–2009

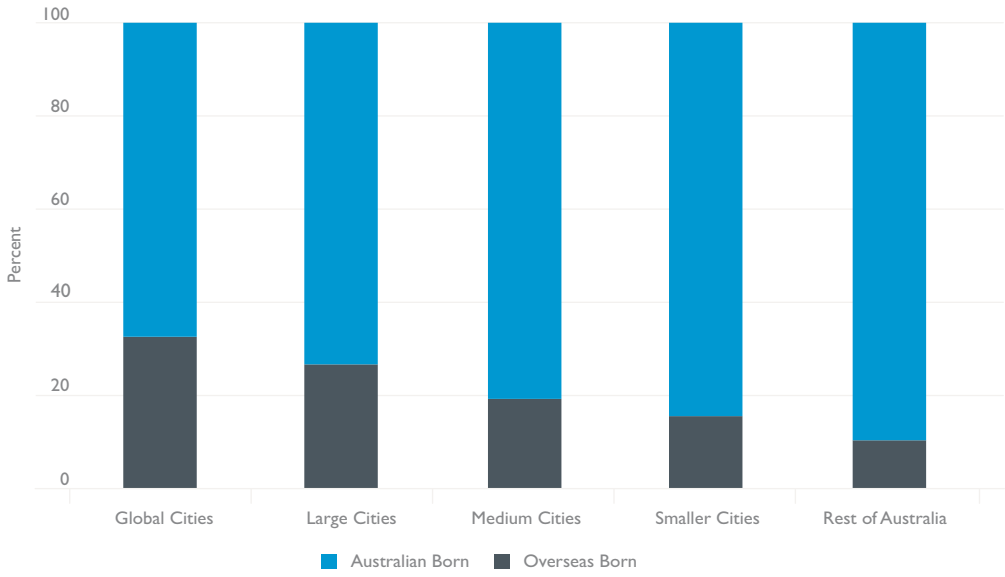


Source: ABS 2009a.

In the year 2007–08 net migration contributed 60 per cent to the population growth. The ratio of net migration to population will remain above 0.5 for the next four decades according to projections in the 2010 Intergenerational report (The Treasury 2010).

As a result of long-term immigration, almost one-quarter (24 per cent) of Australia's population was born overseas. The vast majority of people born overseas live in the major cities and, as demonstrated by Figure 3.7, the larger Australian cities have higher shares of overseas-born people.

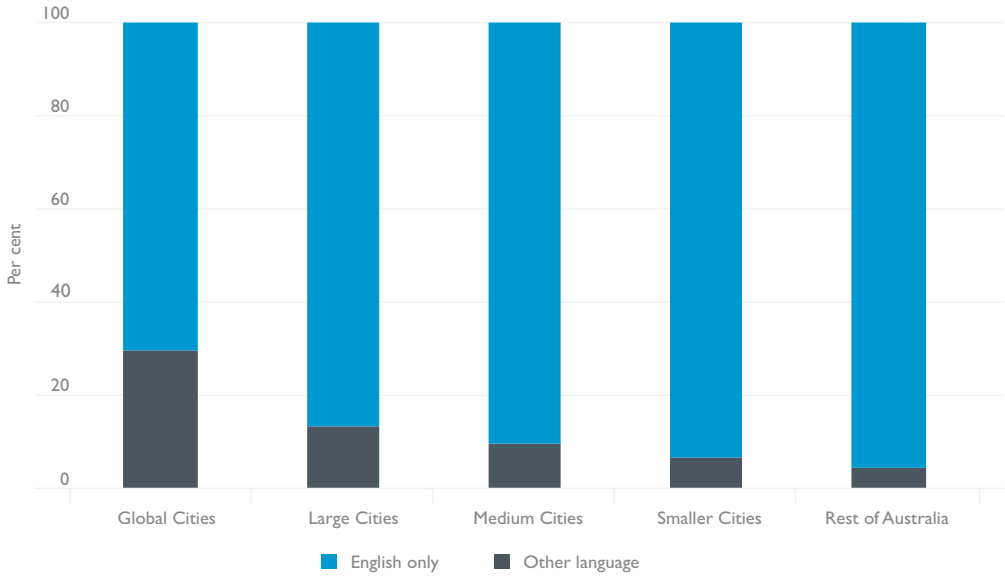
Figure 3.7 Overseas-born population in major cities, 2006



Source: ABS 2006.

One outcome of the large net overseas migration and the concentration of overseas-born people in cities has been the cultural and linguistic diversity that has become a characteristic of Australia's cities (Cully 2009). Such diversity has been generated from the multiple waves of overseas migration since the end of World War II and especially since the mid 1970s. At the 2006 Census as much as 93.1 per cent of people who spoke a language other than English lived in the major cities (Figure 3.8).

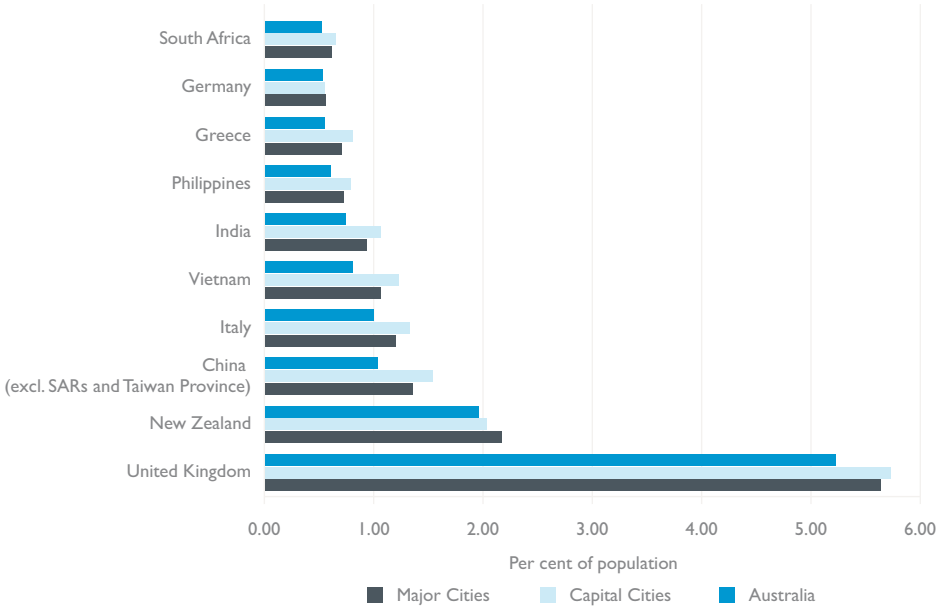
Figure 3.8 Language spoken at home, 2006



Source: ABS 2006.

While the United Kingdom remains the source of the largest overseas-born group, its proportion of the total overseas-born is declining. Almost two-thirds of the overseas-born population (62 per cent) in Australia were born in non-English speaking countries (DIAC 2009a) (Figure 3.9).

Figure 3.9 Top ten countries of birth of people born overseas, 2006



Source: ABS 2006.

For the decade 1995 to 2004 migration intake was relatively stable at around 100,000 permanent settlers per year. However, following concerns that this level would not support desired levels of economic growth (see for example McDonald & Temple 2009) the migration intake levels were increased and have been around twice as much since. In addition to permanent settlers there were the over 4 million temporary entrants arriving in 2007–08 for the purposes of work or study and tourism (DIAC 2009b).

Based on current migration program targets and recent trends it is likely that the contribution of net overseas migration will continue to be the main contributor to population growth.

Distribution of overseas settler arrivals

The population growth generated by immigration has contributed to economic growth but the distribution of the migrant settlers has, in the main, not been restricted. As a result the majority of overseas migrants settle in the major cities rather than in smaller cities or regional towns. New South Wales remains the destination for the majority of new settlers, but distribution to other states, especially Queensland and Western Australia, has been increasing.

Within cities there has also been uneven distribution of new settlers. There are clusters of new arrivals in particular localities based on country of origin, religion, language, or relating

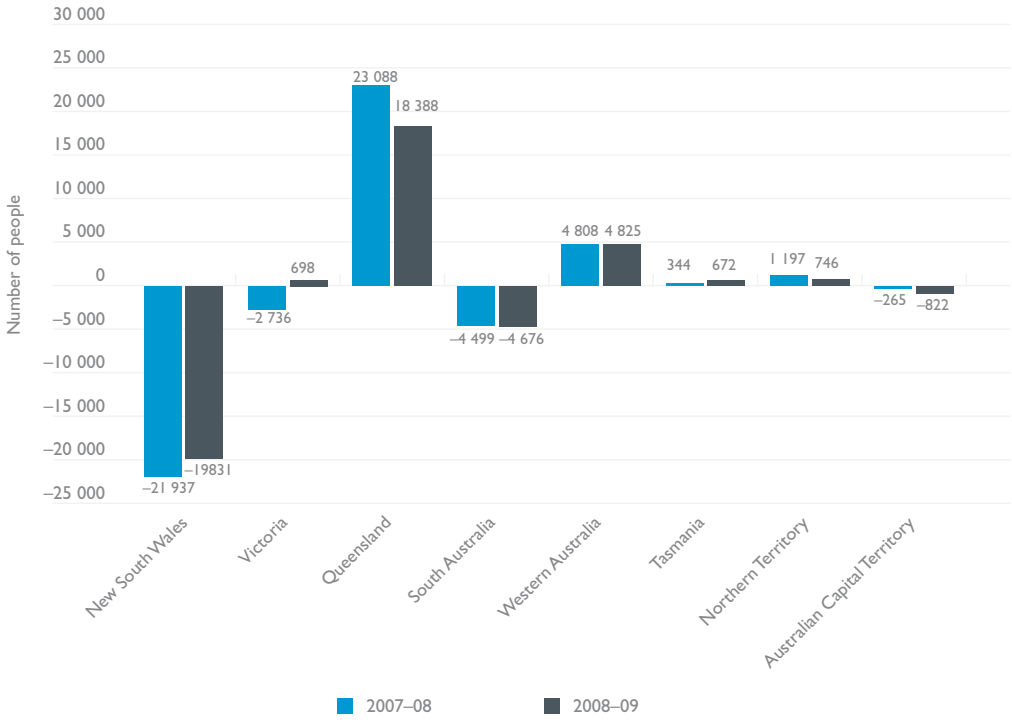
to their economic circumstances or the settlement and migration stream under which they have arrived.

ABS population projections for medium growth (ABS 2008b) and National Housing Supply Council (2009) demand and supply projections have been based on the Migration Program being maintained at a net overseas migration of 180,000 people a year. However, the permanent skilled migrant intake was reduced in March 2009 and again in May to bring the total for the 2009–10 migration program from 133,500 to 108,100 places in response to the economic downturn (Evans 2009). Nevertheless, even at these numbers there will still be considerable population growth.

Internal migration

In addition to large net overseas migration some cities are experiencing accelerated population growth as a result of interstate migration. In the year 2007–08 New South Wales experienced a net loss of 19,831 people, while Queensland experienced a similar net gain of 18,388 people (ABS 2009a). Western Australia recorded a net gain 4,825 people from interstate migration as shown in Figure 3.10.

Figure 3.10 Interstate migration, 2007–08 and 2008–09



Source: ABS 2009a.

Demographic change

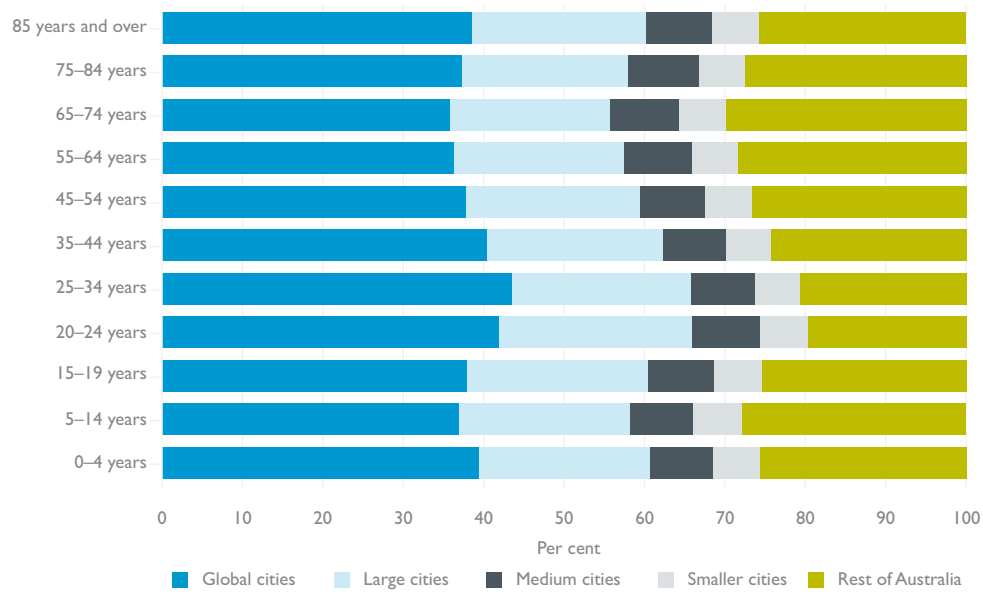
The two most important demographic changes occurring within the Australia population are the ageing of the population and changes to household size and composition.

Population ageing in our cities

Population ageing refers to the age structure of the population which, with declining fertility rates, is changing. An ageing population means that older people will make up a greater proportion of the population. Ageing of the population is expected to continue under all projections. The 2010 Intergenerational Report projections state that by 2050 there will be 8.1 million people over 65 years, representing 23 per cent of the population (The Treasury 2010) compared to 2.6 million people or 13.3 per cent in 2006.

Large cities tend to have a younger age profile than the medium and smaller cities and the rest of Australia because of the higher representation of tertiary students and people of working age between 20 and 34 years (Figure 3.11).

Figure 3.11 Age structure of Australian cities, 2006



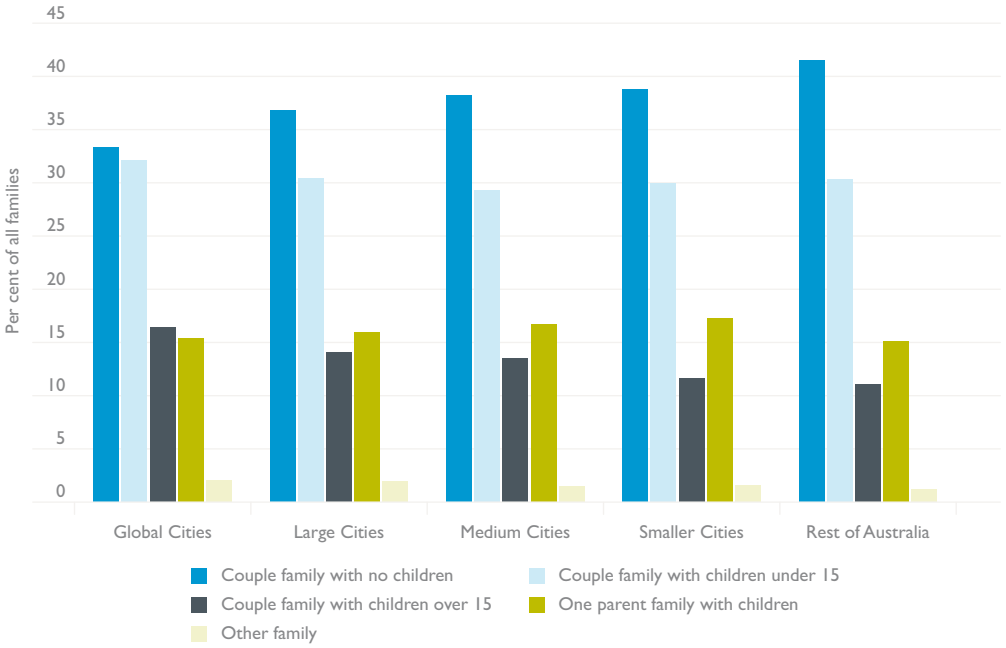
Source: ABS 2006.

Household size and composition

The composition of households varies between major cities and the rest of Australia, and varies with the size of cities. Further substantial regional variation in household composition also exists within cities.

Family structures differ with city size. Larger cities have lower percentages of families with no children and a higher percentage of families with children (Figure 3.12). Larger cities also have higher percentages of younger children (couple families with children under 15). One-parent families tend to be most highly represented in smaller cities.

Figure 3.12 Family types as a proportion of households, 2006



Source: ABS 2006.

There has been a notable trend towards smaller households over the past decade. This trend reflects the increase in the number of lone-person households and couple-only households. These various households will require more diverse housing stock but there is a mismatch between these demographic trends and current patterns of housing development, firstly in the types of dwellings being built and secondly in the size of the dwellings.

The decline in household size is producing an increase in the number of households relative to population growth. The number of households in Australia is projected to increase from 7.4 million in 2001 to between 10.2 and 10.8 million in 2026, an increase of between 39 per cent and 47 per cent (ABS 2004). This growth in the number of households is much faster than Australia's projected population growth of 25 per cent for the same period.

The average household size in Australia is projected to decline from 2.6 people per household in 2001 to between 2.2 and 2.3 people per household in 2026. Australia's household size (2.5) in 2011 is projected to be smaller than New Zealand (2.6) and Japan (2.6), the same as the United States of America (2.5) and Canada (2.5), and larger than England (2.2).

Lone-person households are projected to show the greatest percentage increase of all household types over the 25-year projection period of 2001 to 2026. This is related to the ageing of the population and the fact that older women, in particular, are more likely to live alone. The number of lone-person households is projected to increase by between 57 per cent

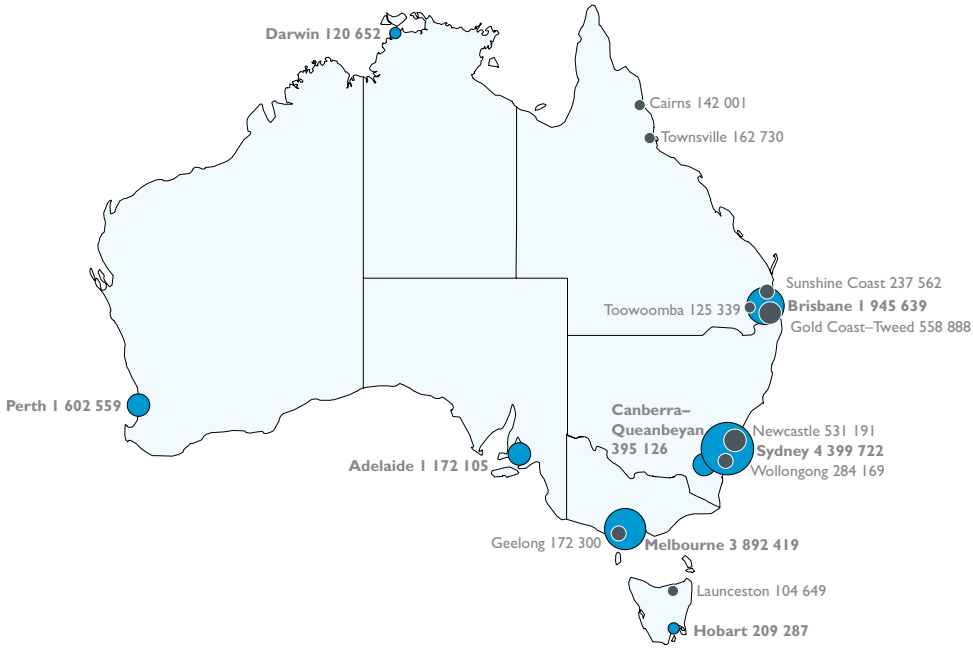
and 105 per cent, from 1.8 million households in 2001 to between 2.8 million and 3.7 million households in 2026.

More information on appropriate housing can be found in Chapter 6 (Liveability) in this report.

Urban settlement

Australia's major cities are located predominantly in coastal areas (Figure 3.13). The shapes of these cities follow the natural contours, with 'outer areas' located often at long distances from the 'central' business districts (CBDs). In south-east Queensland, for example, the metropolitan region stretches along 200 kilometres of coastline. This combination of a highly urbanised population and the coastal locations of cities mean that nearly 80 per cent of Australians now live within 50 kilometres of the sea coast.

Figure 3.13 Australia's major cities, estimated resident population at June 30, 2008



Source: ABS 2009a.

The patterns of outward growth of major urban areas and improved transport linkages to regional centres have expanded our metropolitan regions. There are now major metropolitan regions that spread from Newcastle to Wollongong, from Bellarine to Mornington Peninsula, from Yanchep to Mandurah and from the Sunshine Coast to the Gold Coast and Coolangatta and beyond the border to Far North Coast New South Wales.

Rapid population growth in the post-war years in the larger capitals and in the later decades of the 20th century in the emerging cities has mostly been accommodated by new housing developments located at long distances from the central business districts where jobs, higher

education facilities and services have been concentrated. The majority of new housing development in outer areas has been single detached dwellings.

As a result of this type of urban development, the populations of Australia's major cities are distributed over relatively large land areas. As at the 2006 Census the area covered by the major cities was 48,908 square kilometres with an average of 1,332.2 persons per square kilometre. However, considerable differences exist between the cities in the relationship between area of land covered by urban development and the number of persons per square kilometre as shown in Table 3.2 below.

Table 3.2 Population distribution within major cities, Australia, 2006

City (a)	Persons per sq km
Sydney	2 037
Melbourne	1 566
Brisbane	918
Perth	1 213
Adelaide	1 374
Gold Coast	553
Newcastle	1 102
Canberra	1 081
Wollongong	1 272
Sunshine Coast	848
Hobart	1 027
Geelong	1 356
Townsville	8 28
Cairns	775
Toowoomba	803
Darwin	845
Launceston	747

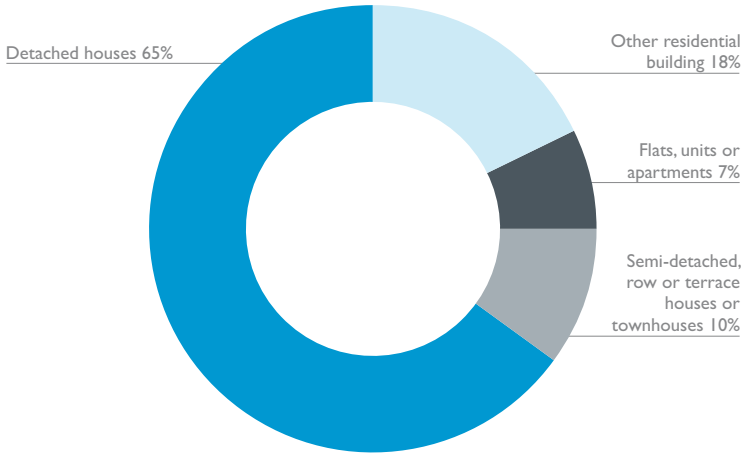
(a) Geographic unit of analysis for capital cities is 'urban centre'; for regional cities this is 'statistical sub-division'.
Source: ABS 2006

The impacts of outward urban expansion and low-density residential development have been a greater separation between residential areas and locations of employment, greater use of cars for mobility, higher costs of transport and vulnerability to oil price rises, and a loss of productive agricultural land or habitat.

Dwelling stock

The most common type of housing in Australian cities has been for most of the past century owner-occupied detached houses. The composition of dwelling stock in Australia has remained relatively stable over the past decade. In 2007, 79 per cent of dwellings were single detached houses, down only slightly from 80 per cent in 1997, with 9.4 per cent being semi-detached dwellings and 10.4 per cent being flats, units or apartments (ABS 2008c). In the year 2008–09, 71 per cent of dwelling approvals were for new houses (Figure 3.14).

Figure 3.14 Building approvals by dwelling category, Australia, 2008–09

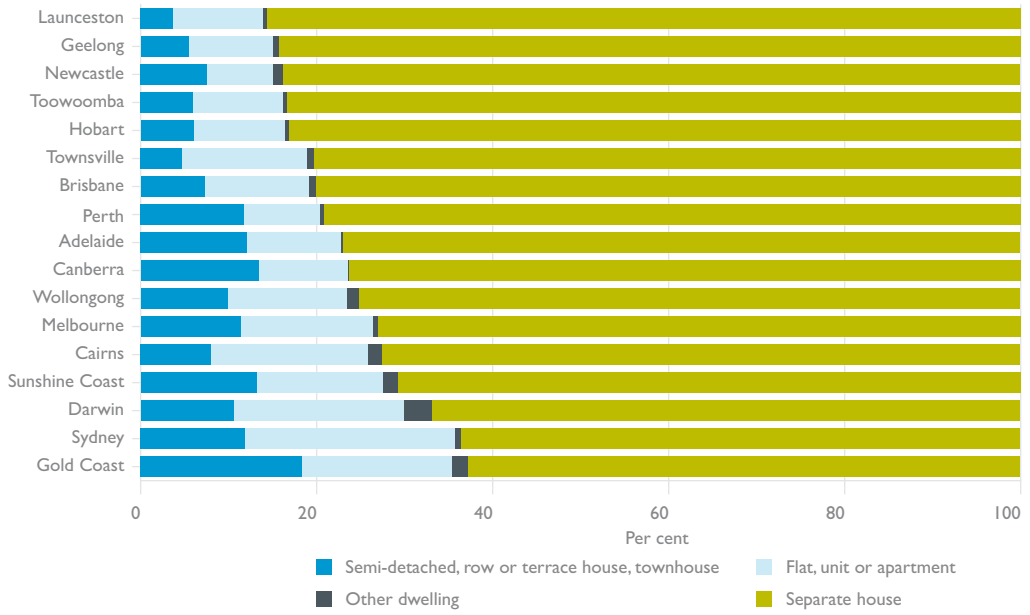


Source: ABS 2009c.

Proportions of housing types are not uniformly distributed. High concentrations of multistorey residential apartment buildings are usually found around CBDs, with decreasing densities towards the outer areas. The exceptions to this pattern can be found in Gold Coast City, where high-rise residential buildings extend along the coastline, and in Sydney, where higher-density residential development can be found around each of the major centres encompassed by the metropolitan area.

The proportions of dwelling type differ across our major cities. Sydney and the Gold Coast have the lowest portion of detached dwellings (Figure 3.15).

Figure 3.15 Proportion of housing stock by dwelling type in the major cities



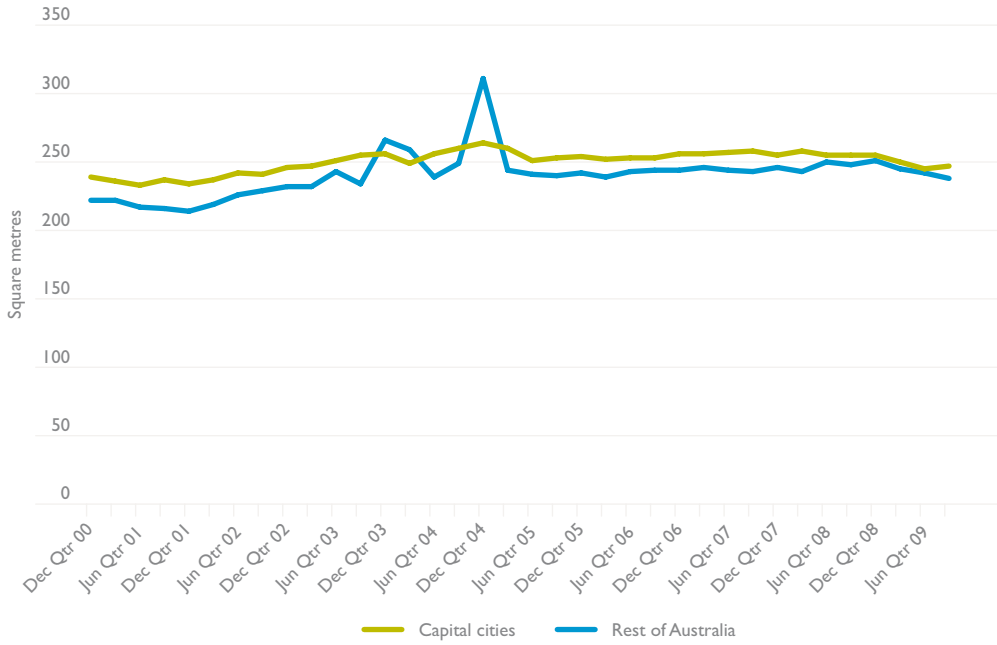
Source: ABS 2006.

Dwelling size

There has been a long-term trend to larger-sized homes in Australia to the extent that a recent analysis by the Commonwealth Bank showed that Australian homes now have the largest average floor size in the world (James 2009). The average size of new houses in Australia in 2008–09 was a record 245.3 square metres, up from around 160 square metres in 1985–86.

Since 2008, however, there has been a slight decline in the size of houses as shown in Figure 3.16. This may partly reflect the onset of the global financial crisis in 2008.

Figure 3.16 Average size of private sector houses, 2000–2009



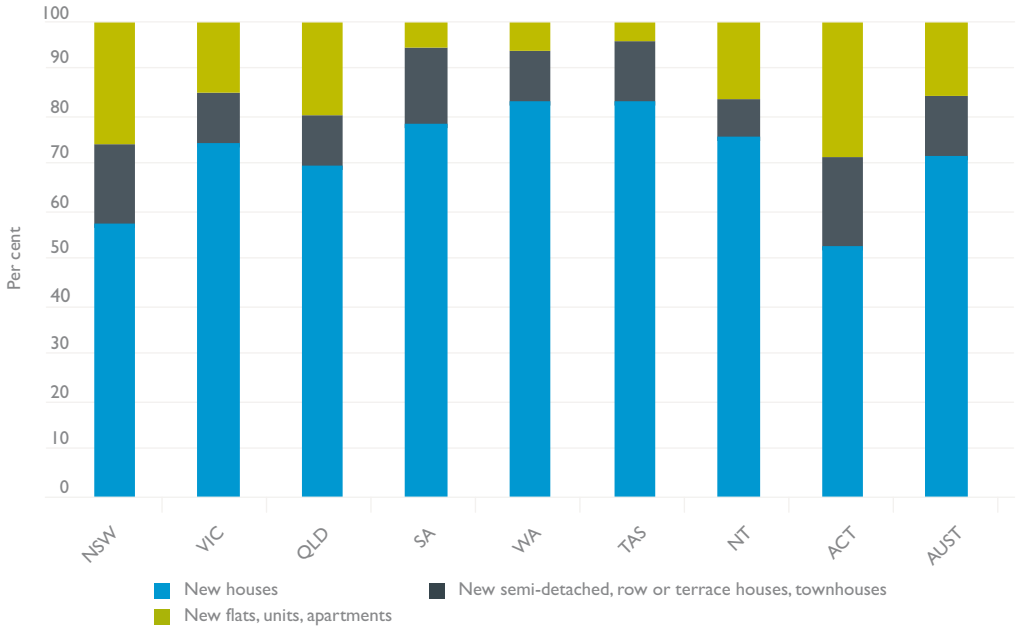
Source: ABS 2009c.

Relationship between housing stock and household composition

Traditionally, the progression along the life course for households from couple-only to families with dependent children means that the majority of first-home buyers are buying single detached dwellings. However, the social trends towards couples having children later in life, more people living alone and a greater proportion of older couples whose children have left home are increasing the number of households overall, and even more rapidly increasing the number of smaller households. Between 1997 and 2006, the average household size reduced from 2.7 persons to 2.5 persons.

Despite these social trends, the preference to build and buy detached houses has continued. In some jurisdictions, up to 80 per cent of all new dwellings (including non-residential) continue to be single detached housing (Figure 3.17).

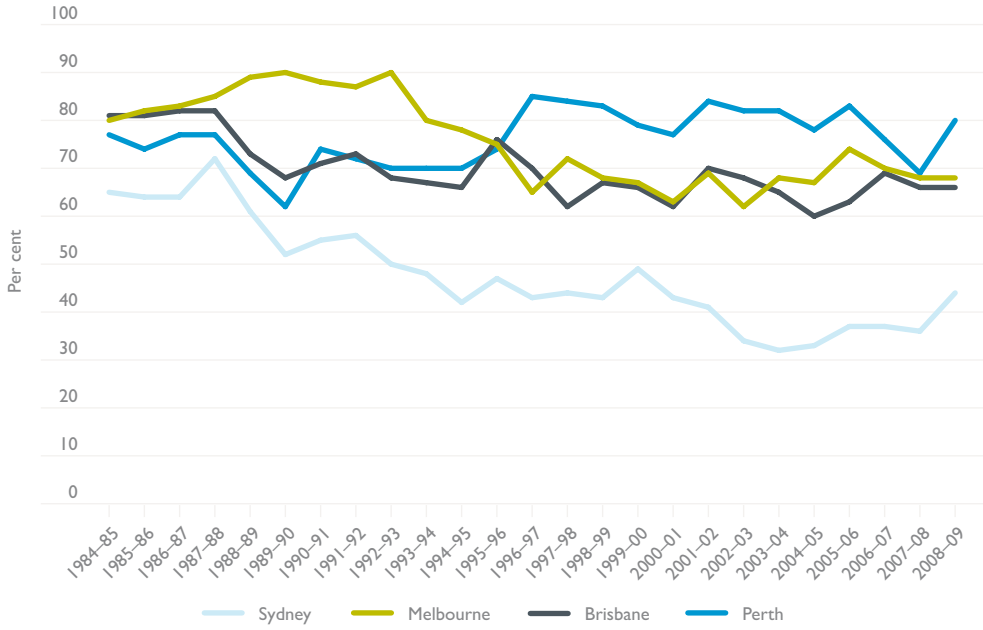
Figure 3.17 Proportion of dwellings approved by dwelling type, states and territories, 2008–09



Source: ABS 2009c.

However, in Sydney approvals for houses as a proportion of new dwellings declined from 84 per cent in 1984–85 to 50 per cent in 1992–93. It has remained below 50 per cent since, and was 44 per cent in 2008–09 (Figure 3.18).

Figure 3.18 Building approvals—houses as a per cent of total dwelling units

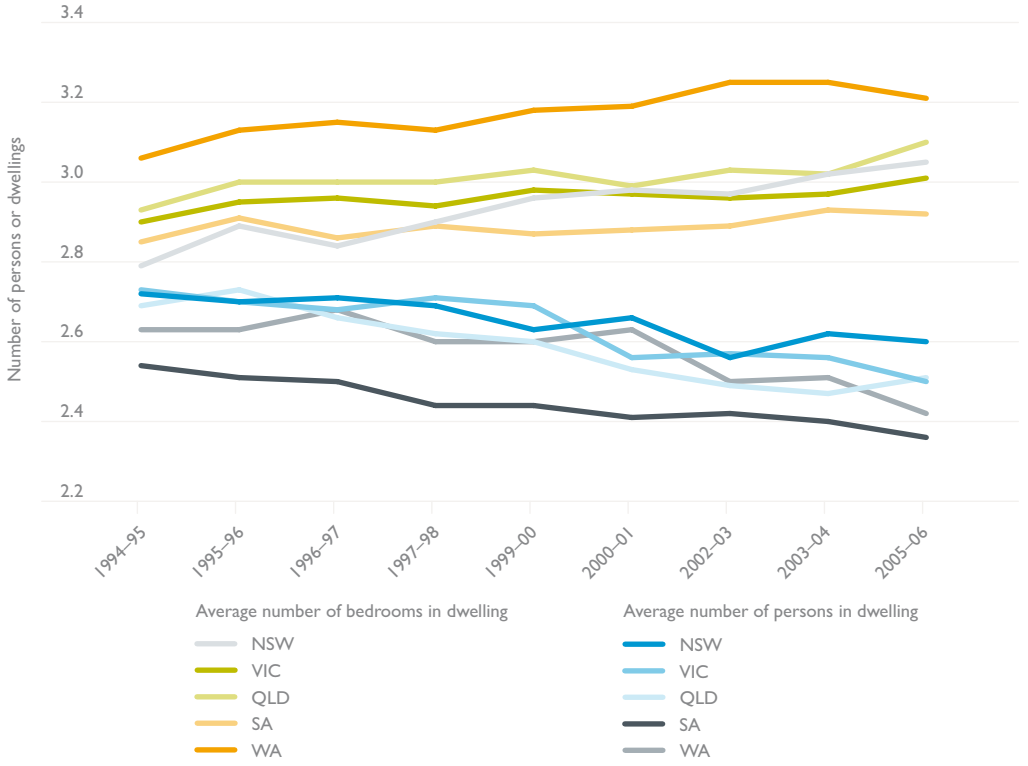


Source: ABS 2009c.

The trend to building and purchasing larger houses is also reflected in the number of bedrooms per dwelling. Between 1997 and 2006 the average number of bedrooms per dwelling increased from 2.9 to 3.1 (Figure 3.19). The Australian Bureau of Statistics has adopted the Canadian National Occupancy Standard[2] as one measure of housing appropriateness (ABS 2007b). Using this standard, figures for 2006 show that a very small percentage of households (2.8 per cent) in Australia had an insufficient number of bedrooms. By contrast, 42.4 per cent of households have above their required number of bedrooms (ABS 2008c).

2 The Canadian National Occupancy Standard measures the bedroom requirements of a household by specifying that: there should be no more than two people per bedroom; children less than five years of age of different sexes may reasonably share a bedroom; children less than 18 years of age and of the same sex may reasonably share a bedroom; single household members 18 years and over should have a separate bedroom, as should parents or couples; and a lone-person household may reasonably occupy a bed sitter.

Figure 3.19 Average number of persons per household and bedrooms per dwelling for five states



Source: BITRE analysis of ABS 2007b.

Both the extra bedrooms and the reduction in household size can, in part, be explained by an ageing population as people remain in homes built for their families long after their children move out. This is evidenced by the 77.5 per cent of couple-only households aged over 65 years having two or more spare bedrooms. However, there is also a trend towards larger houses for family households. In 2003–04, 73 per cent of family households in new dwellings had four or more bedrooms compared with 52 per cent of the total stock of owner-occupied dwellings having four or more bedrooms (ABS 2007a).

The evidence of this increasing housing size is also shown by overall floor space of new houses. In Perth for example, between 1994–95 and 2003–04 the average size of new separate houses grew by 17 per cent while household size declined by 10 per cent. The overall implication for cities is an apparent mismatch between housing stock and the diversity of needs of households, especially in respect to the ageing of the population and changing demographic profile of households. This trend also has implications for housing affordability, consumption and associated greenhouse gas emissions, and environmental sustainability.

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Productivity of Australian cities

Chapter 4

Introduction

Cities are not merely concentrations of people but centres of economic activity. As such, economically, cities matter, as places of business, commerce and trade. They are centres of opportunity attracting people, business and investment from around the world. They are a nation's gateway to the world and the global economy. Cities have to operate efficiently to ensure that the market can operate to maximum capability.

Australia's major cities contribute nearly 80 per cent of the national Gross Domestic Product and employ nearly 75 per cent of its workforce (ABS 2006; Raskall 2010). They are the principal location for approximately 70 per cent of Australia's businesses, including nearly two-thirds of its small and medium-sized businesses, and nearly 80 per cent of large corporations (Parliament of Australia Library 2005).

However, aside from their relative economic size, major cities, more significantly, are the drivers of their national economies. The OECD Report on *Competitive Cities in the Global Economy* found that most metro-regions in the OECD have a higher per capita GDP, higher productivity and faster growth rates than their national average (OECD 2006). It has been estimated that major cities were responsible for some 84 per cent of Australia's economic growth in the 2003–2008 period (Raskall 2010), and 81per cent of the employment growth in the 2001–2006 period (BITRE 2009). Even in a period of a resources boom in Australia, the major cities' share of the national economy increased.

The reason for this is that cities as economic entities add competitive value to the businesses located within them. Cities can provide benefits to business through connectivity, large-scale provision of factors such as skilled and specialised labour, and the capacity to attract such labour. There is an important two-way relationship between cities and the businesses located within them. Business competes nationally and internationally, but to be able to do so effectively requires assistance from cities in the form of skilled labour, connectivity, educational, cultural and social facilities, as well as efficient linkages of centres of activity through transport, freight systems and communications. To realise this potential, businesses in Australian cities need to be globally competitive—not merely in cost terms but also in terms of access to the benefits of innovation and skilled labour markets that cities can provide.

Through agglomeration economies—that is, the benefits that result from the clustering of activities— and flow-on effects on innovation and specialisation, cities achieve a productivity premium which is considerable. This may be enhanced through strategic management of skills development and investment in amenity in cities through integration of land-use, transport and infrastructure provision.

This chapter examines some indicators of factors affecting the productivity contribution of Australia's major cities. While there are significant gaps in the provision of city output and productivity data, it provides an indication of how successfully Australian cities are contributing towards national and local productivity.

The productivity of our cities is affected by many factors, including efficiency of infrastructure, connectivity between businesses, people and their skills, ideas, goods and services, liveability and the well being of our community. This section focuses on two main principles that affect the productivity of cities:

- efficient use of infrastructure and resources
- building on the comparative advantages of cities.

Summary indicators

Dimension	Indicators
Economic output/growth	Estimated city gross value added output
	City contribution to national economic output
	Estimated city economic growth
	City economic growth premium compared to national average
Productivity/innovation	Patent activity
	International regional productivity comparisons
Congestion/transport	Costs of congestion
	Port interface costs
	Growth in motorised travel
Service/Knowledge industries	Service sector growth
	Service sector exports
	Employment by occupation
Connectivity/Internet	Rate of Internet connection
	Regional connections
Concentration/Specialisation of economic activity	Employment by industry
	Location quotients by city

Key findings

- Australia's major cities contribute nearly 80 per cent of the national Gross Domestic Product and employ nearly 75 per cent of its workforce. They are the principal location for approximately 70 per cent of Australia's businesses, including nearly two-thirds of its small and medium-sized businesses and nearly 80 per cent of large corporations.
- Major cities were responsible for some 84 per cent of Australia's economic growth in the 2003–2008 period, and 81 per cent of the employment growth in the 2001–2006 period. Even in a period of a resources boom in Australia, the major cities' share of the national economy increased.

- Bureau of Transport and Regional Economics (BTRE) estimated that the avoidable cost of road congestion for the Australian capitals was approximately $9.4 billion for 2005. This is projected to rise to $20.4 billion by 2020 according to base case projections.
- The freight task in Australia's eight capital cities is expected to grow by 70 per cent between the years 2003 and 2020.
- Australia's major cities continue to contribute positively to national productivity compared to the rest of Australia.
- Australian cities drive the services sector. In Australia, the services sector accounts for more than 75 per cent of economic activity, 85 per cent of employment and 20 per cent of exports. The service sector is the fastest-growing source of high-value jobs in the developed world, including Australia. Services contribute to an increasing share of GDP. The vast bulk of that activity occurs in our cities.

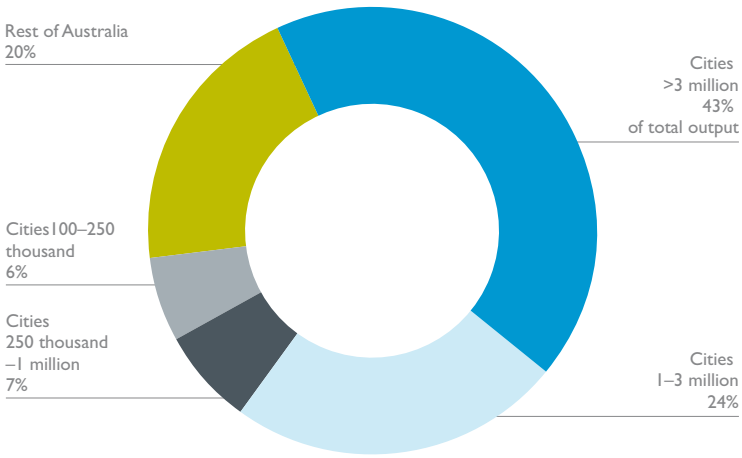
Economic performance of Australian cities

Economic activity

The economic dominance of the major cities is highlighted by the data presented on the relative share of economic activity. While national account equivalent data are unavailable at a city level, estimates based on relative labour productivity by industry and the industry–employment mix in particular cities suggest that 80 per cent of Australia's economic activity occurs in major cities and that they employ 72.8 per cent of total national employment (ABS 2006). These two figures are consistent with the productivity premium of city-based employment.

Over half (53 per cent) of Australia's economic activity occurs in Sydney, Melbourne and Brisbane, and a further 15 per cent in Perth and Adelaide. Other medium-sized major cities (with between 250,000 and 1 million population) contribute 7 per cent, slightly larger than the economic activity generated in the smaller major cities with a population between 100,000 and 250,000 (Figure 4.1).

Figure 4.1 Major city contribution to economic output



Source: Estimates derived from ABS (2009) and ABS (2006).

While the major cities constitute a substantial proportion of the economic size of the Australian economy, they have constituted an even larger share of economic growth in the economy, as measured by Gross Value-Added.

Calculations based on a methodology analogous to the economic output measure show that in the five years from 2001 to 2006, the major cities contributed a total of 84 per cent to the growth of the national economy, with the capital cities contributing 75 per cent alone (Raskall 2010). This was accompanied by an 81 per cent share of the employment growth over this period. The difference again reflects the economic growth premium stemming from productivity gains within the major cities.

However, it must be stressed that these are estimates of Gross City Product and not measures calculated within the compilation of the National Accounts by the Australian Bureau of Statistics.

Decline in economic growth relative contribution

There are indications that the major cities may be losing their edge in contributing to economic growth. Using a similar productivity-adjusted industry-employment mix to re-scale national growth in Value-Added by Industry for each city, estimates can be made of the likely difference in economic growth between the major cities and the national economic average.

Table 4.1 shows that over that 33-year period from 1976 to 2009 the major cities recorded economic growth that was, on average, 0.201 per cent greater than the national average. This was largely concentrated in the larger capital cities, which recorded a 'premium' of 0.212 per cent. Though not quite as large as the capital city contribution, regional cities have still recorded an above-national long-term growth of 0.114 per cent.

However, over the past decade, the contribution of the major cities has resulted in an average economic growth only 0.037 per cent more than the national average. For the capital cities this had fallen to 0.049 per cent; for the regional cities, it declined such that they averaged 0.054 per cent less than the national average.

Table 4.1 Average city economic growth premium (per cent)

	1976–2009	2000–2009
Major cities	0.201	0.037
Capital cities	0.212	0.049
Regional cities	0.114	-0.054

Source: Estimates derived from ABS (2009) and ABS (2006)

This result may have occurred because of events in the past decade that have affected the industry specialisation of cities, such as the global downturn in the ICT industry in 2000–01 and the early impact of the recent global financial crisis. Other contributing factors may have included increased inefficiencies and productivity losses arising from an infrastructure backlog, transport congestion, and increased costs associated with the movement of freight, and the provision of services such as water, power and sewerage associated with the growth of cities. The resources boom may have seen increased relative non-city productivity.

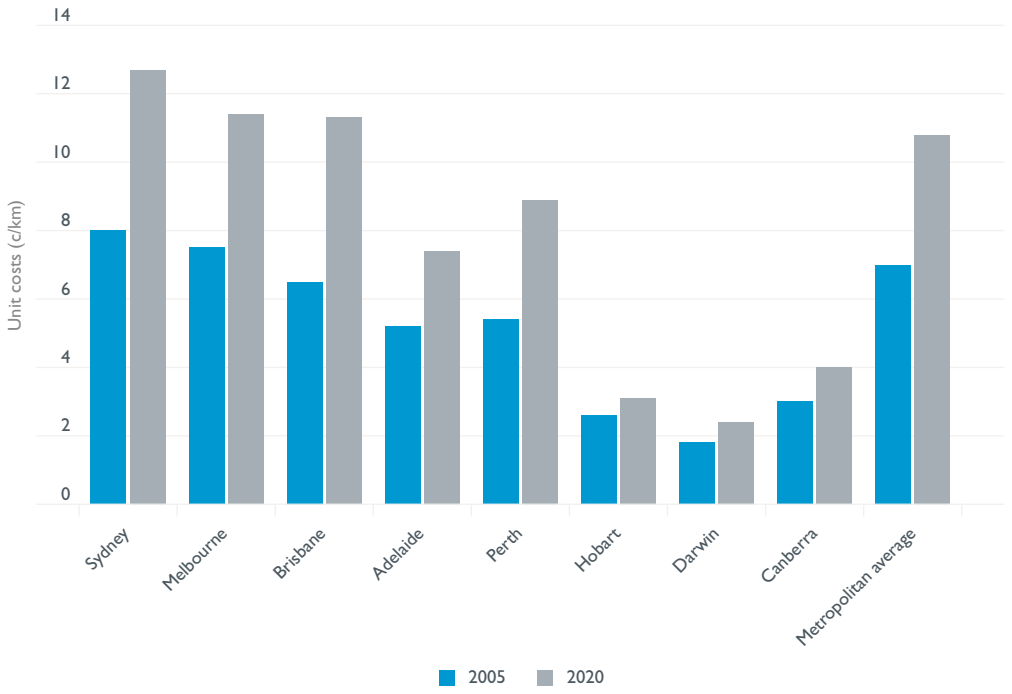
Challenges to productivity

The productivity of our cities is affected by many factors, including: efficiency of infrastructure; connectivity between businesses, people, ideas, goods and services; and 'liveability' (discussed in Chapter 6).

Road congestion

Road congestion is one important area where efficiency of infrastructure affects productivity in Australia's cities. It is clear that the number of passenger and freight trips is increasing faster than transport network capacity. The Bureau of Transport and Regional Economics (BTRE) estimated that the avoidable cost of congestion for the Australian capitals was approximately $9.4 billion for 2005. This is projected to rise to $20.4 billion by 2020 according to base case projections (BTRE 2007). As demonstrated in Figure 4.2, this aggregate cost of avoidable congestion has been translated into an average cost per kilometre travelled. Urban road congestion also has a social cost through, for example, reducing the amount of time available for families to spend together. It has a great impact on city residents' quality of life.

Figure 4.2 Average unit costs of congestion for Australian capital cities



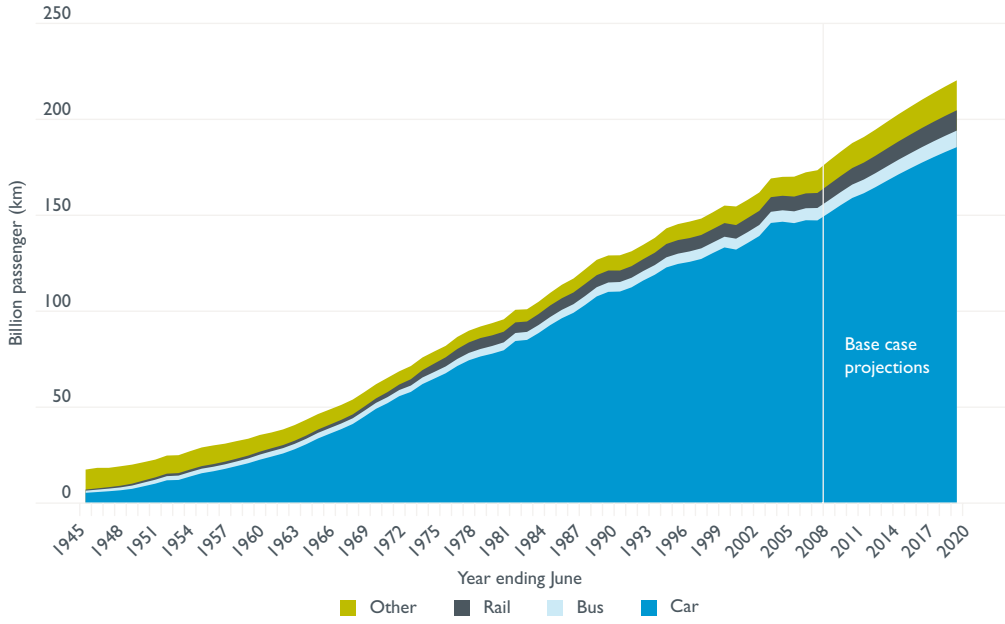
Source: BTRE 2007

Australia's urban transport system is largely based on motorised vehicles, which represent roughly 90 per cent of passenger transport (BITRE 2008) and about 80 per cent of total transport in Australian cities (ABS 2008a).

The increase in the use of different modes of motorised travel in Australia's capital cities since 1945 is illustrated in Figure 4.3.

Urban car use has grown almost thirty-fold since 1950 when it began to replace rail as the main mode of passenger transportation. The levels of car dependency in Australian cities have increased at a rate faster than population growth, creating traffic congestion problems, particularly in the larger capitals of Sydney and Melbourne and in Brisbane and Perth where infrastructure and public transport provision have not kept pace with growth rates. In addition, the heavy reliance on private vehicles makes Australia's urban transport system structurally vulnerable to increasing oil prices (Dodson & Sipe 2008).

Figure 4.3 Motorised travel in Australia's capital cities



Source: BITRE 2008

Freight

The freight task in Australia's eight capital cities is expected to grow by 70 per cent between the years 2003 and 2020 (BTRE 2007). Increasing congestion on urban roads means that as freight continues to compete with other traffic, productivity declines. This is particularly important for the productivity of businesses.

Increases in international freight costs can be attributed to increasing costs in landside freight. Portside costs including stevedoring, customs and port charges have decreased in real terms since 1996 (BITRE 1996–2009). At the same time, the cost of transporting freight to Australia's major ports has increased mainly due to congestion. Figure 4.4 demonstrates this change since 1996.

Figure 4.4 BITRE port interface costs: change in $ per TEU*, imports, 1996–2008

* Twenty-foot Equivalent Unit, the standard unit for measuring shipping container volume

Source: Bureau of Infrastructure Transport and Regional Economics (BITRE) 1996–2009 Waterline. Issues 8–45

International productivity comparisons

After a decade of strong growth in international terms, since the late 1990s Australia's relative productivity growth performance has deteriorated.

Productivity measures the efficiency with which labour and capital are combined to produce goods and services, and thus implicitly captures the effects of technological advances, organisational changes, new processes and the movement of factors of production. It reflects the diffusion and transmission of new information and communication technologies, as well as new products.

While much attention, operationally, is assigned to labour productivity—the output per hour worked—because of its connection to standards of living, of particular relevance here is the more technical concept of 'multi-factor' productivity, which reflects the interaction of labour and capital. It is this latter component that has shown a decline in the past decade to less than half the long-term average rate of growth, and substantially below many of Australia's competitive trading partners.

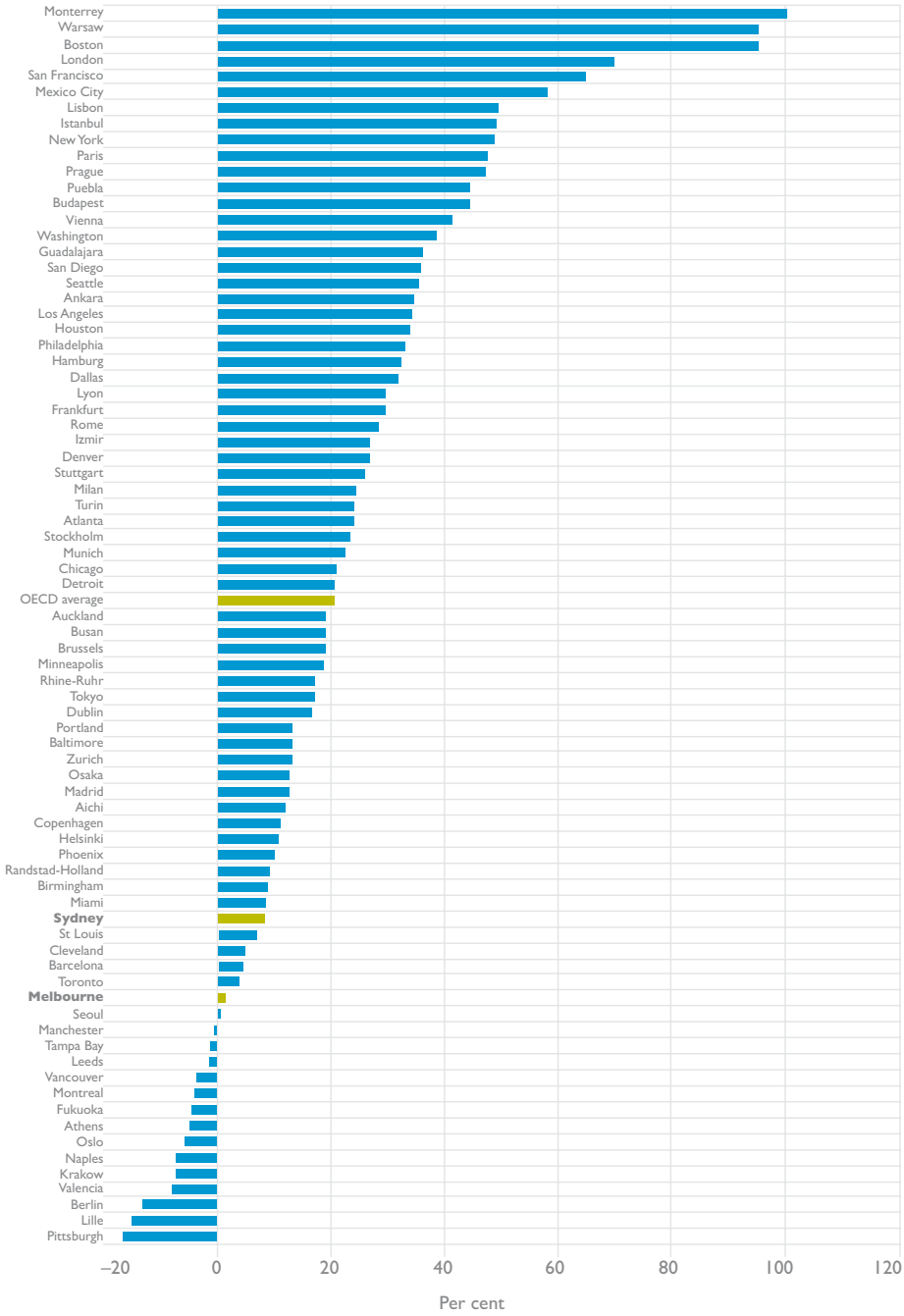
Attention is generally directed towards industry-sector productivity and business dynamics. Regionally-based industries such as mining, agriculture, electricity, gas and water industries are argued to have played a strong role in recent slowing of Australia's productivity growth rate (Productivity Commission 2009). However, if cities impart productivity benefits to businesses in the market through externalities (that is, impacts on a business of economic activity they are not directly involved in) and agglomeration economies, then equally when those cities do not function as efficiently, they have the potential to also reduce or even detract from overall national productivity performance. Unfortunately, datasets measuring productivity and 'multi-

factor' productivity are not available at an Australian city level, where cities are treated as a discrete economic entity in order to measure this.

In 2006, the OECD undertook a study on competitive cities in the global economy, and estimated the output and productivity of the largest 78 metro-regions in the OECD (OECD 2006). This included Sydney and Melbourne. The study revealed that most cities have higher economic growth, foreign investment and productivity than the rest of the country they are located within.

Figure 4.5 shows the ranking of these metro-regions by productivity premium over the rest of the nation.

Figure 4.5 Productivity differences, metro-regions, 2002



Source: OECD 2006.

Both Sydney and Melbourne, while positive in national productivity contribution, ranked below the OECD average. Out of the 78 cities examined, they ranked 58th and 63rd respectively. These results should be interpreted with caution as the estimates for Sydney and Melbourne

use State productivity estimates rather than city-specific productivity estimates, which are then compared to city-specific productivity estimates for cities in other countries.

Innovation

In 2007–08, 39.1 per cent of Australian businesses reported implementing an innovation. This represented a 7 per cent increase from the year 2006–07. Of the types of innovation implemented, 21.9 per cent of businesses reported introducing new goods and services, 17.6 per cent implemented new operational processes, 19.0 per cent implemented new organisational/managerial processes, and 14.6 per cent implemented new marketing methods (DIISR 2009).

Innovation through the generation of ideas and transmission of new technologies can underpin productivity gains. Because these can occur through connectivity and collaboration, innovation can have a specific location impact.

In the absence of comparable statistics, one indicator of capacity to create knowledge and innovation is patent activity. The OECD provides a snapshot of the latest internationally comparable data on patents. Among OECD countries, inventive activities are the most highly concentrated in certain regions in Australia, which is second only to Canada on a geographic concentration index (OECD 2008). For the purposes of the OECD database, regions are defined at an Australian state level, although the primacy of the capital city in most states makes those cities the most likely source of origin. Most of the regions selected overseas are based on urban conurbations.

For 2008, New South Wales ranked 39th and Victoria 59th among patenting regions worldwide (OECD 2008). While these regions ranked lowly in terms of patents related to information technology, both ranked in the top 40 for biotechnology. Of particular note is New South Wales' third ranking in patents relating to renewable energy technology for the period 2003–2005, behind Denmark and Tokyo.

Evidence provided by the Australian Local Government Association–National Economics *State of the Regions 2007–08* report suggests that over the past decade, 75 per cent of all Australian patents were sourced in capital cities. In particular, 85 per cent of high-tech and information technology patents came from the capital cities. Over 80 per cent of innovative start-ups were located in these cities (National Economics 2008).

The increasing knowledge sector economies of Australian cities

A city's competitive advantage also relates to its capacity to concentrate research and development activities and generate innovation (OECD 2006). Cities that build and retain their human capital will be the strongest, most resilient and competitive.

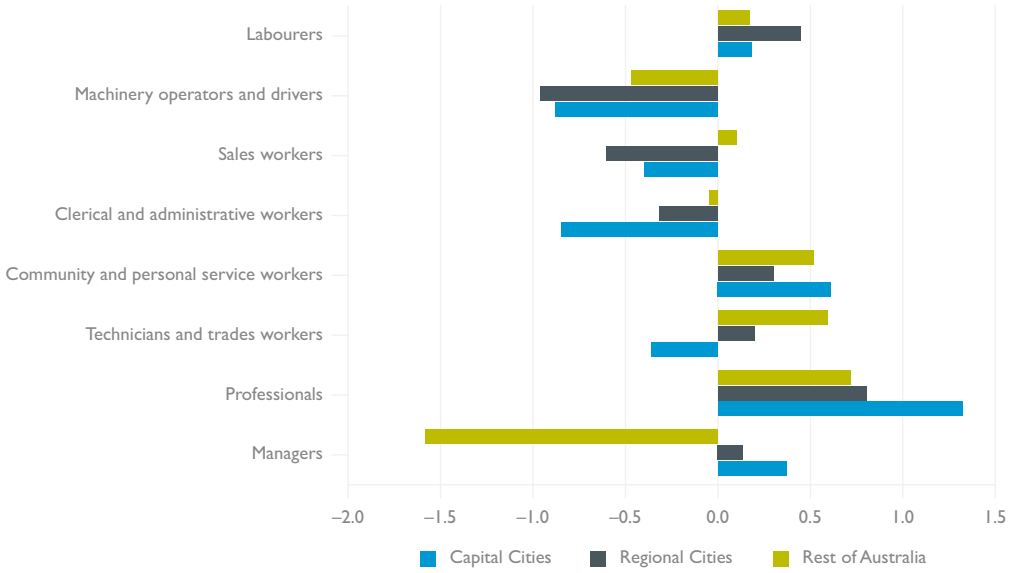
Australian cities drive the growth in the services sector. The services sector is the broad description for a group of industries, that include for example electricity, gas, water and waste services, construction, wholesale and retail trade, accommodation and food services, transport, information media and telecommunications, finance and insurance, real estate, professionals,

scientific and technical, public administration, education and health care, arts and recreation services, and other services.

In Australia, the services sector accounts for more than 75 per cent of economic activity, 85 per cent of employment and 20 per cent of exports (Business Council of Australia 2007). The service sector is the fastest-growing source of high-value jobs in the developed world, including Australia. Services contribute to an increasing share of GDP (ABS 2008b). The vast bulk of that activity occurs in our cities.

Knowledge-based industry is fuelling the growth of Australia's major cities. Figure 4.6 demonstrates a shift towards knowledge-based employment sectors in Australian cities. Since 1996, there has been an increase in the proportion of professionals throughout Australia. This is most concentrated in the capital cities. Managers have also increased their proportionate share in cities, while the proportionate share of managers in the rest of Australia has declined (largely due to a decline in the number of farm managers). This has occurred as the proportions of machinery operators and drivers, sales workers and clerical and administrative workers have declined in Australian cities.

Figure 4.6 Change in proportionate share of occupational sectors, 1996–2006



Source: ABS 2006.

Case study: Australian companies lead the world in property, design and construction

Australian individuals and companies are increasingly locating throughout the Asia-Pacific region, Europe and the United States, and are leading and innovating in property development, urban design, building construction, property investment and finance.

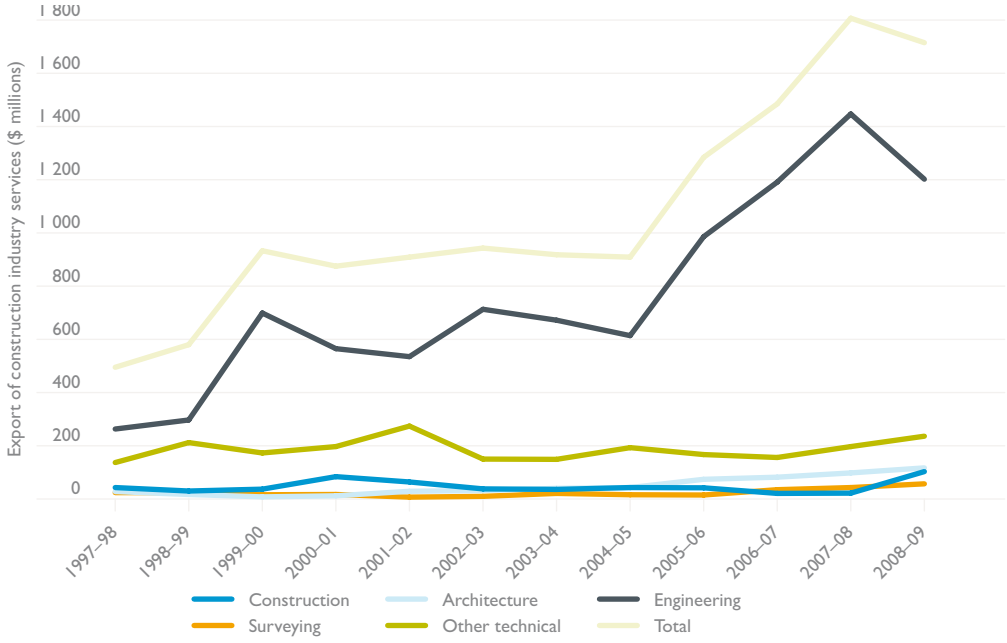
For example, Australia has one of the most sophisticated property markets in the world and, with 70 per cent of core property securitised through listed and wholesale trusts (Australian

Stock Exchange 2009) it has the most securitised property market. Australia has the second largest Real Estate Investment Trust (REIT) market in the world after the United States. Australian A-REITS, formerly known as listed property trusts, comprised 13.7 per cent of the global real estate market in June 2006 compared to Japan (6 per cent), the rest of Asia (3 per cent) and France (3.3 per cent) (de Francesco 2006).

Likewise Australian property, construction, engineering and design companies such as Westfield, Macquarie, Lend Lease, Multiplex and Snowy Mountains Engineering Corporation (SMEC) have expanded across the global stage.

Figure 4.7 shows the growth in exports of Australian construction industry services from 1997–98 to 2007–08 (DFAT 2009). Construction industry services are Australia's fourth largest services export industry after education, tourism and financial / insurance (DFAT 2008).

Figure 4.7 Exports of Australian construction industry services, 1997–2008



Source: ABS 2010.

State of the Regions report

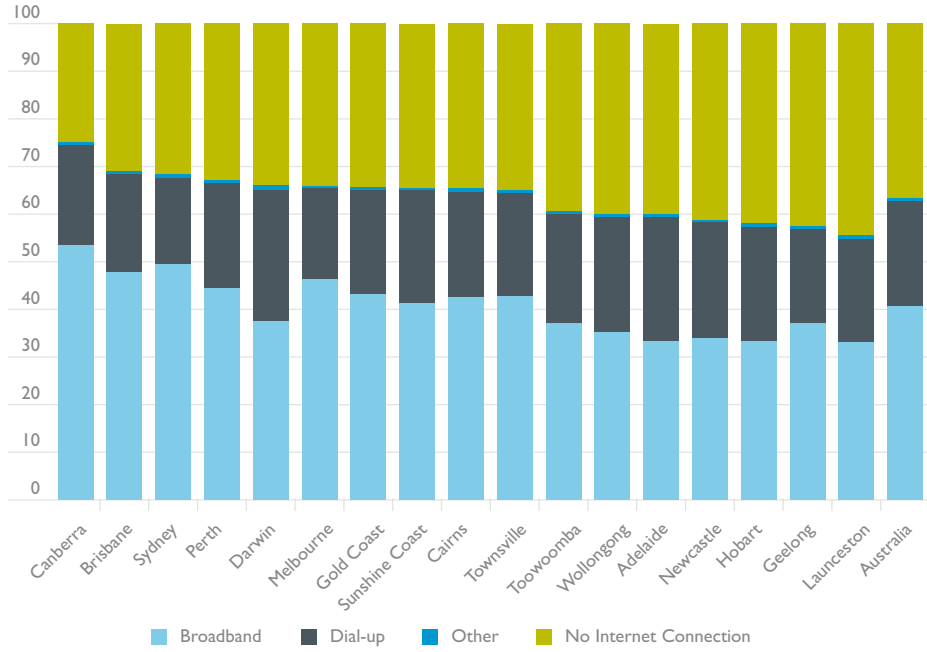
The 2007–08 State of the Regions report (National Economics 2008) utilises cross-sectional data across defined regions compiled over a decade to demonstrate these propositions:

- High-income economies, apart from those with a unique and extensive natural resource base, now depend on sustained innovation as the core driver of long-term economic growth.
- The capacity to innovate depends on knowledge and networks at a regional level.
- There is a good correlation between the economic success of a region measured by non-mining gross regional product per person employed and patent activity, and similarly between high-tech business start-ups and patents per capita.
- Regions with high productivity have high household incomes and low unemployment rates.
- Low-productivity regions are rapidly ageing in population, while high-productivity regions are ageing relatively slowly.
- Successful knowledge-based regions have a high concentration of highly skilled knowledge workers, who tend to migrate to regions with scale and diversity of social and community infrastructure and cultural and lifestyle choices.
- Regional centres that have contributed strongly to the improved economic performance of a rural regional group have had high employment growth relative to population growth.

Communications connectivity

While connectivity is one of the principal drivers of city productivity, it does not relate solely to transport and movement systems. Households in Australia's major cities have better access to the Internet than the rest of Australia. Figure 4.8 demonstrates that levels of Internet subscription differ among the major cities. Canberra clearly has the highest percentage of households with Internet connections overall.

Figure 4.8 Household Internet connections



Source: ABS 2006.

Aside from personal connections, the Internet enables businesses to market directly to the national and global economy and to cluster, in a virtual sense, around whichever Australian or global research-based institution serves their sector best. Thus firms in the knowledge economy can obtain significant productivity benefits through their capability to use the communications network as their virtual economic cluster.

For other businesses, communications technology can rapidly improve process and management efficiency through computer-based software innovation applications. In certain circumstances this has enabled organisations to separate the component functional divisions of their organisation into different locations with communication linkages. This has freed the organisations to take advantage of the optimum location for each of these divisions, rather than a compromised location for the entire organisation.

However, paradoxically, for some parts of organisations, particularly those with a strategic function, globalisation has brought an increased need for 'face-to-face' contact, to be aware of, and engaged in, spatially based and location-specific knowledge networks.

Regional connections

Just as the major cities connect Australia to the global economy, the prosperity of smaller regional areas of each state and the major cities are also connected.

While these rural and small urban areas supply food, energy and other essential items to the cities, the major cities also act as the regions' biggest customers, market the regions to the

rest of Australia and the world, provide important specialised labour, research and advisory services, provide important distribution infrastructure facilities—seaports, airports, and land-based transport interchanges—and, through gains in trade, help advance the regional standard of living. In reality, it is not 'the city or the bush', but 'the city and the bush'.

As an illustration, in 2003, the Committee for Sydney commissioned research (Committee for Sydney 2003) to examine the extent of this mutual interdependence. Using its position as Australia's major airport hub (with approximately half of international passengers and a quarter of domestic passengers starting or ending their journey at Sydney airport), Sydney (like the other major cities) acts as a gateway to regional NSW. From Sydney, visitors travel to all points of the compass in regional NSW, making 12 million trips annually (including 3 million international visitors). The study estimated that tourists from Sydney injected $5.4 billion into the regional NSW economies, directly creating 111,000 jobs and 63,000 flow-on jobs (Committee for Sydney 2003).

Similarly, the study found that Sydney is regional NSW's biggest customer, buying over $2.4 billion of agricultural produce. This has been estimated to involve 28,000 jobs in supplying the Sydney market and 17,600 flow-on jobs in regional NSW.

All up, through just these two industry sectors, Sydney underpinned approximately 220,000 jobs in regional NSW, which was equivalent to approximately 20 per cent of the regional workforce in NSW.

In the supply-chain of competitiveness, regional NSW depends on Sydney for a globally competitive business cost structures and efficient transport infrastructure to compete globally, through Sydney ports, air and sea. In 2003, this directly benefited around $13 billion of exports, of which over $7 billion was non-agricultural. These exports would have contributed another 35,000 direct jobs in regional NSW.

In just this limited illustration, a major city in one state contributes to the maintenance of approximately one-quarter of non-metropolitan jobs. Similar results, possibly higher, would appear in respect of other major cities depending upon the particular circumstances of the respective state.

Concentration and specialisation of economic activity

The above discussion suggests strongly that, through the concepts of relative productivity, agglomeration economies, clusters and innovation, 'place' matters in economic outcome.

Economic activities, once located, tend to benefit from specialisation, productivity advantages and agglomeration economies to develop into broader clusters of similar or related activities.

The result is that economic events or policies that affect particular industries will have a different impact in different parts of the nation. This, in turn, can impact differently on community residents in uneven pattern across the nation. Economic action has a location or 'place' outcome.

At the broadest level, based on relative industry sector employment share, the largest cities—Sydney, Melbourne, Brisbane and Perth—are dominated by finance and business services, followed by the retail and manufacturing industries.

For the other cities, particularly the non-metropolitan regional cities, retail is the dominant sector, the exceptions being Canberra and Darwin where government employment dominates.

Industry sectors dominant within the major cities include finance, information communication technology and wholesale trade as well as some manufacturing industries.

Similarly, among occupation sectors the major cities dominate in professional and managerial occupations.

Depending on their functional role and location, even at a broad employment scale, specialisations become apparent—for example, manufacturing is significant in Geelong, Adelaide and Wollongong; health and community services are prominent in Newcastle, Adelaide, Toowoomba and Launceston. The 'sea change' cities of Gold Coast, Sunshine Coast and Cairns have significant construction industries.

Perth has clearly become Australia's mining industry 'capital'. Between 2001 and 2006, mining employment in Australia increased by 31,716. In Perth alone, employment in mining increased by 67 per cent to a total of 17,690. Over this period, 7,139 or 22.5 per cent of the Australian increase occurred in Perth (ABS 2006).

Tables 4.2 and 4.3 show the major specialisation of particular industries in each city as reflected in its 'location quotient' or specialisation index.

A high location quotient shows that a particular city has more than its share of a particular economic or industry activity. The location quotient determines which industries make the city economy unique and form its economic export base. This diversity and specialisation is important because it can increase the opportunity for complementary linkages between cities to maximise comparative advantage.

Even within the major cities, particular areas of the city can reflect an industry specialisation based on the location qualities and accessibility of each area.

Table 4.2 Capital city specialisations: top 3 industries by employment location quotient

Sydney	Internet Publishing + Broadcasting	Financial Services	Air Transport
Melbourne	Transport Manufacturing	Polymer/Rubber Manufacturing	Telecommunications
Brisbane	Petroleum/Coal Product Manufacturing	Rail Transport	Transport Support Services
Perth	Oil and Gas	Non-Metallic Mineral Mining	Gas Supply
Adelaide	Transport Manufacturing	Oil and Gas	Mechanical + Equipment Manufacturing
Hobart	Aquaculture	Forestry	Electricity Supply
Canberra	Public Administration	Library + Information	Heritage Activities
Darwin	Defence	Water Transport	Gambling Activities

Source: ABS 2006.

Table 4.3 Regional city specialisations: top 3 industries by employment location quotient

Newcastle	Metal Manufacturing	Coal Mining	Electricity Supply
Wollongong	Metal Manufacturing	Coal Mining	Tertiary Education
Geelong	Petroleum/Coal Product Manufacturing	Textile, Clothing Manufacturing	Metal Manufacturing
Gold Coast	Gambling Activities	Financial Services	Accommodation
Sunshine Coast	Accommodation	Real Estate Services	Fishing
Townsville	Defence	Rail Transport	Electricity Supply
Cairns	Air Transport	Accommodation	Fishing
Toowoomba	Food Product Manufacturing	Motor Vehicle Wholesale + Retail	Tertiary education
Launceston	Forestry	Wood Product Manufacturing	Metal Manufacturing

Source: ABS 2006.

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The sustainability of Australian cities

Chapter 5

Introduction

Human settlements and their populations place pressure on the environment through the demand for water, energy and land, and through the production of wastes including greenhouse gas emissions. These impacts can be direct, through the use of water, energy and land, or indirect, through the production and distribution of goods and services that households and businesses consume.

Urban communities are feeling the impacts of these pressures through, for example, extensive water restrictions across several of our major cities, air pollution, and the loss of productive land, open space and habitat on urban fringes. We are increasingly aware of our vulnerability to a changing climate, with many cities experiencing unprecedented high temperatures, fires and storms in recent years.

There is evidence that our way of living and direction of development is not ecologically sustainable. A recent analysis has demonstrated a high degree of variability in the environmental impact between locations, and overall Australia's major cities are having a greater environmental impact than regional and rural locations.

Yet Australian cities provide many opportunities to lead the nation towards a more sustainable future. The way in which cities are planned, built and function can promote more efficient use of resources including water, energy and land, minimise the production of waste and encourage more reuse and recycling, reduce greenhouse gas emissions, and support biodiversity in and around urban areas through better management of open and green space.

Cities can be a resource for the generation of renewable energy, they can reduce pressure on potable water supplies through decentralised water collection, and they can produce food. Some of this can be achieved through technological advances, but recent trends in water consumption and passenger travel also suggest that changing individual, household and community practices are making significant contributions to improving the sustainability of urban systems.

This chapter compiles a range of available indicators that measure the environmental performance of Australia's urban settlements and their residents. While the data indicate significant gaps, particularly in information available at the city level, they provide a basis for further discussion on how our cities are progressing in terms of ecological sustainability.

Summary indicators

Dimension	Key Indicators
Water	Water consumption by sector, Australia
	Changes in personal water use in the last 12 months, Capital cities
	Households with water conservation devices, Australia
	Households with rainwater tank installed at dwelling, Capital cities
Energy	Australian energy consumption, by industry
	Home energy use
	Persons taking steps to limit use of electricity, Capital cities
	Dwellings with insulation, Capital cities
	Awareness of GreenPower Scheme, Capital cities
Climate change	Net greenhouse gas emission by sector, Australia
	Base case projections of direct greenhouse gas emissions for Australian transport
	Summary of capital city emission reduction targets
	Trend in annual rainfall, Australia
Air pollution	Exceedence of fine particle health standards, selected cities
	Trend in peak ozone levels, selected cities
Waste	National waste generation by source
	Waste generation by state
	Per capita waste generation

Key findings

- Water restrictions in major cities across the nation saw total consumption by households fall by 7 per cent between 2000–01 and 2004–05 despite population growth over the period.
- Residential energy use accounted for approximately 7 per cent of total energy consumption in 2007–08, but grew at a high rate (2.2 per cent) relative to other sectors over the period. This growth is attributed to population increase, higher ownership of appliances and IT equipment per household, and increases in the average size of homes. Standby power was the greatest contributor to average annual growth in household energy use over the period 1989–90 to 2006–07.
- Transport emissions are one of the strongest sources of emissions growth in Australia. Strong growth in emissions from the transport sector is expected to continue, with direct CO_2 equivalent emissions projected to increase 22.6 per cent over the period 2007 to 2020 (or around 1.58 per cent a year).
- Climate change is affecting rainfall patterns. Since 1950 much of eastern Australia and the far southwest, where our largest cities are located and the majority of the population lives, have experienced an annual decline of up to 50 mm in rainfall per decade affecting both the availability and quality of water supplies across urban areas.

- Levels of the key pollutants of lead, carbon monoxide, sulphur dioxide and nitrogen dioxide in the largest capital cities have decreased significantly over a ten-year period. However, particulate air pollution and ozone levels have remained at or above national air quality standard levels over the period and showed no evidence of decline.
- While national recycling rates have increased, total waste generation has also continued to increase—by around 31 per cent from 2002–03 to 2006–07, exceeding the rate of population growth of 5.6 per cent over the period.
- When both direct and indirect environmental impacts are taken into account, higher environmental impacts at the household level are associated with higher incomes and smaller household sizes.

Water

Australia's total water consumption was 18,767 gigalitres in 2004–05, a reduction of 14 per cent from total consumption in 2000–01 (Table 5.1). This reduction has been attributed to drought conditions over the period.

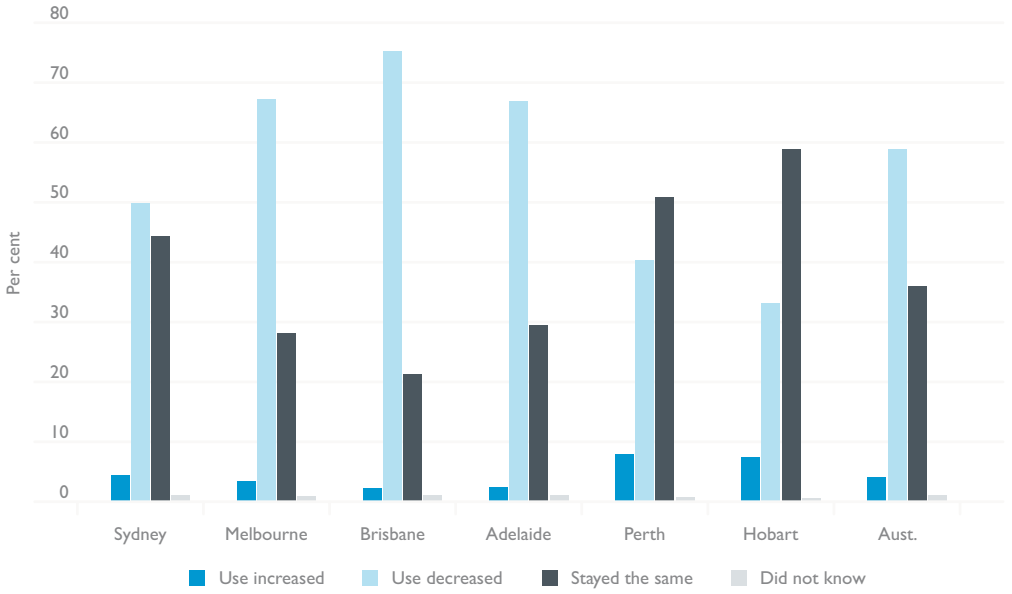
Table 5.1 Water consumption by sector, Australia

	2000–01		2004–05	
	Volume (GL)	% of total	Volume (GL)	% of total
Agriculture	14 989	69.1	12 191	65.0
Household	2 278	10.5	2 108	11.2
Water supply (a)(b)	2 165	10.0	2 083	11.1
Other industries	1 102	5.1	1 059	5.6
Manufacturing	549	2.5	589	3.1
Mining	321	1.5	413	2.2
Electricity and gas	255	1.2	271	1.4
Forestry and fishing (c)	44	0.2	51	0.3
Total	**21 703**	**100**	**18 767**	**100**

(a) Includes sewerage and drainage services
(b) Includes water losses
(c) Includes services to agriculture; hunting and trapping
Source: ABS 2006a.

Between 2002 and 2003, drought conditions caused a reduction of more than 20 per cent of the water stored in large dams around the country, which by 2005 had failed to recover to pre-2002 levels (ABS 2006a). In response, state and territory governments introduced water restrictions in major cities, which saw total consumption by households fall by 7 per cent between 2000–01 and 2004–05 despite population growth over the period.

Figure 5.1 Changes in personal water use in the 12 months to 2007–08

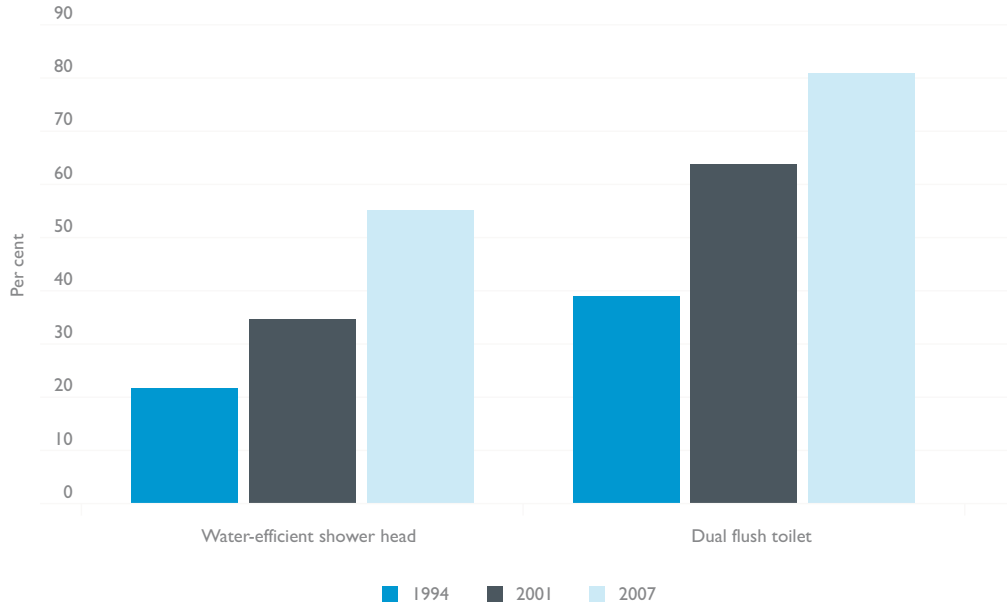


Source: ABS 2009a.

Water restrictions in urban areas have generated a greater awareness of water conservation in the community. Figure 5.1 shows high proportions of householders across most of the capital cities of Australia had decreased their personal use of water over the 12 months to 2007–08. Brisbane had the largest change, with over 75 per cent of households reporting a reduction in personal water use, followed by Melbourne (67.3 per cent) and Adelaide (66.9 per cent).

This reduction has been facilitated by the adoption of voluntary measures by households to reduce water use and install water-saving devices such as water-efficient shower-heads and dual-flush toilets (Figure 5.2). By the end of 2007, more than 80 per cent of Australian households had installed a dual-flush toilet—an increase of 107 per cent from 1994.

Figure 5.2 Households with water conservation devices, Australia—1994–2007

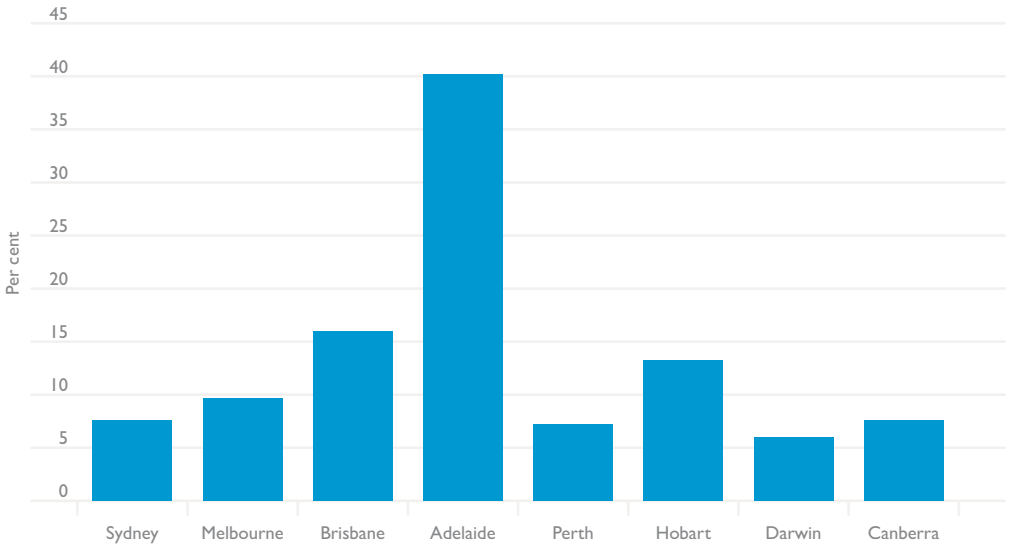


Source: ABS 2007a.

While the majority of households in capital cities have access to mains water supply, some households are supplementing their supply, for example through the use of rainwater tanks (Figure 5.3). Over 40 per cent of households had a rainwater tank in Adelaide in 2007, contrasting with only 7 per cent across Sydney, Perth and Canberra.

The difference across capital cities can partially be explained by the introduction of regulations and incentives to install rainwater tanks across various states and local governments. For example, since 1 July 2006, building rules in South Australia have required new dwellings (and some extensions or alterations) to have an additional water supply to supplement the mains water, and rebates are offered to install rainwater tanks on existing homes (Planning South Australia 2009).

Figure 5.3 Households with rainwater tank installed at dwelling—2007



Source: ABS (2007) *Environmental Issues: Peoples Views and Practices,* March 2007 (cat. no. 4602.0).

Households accounted for over 11 per cent of total water consumption in Australia in 2004–05 (Table 5.1). By comparison the Agriculture sector was the greatest user of water at 65 per cent. Other major industry sectors, including Water supply, Manufacturing, Mining, and Electricity and Gas notably increased water consumption over the period 2000–01 to 2004–05.

This has implications for our cities, because while the direct use of water by households is proportionally small in comparison with other industry sectors, much of the water consumed by households occurs indirectly—through, for example, the production of food we eat, the clothes we wear, the goods and services we buy, and even the generation of electricity for use in our homes, workplaces and shopping malls. More efficient use of water requires households to consider the impact of the goods and services they consume in addition to undertaking water conservation measures in the home.

Energy

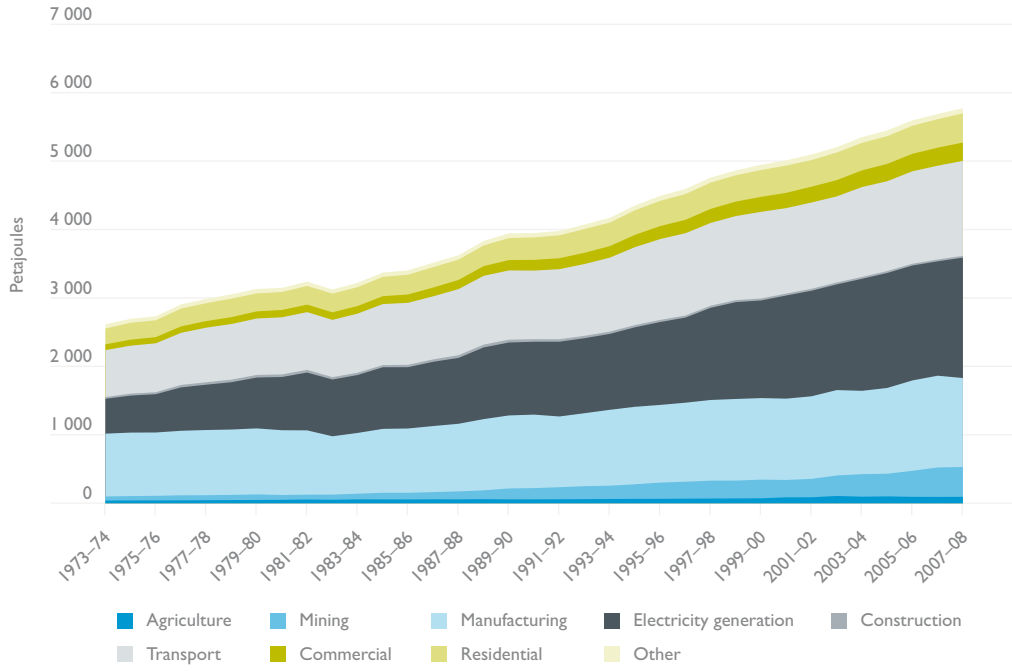
Energy is vital for economic growth and the high standard of living enjoyed by all Australians. Although economic growth is progressively becoming more energy-efficient, Australia remains one of the highest consumers of energy per capita in the world (International Energy Agency 2009a). Although robust data are not available on the contribution of Australia's cities to energy consumption, it is estimated that cities consume around 75 per cent of the world's energy (C40 Cities 2009).

Around 97 per cent of energy used in Australia in 2007–08 was sourced from non-renewable sources, including coal, petroleum products and natural gas (ABS 2010). This particular mix of energy sources and high rates of energy consumption has implications for the environment, including greenhouse gas emissions, resource depletion, and other pollution associated with the production and consumption of energy.

Energy consumption has steadily increased over the past three decades (Figure 5.4).

The electricity generation sector was the greatest contributor to growth in energy consumption in 2007–08. Electricity generation accounted for over 30 per cent of energy consumption in 2007–08, followed by transport (24 per cent) and manufacturing and construction (23 per cent).

Figure 5.4 Australian energy consumption, by industry



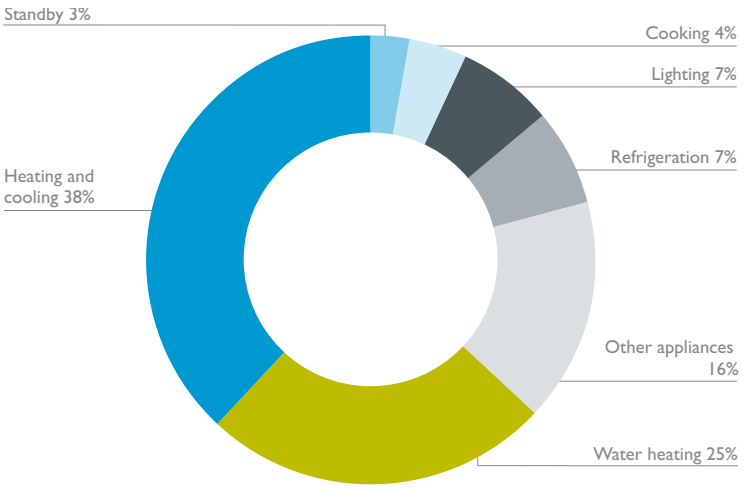
Source: Shultz 2009.

Within the transport sector, around 60 per cent of energy consumed is associated with the movement of passengers that is dominated by cars, and the remainder with the distribution of goods and services (Sandu & Petchey 2009).

Residential energy use accounted for approximately 7 per cent of total energy consumption in 2007–08, but grew at a high rate (2.2 per cent) relative to other sectors over the period. This growth is attributed to population increase, higher ownership of appliances and IT equipment per household, and increases in the average size of homes (ABARE 2009). However, standby power was the greatest contributor to average annual growth in household energy use over the period 1989–90 to 2006–07 (Sandu & Petchey 2009).

Around 38 per cent of energy used in the home is for heating and cooling purposes (Figure 5.5). Water heating accounts for 35 per cent of total household energy use, followed by other appliances (16 per cent) and lighting and refrigeration (7 per respectively).

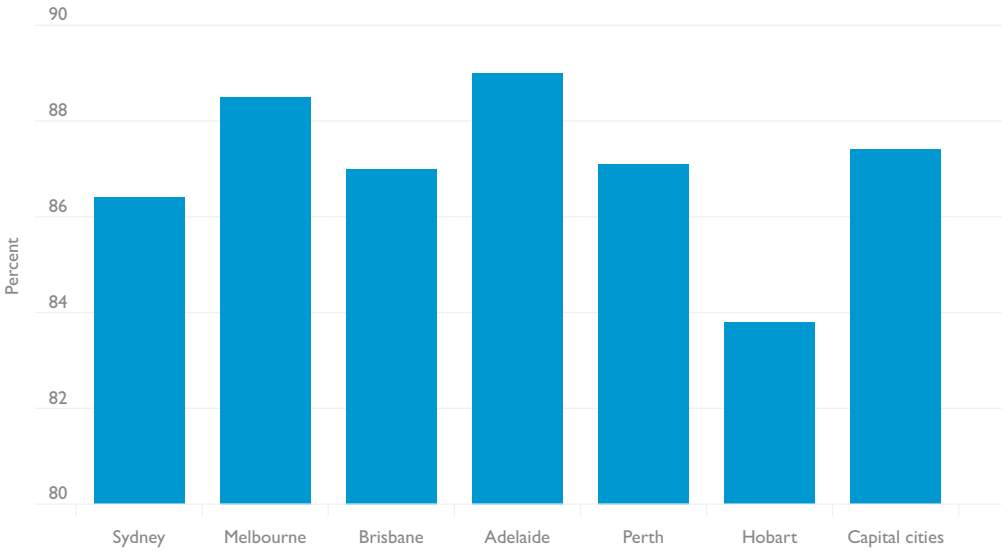
Figure 5.5 Home energy use (baseline energy estimates) 2008



Source: DEWHA 2008

Greater awareness of environmental issues and higher energy costs has prompted household interest in energy efficiency. Across the capital cities of Australia, over 87 per cent of households reported that they had taken steps to limit their use of electricity over 2007–08 (Figure 5.6). Almost 90 per cent of households in Adelaide applied energy efficiency measures in their homes over the period, closely followed by Melbourne (88.5 per cent).

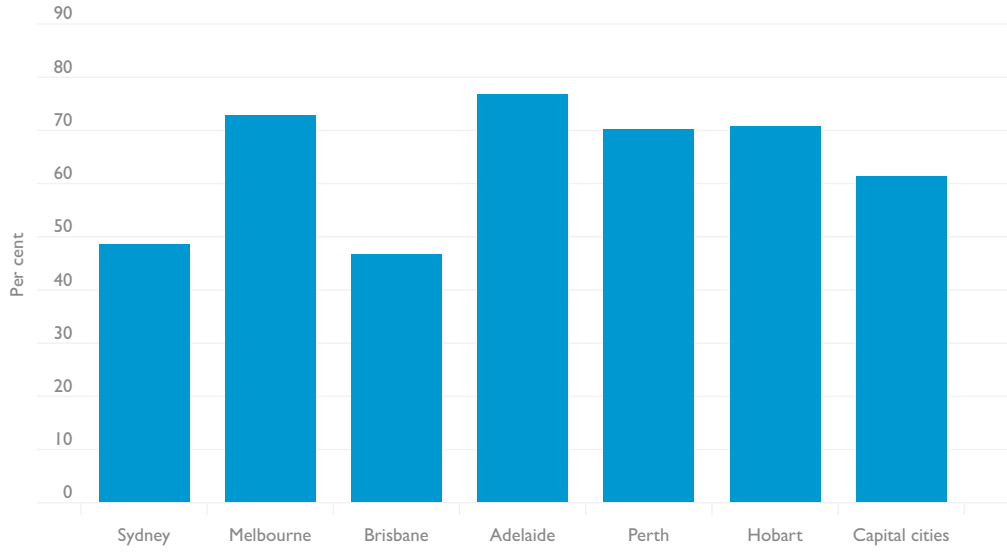
Figure 5.6 Persons taking steps to limit use of electricity—2007–08



Source: ABS 2009a

A common energy efficiency measure applied by households was the installation of insulation. Over 61 per cent of households across capital cities reported their dwellings had insulation in 2008 (Figure 5.7). However, figures varied greatly between the cities. Adelaide reported the highest proportion (77 per cent) of dwellings with insulation, followed by Melbourne (73 per cent), Hobart (71 per cent) and Perth (70 per cent). The cities of Brisbane and Sydney reported the lowest proportion of dwellings with insulation, at 47 per cent and 49 per cent respectively. Incentives provided under the recent Home Insulation Program will have increased these figures.

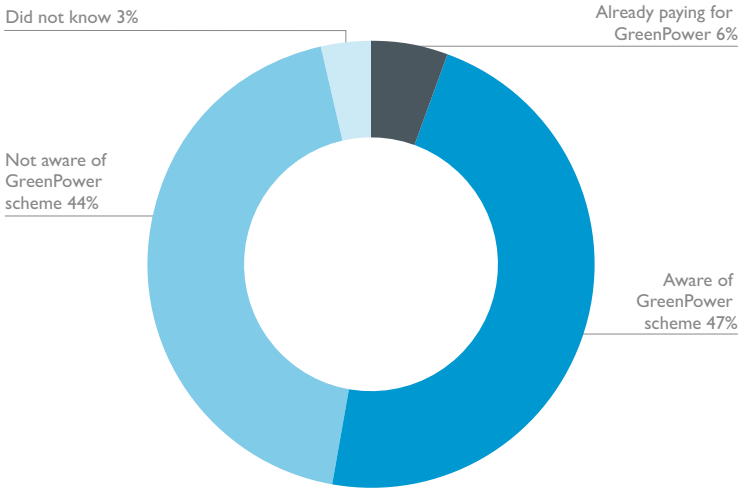
Figure 5.7 Dwellings with insulation, 2008



Source: ABS 2008

Capital city household awareness of the GreenPower scheme remains low at approximately under 50 per cent (Figure 5.8). The GreenPower scheme is a government accreditation program for renewable energy, whereby participants pay extra into their electricity account for their energy providers to invest in the renewable energy sector on behalf of customers (GreenPower 2010). Only 6 per cent of households across capital cities have taken up the scheme.

Figure 5.8 Awareness of GreenPower scheme, capital cities, 2008



Source: ABS 2008

Climate change

Greenhouse gas emissions

Observed anthropogenic (human induced) emissions of carbon dioxide are tracking at the upper limit of projections by the Intergovernmental Panel on Climate Change (Steffen 2009). While the global economic crisis has temporarily slowed the growth of greenhouse gas emissions, carbon pollution and the impacts of climate change are projected to continue to increase without action.

As large users of energy, cities produce a significant proportion of greenhouse gas emissions. There are no reliable estimates for the contribution of cities to greenhouse gas emissions. However, it has been estimated that up to 75 per cent of global greenhouse gas emissions are attributable to cities (C40 2009). A rough estimate for Australian cities places this figure below 67 per cent of national emissions (Dunstan et al. 2009). This can be partially attributed to the dominance of agriculture in our emissions profile.

Australia's per capita emissions are among the highest of any OECD country (International Energy Agency 2009b). Our per capita emissions are relatively high as we are an exporting nation of agriculture, mining and metal products (such as aluminium), and our energy production is reliant upon coal fired electricity.

National greenhouse gas emissions have increased over 6.5 per cent since 1990, with an average increase of 1.5 per cent a year over the past three years (Table 5.2). The energy sector was collectively responsible for over 71 per cent of national emissions in 2007, with stationary energy[3] and transport contributing to 51 per cent and 14 per cent of emissions respectively. The agriculture sector produced almost 16 per cent of national emissions over the period.

Stationary energy accounted for the greatest growth in emissions (50 per cent since 1990), followed by industrial processes (41 per cent) fugitive emissions (release of emissions such as gas or vapour that typically result from leaks) (37 per cent), and transport (32 per cent).

Table 5.2 Net greenhouse gas emissions by sector, Australia

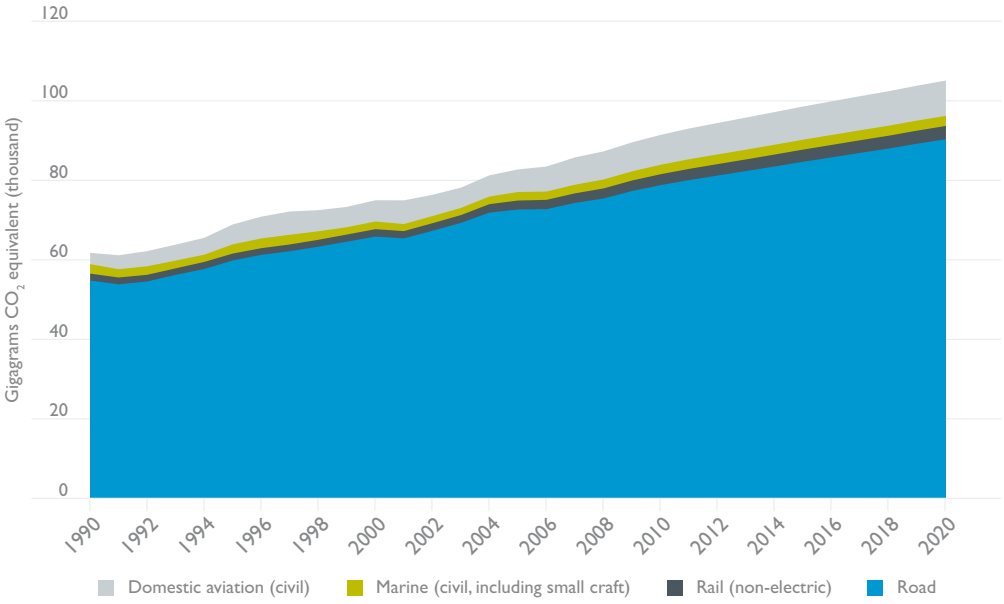
	Emissions Mt CO_2-e			
	1990	2008	% change 1990–2008	% emissions 2008
Energy	286.4	415.0	44.9%	71.2%
Stationary	195.1	293.0	50.2%	50.3%
Transport	62.1	82.0	32.0%	14.1%
Fugitive emissions	29.2	40.0	37.0%	6.9%
Industrial processes	24.1	34.0	41.1%	5.8%
Agriculture	86.8	91.0	4.8%	15.6%
Land Use, Land Change and Forestry	131.5	28.0	–78.7%	4.8%
Waste	18.8	15.0	–20.2%	2.6%
Net emissions	**547.6**	**583.0**	**6.5%**	**100.0%**

Source: Department of Climate Change 2009a

Transport emissions are one of the strongest sources of emissions growth in Australia. The increasing trend in transport emissions is of particular concern to Australia's cities, which feature high levels of personal car use and automobile dependency. Strong growth in emissions from the transport sector is expected to continue, with direct CO_2 equivalent emissions projected to increase by 22.6 per cent over the period 2007 to 2020 (or around 1.58 per cent a year) (Figure 5.9).

3 Stationary energy includes emissions from fuel consumption for electricity generation, fuels consumed in the manufacturing, construction and commercial sectors, and other sources like domestic heating.

Figure 5.9 Base case projections of direct greenhouse gas emissions (carbon dioxide equivalent) for Australian transport



Source: BITRE 2009

Australian capital city Lord Mayors have committed to emissions reduction targets irrespective of the development of national targets. These targets are summarised in Table 5.3.

Table 5.3 Summary of capital city emission reduction targets

	Reference year	Goal year	Community target
ACT	2000	2025	0%
	2000	2050	–60%
Sydney	1990	2050	–70%
	1990	2030	–50%
	2006	2030	–70%
Brisbane	2000	2010	0%
	2005	2011	–20%
	2006	2026	–50%
Adelaide	1994	2010	–10%
Hobart			None
Melbourne	1996	2010	–20%
		2020	–100%
Perth	1996	2010	–20%
Darwin	2001	2010	–25%

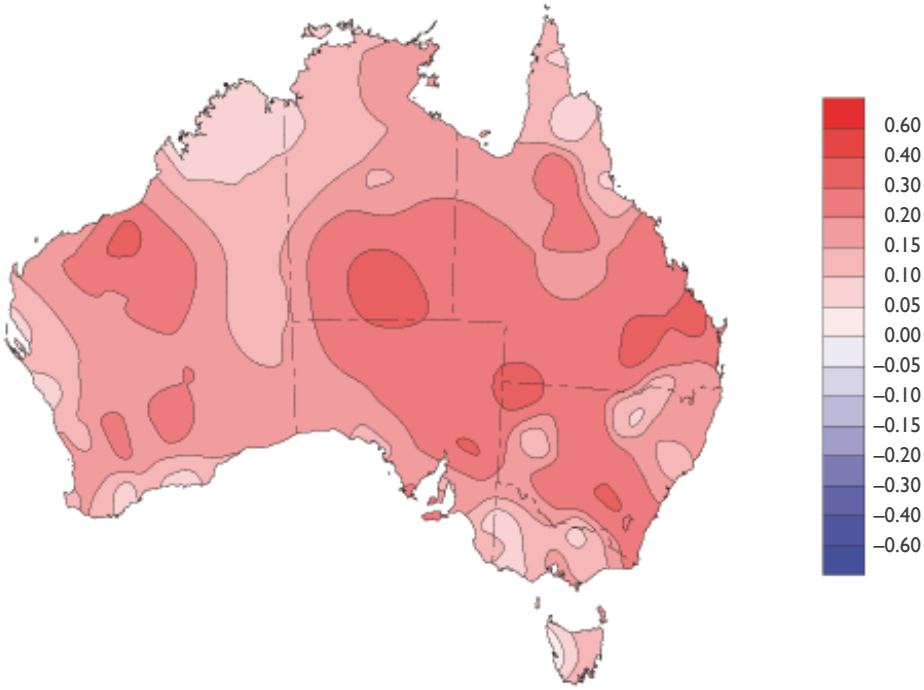
Source: Dunstan, Pillora & Glassmire 2009

Changes in climatic conditions

Even if all greenhouse gas emissions were reduced to zero, the effect of emissions released to date have committed the globe to an additional warming of 0.2–1.0°C by the end of the century (Preston & Jones 2006). This presents a significant challenge to the cities of Australia to prepare for and adapt their built environment and communities to the impacts of climate change while continuing to take action to reduce emissions.

According to the Intergovernmental Panel on Climate Change (2007), average global temperatures have increased 0.76°C since pre-industrial values, and are expected to rise 2.5°C by 2050 and up to 5.0°C by 2100. The Bureau of Meteorology (2010a) reported that 2009 ended Australia's warmest decade on record, with a decadal mean temperature anomaly of +0.48°C (above the 1961–90 average) (Figure 5.10) . In Australia, each decade since the 1940s has been warmer than the preceding decade (BOM 2010a). It is projected that annual average temperatures in Australia will increase by 1.0°C above 1990 levels by 2030 and up to 5.0°C by 2070 under a high emissions scenario (BOM & CSIRO 2009).

Figure 5.10 Trend in mean temperature, 1960–2009 (°C/10 yrs)

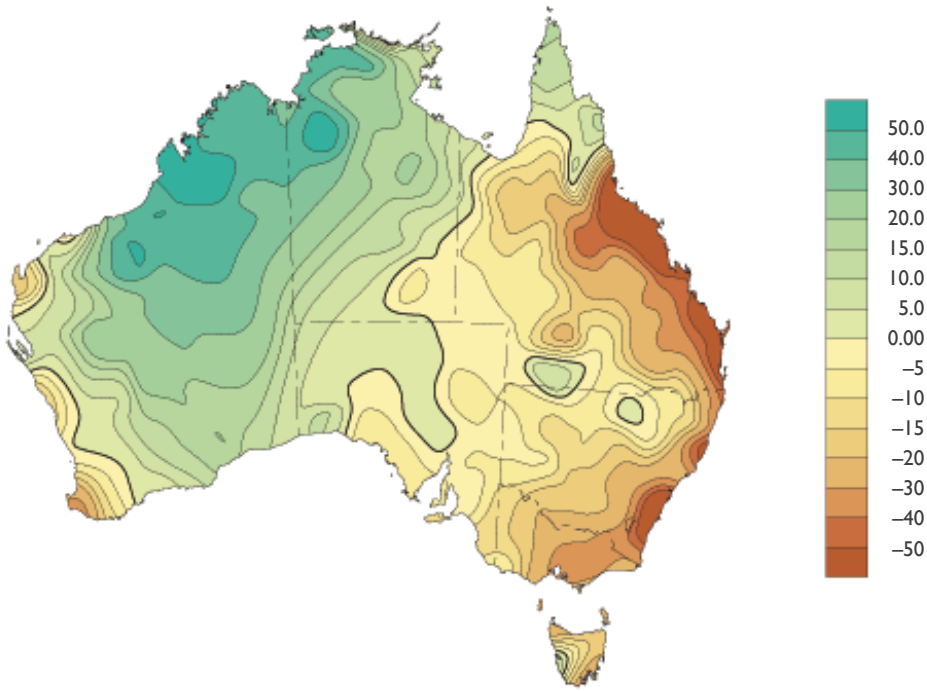


Source: Bureau of Meteorology 2010b

According to the Garnaut Climate Change review, Australia's exposure to the impacts and level of sensitivity to the impacts of climate change is high, with a range of implications for our settlements and infrastructure, including: changing rainfall patterns on traditional water supplies; sea-level rises for coastal cities; and increased frequency of extreme weather (Garnaut 2008).

Climate change is affecting rainfall patterns. Since 1950 the northwest region of Australia has seen an increase in rainfall while much of eastern Australia and the far southwest have experienced an annual decline of up to 50 mm per decade (Figure 5.11). It is in the southern and eastern regions where our largest cities and populations are located, and where population is projected to significantly increase. Best estimates of annual rainfall change indicate that decreases are likely across most of the continent, affecting both the availability and quality of water supplies across these urban areas.

Figure 5.11 Trend in annual rainfall, 1950–2009 (mm/10yrs)



Source: Bureau of Meteorology 2010c

Observations since 1961 show that the oceans have warmed as the result of absorbing more than 80 per cent of the heat added to the climate system largely because of the enhanced greenhouse effect, causing the oceans to expand and contributing to sea-level rise (House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts 2009). The average rate of sea-level rise from 1961 to 2003 was 1.8 mm/year and increased to 3.1 mm/year from 1993 to 2003 (Church et al. 2009). The range of all model projections over all scenarios up to 2100 shows sea levels rising 20–110 cm (Church et al. 2009).

The 2009 report *Climate change risks to Australia's coast – A first pass national assessment* (Department of Climate Change 2009b) found that:

- Between 157,000 and 247,600 properties are potentially exposed to inundation with a sea-level rise of 1.1 metres.
- Nearly 39,000 properties are located within 110 metres of 'soft' shorelines and are at risk from accelerated erosion due to sea-level rise and changing climatic conditions.

- The current value of existing residential buildings at risk from inundation ranges from $41 billion to $63 billion (2008 replacement value).
- There are many facilities supporting the delivery of community services in close proximity to the coastline. They include 258 police, fire and ambulance stations, 5 power stations/sub stations, 75 hospitals and health services, 41 landfill sites, 3 water treatment plants, and 11 emergency services facilities located within 200 metres of the shoreline and at risk.

Climate change is also expected to alter the frequency of extreme weather events such as droughts, bushfires, storm surges, cyclones and hail. This is expected to increase damage to infrastructure, disrupt key services, increase insurance costs, increase risk to human life including respiratory disease, heat stress, post-event disease outbreaks and other health-related impacts. For many locations around Australia, a 50 cm sea-level rise would result in the present one-in-a-hundred-year event becoming an annual or more frequent event by the end of the 21st century.

For example, substantial increases in the frequency of days over 35°C are projected for the major cities of Australia under all scenarios (BOM & CSIRO 2009). Extreme heat events cause damage to infrastructure and increase risk to human health, particularly for older people. The 2009 January heatwave in Melbourne resulted in the buckling of train tracks, collapsing transport networks across the city. In addition, city morgues exceeded capacity as they managed more than twice the number of bodies than in the same period of the previous year (ABC News 2009).

Air pollution

Air pollution occurs when substances are present in the air at amounts that can affect human and environmental health. A number of substances, or pollutants, are known to affect urban and regional air quality (Table 5.4).

High concentrations of the major air pollutants are associated with respiratory problems such as coughs, bronchitis, asthma and, in severe cases, developmental problems in children, and even death (DEWHA 2005).

The main pollutants of concern in the major urban centres of Australia are particles and ozone (DEH 2004). While the air quality of Australia's cities is good in comparison with other major cities around the world, air pollution consistently rates as a major concern for urban communities (DEH 2004).

The *State of the Air* report (DEH 2004) reported a significant decrease in the key pollutants of lead, carbon monoxide, sulphur dioxide and nitrogen dioxide levels over a ten-year period. However air particle pollution and ozone levels have remained at or above national air quality standard levels over the period and showed no evidence of decline (DEH 2004).

Fine particle health standards were periodically exceeded in select urban centres between 1997 and 2007, associated with severe fire and dust storm events (ABS 2009b).

Peak ozone levels experienced by most cities remain close to or above the National Environment Protection Measure for Ambient Air Quality (NEPM) standard, a trend particularly evident in the larger urban centres of Sydney and Melbourne, along with Brisbane and Perth (DEWHA 2006). The primary source of chemicals that react to form ozone is motor vehicle exhaust,

which accounts for up to 70 per cent of nitrous oxides and 50 per cent of the organic chemicals that form ozone (DEWHA 2005b).

Table 5.4 Major air pollutants

Pollutant	Sources	Health effects
Carbon monoxide	Motor vehicles, burning of fossil fuels.	Blood absorbs carbon monoxide more readily than oxygen, reducing the amount of oxygen being carried through the body. Carbon monoxide can produce tiredness and headaches. People with heart problems are particularly at risk.
Sulfur dioxide	Coal and oil burning power stations, mineral ore processing and chemical manufacture.	Attacks the throat and lungs. People with breathing problems can suffer severe illness.
Nitrogen dioxide	Fuel combustion.	Affects the throat and lungs.
Volatile organic compounds	Motor vehicles, fuel combustion, solvent use.	Some VOCs cause eye and skin irritation, headaches or nausea, while some are classed as carcinogens.
Ozone	Formed from nitrogen oxides and hydrocarbons in sunny conditions. These chemicals are released by motor vehicles and industry.	Ozone attacks the tissue of the throat and lungs and irritates the eyes.
Lead	Exhaust gases from motor vehicles that use leaded petrol, smelters.	Particles containing lead in the air can enter the lungs. The lead can then be absorbed into the blood stream. Over a period lead can affect the nervous system and the body's ability to produce blood.
Particles	Motor vehicles, burning of plant materials, bushfires.	May cause breathing difficulties and worsen respiratory diseases. Some particles contain cancer-producing materials.

Source: CSIRO 2000

Waste

Waste generation—incorporating the three main waste streams of municipal solid waste, commercial and industrial waste and construction and demolition waste (Figure 5.12)—provides a measure of overall waste activity within the economy.

The Australian population produces solid waste at a higher rate compared with most other countries within the OECD (Productivity Commission 2006). This is of concern, as waste disposal is associated with impacts on human health and amenity, and environmental pollution including greenhouse gas emissions, with more recent concern focusing on the externalities associated with resource extraction and depletion (Productivity Commission 2006).

Detailed statistics for waste generation are available mainly at the national and state level, and are not readily available for all major cities in Australia. However, cities account for a large proportion of national economic activity and population, and are therefore considered major sources of waste.

Figure 5.12 Main waste streams, Australia

Municipal solid waste (MSW): Mainly household and council waste, and some construction waste from owner/occupier renovations delivered directly to landfill.

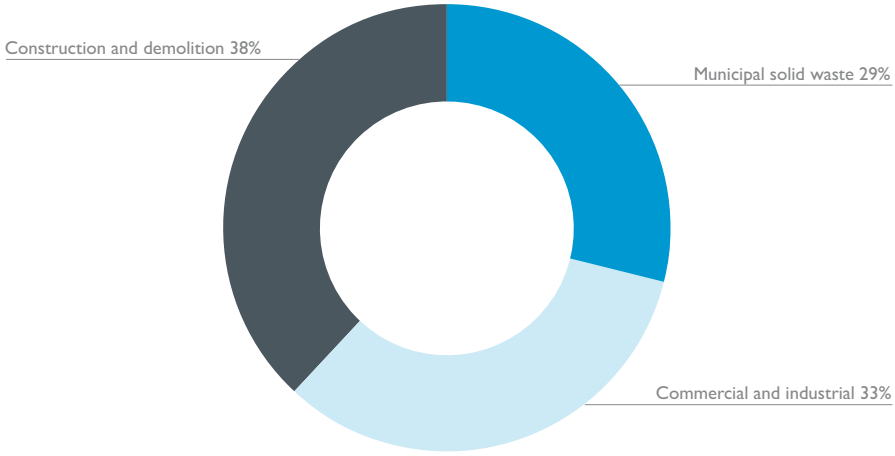
Commercial and industrial waste (C&I): Business, educational institution and government (other than council) waste.

Construction and demolition waste (C&D): Residential, civil and commercial demolition waste.

Source: Environment Protection and Heritage Council 2009

In 2006–07, construction and demolition waste accounted for the greatest source of waste in Australia (38 per cent of total waste), followed by commercial and industrial waste (33 per cent) and municipal solid waste (29 per cent)(Figure 5.13).

Figure 5.13 National waste generation by source, 2006–07



Source: Environment Protection and Heritage Council 2009.

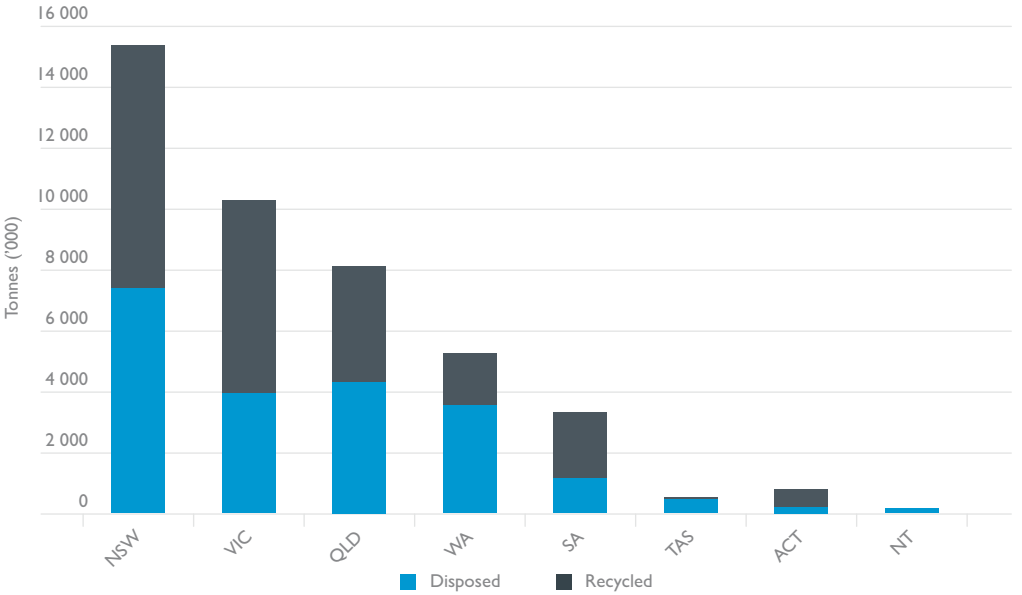
There has been a significant shift in the way that waste has been managed over the past decade or so, including an increase in recycling and the diversion of waste from landfill. For example, only 6 per cent of total waste was diverted from landfill in 1992, increasing to 52 per cent of total waste by 2006–07 (Environment Protection and Heritage Council 2009).

However, while national recycling rates have increased, total waste generation has also continued to increase. The *National Waste Overview 2009* (Environment Protection and Heritage Council 2009) noted that total waste generation increased around 31 per cent from 2002–03 to 2006–07, substantially exceeding the rate of population growth of 5.6 per cent over the period.

The Productivity Commission (2006) has suggested the increasing amount of waste generated per person in Australia relates to a number of factors, including: economic growth; decreasing household size corresponding with an increase in ownership of more durable goods per person; higher replacement rates of durable goods given changes in fashion and technology, reduced product durability, and lower prices compared with repairs; and higher package size to product ratios in small goods. It is also proposed that growing travel time between home and work is associated with an increased demand for time-saving devices such as dishwashers and pre-prepared food (Productivity Commission 2006).

New South Wales produced the largest volume of waste, accounting for 35 per cent of total waste generation in 2006–07 (Figure 5.14). Over half of this volume was diverted from landfill and recycled. Victoria was the next highest producer of waste in volume (23 per cent of total waste in Australia), but featured recycling rates in the order of 62 per cent.

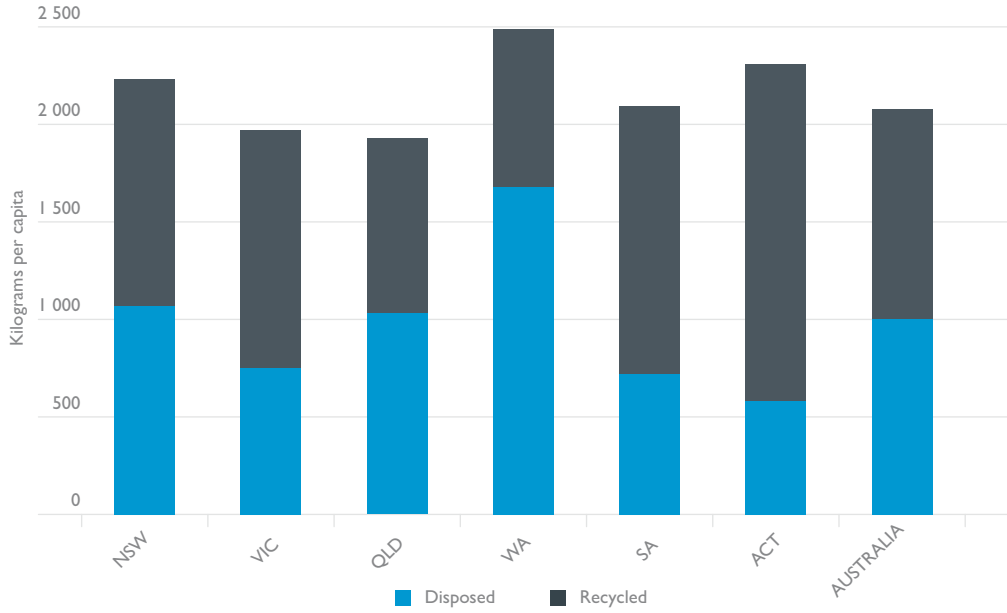
Figure 5.14 Waste generation by state, 2006–07



Source: Environment Protection and Heritage Council 2009.

There has also been a trend of increasing waste generation per person (ABS 2006b). Western Australia generated the most waste per capita at 2490 kilograms per person, followed by the Australian Capital Territory at 2310 kilograms per person (Figure 5.15). However, Western Australia recycled only 33 per cent of total waste—the lowest across the nation—while the Australian Capital Territory had the highest rates of recycling, diverting approximately 75 per cent of waste.

Figure 5.15 Per capita waste generation, 2006–07



Source: Environment Protection and Heritage Council 2009.

At the household level, all capital cities reported high rates of recycling (98.3 per cent of total households) and reuse of waste (84.3 per cent) (ABS 2009c). Based on area of usual residence, households in metropolitan areas had higher levels of recycling than non-metropolitan areas, but greater proportions of households in non-metropolitan reported reuse of waste (ABS 2009c).

Urban form

The urbanisation of the Australian population and structure and form of urban settlements has implications for the environment and sustainability.

For example, urban expansion competes for land with agricultural production and habitat purposes. The movement of people from rural and remote areas to cities and coastal areas has resulted in relatively high rates of land clearing for urban development, causing the loss of habitat for native plants and animals, and reducing their numbers and geographical spread (ABS 2007b).

Competition for arable land continues to be an issue for city regions. The urban fringes of Australia account for a significant proportion of some types of food production, particularly perishable vegetables. For example, the Sydney region is estimated to be responsible for producing around 90 per cent of cabbage and lettuce consumed in the city (Malcolm & Fahd 2009). The north-west and south-west growth centres of Sydney, designated to be progressively released for urban development over the next two decades, contain 52 per cent of Sydney's vegetable farming properties, 60 per cent of greenhouse industries, and 46 per cent of outdoor hydroponic vegetable industries in the region (Malcolm & Fahd 2009).

In addition, advances in transport infrastructure, machinery, storage and handling practice have enabled perishable food goods to be transported over considerable distances into our cities, from interstate and overseas. The reliance of transport on petrol and diesel fuels make supplies of fresh food vulnerable to changes in energy prices. The long-range transportation of food into our cities is also associated with an increase in greenhouse gas emissions.

The major cities of Australia have relatively low concentrations of population and dwellings. This feature of settlement has given rise to concerns about the unsustainable nature of 'urban sprawl'. In response, state governments have adopted planning policies to encourage greater urban consolidation, which is seen as a means of achieving a number of environmental objectives, including: reduced competition for land; lower resource use, particularly energy; reduced greenhouse gas emissions from transport; reduction in waste generation; and, improved health outcomes through an increase in active transport (that is, cycling and walking) (DEWHA 2006).

However, the debate relating to the sustainability outcomes of urban consolidation is considerably polarised. Low population and dwelling concentrations typical of suburban developments on the outer fringes of cities are argued to be inefficient in terms of resource use and the costs of infrastructure provision, encourage automobile dependency and transportation costs, produce higher greenhouse gas emissions, and gives rise to health costs related to inactivity (Newman & Kenworthy 1999; Trubka et al. 2009). Proponents of typical suburban developments point to the lifestyle choices and opportunities offered by this type of development including open space and amenity, and that urban design and technological improvements can reduce resource consumption and greenhouse gas emissions (Roberts 2007).

A recent analysis incorporating indirect environment impacts—that is, the impacts arising through the production and distribution of goods and services that households consume in addition to direct household use of water, energy and land—has associated higher environmental impacts with higher incomes and smaller household sizes (Dey et al. 2007).

Another study comparing the lifecycle energy consumption and greenhouse gas emissions of city centre apartments with suburban dwellings in Adelaide confirmed that more compact housing development provides opportunities for significant reductions in per capita transport emissions (Perkins et al. 2009). However, a combination of high building mass, inefficient design for operational energy savings and low occupancy rates of apartment dwellings results in higher energy use and greenhouse emissions on a per capita basis than for suburban dwellings. This study found that the most carbon-efficient form of housing was townhouses and villas in inner suburban areas.

The study also noted there are significant opportunities in the design and energy of apartments to reduce emissions, but the reduction of transport-related emissions in less compact outer suburban dwellings is more challenging and requires effective policy responses such as public transport investment, changes to urban form and energy efficient vehicles (Perkins et al. 2009).

The environmental merits of urban consolidation policies adopted in Australia's capital cities continue to be the subject of debate. However it is clear that planning for more sustainable urban forms and building design must be accompanied by policy that addresses the broader drivers of environmental pressure, particularly household consumption.

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Liveability of Australian cities

Chapter 6

Introduction

Liveability refers to the degree to which a place, be it a neighbourhood, town or city, supports quality of life, health and wellbeing for the people who live, work or visit. Cities considered to have a high degree of liveability tend to have a high level of, and widespread accessibility to, amenity. Amenity includes features such as open and green space; educational, social, cultural and recreational facilities. High-amenity places have not only higher financial value (property prices and rents) but also social, environmental, public health and cultural value (CABE 2007). High-amenity locations have been shown to be associated with better physical and mental health (Berry 2007).

Liveability encompasses these features of amenity as well as other characteristics of the built environment that reflect the way places are planned, constructed and connected. These characteristics of the built environment include the arrangement, design and construction of dwellings and other buildings, public transport systems, road networks and public spaces, walkability and accessibility to goods and services, and high quality communication technology. Liveability also refers to the elements of natural environment, such as low air pollution, the presence of parklands, trees, water or a view.

Apart from the physical features of cities and localities, a range of social factors contribute to liveability, such as political stability, social cohesion, lower risks to personal safety, conviviality and social inclusiveness, aesthetics, diversity among the population, and heritage. While opinions vary about the precise characteristics of liveability, liveable cities are widely perceived to be healthy, attractive and enjoyable places for people of all ages, physical abilities and backgrounds.

This chapter describes some of these aspects of liveability in Australian cities. As discussed in Chapter 2, Australian Cities in the International Context, Australian cities rank highly in terms of liveability compared to many other cities, but there are aspects of liveability that can be improved, often in specific locations within the cities.

Summary indicators

Dimension	Indicators
Health	The proportion of people not engaged in sufficient physical activity to confer a health benefit The rate of overweight persons and obesity
Amenity	Access to quality open space
Housing	Housing affordability index Rental stress
Living affordability	Vulnerability Assessment for Mortgage, Petrol and Inflation Risks and Expenditure (VAMPIRE) index
Accessibility	Proportion of households that can access main facilities and services (e.g. employment, education, health and cultural facilities) by public transport within 60 minutes

Key findings

- The design of urban environments can contribute to the health and wellbeing of communities by supporting active living, physical activity through walking, cycling and using public transport, and opportunities for social interaction.
- There is growing evidence that attractive, well-designed public open space is restorative, reducing mental fatigue and stress.
- Regular physical activity promotes physical and mental health. Research in Perth showed that adults who had access to large, attractive public open spaces were 50 per cent more likely to undertake high levels of walking.
- The most commonly reported health conditions among children and young adults were respiratory conditions. Exposure to urban air pollution in Australia accounts for 2.3 per cent of all deaths.
- Sydney and the Gold Coast have the largest gap in low cost private rental dwellings to meet the demand of the very low income households. In Sydney this means that there is one affordable and available dwelling for every 15 very low income households.
- Analysis of the distribution of vulnerability to fuel, mortgage and inflation risks and expenses shows very high vulnerability is distributed across large tracts of the outer areas of Australia's cities.

Health

Public health refers to populations rather than individuals. The focus of public health is to prevent rather than treat disease. Major public health achievements in the 20th century included reductions in infant mortality, control of infectious diseases, dental hygiene, better nutrition, and improvements in vehicle and workplace safety.

Urban environments are strongly associated with public health concerns, with contributing factors being water and air quality, noise, temperature, access to open and green space, opportunities to exercise, and opportunities to have social interaction.

There is a strong socio-economic dimension to public health outcomes. A higher proportion of people in the lowest socio-economic groups have poorer health. Higher proportions are overweight, physically inactive and suffer mental illnesses.

A higher proportion of people in the lowest socio-economic groups live in areas characterised by poor urban design, inadequate infrastructure and facilities, and lack of healthy, affordable food options (Giles-Corti & Donovan 2002).

Convivial neighbourhoods and civic centres have attractively designed streets, buildings and public open space that encourage physical activity for people of all ages and range of abilities. They increase the opportunities for positive social interaction between people. Creating convivial neighbourhoods and centres can support a sense of community and wellbeing among residents and has been associated with positive mental and physical health (Giles-Corti 2006).

Conversely, real and perceived crime, traffic and noise, monotonous streetscapes and building types, streets and locations that are not welcoming or create physical barriers for pedestrians, and a lack of other pedestrians in the area, all serve to heighten people's anxiety, reduce the likelihood of incidental exercise, and reduce sense of community.

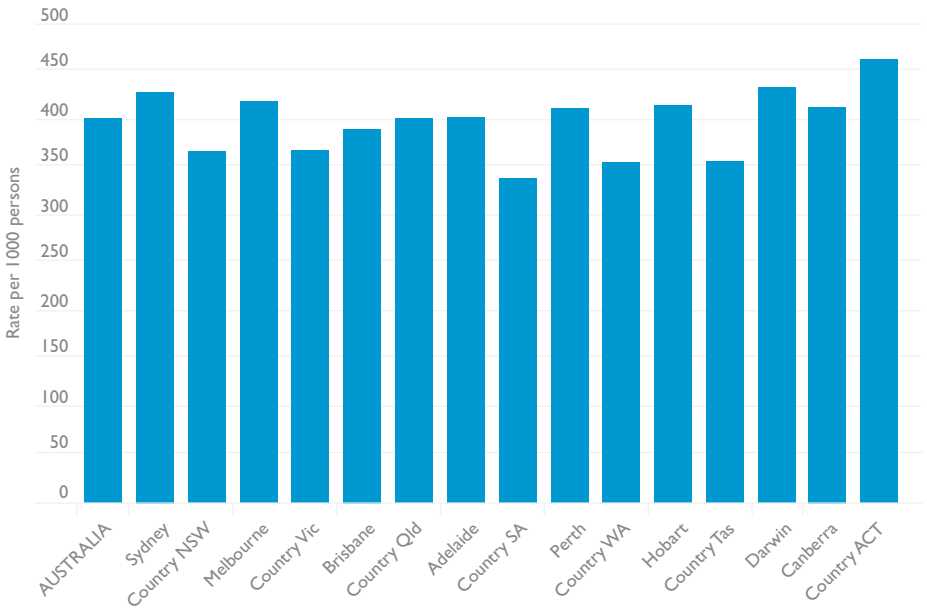
Contemporary debates about the link between urban environments and public health are particularly focused on levels of physical activity, obesity, mental health and respiratory illnesses.

Obesity

The proportion of the population who are either overweight or obese is a critical public health issue in Australia as identified in the House of Representatives report on obesity (2009). The annual financial cost of obesity is estimated at $8.3 billion, with additional costs of lost wellbeing of $49.9 billion, totalling $58.2 billion annually (Access Economics 2008). The National Health Survey 2007–08 found that 61 per cent of Australian adults and 25 per cent of children are overweight or obese (ABS 2009). Over 6 million Australian adults are overweight and another 4.1 million are obese.

Although overweight and obesity is a problem nationwide, there is evidence that rates of people who are overweight and obese are lower in metropolitan areas than in regional areas (PHIDU, 2008). As a broad indicator of the people who are of healthy weight, Figure 6.1 shows estimated number of people in the normal weight range per 1,000 people in capital cities and their respective state and territory.

Figure 6.1 Rate of persons in normal weight range, 2004–05



Note: Rate of persons in normal weight range is estimated number of people 15 years and over in normal weight range, per 1,000 persons, 2004–05

Source: PHIDU 2008
Data compiled by the Public Health Information and Development Unit, University of Adelaide, using data estimated from the 2004–05 National Health Survey (NHS) ABS (unpublished); and ABS Estimated resident Population, average of 30 June 2004 and 2005

The House of Representatives' report on obesity, *Weighing it up (2008),* identified that the way land use has been planned in the Australian urban environment is a significant contributor to the high levels of obesity in Australia.

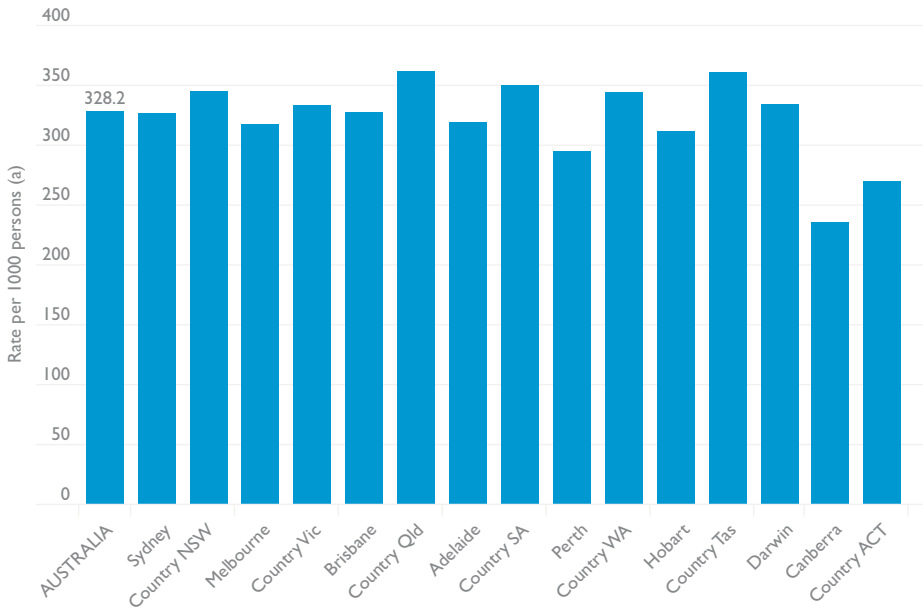
Physical activity

There is a correlation between increasingly sedentary lifestyles and higher levels of obesity. The 2007–08 National Health Survey revealed that almost three quarters (72.8 per cent) of adults report sedentary or low exercise levels, up from 69.4 per cent in 2001 (ABS 2009).

Regular exercise and physical activity decreases the risk of obesity and related illnesses like diabetes and heart disease, and also mental illness (Frank & Schmid 2004).

Figure 6.2 shows data for the rate of physical inactivity for people over 15 years of age for the metropolitan areas of each state and territory. Physical inactivity in these data is defined as those people who did not exercise in the two weeks prior to interview for the 2004–05 NHS through sport, recreation or fitness (including walking). All capital cities have lower rates of physical inactivity than the rest of their respective states and territories.

Figure 6.2 Rate of physical inactivity in metropolitan and country areas, states and territories, 2004–05



Note: Rate of physical inactivity is estimated number persons aged 15 years and over, not physically active per 1,000 persons) 2004–05.

Source: PHIDU 2008.
Data compiled by the Public Health Information and Development Unit, using data estimated from the 2004–05 National Health Survey (NHS) ABS (unpublished); and ABS Estimated resident Population, average of 30 June 2004 and 2005.

There is an increasing amount of Australian research showing that people's access to, and perceptions of, urban environments that support physical activity are associated with increased levels of physical activity (see Burke, Hatfield & Pascoe 2008; Giles-Corti & Donovan 2002). Research in Perth showed that adults who had access to large, attractive public open space were 50 per cent more likely to undertake high levels of walking (Giles-Corti et al. 2005).

For individuals, a lack of walkable urban environments, increased dependency on car use, and concerns about safety (for example, traffic safety or personal safety) have decreased opportunities for incidental exercise. Incidental exercise associated with the use of public transport is often under-reported. One Australian study has shown that walking to and from public transport adds up to about 2 km per day for an average Brisbane commuter (Burke & Brown 2007).

Mental health

Every year around 1 in 5 Australian adults suffers from a mental disorder such as depression or anxiety. Factors of the built environment that influence mental health include:

- opportunities that enable individuals to interact with others and feel part of a community

- visual and physical access to open space
- opportunities to exercise and relax (Giles-Corti 2006).

Rates of mental illness are higher in neighbourhoods where there are also high levels of socio-economic deprivation and overcrowding (Berry 2007).

Physical environment

Policies to deal with air and noise pollution (for example, restrictions on motor vehicle emissions) have been effective in reducing localised pollution. However, there are still significant health costs attributable to ambient air pollution, especially particulates. In Australia, exposure to urban air pollution accounts for 2.3 per cent of all deaths and 1 per cent of disability adjusted life years (Jalaludin et al. 2009).

Heat-related illnesses and death have also been associated with the 'heat island' effects in urban environments. The rates of these illnesses are likely to increase with the increasing temperatures associated with climate change.

Safety

Concerns about crime, whether real or perceived, and traffic safety reduce the likelihood of people cycling, walking and interacting with others.

Injuries or fatalities to cyclists and pedestrians are also related to the built environment and the priority given to motor vehicles over other modes of transport.

Housing

Access to suitable, quality housing is a human right and a basic need for health and wellbeing (CSDH 2008). The majority of Australians in cities live in high-quality housing by world standards. Securing suitable and affordable housing in the major cities can, however, be difficult for many lower-income households.

Appropriate housing

Accommodating an ageing population requires housing suitable for the physical needs of household members as well as located in accessible neighbourhoods, to ensure people of all abilities can fully participate in their communities throughout their lives. With the population above the age of 65 reaching 8 million by mid-century, and most of the existing housing stock not being accessible to people with mobility difficulties, an increasing proportion of housing will need to be made accessible or adaptable for older people.

Universal design is a set of planning and design principles that aim to create environments that are comfortably useable by people from childhood into their older years to the greatest extent possible, inclusive of the range of physical abilities and without the need for major adaptation or specialised design. Such modifications at a later stage can add substantially to the cost of housing for the household.

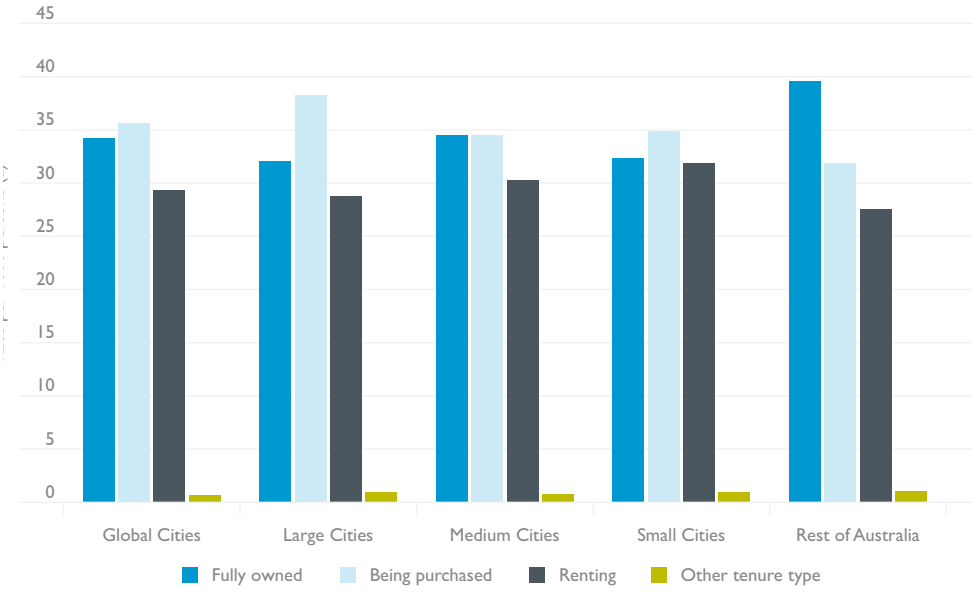
Tenure

The proportion of households who either own or are purchasing a home has remained at around 70 per cent since 1961 (Kyger 2009). However, there has been a change in the balance in the proportion of owners and purchasers in the decade to 2007 with a decline in the proportion of owners without a mortgage from 41.3 per cent to 34.3 per cent with a corresponding increase in those with a mortgage (ABS 2008a). In 2007, 22 per cent of households were renting from a private landlord and 4.7 per cent of households were renting from a state or territory housing authority.

Home ownership has been supported by government policy for decades because the social benefits of secure, adequate, affordable housing include improved health and educational outcomes and a productive workforce. Moreover, there is evidence that home ownership is related to energy conserving behaviours as home owners are more likely to install energy efficient appliances in their homes (Kelly & Fielding 2009).

Figure 6.3 demonstrates the difference in home tenure across the different sizes of Australia's major cities. In the largest cities of Sydney and Melbourne, there are slightly more homes being purchased than are fully owned. In the large cities of Brisbane, Perth and Adelaide, this gap is larger. This may be a result of the growth that Brisbane and Perth are currently experiencing. Outside the major cities there are more homes fully owned than being purchased, and the lowest percentage of renters. This may reflect the move of younger people to cities, as well as the higher housing costs.

Figure 6.3 Home tenure according to city size, 2006



Source: ABS 2006.

Because home ownership provides more security of tenure than renting, the benefits of housing for owner-occupier households tends to be greater than for renter households. In 2006 renters were three times more likely than owner-occupiers to have changed address

within the previous 12 months, with 35 per cent of renters households having lived at a different address within the past year compared to 10 per cent of owner-occupiers.

Not all of these moves were voluntary. The 2006 General Social Survey showed that the main reasons given by renters for moving house were the desire to have a bigger or better home (15 per cent) and employment reasons (14 per cent). A third main reason reported by a similar proportion of people (14 per cent) was that they moved house as a result of being given notice by a landlord (ABS 2008). The cost of moving house on a household's budget is considerable, increasing the cost of living over time and detracting from the social benefits associated with housing, especially for family households.

There is a substantial difference in the distribution of wealth and income between home owners and purchasers as a group and private and public tenants. Owners and buyers aged between 25 and 64 years have the highest incomes and are the wealthiest Australians, their wealth being six times higher than non-homeowners. Tenants of public housing have the lowest wealth and incomes (Australian Government 2008), but can have more secure tenancy and are less vulnerable to rising rental costs than households in private rental.

There are distinct differences in the social profiles of home owners and buyers and renters. In 2005–06 renters tended to be younger (61 per cent of people aged under 35 were renting), and more likely to be single (56 per cent of lone-person households aged between 35 and 44 years were renting). Following the common pattern of progression from renting to home ownership across the life course, less than 6 per cent of couple-only households aged over 65 years were renting.

For many lower-income households, renting is their only housing option throughout their life. Around half (49 per cent) of households in the lowest household income quintile were renting, 56 per cent of Indigenous households were renting (compared to 26 per cent for non-Indigenous households) and 59 per cent of lone-parent households were renting (compared to 20 per cent of couples with dependent children). In contrast, over two-thirds of first home buyer households with a mortgage were couples or couples with children.

Dwelling structure and tenure

Tenure and dwelling structure are closely related to each other in the Australian private residential market, with the majority of owner occupied housing being detached dwellings in contrast to the majority of rented dwellings, of which most are units, flats or apartments.

Living affordability

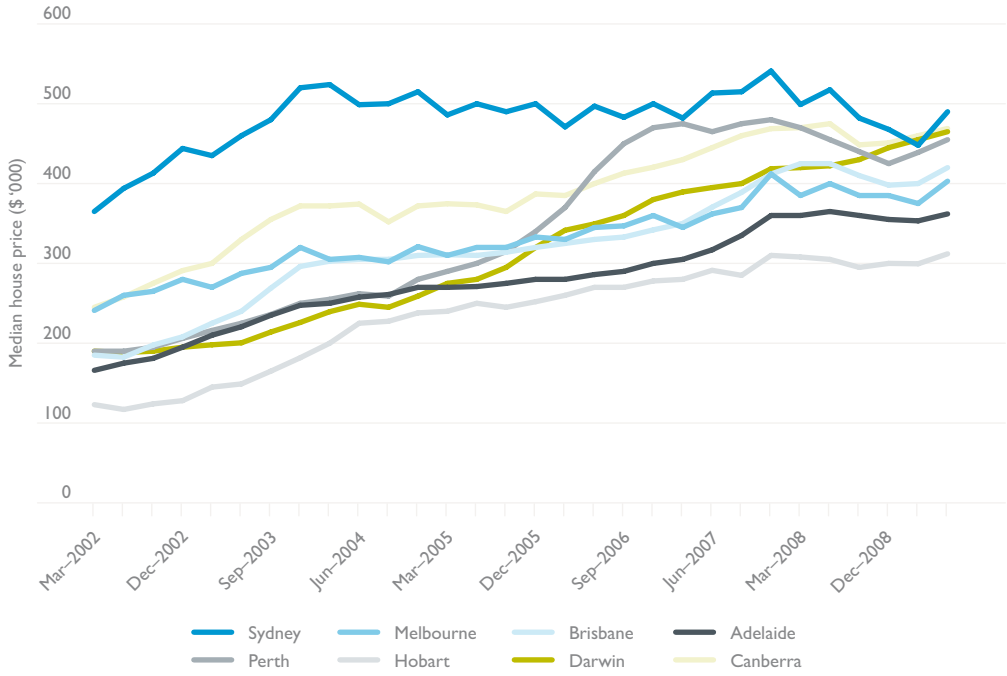
Living affordability refers to the combination of housing costs and other living expenses for households, like the costs of transport, energy and water utilities. Some of these costs for households vary depending on where people live. This is especially the case for the relationship between housing and transport. For example, by locating new housing a long way from jobs, people have to travel further for longer and usually by car.

Living affordability appears to have declined in many parts of Australia's major cities over the past decade because a growing number of households are experiencing financial stress related to rising housing and living costs (Miranti & Nepal 2008).

Affordable housing

House prices have increased by in excess of 50 per cent in real terms since 2000. Average house prices in capital cities have increased to the equivalent of over seven years of average earnings, up from three years in the post-war period to the 1980s (The Senate 2008). Rental prices have also risen substantially, increasing by 17 per cent since 2000 with a steep increase in rents in the past two years as rental vacancy rates have declined. House prices in all capital cities continued to rise over the period 2002 to 2008, except in Sydney where they were relatively stable from around December 2003 (Figure 6.4).

Figure 6.4 Median house prices in capital cities, 2002–2008



Source: ABS 2009a.

The 2008 Senate Select Committee Report on Housing Affordability in Australia (The Senate 2008) found the pressures on affordability are a function of strong demand and limited supply driven by strong population growth underpinned by a range of factors: higher immigration rates; the rate of increase in number of households being greater than the population growth rate; a decline in standard home loan interest rates from the mid-1990s; and greater availability of credit and the taxation system's incentives that have encouraged investment in residential property (through negative gearing provisions and the 50 per cent capital gains tax discount).

The National Housing Supply Council's *State of Supply Report 2008* has estimated that, as at June 2008, there was a shortfall in supply of 85,000 dwellings, including the number required to shelter the homeless and to provide additional rental units to bring vacancy rates to 3 per cent. The report concludes that under medium growth projections, there will be a cumulative gap of 431,000 dwellings by 2028 (NHSC 2009).

The National Housing Supply Council reported limited development of new dwellings for lower-income first home buyers in major cities because of land and construction costs and lower yield from an affordable product (NHSC 2009).

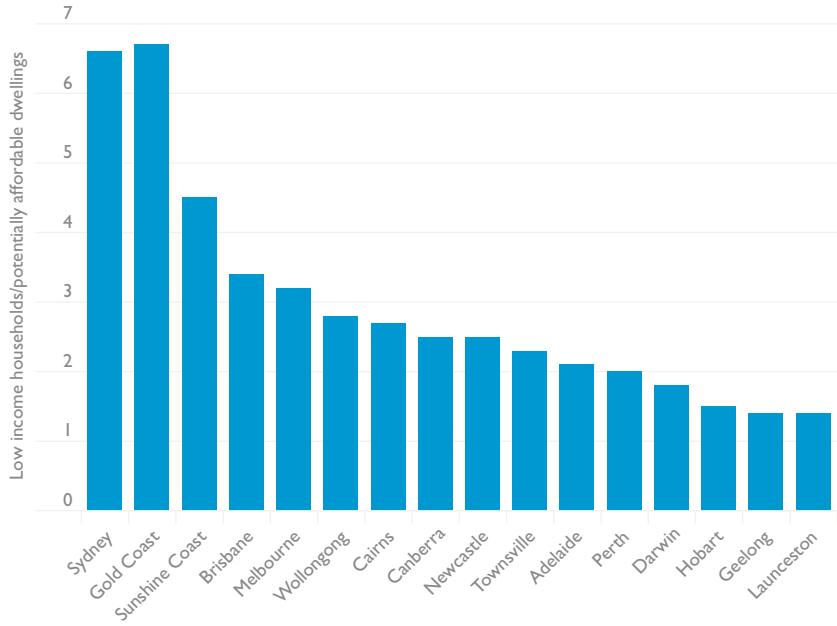
The Council will update these data in its 2010 report, which is expected to show the undersupply of housing becoming more acute due to the effects of the global financial crisis restricting housing finance while there is continued high population growth across Australian cities.

The Commonwealth and state and territory governments made a substantial commitment to improve the supply of affordable housing. The success of the strategy will become evident over the next decade. The commitment was supplemented by considerable investment in social housing as part of the 2009 stimulus expenditures. This included funding under the Social Housing Initiative for the construction of 20 000 new homes and refurbishments to 47 000 existing social housing dwellings by 2012; savings to over 300 000 new private dwellings from reforms under the $512 million Housing Affordability Fund and construction of an additional 50 000 affordable rental dwellings under the National Rental Affordability Scheme.

Rental affordability is a particular concern for low-income households in our major cities. The National Housing Supply Council report noted a shortfall of 202,000 dwellings for renter households within the lowest 20 per cent of income and a decline of some 90,000 social housing dwellings in the period 1996 to 2008. Again this problem is expected to be exacerbated by the effects of the global financial crisis and an associated reduction in housing investments.

Research investigating the change in the private rental market between 2001 and 2006 showed that the private rental stock expanded most at the higher rent brackets while the proportion of rental stock in the four lowest categories declined from 50 to 37 per cent (Wulff et al 2009). This has created a shortage of 71,000 dwellings for renters in the three lowest income categories. Using data from this research, Figure 6.5 shows that the number of low income households is greater than the supply of affordable private rental dwellings throughout Australia.

Figure 6.5 Index of affordable private rental dwellings



Source: Wulff, M et al. 2009

Operating costs

The operating costs of housing include the cost of energy and water consumed by the household. Household energy and water consumption is closely related to housing size. Along with the trend to increased house sizes has been an increase in the energy consumption of households. A range of grants and rebates are available to households to encourage the use of renewable energy and water savings but renter households are unable under existing tenancy arrangements to take up these options, unless the landlord provides them, and therefore are less able to benefit from reduced energy or water consumption costs.

Locational costs

The relationship between where a home is located, and where jobs, facilities and services are located, generates transport demand. The preference for single detached dwellings among home buyers has increased the demand for this type of housing, resulting in the expansion of the urban fringe. Many of these outer urban areas are at greater distances to centres of employment and services, thus increasing the distance and time of travel by household members. In many instances these outer urban areas have few public transport options and so the majority of household travel is by car.

Transport costs are the second-largest cost to households. The impact of the rising price of fuel will be felt most acutely in the outer suburbs of cities where car dependency is highest as a result of the combination of the dispersed residential development and limited public transport. Research into the distribution of households vulnerable to rising oil prices concluded that households in the middle and outer suburban areas of our cities will likely face the highest additional costs from higher fuel prices (Dodson & Sipe 2008).

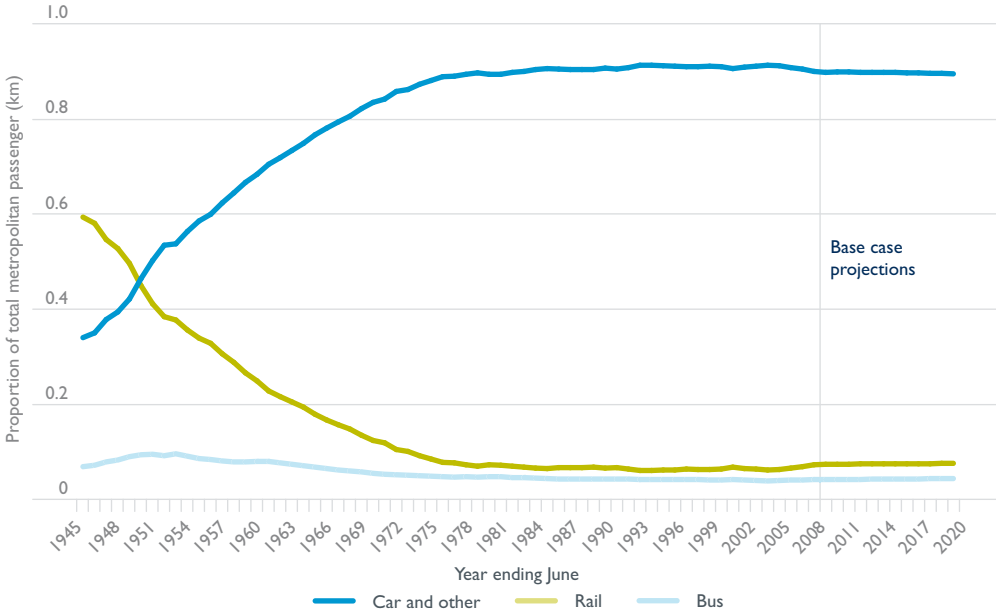
Transport accessibility and mobility

In addition to the cost of transport, the time spent travelling can have an impact on quality of life. Time spent commuting takes away from time spent with family and friends or participating in community, cultural and recreational activities.

A consequence of outward urban expansion has been an increased distance (spatial separation) between residential areas and locations of employment, resulting in long-distance commuting for workers, although there is evidence that commuting distances have been stable or even declining since the 1990's in a number of capital cities (BITRE 2009b). However, there is also evidence that commuting travel times have been increasing over the past decade for Brisbane, Sydney and Adelaide (Melbourne Institute 2009; Milthorpe 2007; NSW Transport and Infrastructure 2009).

The levels of car dependency in Australian cities has increased vehicle kilometres travelled at a rate faster than population growth. As discussed in Chapter 4 (Productivity), car dependency has created problems associated with high levels of traffic congestion, especially in the larger capitals of where infrastructure and public transport provision have not kept pace with growth rates.

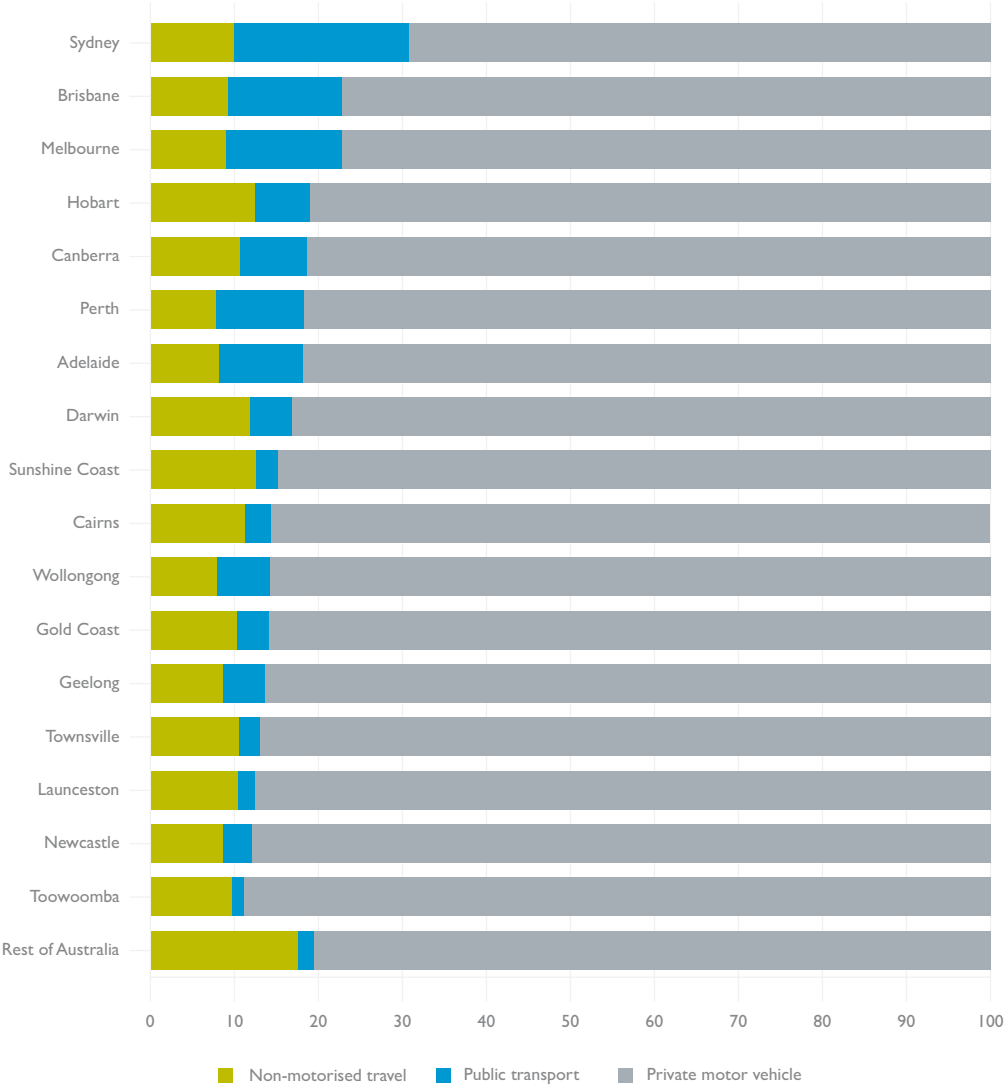
Figure 6.6 Capital cities motorised mode share of travel



Source: BITRE (2009) Information paper 31, Urban passenger transport. How people move about in Australian cities.

Figure 6.6 illustrates that private motor vehicles have been the dominant mode of travel for trips to work throughout Australia since the 1950s. Sydney has the highest share of public transport (Figure 6.7). Non-motorised travel (including walking, cycling, other self-propelled modes and working from home) has the highest share outside our major cities.

Figure 6.7 Modal shares of travel to work in major cities



Source: ABS 2006

Oil and mortgage vulnerability

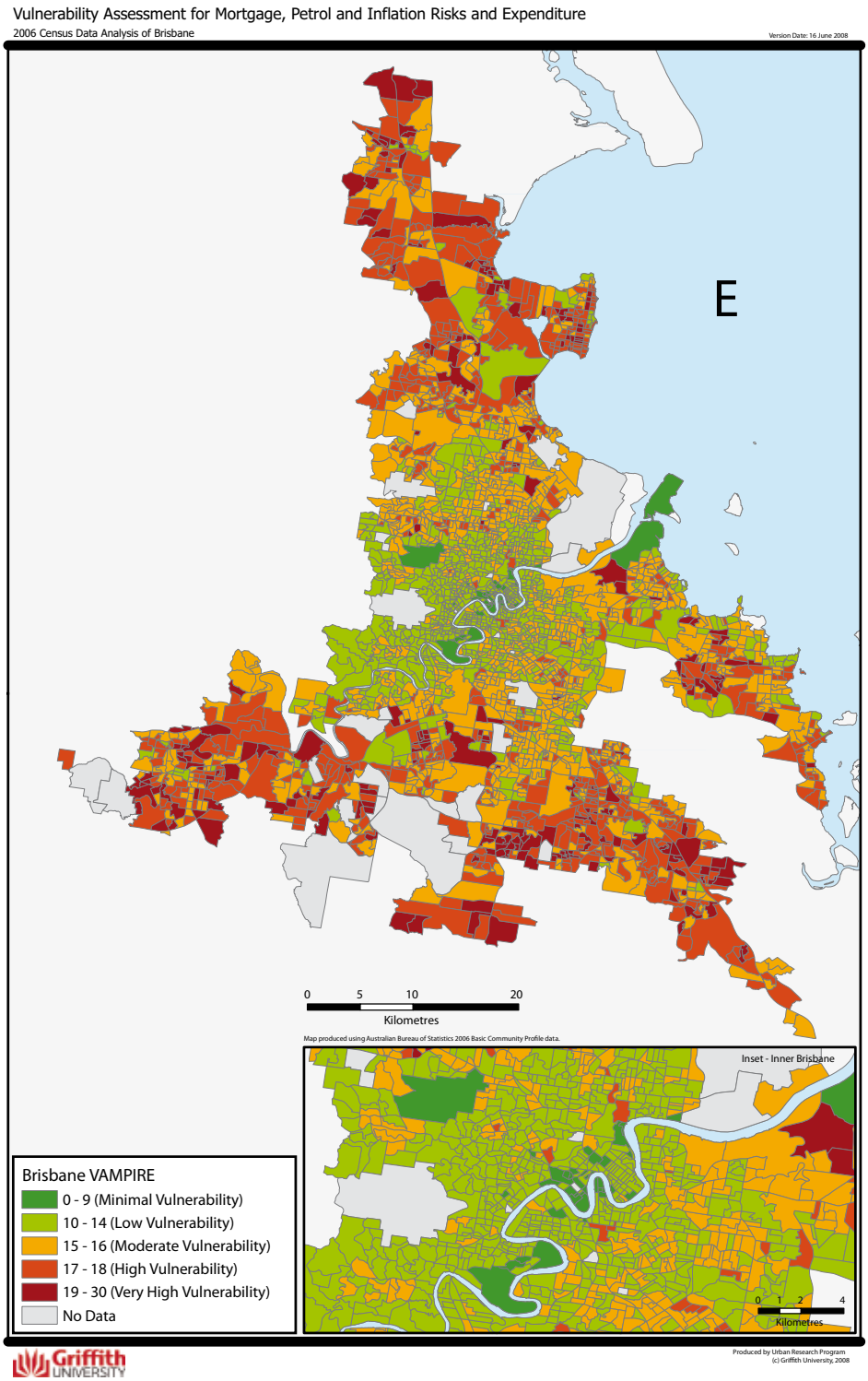
There are considerable spatial variations in living affordability based on cost of housing and the availability of transport alternatives to the private motor vehicle and the accessibility of places to the range of facilities and services within cities.

At the same time there are concentrations of lower-income households who may not have as high housing costs but have higher transport costs because of the location in which they live and the distances they need to travel to access jobs and services.

Indices such VAMPIRE (Vulnerability Assessment for Mortgage, Petroleum and Inflation Risks and Expenses) index developed at Griffith University by Jago Dodson and Neil Sipe (2008) identify the relative degree of stress in localities across the major cities. The VAMPIRE index is an indicator of relative vulnerability to increased petrol prices, interest rates and inflation. The index uses ABS Census data for households by four variables: journey to work by car, car ownership, income and home purchasing.

The distribution of vulnerability based on the VAMPIRE index for households in Brisbane is shown in Figure 6.6. This analysis shows that very high vulnerability is distributed across large tracts of the outer areas of Australia's cities. Other cities show a similar pattern.

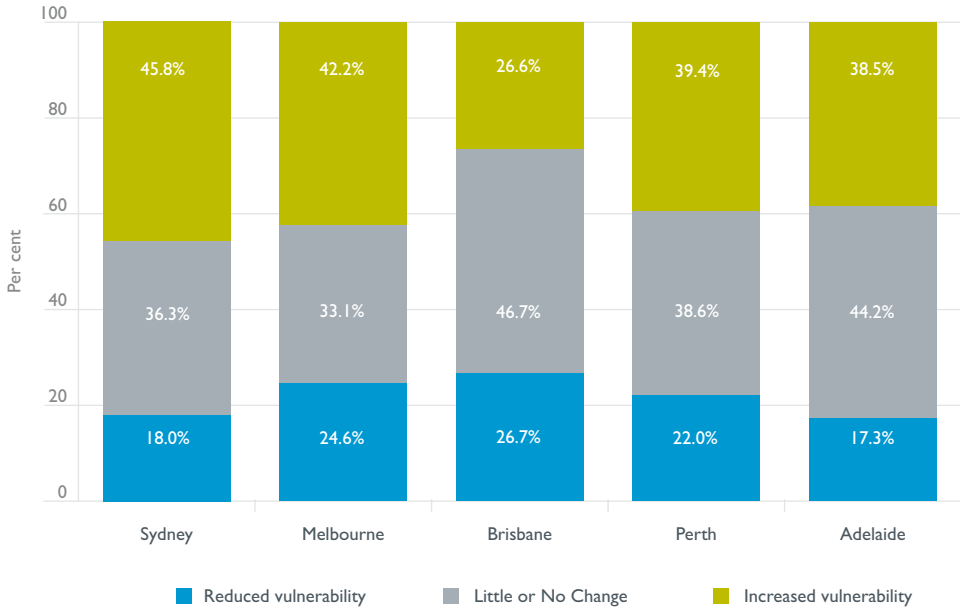
Figure 6.8 Oil and mortgage vulnerability in Brisbane, 2006



Source: Dodson & Sipe 2008 based on ABS 2006 Census data

In their analysis, Dodson and Sipe ranked vulnerability of ABS Census collection districts for 2001 and 2006 for the five largest cities. They then identified the change over that time. The results summarised in Figure 6.9 show that all cities except Brisbane had a greater proportion of collection districts that increased their vulnerability to oil and mortgage price rise than reduced their vulnerability. Of the five cities, Sydney had the greatest proportion of collection districts which increased their level of vulnerability.

Figure 6.9 Change in oil and mortgage vulnerability at the Census Collection District Level, 2001–2006



Source: Adapted from Dodson & Sipe 2008 based on ABS 2001 and 2006 Census data

This is not to say that all households in these areas became more vulnerable because change in the vulnerability index may also reflect some changes in the household composition and internal movements of households within cities. For example, where adult children leave home the number of cars at the dwelling may fall and this would be registered as a reduced vulnerability level. Nevertheless, the broader trend between the cities, and the distribution of vulnerability within cities, gives a good indication of likely localities that have relatively higher levels of vulnerability and, therefore, relatively lower levels of living affordability.

Inequalities between places within cities and issues of locational disadvantage are further discussed next in Chapter 7 Social Inclusion.

Communication technology

Increasingly, connectivity in and between cities and accessibility to goods and services for businesses and individuals is related to access to digital technologies and the internet. Access to high-speed broadband is now an essential part of the way Australians communicate socially as well as to do business. Already employment patterns are changing with the ability to work remotely via the internet. Internet communication is also becoming progressively more important to the delivery of education and health services.

The availability and coverage of affordable, reliable and fast broadband is therefore another aspect of the liveability of cities. It has the potential to reduce the tyranny of distance, particularly in relation to work and education, and provide greater equity of access to employment and leisure opportunities. It also offers greater flexibility to manage family and work life.

The Australian Government is establishing a National Broadband Network which aims to connect 90 per cent of all Australian homes, schools and workplaces with fast, affordable broadband. It is therefore likely that the proportion of dwellings connected to the internet in all cities and regional centres will increase over the next decade.

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Social inclusion and equity

Chapter 7

Introduction

The majority of Australians, whether they live in cities, regional or rural communities, enjoy a high standard living. This is the product of robust economic productivity, the provision of quality education, safeguards on wages and conditions of employment that enable many to have the financial capacity for home ownership, high standards of health care, and the supply and distribution of basic utilities and services such as water, energy, telecommunications and waste disposal.

However, inequalities persist for particular groups within the Australian population and between populations in different locations. The degree of difference between the quality of life of the most disadvantaged group of people and the most advantaged group, and the proportions of people who are each group (and in between), reflect the levels of inequality that exist in the our society.

Equality and opportunity, although most commonly measured in economic terms of income wealth and labour market participation, also relate to access to services and facilities, quality of housing and living environment, and the means to sustain health and wellbeing, including opportunities for social and civic participation.

Social inclusion means that people have the opportunities, the resources and the capabilities to participate in this way—to learn, work, engage, in the community and to influence decisions that affect them (Australian Social Inclusion Board 2010).

While many of the most disadvantaged households are in Australia's remote Indigenous communities, there are large concentrations of highly disadvantaged households within certain neighbourhoods in cities. These concentrations of disadvantage are often reinforced by the uneven distribution of access to employment, education, services and other opportunities across urban areas.

This chapter considers some aspects of inequality and social inclusion in the major cities.

Summary indicators

Dimension	Indicators
Economic resources	Relative socio-economic disadvantage Relative income inequality - Gini coefficient
Employment	Employment rate Children in jobless families
Education	Young people not fully engaged in education or work
Disability	Number and employment rate of people with disability
Housing	Proportion of population who are homeless Proportion of low-income private renter households with housing costs exceeding 30% of household income
Accessibility	Public transport access to main centres of employment, education and health services

Key findings

- Average disposable household incomes are 25 per cent higher in the capital cities than other areas but there is greater inequality within capital cities than other cities and regions.
- Concentrations of disadvantaged households in certain locations within cities are persistent.

Distribution of economic prosperity and poverty

At an international scale, Australia is a wealthy country, ranked above average among the OECD countries (OECD 2009). During the decade 1997–98 to 2007–08 economic growth has improved Australia's productivity and increased wealth. Real net worth per person increased by an average annual rate of 0.9 per cent during the same period. Gross Domestic Product (GDP), as an indicator of economic prosperity, grew in the 10 years to June 2008, from $41,000 to $51,000 per person (up 2.2 per cent a year) (ABS 2009a). The strength of the economy has provided Australia with a level of resilience to the economic downturn resulting from the global financial crisis of 2008 and real wages increased for all income groups.

However, during the same period of growth in economic prosperity, the degree of inequality within Australian society has increased. The Gini Coefficient is a measure of inequalities within economies, where a value of 1 represents the highest level of inequality and a value of 0 represents perfect equality. In 2007–08 Australia's Gini Coefficient was 0.331 (ABS 2009a). At this level, Australia is considered to have a 'moderate level of inequality' (UN-HABITAT 2008), but there has been a gradual increase in the Gini Coefficient in Australia in the past decade, up from 0.303 in 1997–98 (ABS 2009a).

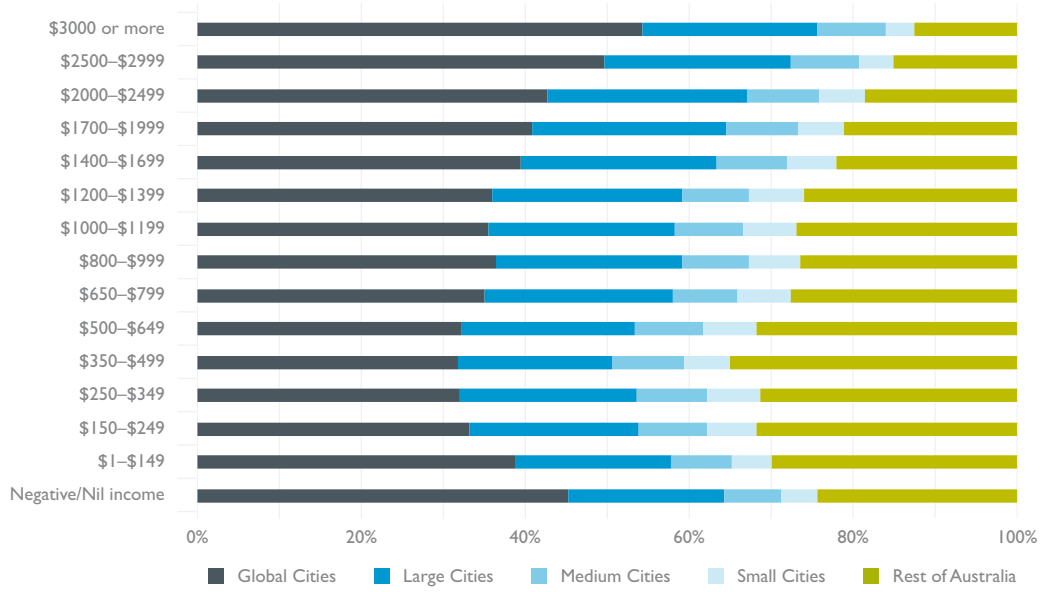
While lower-income earners have benefited from the past decade of economic growth along with higher-income earners, the rate of income growth for lower-income earners has been at lower rate than higher-income earners—thereby exacerbating the difference between average income levels.

Even more striking than disparities in income levels are the inequalities in wealth distribution in Australia. In 2005–06 the wealthiest 20 per cent of households had 61 per cent of the total Australian household wealth, while the poorest 20 per cent of households had just 1 per cent of

the total between them (ABS 2007a). The differences between wealth and income distribution partly reflect the common pattern of wealth being accumulated during a person's working life, and especially patterns of home ownership, such that older couple-only households who own their homes without a mortgage have the highest mean household net worth. In contrast, 92 per cent of households in the lowest net worth quintile were renters (ABS 2007a).

Our larger cities have a disproportionately greater share of higher-income households compared to smaller cities and the rest of Australia (Figure 1). The relative share of households across income deciles is more even in regional cities, while the rest of Australia has a greater share relative to population of lower-income households.

Figure 7.1 Relative shares of households by weekly income



Source: ABS 2006

Inequality within cities

Australian cities have relatively low to moderate levels of inequality compared to many cities of developed nations. However inequalities are greater in our large cities than the rest of Australia (Miranti et al 2009). The pattern of inequality has seen the simultaneous suburbanisation of poverty in Australia's middle and old outer suburban areas, and movement of 'aspirational classes' toward new outer suburbs and inner city regeneration areas.

In relation to the degree of inequality in the major cities, the Gini Coefficient in Australia's urban areas ranges from 0.332 in major cities compared to 0.31 in small regional centres (UN-HABITAT 2008). Recent research by the National Centre for Social and Economic Modelling (2008) investigating inequality within Sydney and Melbourne found that there are distinct pockets of small areas with high income inequality in Sydney, Melbourne and the rest of New South Wales.

There are also substantial disparities between cities, where equivalised disposable household incomes in Adelaide and Hobart were below the national average (ABS 2009a). In addition, smaller, less diversified cities and sub-regions within larger metropolitan areas, particularly where the labour force relies on manufacturing, are likely to experience continued vulnerability to the changes in industry structure despite relative stability of industry structure across the cities (BITRE 2009a).

Locational disadvantage

There is an uneven distribution of, and accessibility to, education, health and community services and facilities, employment, and social, cultural and recreational opportunities within cities. This contributes to socio-economic disparities between locations.

Access to education and employment is critical to levels of labour force participation with the flow-on effects for household income and wealth. For example, labour markets in greater western Sydney have long failed to provide both the range and number of jobs for the size and composition of the population in the region, which in 2006 was home to one in eight Australian children.

Land and housing prices reflect the differences in the relative accessibility of areas and concentrations of lower-income and disadvantaged households in particular neighbourhoods.

Studies using various indexes of disadvantage, such as the Socio-Economic Index for Areas (SEIFA) have shown that the differences between areas in the degree of cumulative disadvantage have remained very stable over the past ten years (Vinson 2009).

While Australia's most disadvantaged locations are remote areas, some localities within cities have similar degrees of disadvantage as indicated by measures of health, education, unemployment and interpersonal violence.

In many cities the changing nature of industry has left localities with fewer job opportunities. Continuing structural change is reducing job opportunities in manufacturing and increasing job opportunities in government and services. Concentrations of different types of employment and the variation in transport connections to these jobs can leave already disadvantaged communities marginalised from these job opportunities, or make other communities vulnerable to increasing rates of unemployment.

For example, Perth's employment is concentrated in the inner and middle suburbs, while population is concentrated in the outer suburbs. This outer region has 51 per cent of employed residents, but only 30 per cent of jobs. Roughly half of Perth's jobs lie more than 2 km from a railway station. Major concentrations of jobs in light industrial areas are difficult to access using Perth's rail system. In Perth, educational attainment is closely related to (and declines with) the level of access to jobs. The proportion of people with no post-school qualifications is comparatively low in areas with good access to jobs. Average income and average wealth tend to be highest in areas with good access to jobs and lowest in areas with very much below-average access (BITRE 2009b).

Accessibility

Accessibility, in an urban context, refers to the ability to access opportunities, goods, services, and participate in the activities that support individual and community health, wellbeing and social cohesion. It relates to the ability of people of all ages, socio-economic status, backgrounds and physical abilities to participate in, and contribute to, all aspects of society. It encompasses the distribution of opportunities and facilities within cities in relation to where people live; the design of places and facilities; and the availability and suitability of the transportation connections. In relation to transportation, accessibility includes the degree to which people can access opportunities with reasonable ease and within a reasonable amount of time.

Over the past half-century, Australian cities have been designed primarily to provide accessibility by road. Accessibility for people without access to a motor vehicle can be limited unless supported by good public transport. In the 2006 General social survey, adults in the youngest age group (18 to 24 year olds) and the older age groups (75 years and over) were the least likely to have access to motor vehicles and more likely to experience difficulty getting to places they needed to go (ABS 2007b).

Low accessibility in the outer suburbs of many Australian cities coincides with low-income households. Many of these households decide that they have little alternative than to purchase and use a private motor vehicle to get to work or access goods and services (Currie et al. 2009; Gleeson & Randolph 2002). This 'forced' car ownership uses significant proportions of household income and exacerbates inequality by making the lower-income households the most vulnerable to imminent petrol price increases and other economic stress (Dodson & Sipe 2008).

Public transportation infrastructure, networks and services, which in the past have been designed to serve able-bodied commuters, can also hinder accessibility for particular groups, or to particular places. The distribution of public transport services is a major determinant of the variations within cities' levels of accessibility and contributes to inequality between locations.

Vulnerable groups

Low income, locational disadvantage and lack of accessibility are aspects of inequality that can disadvantage individuals regardless of their background, age or sex. However, there are some groups that are more at risk of long term disadvantage and social exclusion than others. These groups include Aboriginal and Torres Strait Islander people, people with disabilities and people recently settled as a refugee or humanitarian entrants and children in jobless households. People who are homeless and long term unemployed people are among the groups of people who are already experiencing multiple disadvantage and social exclusion.

Urban Indigenous communities

Indigenous people remain among the most disadvantaged groups of Australians. As a group they experience lower life expectancies, poorer health and higher rates of imprisonment and violence. Indigenous children have lower participation rates in preschool and consequently poorer results in literacy and numeracy, lower rates of school retention, and higher rates of unemployment than non-Indigenous people.

Over 40 per cent of Indigenous people live in major cities. Darwin has the highest proportion of Indigenous people among capital city populations at 11.1 per cent, but with 34,515 Indigenous people as at the 2006 Census, Sydney has the largest population of urban Indigenous Australians.

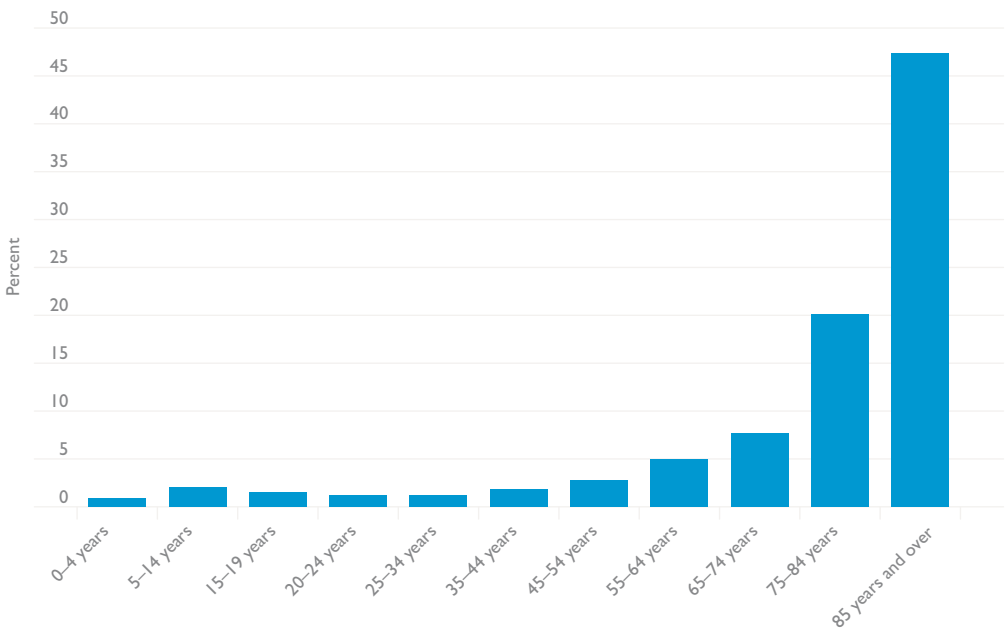
Generally Indigenous people in major cities have better outcomes than Indigenous people in remote areas for some housing, economic and education measures. However, even in major cities the rates for Indigenous people on completing Year 12 schooling, unemployment, income, violence, and physical and mental health compare poorly to non-Indigenous people. At the 2006 Census, a quarter of Indigenous people aged 15 to 64 years in major cities were not working and not studying, compared to 8 per cent of non-Indigenous people in the same age cohort (Productivity Commission 2009).

Disability in urban populations

The underlying disability rate has risen steadily from 15 per cent in 1981 to 20 per cent in 2003 (3.9 million people) (AIHW 2009a).

The proportion of people in need of assistance with a core activity of self care, mobility or communication increases with age (Figure 7.2). The number of Australians who have disabilities has been estimated to increase through the first half of this century, largely due to the ageing of Australia's population, with the number of people with severe and profound disabilities doubling to 2.1 million within 40 years (AIHW 2009a).

Figure 7.2 **Persons in need of assistance with a core activity as a proportion of age group**



Source: ABS 2006

In addition, the number of people with disability under 65 years of age is projected to increase by 25 per cent over the same period, and the proportion of carers will decline.

There is a connection between disability and locational disadvantage, especially in cities. Some 3.1 per cent of people living in the most disadvantaged fifth of local areas within Australian capital cities have severe disability, compared to 1.3 per cent in the most advantaged fifth. The proportion of people with severe disability ranged from 1.9 per cent in Perth, Darwin and Canberra to 2.8 per cent in Hobart. This indicates a strong social gradient underlying the geographical distribution of severe disability in Australian cities (AIHW 2009).

There is also a connection between disability and social isolation and a causal link between social isolation and transport and infrastructure. People with disabilities are less able to get easily to the places they need to go; less likely to have been involved in a community-based social or recreational activity; less likely to feel safe at home alone after dark; less likely to have non-school qualifications or to be employed and, consequently, more likely to be economically disadvantaged than people without disabilities (ABS 2004).

The ABS estimates that 15 per cent of people with disabilities aged 15 to 59 (or 287,500 individuals) live alone compared to 6.8 per cent of people without disabilities (ABS 2003).

Responses on the mainstream issues including in the design and functioning of the city will be important on a practical level irrespective of their key justice and social inclusion context—these responses will increasingly be geared towards sustainability and keeping people paying taxes up to retirement age and not moving onto income support prematurely.

The National Disability Strategy Shut Out (FaHCSIA 2009) draws directly from extensive consultations and hundreds of submissions. It presents the implications of disability in terms of widespread disadvantage, workforce issues, service fragmentation and community access barriers. The report concludes that while people with disabilities are no longer institutionalised, they are effectively shut out of the economy and community.

Unemployed people

Unemployment levels are highly concentrated in particular localities in our cities, to the degree that some suburbs have unemployment rates up to three times that of the metropolitan, state or federal rates for various age groups. These localities are mostly at some distance from the central business districts and other major centres of employment. In general, areas with high proportions of unemployed people also contain high proportions of low-income households, one-parent families with dependent children and people aged 15 to 64 years not in the labour force.

Providing access to opportunities for individuals and families in these areas to improve their livelihoods through employment and social participation remains a long-term challenge for governments.

Children in jobless families

Since the mid-1990s, the proportion of children aged younger than 15 years living without an employed parent in the same household has varied from 15 per cent to 19 per cent, and

has been 16 per cent or less since 2002–03. In 2005–06, 607,000 children lived without an employed co-resident parent, and around 69 per cent of these lived in one-parent families (ABS 2009b).

Homelessness

The Australian Bureau of Statistics *Counting the homeless report* (ABS 2008) found that 105,000 people were homeless in Australia on Census night in 2006, including 16,800 people in absolute homelessness, such as sleeping out or in an improvised shelter. While there has been a decrease in youth homelessness since 2001, there was a 17 per cent increase in the number of homeless people in families in the same period. The report stated that:

> there has been minimal early intervention to assist homeless families and they have been badly affected by a declining supply of affordable housing. Vacancy rates in the private rental market declined from 3 per cent in 2001 to 2 per cent in 2006. The private rental market has deteriorated further since 2006 (ABS 2008).

In general, the larger the city population the higher the number of homeless people. The exception is Darwin where the rate of homelessness at 276 people per 10,000 population is substantially higher than all other cities. Other smaller cities with high rates of homelessness are Townsville (124) and Cairns (113) as shown in Table 7.1

Table 7.1 Homelessness in the major cities (a), 2006

	Number of people experiencing primary homelessness (b)	Rate of homelessness (c)
	Persons	Rate per 10,000
Sydney	1182	39
Melbourne	845	41
Perth	767	47
Brisbane	591	45
Darwin	488	276
Sunshine Coast	270	60
Adelaide	251	47
Gold Coast	216	47
Newcastle	133	32
Hobart	125	53
Cairns	79	113
Canberra	78	42
Townsville	74	124
Wollongong	48	36
Geelong	41	29
Launceston	13	49
Toowoomba	7	46

Notes:
a. Capital cities refers to statistical division and other cities are statistical subdivision.
b. Primary homelessness refers to the number of people sleeping in improvised homes, tents and sleepers out.
c. The rate of homelessness refers to the number of peple experiencing primary homelessness as well as those sleeping at friends or relatives, in Supported Accommodation Assistance Program funded services such as hostels for the homeless, night shelters and refuges; and in boarding houses as a proportion of the total population

Source: AIHW 2009b

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Governance

Chapter 8

Introduction

Governance, in the context of this report, refers to the political and legal structures and mechanisms used to manage and coordinate our urban systems, how they interrelate with each other and with key stakeholders, how resources are allocated and how outcomes are achieved. This chapter briefly describes the various governance arrangements across Australia that have responsibility for the planning and management of the major cities.

Key findings

- The future direction of the 17 major Australian cities is influenced, apart from the Australian Government, by eight state or territory governments, and 155 local governments.
- Metropolitan land-use and infrastructure planning is largely the responsibility of state and territory governments, however, responsibility for planning, funding and delivery of infrastructure, transport and human services in Australia's major cities is shared between all spheres of government.

Composition of the Federation of Australia

There are three spheres of government in Australia: the federal government, six state and two territory governments, and 565 local governments. The 17 major cities with populations of more than 100,000 as at the 2006 Census contain 155 local governments between them.

Local government boundaries differ between capital and regional cities. Table 8.1 lists the number of local government areas contained within Australia's major cities. Maps and tables of the names of these local government areas can be found in Appendix B.

The local governments were established by colonial governments in the 19th century to provide services such as road maintenance, drainage and sewage disposal. They were retained by states and territories after Federation in 1901.

As cities grew so did the number of local government areas that surrounded the city centres. As a result most of Australia's capital cities have acquired a patchwork of local government jurisdictions with many covering relatively small land areas. The exception is Brisbane, which in 1925 merged 20 local councils into one large City of Brisbane council.

In contrast to the capital cities, Australia's regional cities often contain local government areas that cover more than the urban footprint of the city alone. This allows the local governments of many regional cities to operate as a functional economic unit, and to plan and invest in infrastructure at a regional scale.

Table 8.1 Number of local government areas in Australia's largest cities, 2007–08

Major City	Number of Local Government Areas
Sydney	43
Melbourne	31
Brisbane	5
Perth	30
Adelaide	19
Gold Coast–Tweed	2
Newcastle	5
Wollongong	3
Sunshine Coast	1
Hobart	7
Geelong	1
Townsville	1
Cairns	1
Toowoomba	1
Darwin	3
Launceston	4

Source: ABS 2009

Collaboration across the spheres of government

Metropolitan land-use and infrastructure planning has largely been the responsibility of state and territory governments. However, responsibility for policy, planning, funding and delivery of infrastructure, transport and human services in Australia's major cities is shared between all spheres of government.

At the federal level, the Australian Government has responsibilities for setting immigration levels, taxation and distribution of funding to states for health; education, especially universities; and housing. It also has an interest in sea ports, airports and major land transportation networks in relation to their contribution to the productivity of the nation, as well as safety and border security issues associated with international freight and people movements.

State and territory governments are responsible for metropolitan strategic planning, urban roads and transport, and the provision of education and health facilities and utilities. States and territories fund infrastructure and services mainly through transfers from the Federal government but also from state taxes such as stamp duty.

Local governments (generally) have planning authority over land-use zoning and determination of development applications. Local governments are responsible for local roads, rubbish

removal, recycling and increasingly for providing services and facilities for local communities, including libraries, child-care, recreational and cultural facilities. Funds for local government to provide infrastructure and services are sourced from local land rates, and through levies and grants from the other two spheres of government.

The Council of Australia Governments (COAG) was established in 1992 to enable policy reforms that are of national significance and which require cooperative action by Australian governments to be developed and implemented. COAG is the peak intergovernmental forum in Australia, comprising the Prime Minister, Federal Treasurer, state premiers, territory chief ministers, state and territory treasurers, and the President of the Australian Local Government Association (ALGA).

Through COAG the three spheres of government come to together to make decisions about policy and financial relations that cover a range of issues. In many cases these intergovernmental agreements determine the planning and delivery of infrastructure and services in cities. For example, on 7 December 2009, COAG agreed to a set of reforms for national criteria for capital city strategic planning. The criteria aim to ensure there are long-term plans in place to manage population and economic growth, address climate change, improve housing affordability and tackle urban congestion. The states and territories have agreed to the metropolitan plans for their capital cities meeting the criteria by 2012. The Australian Government intends to link future infrastructure funding decisions to jurisdictions having met the criteria. This governance reform is intended to secure better outcomes from the investments of all governments.

Regional Development Australia

Regional Development Australia (RDA) is a recent partnership initiative between the Australian, state, territory and local governments to support the growth and development of Australia's regions. RDA is delivered through a national network of 55 committees. Each committee comprises local leaders with a broad range of skills and experience, as well as demonstrated networks within their region. Committee members are individuals who understand the challenges, opportunities and priorities within their local community and include representatives from governments, regional development organisations, local businesses and community groups.

The RDA committees will:

- consult and engage with the community on economic, social and environmental issues, solutions and priorities;
- liaise with governments and local communities about government programs, services, grants and initiatives for regional development;
- support informed regional planning; and
- contribute to business growth plans and investment strategies, environmental solutions and social inclusion strategies in their region.

A key task for the committees is to develop regional plans which will be available to the community for review and discussion. RDA committees will then work with their communities to implement these plans.

Metropolitan planning in states and territories

Metropolitan planning has been adopted in different ways and to different extents throughout Australia's Federal, state, territory and local governments. This has often developed in conjunction with a shift towards regional governance models to reflect a new paradigm of regional policy.

Although there are many models for metropolitan planning and governance, these can be summarised into statutory and cooperative approaches. A statutory approach to governance means that there is a regional government with powers to create regional laws or by-laws. Similarly, a statutory approach to metropolitan planning means that once a regional plan is agreed upon it becomes law. Statutory metropolitan planning can be undertaken by a regional government; or collaboratively by a number of governments and legislated by an overarching government.

A cooperative approach to regional governance means that smaller local authorities work together to achieve mutually beneficial goals and objectives. Any agreements made would be subject to follow through by each participating government. Similarly, the implementation of a cooperative regional plan would be subject to the statutory powers of the cooperating authorities.

New South Wales

Governance

The NSW Government is vested with the statutory, policy and administrative responsibility for strategic land-use planning, major development and infrastructure projects, and assessments and approvals. The *Environmental Planning and Assessment Act 1979* is the basis for the role.

The Metropolitan Strategy, supporting Draft Subregional Strategies and Regional Strategies describe where future growth is expected to occur and where supporting infrastructure is needed over a 25-year period.

Agencies, including utility and transport, are directly involved in the rollout of a Metropolitan Development Program, which reports annually on the future of residential lands and the quantity of zoned and serviced land. Agency planning (through Total Asset Management [TAM] Plan process) and the State Infrastructure Strategy process ensure that infrastructure delivery aligns with these plans. In respect of Sydney's major growth areas, the North West and South West Growth Centres, a systematic precinct planning process, led by the Department of Planning, involves all relevant agencies.

Local governments across NSW have responsibility for the preparation of local environmental plans (LEP) covering whole or part of the local government area to manage growth. When preparing the LEP, they are required to implement the vision and land-use strategy of an applicable Regional or Subregional Strategy. This includes accommodating growth in employment and housing. Local government is also responsible for the majority of development application assessment and decision-making. However, the Minister for Planning reserves call-in powers for applications.

In parts of the state, regional organisations of councils have been formed as cooperative partnerships between groups of local government entities that agree to collaborate on matters of common interest. They are diverse in size, structure and mandate.

There are 14 RDA committees in New South Wales. The three major cities are included among these committees. There is one committee for Greater Sydney, the Hunter RDA committee encompasses Newcastle and the Illawarra RDA committee covers Wollongong.

Metropolitan planning

New South Wales has a State Plan released in 2006 and reviewed in 2009. The State Plan sets priorities and performance targets for the economy, society and urban and natural environments. The State Plan provides the overarching context for the NSW Government's Detailed Delivery Plans — which include regional and metropolitan strategic plans as well as the State Infrastructure Plan and plans addressing innovation, health, aging, families, safety and security.

Sydney's metropolitan strategy, City of Cities – A Plan for Sydney's Future, is the key overarching 25-year strategic land-use plan for NSW and was released in 2005. The strategy provides the policy framework to coordinate land-use planning decisions across state agencies and local government. The first comprehensive review of the strategy is due in 2010, and will take forward the 25-year timeframe to 2036.

The 2010 comprehensive review of the strategy is proposed to involve the widest group of stakeholders, including developers, investors, local communities, residents, environmental groups and local government. It will also go before Cabinet for whole-of-government endorsement.

The metropolitan strategy assists in the guidance of investment and ensures Government expenditure is focused in alignment with metropolitan transport and land-use planning. The strategy includes monitoring provisions, the results of which have been reported annually to the Metropolitan Chief Executive Officers Group (made up of 26 state agencies) and to Cabinet.

Regional strategic plans have been developed for growth areas in New South Wales. Between 2006 and 2009, eight regional strategies have been developed for the growth areas of the Lower Hunter, Illawarra, Central Coast, South Coast, Mid North Coast, Far North Coast and Canberra to Sydney Corridor. The Draft Murray Strategy was on public exhibition in late 2009. The regional strategies outline employment lands and dwellings numbers to accommodate growth over a 25-year period. All regional strategies commit to a five yearly comprehensive review, with the first due for Lower Hunter in 2011.

Victoria

Governance

Victoria has a longstanding model of regional management forums that provide for dialogue and coordination between levels of government within regional groupings. The Victorian Government has a range of regional strategic planning documents already in place and has established a Regional Planning Ministerial taskforce to work with regional stakeholders on the

development of medium to long-term framework plans for all regions in Victoria. Elements of these frameworks will be given statutory weight upon their approval.

There are nine RDA committees in Victoria, generally aligned with Victorian Government administrative boundaries. Metropolitan Melbourne has four committees: Northern Melbourne, Western Melbourne, Southern Melbourne, and Eastern Melbourne. Five RDAs are located in provincial Victoria. The city of Geelong is included in the Barwon South West region.

Victoria has an urban development program that reports annually on the supply and demand for residential and industrial land in the metropolitan region and the Greater Geelong region. This program is being progressively established in the major regional centres. For growth areas in the metropolitan region, the Government established the Growth Areas Authority to integrate infrastructure planning at a precinct level.

Contemporary precinct planning guidelines have been established as a basis for streamlining planning, assessment and land release activities. Victoria publishes Victoria in future—comprehensive population forecasts to inform planning and service delivery activities.

The State Government has an overall leadership role in establishing long term policy priorities and in delivering investment consistent with its policy objectives. The Government works in partnership with local government and agencies in planning for Melbourne and Victoria. Decision-making at the state or city level provides for the strategic planning framework, long-term directions, high-level investment strategies and coordination of service and infrastructure delivery. At a municipal level, councils are responsible for municipal-level strategic and statutory planning, within the overall metropolitan context, and for delivery of a range of infrastructure and other services.

Metropolitan planning

Victoria has a comprehensive legislative, policy and regulatory environment that enable it to address key sectoral issues as well as policy issues that affect Melbourne, regional centres and the state generally.

The *Planning and Environment Act 1987* (Vic) provides the legislative authority for the Victoria Planning Provisions (including a state planning policy framework and local planning policy frameworks tailored to each municipality). This also provides for regional or place specific strategies to be given statutory weight as well as establishing requirements for assessment of planning scheme amendments against policy objectives.

The Planning and Environment Act, the State Planning Policy Framework and other related provisions are currently under review. The practical application of the planning system is supported by performance monitoring and through the progressive rollout of electronic data systems, including planning scheme maps on line and electronic development assessment.

Melbourne has had a metropolitan strategy since 1927. The strategy has been updated from time to time. The most recent overall review of the metropolitan strategy was Melbourne 2030 (M2030, released in 2002) and given statutory weight at the same time. It is a whole-of-government endorsed strategic planning framework for metropolitan Melbourne and its relationship with regional Victoria.

In 2008, following a comprehensive audit of M2030, the Victorian Government released Melbourne 2030: a planning update – Melbourne @5 million (M@5m). This was developed in conjunction with The Victorian Transport Plan (VTP). These are key policy documents that integrate new commitments for public and private transport, long-term land supply for employment and residential growth, as well as implementing a strategic approach to managing environmental impacts. This update also has statutory weight within the Victorian planning system.

Queensland

Governance

Queensland has established regional planning committees to oversee the development and implementation of regional plans. They are statutory groups made by the Minister for Infrastructure and Planning and comprise relevant state agencies and councils.

The Council of Mayors is a cooperative group of mayors from the councils in South East Queensland. This group examines strategic issues affecting the region of South East Queensland.

In addition, Queensland recently completed a substantial local government reform program, which involved amalgamation of councils to form regional councils. The new regional councils are much larger and have a better capacity to undertake planning, development assessment, asset creation and management.

Queensland has a program for the development and sequencing of major infrastructure designed to align with urban growth. The South East Queensland Infrastructure Plan and Program 2009–2026 is Cabinet-endorsed and is the largest coordinated infrastructure program in Australia. It covers an extensive range of economic and social infrastructure.

At the state level the roles and functions of metropolitan planning and infrastructure planning are integrated into the Department of Infrastructure and Planning. The Department oversees whole-of-government urban and regional planning. It is headed by the state's Coordinator General who also has statutory planning powers over major projects.

The state government is responsible for developing state planning policies and regional plans. Local government planning schemes direct building and development in each local government area. They are reviewed and approved by the Minister for Infrastructure and Planning and must align with the strategic policies set out in regional plans and state planning policies.

Master plans are developed primarily by local governments and manage cities by providing more detail about what types of development are desirable in particular neighbourhoods. Master plans are reviewed and approved by the Minister for Infrastructure and Planning and must align with the strategic policies and the Local Government Planning Scheme.

Local governments manage the vast majority of development assessment processes and in the majority of cases determine development applications.

In Queensland there are 12 newly incorporated RDA Committees which are based on local government boundaries. The cities of Brisbane, Gold Coast and Sunshine Coast each have an RDA Committee. The smaller cities in Queensland are incorporated in larger RDA regions.

Cairns is part of the Far North Queensland and Torres Strait region; Townsville is part of the Townsville and North West region and Toowoomba is part of the Darling Downs and South West region.

Metropolitan planning

Queensland's planning, development and building system is called Qplan. A significant milestone in the delivery of Qplan was the commencement of the *Sustainable Planning Act 2009* on 18 December 2009. The tools used in Qplan (State Planning Instruments) are described in *Sustainable Planning Act 2009* and the *Sustainable Planning Regulation 2009*. Strategic components of Qplan include regional plans and state planning policies.

State planning policies articulate a position about a particular issue related to development, apply across the state and inform the development assessment process. Regional plans are used to articulate the Queensland Government's broad intent for development in particular regions. Regional plans shape cities by setting growth boundaries, identify areas for new urban development and broadly convey how development should occur in the particular region.

The South East Queensland Regional Plan was established in 1998, is a statutory document endorsed by Cabinet and has been reviewed periodically, most recently in 2009. The South East Queensland Regional Plan 2009–2031 encompasses the greater Brisbane area and the other major urban centres of Ipswich, the Gold Coast, the Sunshine Coast, Logan and Toowoomba.

The regional plans inform local level planning. For Queensland's capital city itself, the Brisbane City Plan 2000 directs all building and development in the Brisbane City Council area. This plan was reviewed and approved by the Minister for Infrastructure and Planning. Brisbane City Plan 2000 is currently under review by Brisbane City Council, with an anticipated completion in 2012. This plan has strategic elements that provide a vision for how Brisbane should develop.

Western Australia

Governance

Western Australia is the largest state by size and is characterised by some of the smallest and largest local government areas in the country. The state is currently undergoing a process of local government reform with voluntary amalgamation being encouraged.

The State Government has recently established a lead agency with responsibility for major resource and infrastructure projects in the Department of State Development.

The Western Australian Planning Commission is a statutory authority headed by an independent chair with statewide responsibilities for urban, rural and regional land-use and infrastructure planning. It provides strategic advice to the Minister for Planning and the Government, and has a range of statutory approval roles. The Department of Planning is represented on the Commission and provides technical and administrative support to the Commission.

The Western Australian Government has recently increased its emphasis on regional planning with the establishment of new regional planning committees under the Western Australian Planning Commission to provide strategic advice and determine applications under the

delegation of the Commission, as relevant. The Department of Planning works with regional organisations of councils to progress strategic planning that crosses local government areas. These groups are often a forum for information dissemination and resource sharing.

RDA Committees in Western Australia will operate independently and in parallel with WA Regional Development Commissions working towards co-location and joint projects where possible. There are eight committees with regional boundaries aligned with State administrative boundaries. Perth is covered by a single RDA region.

The state has an urban development program which aims to monitor and manage land supply and prioritise and implement infrastructure coordination. The Urban Development Program underpins the Commission's Infrastructure Co-ordination Committee which is the peak body of infrastructure providers (government and government trading enterprise) in the state.

This work informs the deliberations of the Western Australian Land Availability Working Group (chaired by the Director General of the Department of the Premier and Cabinet) which reports to the Ministerial Task Force on Approvals, Development and Sustainability.

The Western Australian Planning Commission plays a role in guiding planning of cities, through the State Planning Strategy and the creation of state planning policies. It also makes decisions about the growth and management of cities, as it is responsible for determining applications for subdivision made across the state, as well as determining applications for development made within region planning scheme areas. Local governments are responsible for determining most other development applications.

Metropolitan planning

The *Planning and Development Act 2005* sets out the Western Australian planning framework which consists of the following key instruments:

- State Planning Strategy (SPS) (1997)—required to be prepared by the Commission to coordinate and promote land-use planning, transport planning and land development in a sustainable manner. This strategy is presently under review.
- State planning policies (various publication dates)—prepared by the Commission to guide local governments in exercising their planning and decision-making powers.
- Region planning schemes (various publication dates)—prepared by the Western Australian Planning Commission to guide development in a regional area.
- Local planning schemes (various publication dates)—prepared by each local government, to make suitable provision for the improvement, development and use of land in the area.

The Perth Metropolitan area has had a series of metropolitan plans since 1955. The most recent plan, which covers both the Metropolitan and Peel regions, is in a draft form and is called Directions 2031. The draft Directions 2031 plan was released for public comment in June 2009. Following endorsement by the Planning Commission the plan will be forwarded to the Minister for Planning and submitted to Cabinet for whole-of-government endorsement.

Directions 2031 is a strategic document and provides a framework for considering amendments to the Metropolitan Region and Peel Planning Schemes, which contain the statutory foundations for development control.

Directions 2031 builds on some of the principles contained in earlier plans such as Network City (2004) and Metroplan (1990). When formally adopted, it will replace both these documents. The final document will contain a component that looks beyond 2031 and plans for a city of 3.5 million.

It is intended the final version of Directions 2031 and the two associated growth management strategies will fulfil the requirements of the Council of Australian Governments' criteria for capital city strategic planning.

South Australia (SA)

Governance

South Australia uses regional councils and regional organisations of councils as a means of working collaboratively over significant areas of the state. The South Australian Local Government Association has established regional organisations of councils to effectively represent regional interests and the state uses these groupings to help deliver a range of services. State government representatives from the Department of Planning and Local Government attend all regional meetings as a means of exchanging information and working collaboratively to achieve agreed outcomes.

The state has established the Government Planning Coordination Committee to coordinate state-significant planning and development matters across government. The Chief Executive Officers of state government departments sit on the committee, as do relevant local government chief executive officers as required. The Government Planning Coordination Committee reports directly to Cabinet.

As with most of the other states, the state government is responsible for setting the planning policy framework and local government is responsible for determining applications within that policy framework. South Australia also has statutory requirements for the use of planning assessment panels under certain circumstances.

There are seven incorporated RDA committees in South Australia with boundaries aligned with State administrative boundaries. Local government is a funding partner to these committees. Adelaide has a Commonwealth-funded unincorporated advisory board.

Metropolitan planning

South Australia has a state planning framework known as the Planning Strategy and it is required to be prepared by the Minister for Urban Development and Planning. The Planning Strategy covers the entire state and determines the planning policy within development plans for lands in both local government and state-managed areas.

The Planning Strategy is a whole-of-government endorsed plan and is a strategic level plan while still being a statutorily required plan. The Planning Strategy is constantly under review as required by the Act, with the 'Greater Adelaide' area having been recently updated. Reviews of the rest of the state are expected to be complete by the end of 2010.

The planning strategy for the greater Adelaide area is referred to as the 'Planning Strategy for greater Adelaide' or the '30 year plan for greater Adelaide'. It is a cabinet approved whole-of-government document and was authorised on 17 February 2010.

The plan is a strategic level plan while still being a statutorily required plan.

While it will not be the subject of a significant review until 2015, the targets within it will be monitored on a yearly basis and will inform reviews as required to meet the long-term targets.

Tasmania

Governance

There are three regional organisations of councils in the state of Tasmania—the Cradle Coast Authority, the Southern Tasmanian Councils Authority and the Northern Tasmania Development.

The Cradle Coast Authority and the Southern Tasmanian Councils Authority are statutorily based while the Northern Tasmanian Development is a registered company formed by guarantee and shares by the councils pursuant to section 250D of the *Corporations Act 2001* (Commonwealth).

The regional organisations are signatories to the government's regional planning initiative and provide direct assistance to the regional projects by:

- facilitating and promoting the coordination and cooperation of all the councils to achieve the project outputs; and
- assisting in achieving project outputs through funding, partnership and support arrangements.

The state is currently developing appropriate arrangements to ensure that the regional planning initiative in each region is ongoing.

The three spheres of governments have agreed that there will be one RDA Committee in Tasmania that will cover all local government boundaries and incorporates the capital city, Hobart, and the smaller city of Launceston.

There is no urban development program for greater Hobart or other cities at this time in Tasmania. There is, however, a commitment in the recently released Urban Passenger Transport Framework report by the Department of Infrastructure, Energy and Resources to form a Strategic Integrated Land and Transport Committee in conjunction with the Tasmanian Planning Commission and the three regional authorities.

The need for greater coordination between land-use and infrastructure provisions will be identified through the development of the metropolitan plan for greater Hobart.

Under Tasmanian legislation, councils are responsible for planning of their local area. The state's main avenue of influence over the management of greater Hobart and other cities is through infrastructure provision (hard and soft) and through approval of planning schemes and planning scheme amendments.

Metropolitan planning

Currently there is no overarching strategic planning framework for the state although the state has recently released a 10-year infrastructure plan which coordinates the state's effort across the major economic sectors of transport, water, energy and digital. Importantly, the strategy recognises the essential role land-use planning plays in the location and provision of infrastructure.

The state also has the statutory mechanisms/processes available to it to implement the state's strategic directions at a state, regional and local level through state policies, regional land-use strategies and planning schemes.

The need for an overarching strategic planning framework has been identified in the Tasmanian Planning Commission's business plan and is seen as a high priority.

Currently there is no metropolitan plan for Hobart. A metropolitan plan is proposed to be produced as part of the state's Regional Initiative in the south. A draft for consultation is expected to be completed by the end of 2010. Once adopted, the plan will have statutory effect under the *Land Use Planning and Approvals Act 1993*.

Northern Territory

Governance

In mid-2008, the Northern Territory established eight new regional shires, under a process of local government reform. The major city of Darwin contains three local government areas.

The Territory's Department of Infrastructure and Planning provides an integrated approach to the land-use planning, infrastructure planning and service delivery of transport. The Department, rather than local councils, is responsible for determining development applications.

In terms of regional governance, Regional Council meetings have input into regional management plans which are a requirement under the *Local Government Act 2008*. The plans are developed from consultation between interested local councils in the region and the Department of Local Government and Housing. Regional management plans address key issues relating to local government, resource sharing and regional development.

Similar to Tasmania, there is one RDA Committee in the Northern Territory that will cover all local government boundaries. This includes the city of Darwin.

Local government acts only as a service authority in commenting on development proposals and has no statutory role in the determination of development applications. Individual councils are collaborative partners with the Northern Territory Government in developing strategic planning visions for their local community.

The Northern Territory uses project control groups, coordinated through the Department of Lands and Planning, to develop and implement plans for the provision of infrastructure and services to greenfields sites. Cabinet is regularly briefed on the activities of the project control groups and provides strategic direction and priority to the implementation of government policy.

The Northern Territory Government, through the Minister for Lands and Planning, is responsible for administering the Planning Act. The Planning Act establishes the Development Consent Authority that is responsible for determining development proposals in accordance with the provisions of the Northern Territory Planning Scheme. The development of the strategic planning framework, area plans and ultimately zoning maps are the role of the Northern Territory Government. Councils are joint partners with the Northern Territory Government in developing visions for the future and provide comments on changes to the Northern Territory Planning Scheme.

Metropolitan planning

The Northern Territory Planning Scheme is a statutory document which commenced in 2007 and applies to the whole of the territory. It contains planning principles which are the Northern Territory Government's commitment to outcomes for land-use planning and development control.

The Scheme also contains framework drawings and area plans which further detail the principles and objectives to guide future development of major urban and regional centres. The area plans are regularly reviewed following public consultation. The consent authority, when determining development applications, must take into consideration any area plan and planning principles applicable to the locality. Reference documents to the Scheme include land-use objectives and planning concepts and the Capital City Charter which are also required to be taken into consideration when considering a proposed development.

There is currently no specific overarching metropolitan plan for Darwin. The development of area plans for specific precincts to support the planning framework for Darwin is an ongoing project and there are currently a number of areas under review.

Australian Capital Territory

Governance

The Australian Capital Territory has both state and local government functions and is based on a leasehold system. There is no formal regional organisation of councils within the Territory given the sole jurisdiction of the ACT Government in the ACT. However, there is an informal collection of regional councils (NSW with the ACT) who seek to share information and resolve issues that are common to their interests.

A Chief Executives Strategic Coordination Committee has been established to support the development of an informal urban development program in conjunction with the land release program, infrastructure coordination and service delivery. This committee reports to a sub-committee of Cabinet.

The ACT Government is the state and local authority in respect to the management of Canberra. However, given the unique role of the National Capital Authority in safeguarding aspects of 'national significance' in Australia's national capital, there are some overlaps. The interrelationships between the ACT Government and the Commonwealth in planning and managing Canberra are currently under review by the Federal Minister for Home Affairs.

Planning policy advice is given to the ACT Government through the ACT Planning and Land Authority, which also has independent statutory approval powers for applications. The Minister for Planning reserves call-in powers for development applications under certain circumstances.

There is one RDA committee to cover the Australian Capital Territory, incorporating the capital city of Canberra.

Metropolitan planning

The Canberra Spatial Plan (and companion Sustainable Transport Plan) was adopted in 2004. This is a whole-of-government document that sits under the umbrella of the Canberra Plan, which incorporates the Economic Plan, Social Plan and Climate Change Plan. It is a strategic planning document that in 2008 was made a statutory instrument (the Planning Strategy) under the *Planning and Development Act 2007*. It is currently being comprehensively evaluated as part of the Sustainable Future Program, due for completion in early 2011.

Given the unique role of the National Capital Authority in the ACT, there is also a metropolitan structure plan contained within the National Capital Plan. This plan exerts significant influence over the planning of Canberra as a statutory document. It is not currently under review.

References

Australian Bureau of Statistics (ABS) 2009, *Regional population growth, Australia 2007–2008,* cat. no. 3218.0, Canberra.

Appendix A: Major city relative share of Australia's sociodemographic profile

	Major Cities	Capital Cities	Regional Cities
Population	74.5	63.7	10.8
Australia's land mass (square kilometres)	0.6	0.5	0.1
Population Growth 2001–2006	82.6	66.2	16.4
Age (per cent of Australian population):			
younger than 15	72.8	62.1	10.7
15 to 65	75.6	65.1	10.5
over 65	71.4	59.5	11.9
Ethnicity (per cent of Australian population):			
Aboriginal & Torres Strait Islander	42.6	31.2	11.4
Overseas Born	88.5	80.5	8.0
Speak Another Language	93.1	88.4	4.7
Year of Arrival (per cent of Australian population):			
Before 1991	86.2	78.0	8.2
1991 to 2000	93.2	86.5	6.7
2001 to 2005	92.3	84.4	7.9
Education (per cent of Australian population):			
Completed year 12	82.2	72.8	9.4
Completed year 9 only	65.5	52.9	12.6
Did not go to school	85.4	79.7	5.7
20 to 24 year olds attending an education institution	88.6	79.0	9.6
Attending tertiary education	88.6	78.9	9.7
TAFE	76.2	65.8	10.4
Full time university student	91.7	82.3	9.4
Completed bachelor degree or higher	85.3	77.3	8.0
Internet Connection (per cent of Australian households):			
Internet	77.5	66.7	10.8
Broadband	82.2	71.7	10.5
Income (per cent of Australian population):			
Individual			
less than $150 per week	76.2	66.3	9.9
more than $1300 per week	82.7	74.1	8.6

	Major Cities	Capital Cities	Regional Cities
Household			
less than $500 per week	68.3	56.3	12.0
more than $2000 per week	84.6	76.1	8.5
Households (per cent of Australian population):	74.4	63.3	11.1
Lone person	73.5	62.3	11.2
Group house	82.7	70.9	11.8
Family	74.4	63.4	11.0
Couple without children	71.2	59.6	11.6
Couple with children	76.4	66.3	10.1
One parent family	75.3	63.3	12.0
Dwellings (per cent of Australia):	74.4	63.3	11.1
Detached houses	70.7	59.8	10.9
Semi-detached or terrace house	88.1	75.5	12.6
Flat or apartment	88.4	77.7	10.7
1 to 2 story flat or apartment	80.1	67.6	12.5
3 or more story flat or apartment	98.4	89.7	8.7
Tenure (per cent of Australia):			
Fully owned	71.1	60.2	10.9
Being purchased	16.8	66.2	10.6
Rented	75.7	63.9	11.8
Public or social housing	72.7	61.7	11.0
Household Car Ownership (per cent of Australia):			
0 cars	79.6	69.2	10.3
1 to 2 cars	74.5	63.2	11.3
3 or more cars	70.5	60.3	10.2
Travel to Work (per cent of Australian population):			
Public transport	92.8	92.3	3.5
Private motor vehicle	75.6	64.2	11.4
Non - motorised	63.1	54.2	8.9
Labour Force (per cent of Australian population):			
Employed	76.1	65.7	10.4
Full Time	76.8	66.8	10.0
Part Time	75.1	63.9	11.2

Source: ABS 2006

Appendix B: Local government in Australia's major cities

Major cities in New South Wales

City	Local Government
Sydney	Ashfield
	Auburn
	Bankstown
	The Hills Shire
	Blacktown
	Blue Mountains
	Botany Bay
	Burwood
	Camden
	Campbelltown
	Canada Bay
	Canterbury
	Fairfield
	Gosford
	Hawkesbury
	Holroyd
	Hornsby
	Hunters Hill
	Hurstville
	Kogarah
	Ku-ring-gai
	Lane Cove
	Leichhardt
	Liverpool
	Manly
	Marrickville
	Mosman
	North Sydney
	Parramatta
	Penrith
	Pittwater
	Randwick
	Rockdale
	Ryde
	Strathfield
	Sutherland Shire
	Sydney
	Warringah
	Waverley
	Willoughby
	Wollondilly
	Woollahra
	Wyong
Newcastle	Newcastle City Council
	Lake Macquarie City Council
	Cessnock City Council
	Maitland City Council
	Port Stephens Shire Council
Wollongong	Wollongong City Council
	Shellharbour City Council
	Kiama Shire Council

Major cities in Victoria

City	Local Government
Melbourne	Melbourne City
	Yarra City
	Port Phillip City
	Maribyrnong City
	Hobsons Bay
	Bayside City
	Glen Eira City
	Kingston City
	Monash City
	Boroondara City
	Yarra City
	Brimbank City
	Moonee Valley City
	Moreland City
	Darebin City
	Banyule City
	Manningham City
	Whitehorse City
	Knox City
	Maroondah City
	Wyndham City
	Melton Shire
	Hume City
	Whittlesea City
	Nillumbik Shire
	Yarra Ranges Shire
	Cardinia Shire
	Casey City
	Frankston City
	Mornington Peninsula
Geelong	Geelong City Council

Major cities in Queensland

City	Local Government
Brisbane	Brisbane City Council
	Ipswich City Council
	Logan City Council
	Redland City Council
	Moreton Bay Regional Council
Gold Coast	Gold Coast City Council
	Tweed Shire Council
Sunshine Coast	Sunshine Coast Regional Council
Toowoomba	Toowoomba Regional Council
Cairns	Cairns Regional Council
Townsville	Townsville City Council

Major cities in Western Australia

City	Local Government
Perth	Perth City
	Subiaco City
	Nedlands City
	Claremont Town
	Vincent Town
	Cambridge Town
	Bayswater City
	Belmont City
	Victoria Park Town
	South Perth City
	Canning City
	Melville City
	Fremantle City
	East Fremantle Town
	Mosman Park Town
	Peppermint Grove Town
	Cottesloe Town
	Stirling City
	Swan City
	Gosnells City
	Cockburn City
	Joondalup City
	Wanneroo City
	Swan City
	Mundaring Shire
	Kalamunda Shire
	Armadale City
	Kwinana Town
	Rockingham City
	Serpentine-Jarrahdale

Major cities in South Australia

City	Local Government
Adelaide	Adelaide City
	Unley City
	Norwood Payneham St Peters City
	Walkerville
	Prospect City
	Burnside City
	West Torrens City
	Charles Sturt City
	Port Adelaide Enfield
	Campbelltown City
	Holdfast Bay City
	Marion City
	Mitcham City
	Onkaparinga City
	Adelaide Hills
	Tea Tree Gully City
	Salisbury
	Playford City
	Gawler Town

Major cities in Tasmania

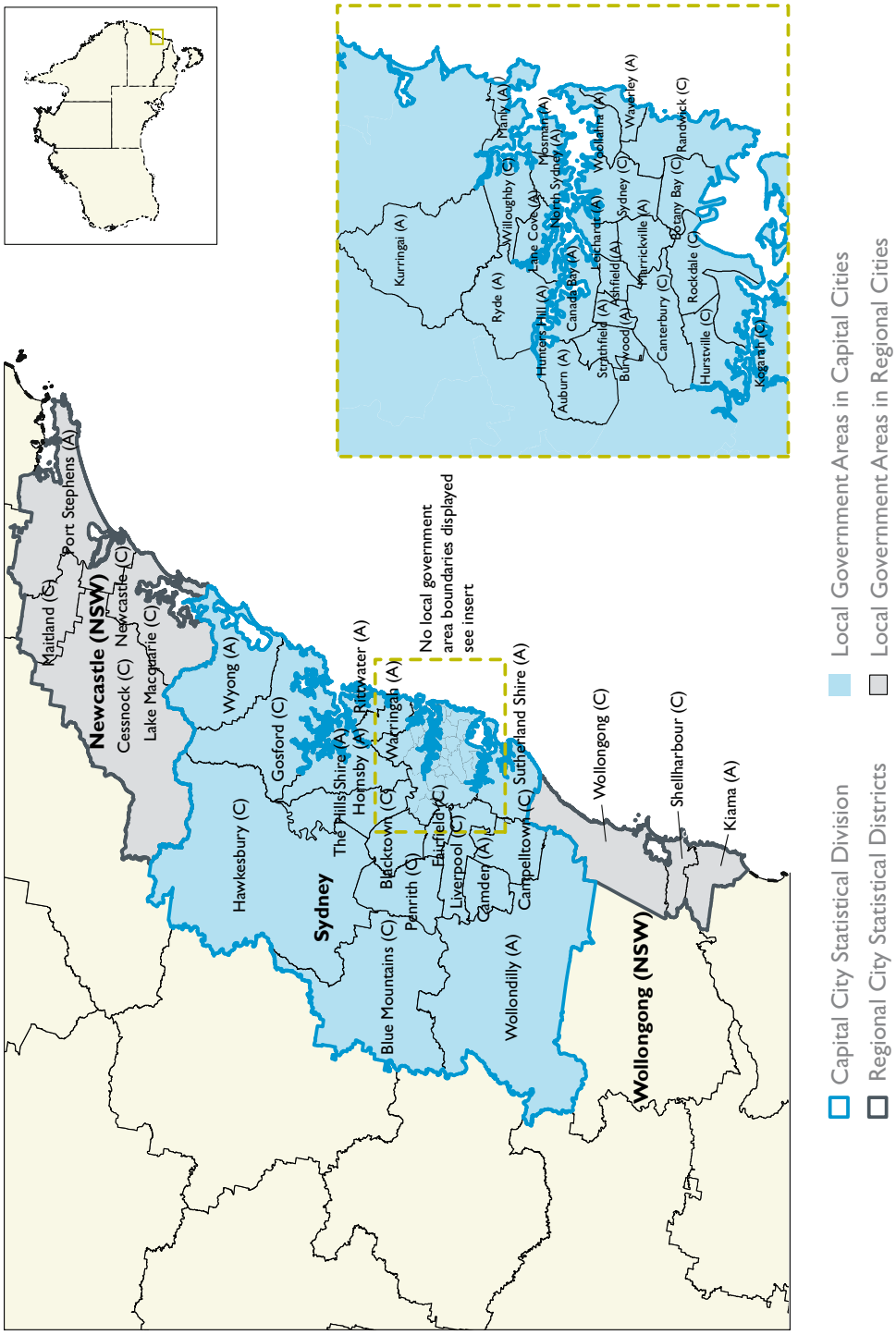
City	Local Government
Hobart	Hobart City Council
	Clarence
	Glenorchy
	Sorell
	Brighton
	Kingborough
	Derwent Valley
Launceston	Launceston City Council
	West Tamar
	Georgetown
	Northern Midlands

Major cities in the Northern Territory

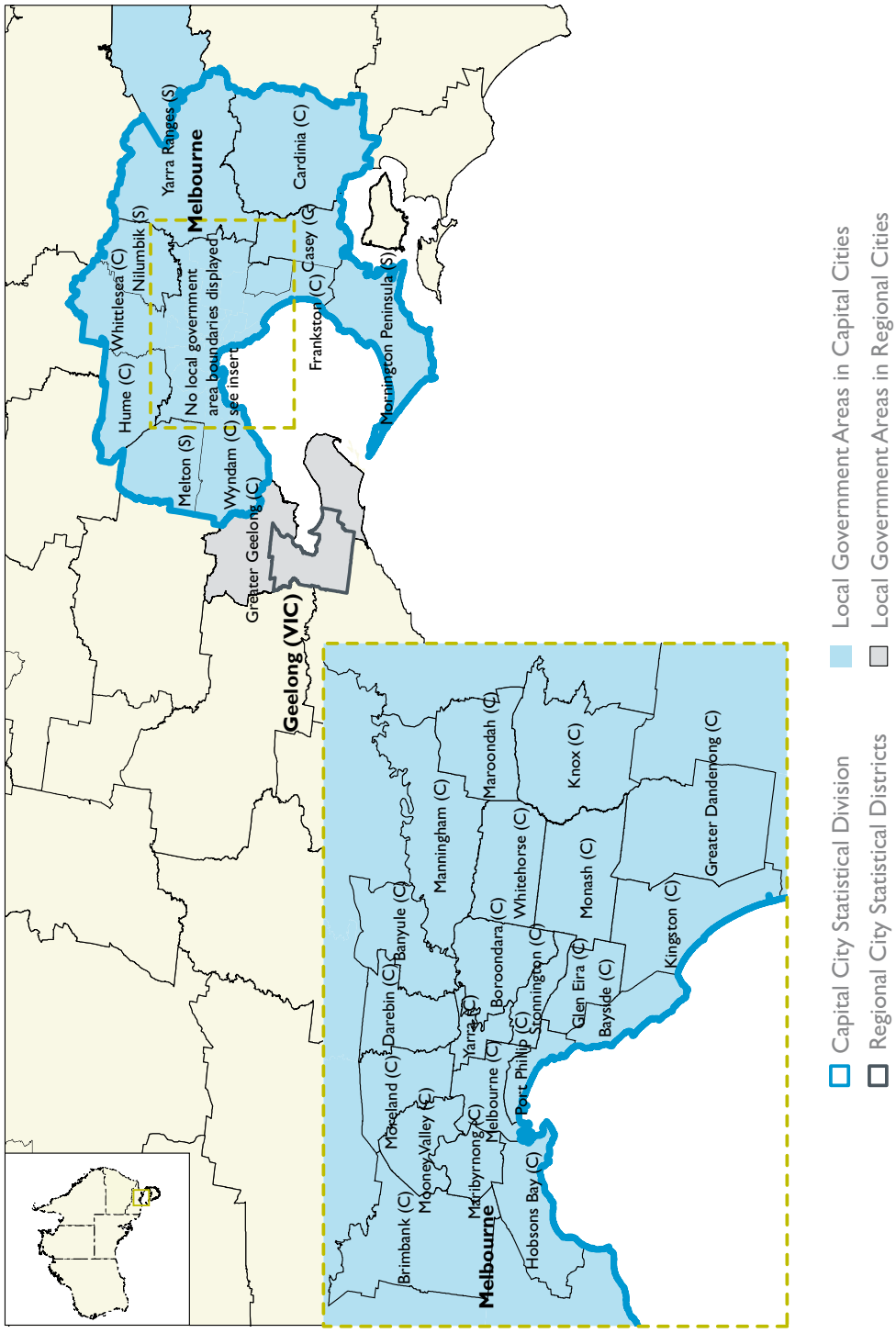
City	Local Government
Darwin	Darwin City Council
	Palmerston City Council
	Litchfield Shire Council

Source: ABS 2009

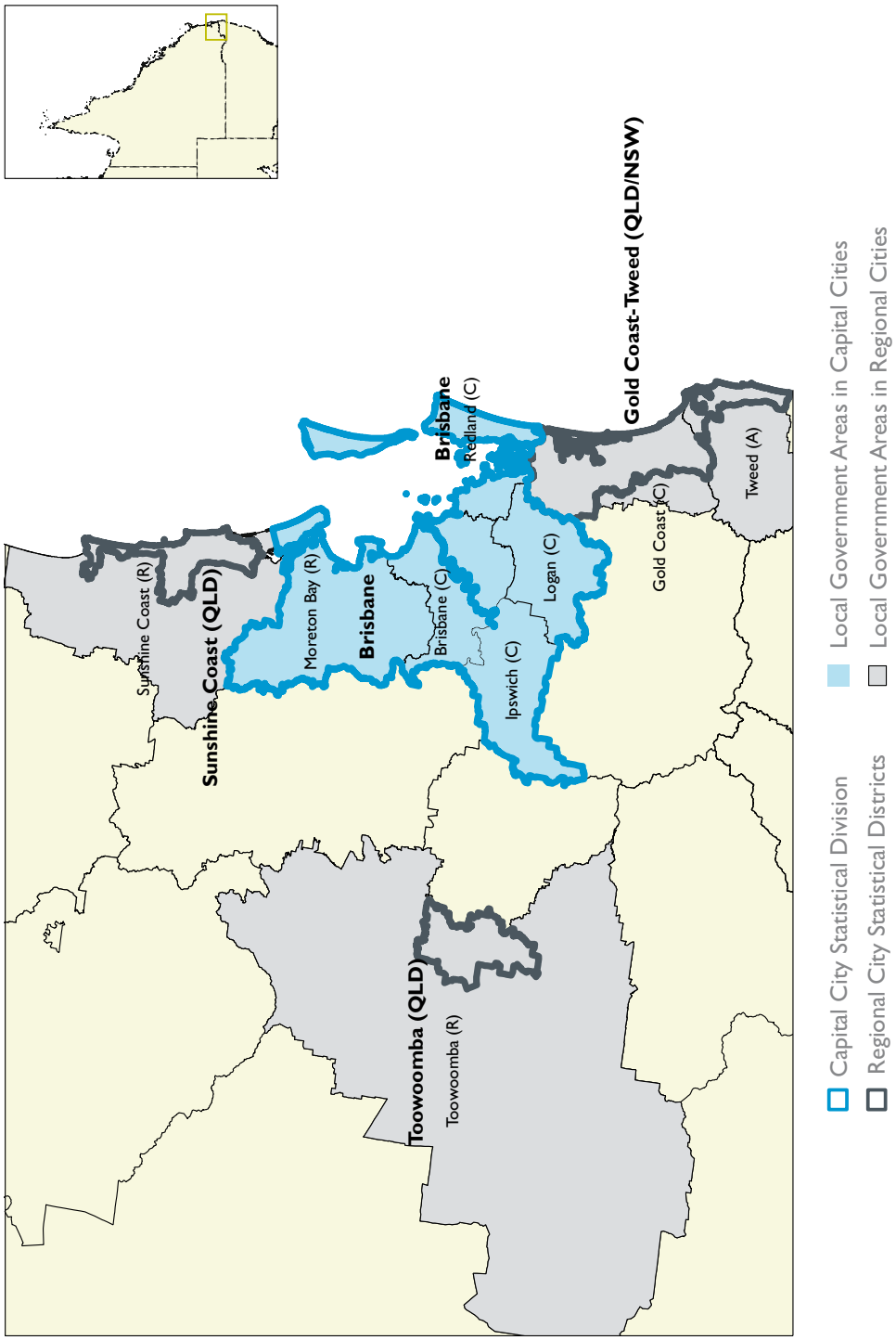
Major cities in New South Wales



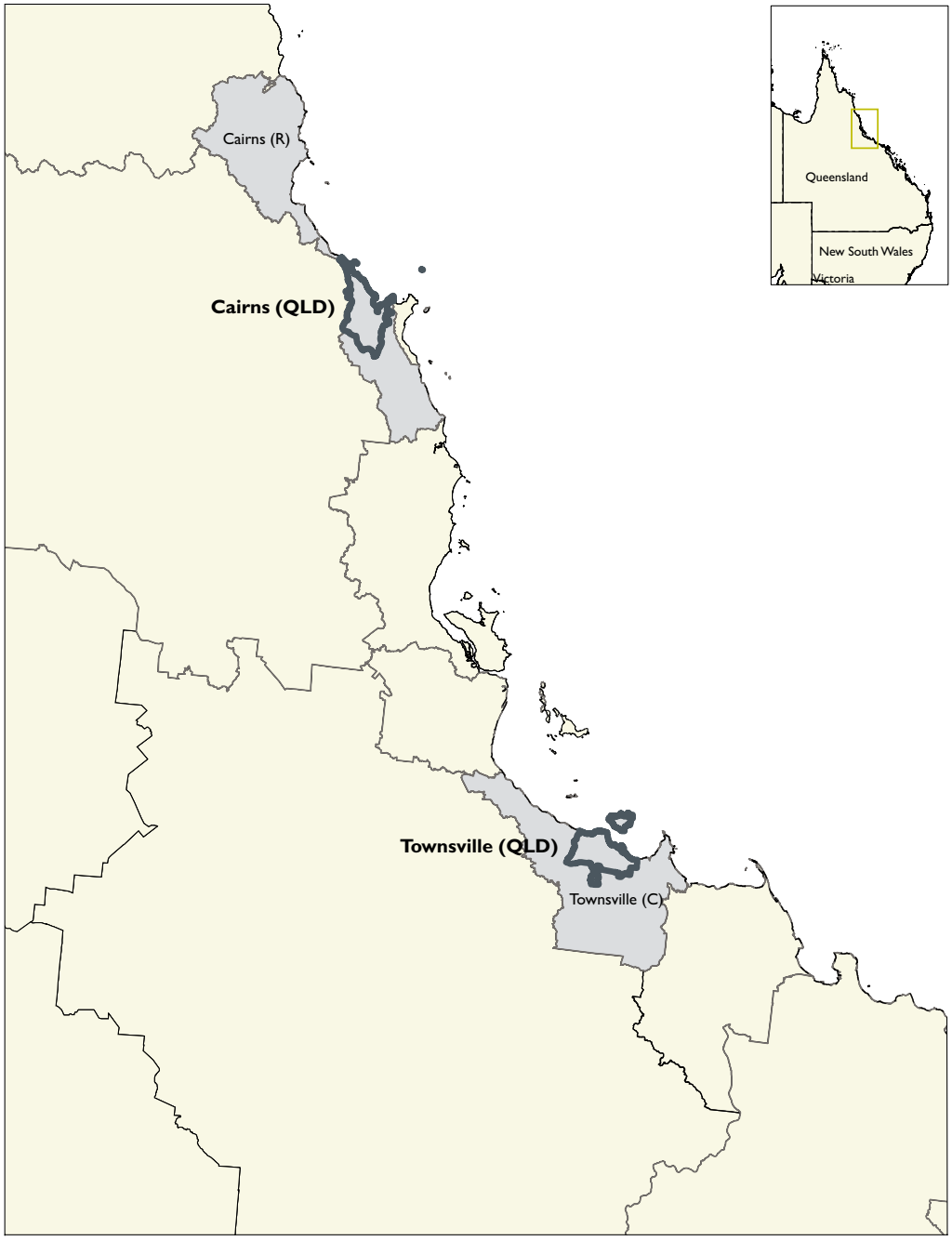
Major cities in Victoria



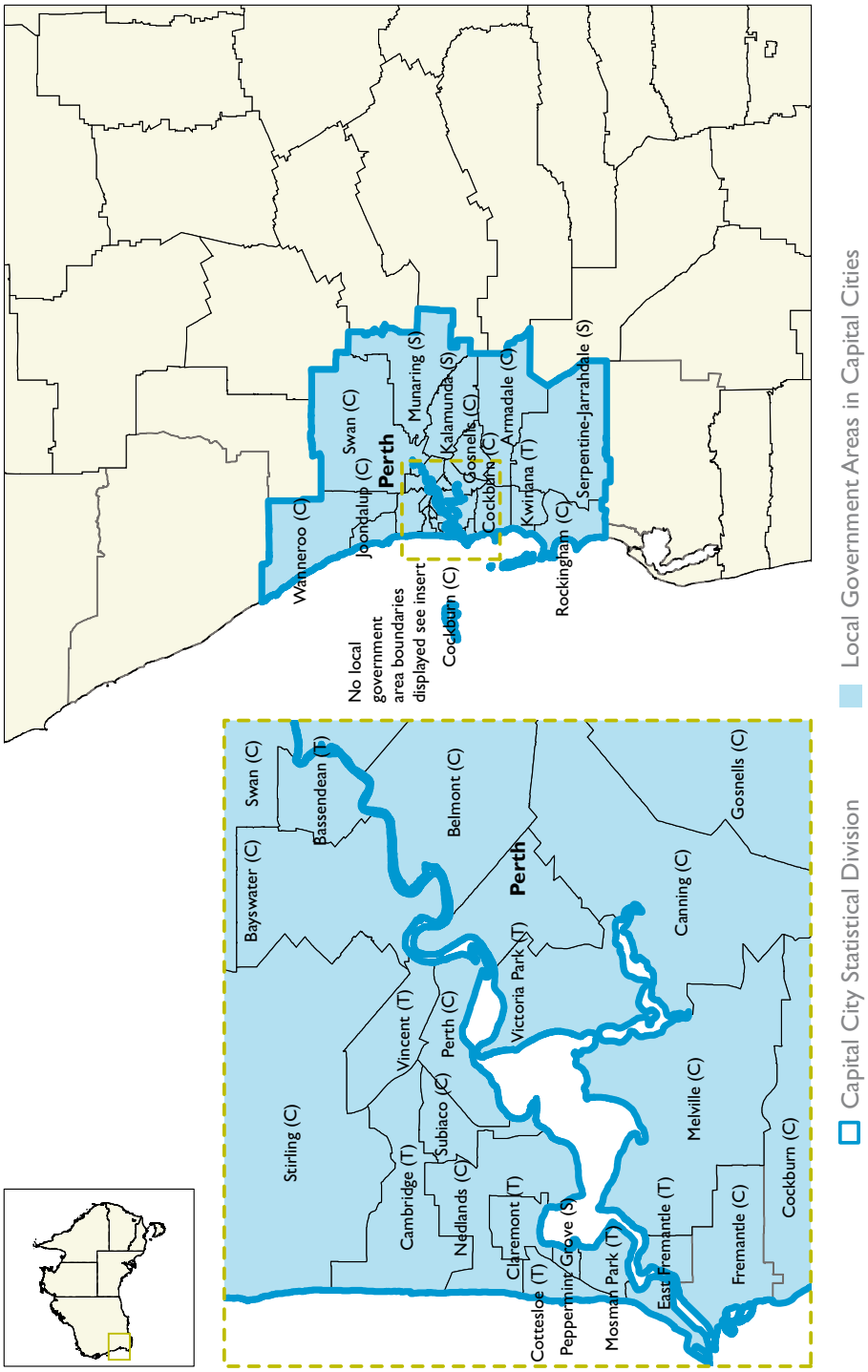
Major cities in East Queensland



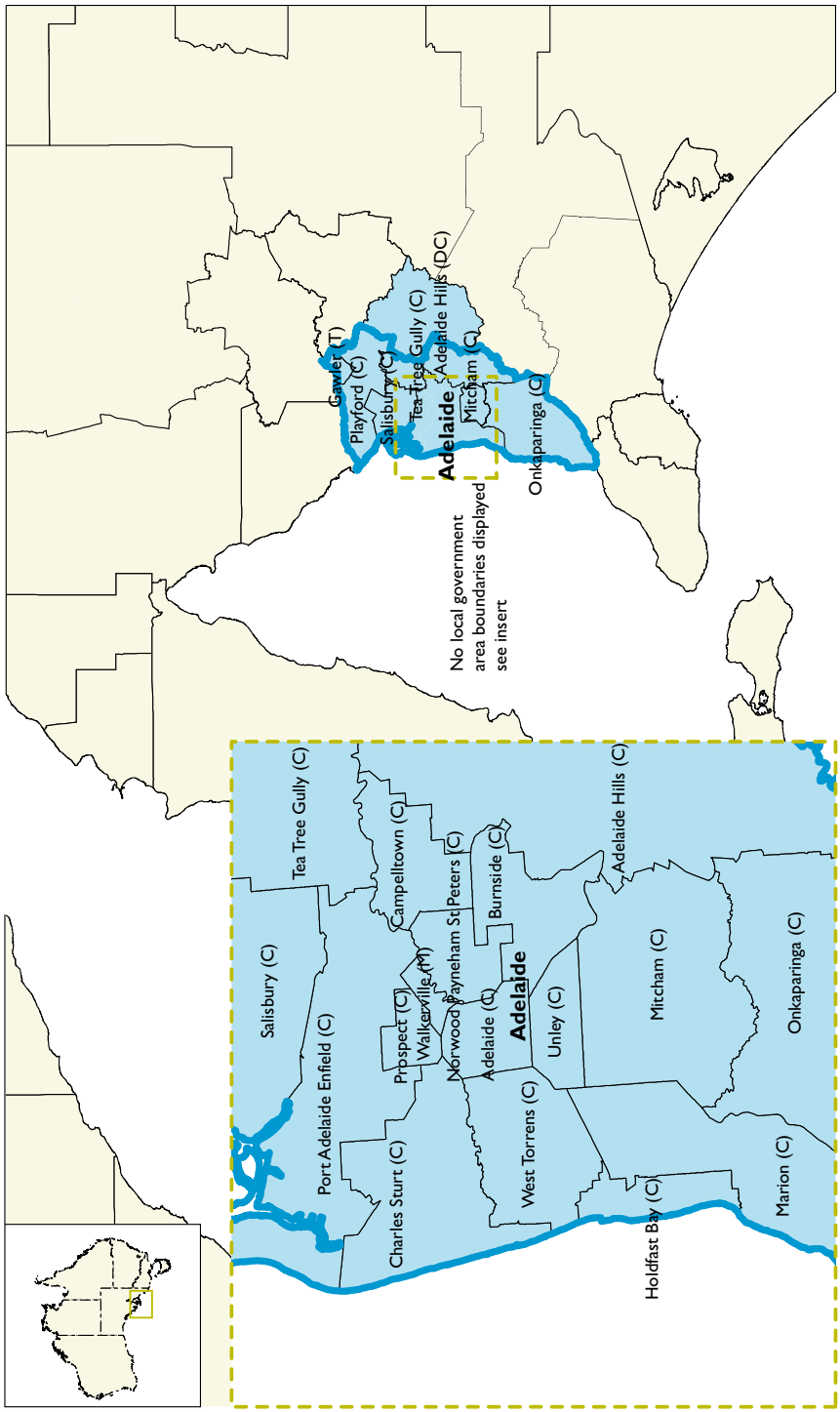
Major cities in North Queensland



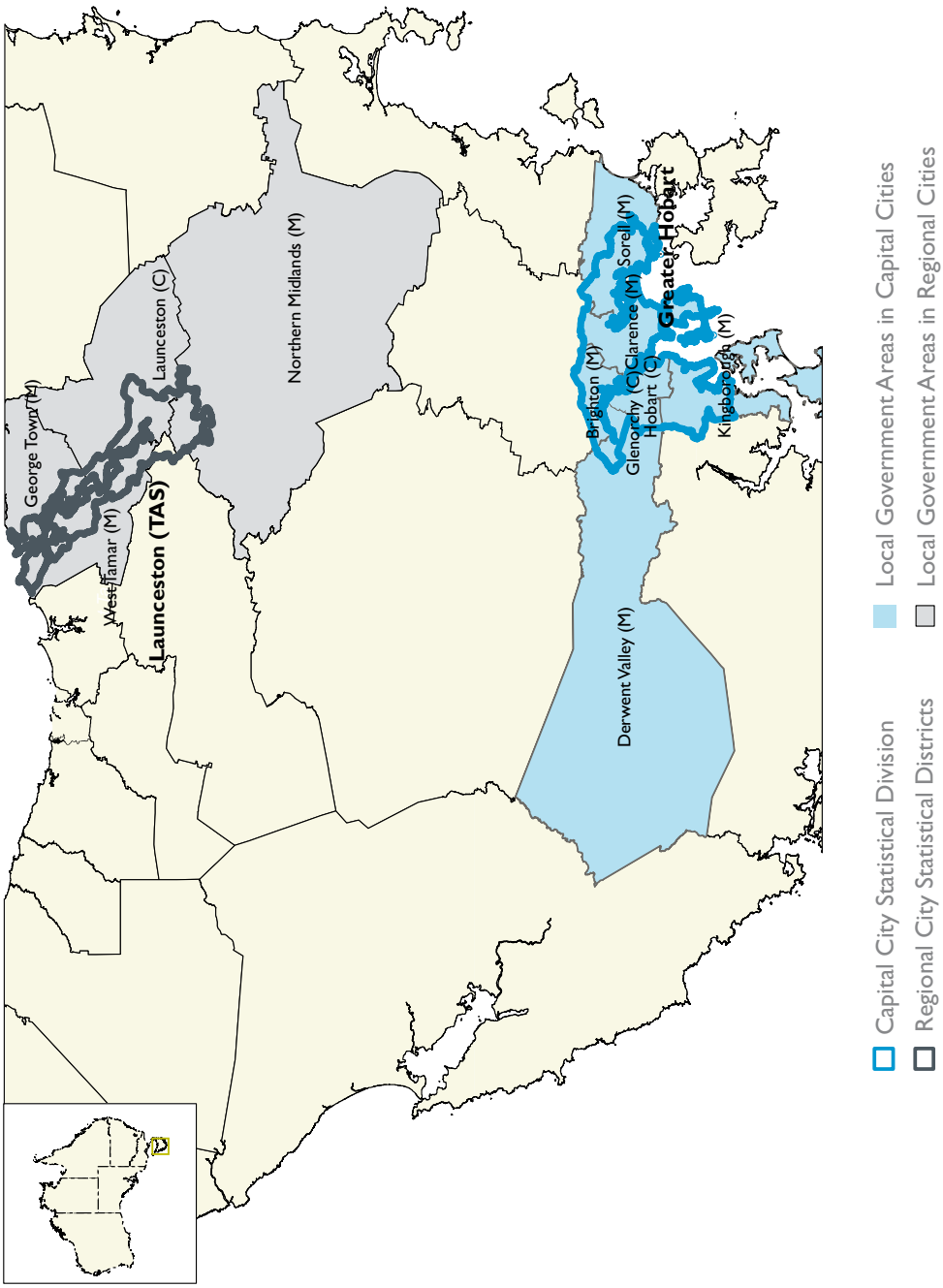
Major cities in Western Australia



Major cities in South Australia



Major cities in Tasmania



Major cities in Northern Territory

Source: ABS 2009

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