



Department of Planning





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Minister's foreword

The Perth and Peel area is undergoing a period of rapid transformation - the growth of the city's population and economy is outpacing other major Australian cities. Periods of progress, such as this, present new opportunities for the region to evolve into a more vibrant global city.

A full understanding of the drivers of this growth will enable planners and developers to capitalise on these opportunities, while preserving the characteristics that have made the city so popular in the past.

In order to ensure planning guides the development of Perth as a desirable and internationally competitive city, an accurate understanding of how the city is changing, now and in the future, is required. In particular, factors and trends associated with the supply and demand of land and dwellings need to be understood.

The *Perth and Peel Development Outlook* provides a comprehensive assessment of the factors shaping future demand and supply of land and dwellings in the Perth and Peel area.

This publication aids the preparation for future growth by providing information that will ultimately allow us to manage the development of the Perth and Peel area in an effective and responsible manner.

The Outlook will inform infrastructure agencies, public utilities, local governments and the private sector as they look to provide housing, infrastructure and services to facilitate Perth and Peel's growth.

John Day MLA Minister for Planning





Chairman's foreword

Creating the optimum urban form for the Perth and Peel area requires a vision of that form and a strategy with which to achieve it. A robust urban growth strategy needs to consider future patterns of urban growth in order to be effectively implemented.

Directions 2031 and Beyond delivers the strategic direction for the Perth and Peel area, based on important principles that guide future development in a liveable, accessible and sustainable manner.

Part of the Urban Development Program, the *Perth and Peel Development Outlook* is an important resource that will assist us to identify urban growth scenarios likely to arise in the coming years. This will enable a pro-active approach to assist in guiding urban development.

The *Perth and Peel Development Outlook* describes the main drivers of demand for land and housing in Perth and Peel, discussing recent trends and the implications of these for future urban growth.

In addition, it addresses issues pertaining to the 'land supply pipeline'; identifying and reporting on its key stages, particularly those which are likely to impact future development.

For more localised analysis; the Outlook includes a series of six sub-regional profiles, that focus on development matters specific to each planning sub-region.

This is further complemented by land release plan maps and tables providing detailed information on future residential development projects including yield, timing and constraint information.

For the first time, information on the location, expected dwelling yield, status and land use for both district and local level planning areas has been collated for the entire Perth and Peel area.

The insight this publication contains in regard to future growth patterns is an integral part of the implementation of *Directions 2031 and Beyond* and other strategic planning documents.

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Gary Prattley Chairman Western Australian Planning Commission





Director General's foreword

Western Australia, and in particular the Perth and Peel region, is currently experiencing a significant period of change. This change has been brought about by our strong economic position and population increase.

There many factors that are driving people to choose Perth and Peel as a place to live, work and visit and these attributes need to be preserved as this area grows.

The Department of Planning is committed to enabling our city to develop in a sustainable, accessible and respectful manner. Supporting our ongoing strategic planning in line with *Directions 2031 and Beyond* is the Urban Development Program.

The program is a suite of initiatives that monitor land supply, as well as managing the coordination of infrastructure with land development, to guide State infrastructure agencies, public utilities, local governments and the private sector.

The *Perth and Peel Development Outlook* is an integral part of this program which provides valuable insight into the future growth patterns of the Perth and Peel area. It achieves this by way of a detailed assessment of the future demand and supply for both land and dwellings.

This outlook is the latest in the Urban Development Program series and joins the award winning *Urban Growth Monitor*, which tracks the supply and development of urban land in the Perth, Peel and Greater Bunbury regions.

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Eric Lumsden Director General Department of Planning





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1. Executive summary

1.1 The Urban Development Program

The Department of Planning prepares the Urban Development Program (UDP) for the Western Australian Planning Commission's Infrastructure Coordinating Committee to support inter-agency decision-making about urban development and the provision of infrastructure services.

The UDP coordinates and promotes the development of serviced land in a sustainable and timely manner for the guidance of State infrastructure agencies, public utilities, local government and the private sector. The Program tracks land demand and supply as well as proposed development and infrastructure in Western Australia's major urban centres to promote a more effective use of land, better staging of development and prioritisation of infrastructure investment to support urban growth (Figure 1).

The UDP encompasses the former Metropolitan Development Program, Country Land Development Program and the Industrial Land Development Program. It also relates to strategic planning for future land supply such as the *Economic and Employment Lands Strategy: non-heavy industrial, Perth metropolitan and Peel regions* (EELS) and is an implementation tool for *Directions 2031 and Beyond.*

The *Perth and Peel Development Outlook* forms a major part of the UDP's role in monitoring urban growth for the purpose of effectively coordinating land supply and infrastructure provision within the Perth and Peel metropolitan area. The document describes the main drivers of demand in Perth and Peel, discussing recent trends and their implications for future urban growth. It also describes the 'land supply pipeline', identifying and reporting on the key stages of the land supply process.

Accompanying this document is a set of Urban Land Development Outlook maps and tables that provide detailed information on future residential development projects including location, yield, timing and constraint data (Figure 2).



Figure 1: Urban Development Program context



Figure 2: Outlook products



A set of maps and tables with information on the location, expected dwelling yield, status and land use breakdown of district and local level planning areas including activity centre plans and structure plans, is also included. This is the first time that information on this stage of the planning process has been collated for the entire Perth and Peel metropolitan area.

In addition, six sub-regional profiles that detail land and dwelling supply matters specific to each metropolitan planning sub-region are available online at www.planning.wa.gov.au.

1.2 Demand for residential land and dwellings

Demand for residential land and housing is driven by the fundamentals of economic prosperity; productivity; population growth and migration; demographic factors; employment; income (particularly wages); household formation; and family composition. Economic conditions and population growth interact to drive demand for additional developed land for residential, industrial and commercial use. Business investment is a key driver of economic growth. An optimistic economic outlook encourages businesses to invest and expand their operations to take advantage of increasing demand. It is noted that the outlook for the Western Australian economy is underpinned by the economic growth prospects of its Asian trading partners and by movements in commodity prices. From 2012/13 to 2015/16 the Western Australian Department of Treasury (WA Treasury) is projecting Gross State Product (GSP) to grow at four per cent or more per annum; continuing to outperform the rest of Australia, primarily due to strong global demand for the State's resource exports.

The most profound effect that a strong economy has on demand for land and housing is that it generally increases population growth. Western Australia's robust economic conditions helped make the Perth statistical division the fastest growing of any Australian capital city in 2010/11. WA treasury has forecast levels of business investment to increase substantially in the short-term which will encourage migration from overseas and interstate.

Net overseas migration is the largest component of Western Australia's population growth and is therefore a key driver of the demand for land and housing. Both political and economic influences can cause fluctuations in net overseas migration;



which in turn has both short and long-term effects on the demand for housing. Net overseas migration is primarily driven by government policy towards immigration and by labour market and general living conditions in Australia, relative to those in major source countries.

Population growth is both a cause and effect of economic growth, as new immigrants are attracted by employment opportunities and require housing and goods once they have arrived, which in turn stimulates local business and employment. This creates a self-reinforcing cycle of growth, fundamental to Western Australia's prosperity.

Demographic and economic factors affect the household formation rate, which is predominantly driven by young homebuyers entering the market and net migration. The household formation rate is quite sensitive to employment prospects as well as to interest rates and housing prices.

1.3 Underlying demand and effective demand for residential land and dwellings

Underlying housing demand is the need for additional dwellings that will satisfy the requirements of a community, irrespective of the demand actually expressed by the market. Favourable employment opportunities and significant wages growth have enticed many individuals to Western Australia from overseas and interstate. This has created a significant increase in underlying demand for land and housing in the Perth and Peel metropolitan area over the last decade.

Matching underlying demand with estimates of housing stocks provides an estimate of the under or over-supply of housing. However, forecasting underlying demand can be problematic as model outputs tend to be very sensitive to small variations in their assumptions and data inputs. While underlying demand essentially represents the housing requirements of a population, effective demand represents the population's actual demand for property and is what, in effect, drives the property market. Effective demand has had a profound impact on the Perth and Peel property market during the past decade, being heavily influenced by the mining boom and subsequently the Global Financial Crisis (GFC).

The prosperity of Western Australia's resource sector encouraged a marked increase in population growth, employment levels and average income in the Perth and Peel metropolitan area between 2000 and 2008. The resulting increase in demand for land and housing, and improved purchasing power of households contributed to a sharp increase in median house prices, which more than doubled in Perth between 2000/01 and 2006/07. During this time favourable interest rates and relatively easy access to finance helped enable a property boom, as more people began speculatively investing in land and housing.

Although transaction costs (stamp duty, selling fees etc.) generally discourage speculative investment in property, it becomes an attractive short-term trading commodity during periods of rapid growth. The Real Estate Institute of Western Australia (REIWA) estimates that, at times during the property boom, 25 per cent of lots purchased in Perth were on-sold without construction – on the assumption that capital gains would exceed transaction costs.

The rise in property values was, to a large extent also equity driven – augmented by 'upgraders' who were able to purchase new homes using equity in their existing property. During the housing boom the average loan to valuation ratio (LVR) for housing finance in Western Australia was the lowest in the country. Throughout this period there was a substantial increase in the number of dwellings under finance, which was almost entirely due to the rise in commitments from non-first homebuyers. The increase in dwellings financed by first home buyers (including overseas immigrants) during this time was negligible.

Indicators for most of the main drivers of house prices in Perth and Peel (including commodity prices, employment growth, income growth and interest rates) dropped sharply with the on-set of the GFC. House prices however, do not generally fall rapidly unless there is some shock that causes significant unemployment. This is because households tend to hold



properties rather than sell them at a loss. As the employment shocks caused by the GFC were relatively minor in Perth, few households were forced to sell their properties. This helped mitigate the reduction in median house prices and contributed to an increase in the number of properties on the market.

1.4 Residential land and dwelling supply

Since the middle of last century the supply of housing in the Perth and Peel metropolitan area has been typified by large suburban developments. Despite an increase in 'other' dwelling production (including apartments and units), the majority of new dwellings are still detached houses, built on greenfield sites toward the urban fringe.

Historically, approximately 30 per cent of residential development in the Perth and Peel metropolitan area has been infill. *Directions 2031 and Beyond* has set a target for 47 per cent of development to be infill. However, the Urban Development Institute of Australia (UDIA) has stated that 35 per cent infill is a more realistic prediction. Whether UDIA predictions or *Directions 2031 and Beyond* targets are more accurate, it appears likely that greenfield projects will remain the predominant form of residential development in the Perth and Peel metropolitan area.

There are a substantial number of very large landholdings earmarked for urban development in the Perth and Peel metropolitan area, many of which are a great distance from central Perth. The largest of these greenfield sites include Yanchep and Two Rocks (in the North-west sub-region) and Armadale and Mundijong (in the South-east sub-region).

The responsibility for the supply of land and housing is shared between the Government and the private sector. Government is responsible for the long-term identification of land through strategies such as *Directions 2031 and Beyond*; ensuring there is sufficient zoned land available and suitable for development, undertaking major (sub-regional and district) structure planning; and for providing major infrastructure. Landowners and developers are responsible for initiating rezoning, local structure planning and subdivision applications, progressing development works and selling land to the public.

The State Government's primary mechanism for land release in the Perth and Peel metropolitan area is by rezoning land, under the Metropolitan and Peel Region Schemes. Most Australian capital cities use a benchmark of needing enough zoned land to support anticipated levels of urban growth for 15 years. Analysis from the UDP's *Urban Growth Monitor 2011* (UGM) indicates that existing stocks of zoned land in Perth and Peel are adequate to meet demand for between 22 and 44 years – the lower estimate being a continuation of business-as-usual development, and the higher estimate reflecting the impact of *Directions 2031 and Beyond* density and infill targets. The UGM shows that even during times of perceived land shortage (i.e. the housing boom) there has been an ample stock of land zoned for development and approved for subdivision.

Infrastructure timing and cost issues continue to affect the development industry's capacity to plan future developments with confidence. Improved coordination between Government agencies and developers must therefore be pursued to promote a greater degree of efficiency in the land and dwelling development process.

The structure planning stage of the land supply process is potentially a valuable tool that can facilitate more effective land supply and infrastructure coordination. Structure planning describes a series of major milestones in the planning system that provide a blueprint for future development, incorporating detailed assessments of the issues and constraints affecting the form, timing and yield of future developments. The State Government is streamlining, simplifying and tracking structure plans as a priority action identified in *Planning Makes it Happen: a blueprint for planning reform.* The local planning area maps and explanatory tables accompanying this document provide an overview of structure plans in place across the Perth and Peel metropolitan area.

Lot supply

Subdivision activity is initiated by developers and approved by the Western Australian Planning Commission (WAPC), and is the mechanism for creating new residential lots. During the housing boom there were high levels of subdivision activity in the Perth and Peel metropolitan area, with developers eager to provide new lots to a surging market. Despite the high levels of lot production, there was a shortage of serviced lots available to the public in 2006, as the development industry struggled to keep pace with demand.

Recent trends in subdivision activity reflect business confidence – with uncertainty in the short-term due to concerns regarding the global economy, but a positive outlook beyond that. Consequently the number of conditional approvals granted in 2011 was



comparable to the long-term average, but final approvals were relatively low. This suggests that a significant number of developers have obtained conditional approval on the expectation that market conditions will improve, but are postponing constructing, servicing and progressing their lots to final approval until there is a greater certainty of demand.

Dwelling supply

Like lots, the effective demand for dwellings during the housing boom was extremely high, with very large numbers of dwellings constructed during the boom years. The 20-year average for the number of dwellings under construction in Western Australia at any point in time (between June 1983 and June 2004) was 8,900. From June 2004 to June 2009 there was an average stock of 20,000 dwellings under construction in the State. This level of production stretched the housing construction industry very thin, resulting in extended development timeframes and increased costs.

Shortages of skilled labour were a major impediment to construction during that time, particularly as the housing industry was competing with the mining sector for labour. Dwelling production has declined significantly in the two years since June 2010, largely due to a lack of investor confidence resulting from continued uncertainties in the global economy.

1.5 Demand and supply assessment

Between 2001 and 2006, high levels of production exceeded underlying demand for lots and dwellings. The 'over-production' during this period increased the stock of vacant lots and dwellings in the Perth and Peel metropolitan area. Paradoxically, the scramble for property, triggered by the State's booming economy, created a shortage of newly developed lots and dwellings available to the public, as the housing industry could not keep pace with the high level of effective demand.

According to the UGM 2011, Perth and Peel have enough conditionally approved lots to meet demand for three to four years and sufficient zoned land to meet demand for up to 44 years – if *Directions 2031 and Beyond* growth targets are met. The impetus for a significant increase to lot and dwelling production therefore, must come from the private sector.

Recent concerns regarding the global economic climate have dampened the enthusiasm of developers and finance providers for undertaking new projects in the short-term. This has caused a reduction in the stock of vacant serviced lots and of rental accommodation, as underlying demand has remained high and production has slowed. Rental vacancy rates have declined from over 4.5 per cent at the end of 2009 to below 2.0 per cent in early 2012 (3.0 per cent is considered equilibrium). The stock of vacant serviced lots has also fallen by approximately 17 per cent, between 2007/08 and 2010/11.

1.6 Residential land and dwelling outlook

Although there is still a degree of uncertainty regarding the economic outlook (particularly in the short-term), the prospects for Western Australia's economy are very positive. Investment in resource sector construction projects will lead Western Australia's economic growth in the short to medium-term. There are sufficient projects already under construction or committed, to bolster demand for some time. The magnitude of these projects means they will have broad effects across many areas of the economy.

Confirmed business investment will drive employment growth and very low unemployment (4.0 per cent at March 2012) in Western Australia, which means the only way to meet demand for additional workers will be through migration. A small component of this demand will be met by workers coming from other states and territories of Australia, but as in the past, most will come from overseas.

The Housing Industry Forecasting Group (HIFG) estimates that the underlying demand requirement for Western Australia is currently around 27,000 dwellings per annum. Based on HIFG's forecast for Western Australia it is likely that approximately 20,000 new dwellings per annum will be required in Perth. During 2011, developers progressed just 11,250 lots to final subdivision approval in the Perth and Peel metropolitan area. This may well be a consequence of understandable hesitancy on the part of the developers in an uncertain global economic climate. During the housing boom 16,299 lots reached final approval during the 2005/06 financial year. A return to this level of production could theoretically satisfy the forecast demand – when strata dwelling construction is incorporated into the total for dwellings created.



Producing 27,000 dwellings in a year may be more problematic. Even during the height of the housing boom, when the construction industry struggled to meet demand, that level of production was not achieved (production peaked at 25,717 dwelling completions in 2007). In 2011, construction commenced on just 19,406 dwellings throughout Western Australia.

Given the high level of labour force participation in Perth and Peel it seems highly unlikely that there is a latent 'standing army' of construction workers adequately sizeable to increase lot and dwelling production sufficiently to meet anticipated demand. The SkillsInfo skilled vacancy index corroborates this thesis. Vacancy indices for key construction trades, such as 'technicians and trade workers' and 'machinery operators and drivers', have more than doubled between March 2009 and March 2012.

The Perth and Peel metropolitan area has been buffered to an extent, from any potential lot and housing shortages by the stock of lots and dwellings produced during the boom-period of over production. However, if underlying demand forecasts are accurate, there will need to be a substantial increase in both lot and dwelling production to avoid future housing shortages. It is highly likely that there will be a shortfall in the stocks of skilled labour required to ramp up production sufficiently to meet this demand, particularly as construction workers are increasingly attracted to lucrative job opportunities in the mining sector.

It is therefore reasonable to conclude that underlying demand for lots and dwellings will exceed supply, at least in the very short-term. This 'under-supply' coupled with the State's positive economic outlook will promote renewed enthusiasm from the private sector as risk is reduced and potential profitability increased on the back of higher demand.

If however, demand exceeds supply for an extended period, land and housing values have the potential to increase sharply, thus reinstating property as a profitable short-term trading commodity. This could exacerbate possible supply shortfalls, as an increased proportion of newly developed lots and dwellings are purchased by investors, rather than would be occupants. There is a series of negative repercussions associated with sudden increases in property values, such as decreased housing affordability and increased pressure on public housing resources. It is therefore critical that every effort is made to align housing supply with underlying demand in the Perth and Peel metropolitan area during the anticipated upturn in housing investment.

1.7 Commercial land outlook

There are many high-profile commercial developments near completion or recently completed around central Perth. The planning for most of these however, was finalised prior to the GFC and due to the inherently profit driven nature of such projects, relatively few starts have been made since.

Net absorption rates of office space are currently very high and analysts forecast a severe shortage of office space in central Perth in the next two to three years. Given the positive economic outlook for Western Australia it is likely that some projects that were delayed after the onset of the GFC may soon proceed.

Retail demand appears likely to remain flat given recent poor retail spending growth.

1.8 Industrial land outlook

Demand for well-located industrial land is high in the Perth and Peel metropolitan area. The combination of a continued strong export oriented economy, employment growth and a growing population are likely to bolster demand for industrial land in the Perth and Peel metropolitan area for a considerable time.

The consumption rate for industrial land in the Perth and Peel regions indicates a generally cyclical trend, with demand fluctuating from 80-150 hectares per annum. Between 1996 and 2010 an average of 99.5 hectares of industrial land were consumed annually in the Perth and Peel metropolitan area.

As at July 2012, there were 13,719 hectares of zoned industrial land in the Metropolitan Region Scheme (MRS) and Peel Region Scheme (PRS), representing 1.7 per cent of the area covered by those schemes.

The EELS has identified 37 sites totalling just under 13,000 hectares of potential gross developable land fit for future industrial use. It is a reasonable expectation however, that this figure will be substantially reduced, following the rationalisation of sites through further constraints analysis and subsequent determination of the net developable area.



2 Land and dwelling demand

2.1 Economic demand drivers

Economic conditions and population growth interact to drive demand for additional developed land for residential, industrial and commercial use. Western Australia's current strong economic growth creates employment opportunities which attract additional workers to the State, particularly from overseas. In turn, those new residents require goods and services, thus stimulating further economic growth.

Strong economic prospects, particularly in commodity prices, for Western Australia's major exports, increase levels of business investment. This drive in business investment increases employment opportunities, initially in the construction sector, and then in operations and value added services. Construction-driven employment and population growth are not permanent and are subject to cycles.

Employment prospects are a key driver of net migration and Western Australia's population grows primarily through a net influx of people from overseas. Net interstate migration is minimal in comparison and it tends to vary, depending on the relative economic conditions in other Australian States and territories. These population growth components directly drive the need for additional residential land and housing.

The other major component of population growth is natural increase (births minus deaths). This generally has a greater effect on demand for certain housing types and locations than it does on the overall demand for additional houses.

Figure 3 shows the relationships of economic and demographic factors that influence demand for land and the parts of this document to which they refer.

Economic conditions affect the household formation rate, which includes new households formed in an area as a result of net migration, as well as young homebuyers entering the market for the first time. The household formation rate is quite sensitive to employment prospects as well as to interest rates and housing prices.



Figure 3: Economic and demographic demand drivers



In the short-term, net migration, interest rates, inflation, consumer sentiment and unemployment rates are major influences on the demand for additional land and housing. Longer-term the key drivers of demand are real income growth, employment growth, natural population growth and household formation.

The economic outlook affects all these factors and is therefore the fundamental starting point in determining future demand for land and dwellings in Western Australia.

2.1.1 Economic outlook

Key points/issues/risks

- Global economic conditions shape business investment, employment opportunities, incomes, population growth, consumer sentiment and ultimately, land and housing demand.
- Investment in Western Australia depends largely on overseas factors including commodity prices; demand in the Asian region; and to a lesser degree, general global economic conditions.
- Western Australia's economy is strongly tied to specific international conditions, including commodity demand/ prices and Asian economic growth. The State's major Asian trading partners were not as badly affected as Europe and the USA by the GFC and they appear to be recovering faster than other parts of the world.
- Risks to economic growth include sovereign bonds and the timing of decisions to scale back stimulus measures. Outside the Asia Pacific region, few countries have the capacity to reduce interest rates any lower to stimulate their economies.
- The outlook for Western Australia is for strong economic growth over the next few years with renewed private sector confidence and business investment forecast to replace public investment as the primary stimulus for the State's economy.

Western Australia's economy is expanding at a stable pace and the overall outlook for growth is positive, as forecast by both the Western Australian Government and the business sector (Tables 1, 2 and 3). The Western Australian economy continues to outperform other Australian States, reflecting strong global demand for the state's resource exports.

Western Australia is in the midst of a major investment cycle; led by the construction of Chevron's \$43 billion Gorgon and the \$29 billion Wheatstone LNG projects and several iron ore developments in the Pilbara and Mid West regions. Investment in these projects will underpin growth in the State's economy in 2012/13, with exports becoming the major driver of growth from 2013/14.

The return of business investment will stimulate the demand for goods, services and labour. Renewed business investment also helps drive employment growth, which combined with wages growth, will help to stimulate demand for goods, services, residential lots and housing.

The dramatic fall in public investment forecast (from the highs of 2009/10) is a return to business as usual, as Commonwealth and State stimulus expenditure winds down.



Table 1: Key economic forecasts and parameters - Western Australia (Western Australia Government)

Average annual growth	2010/11 actual %	2011/12 estimated actual %	2012/13 budget estimate %	2013/14 forward estimate %	2014/15 forward estimate %	2015/16 forward estimate %
Gross State Product growth (GSP)	3.5	6.0	4.75	4.75	4.25	4.25
State final demand growth	5.8	9.0	6.75	4.25	2.0	3.25
Household consumption growth	4.4	5.25	4.5	4.5	4.25	4.25
Business investment growth	10.3	23.5	11.25	5.0	-1.25	1.0
Dwelling investment growth	6.6	-7.0	7.5	4.5	4.25	4.25
Government investment growth	11.4	-3.5	-0.25	3.5	0.25	-0.25
Gross State Income growth (GSI)	20.0	6.25	2.5	3.5	1.5	2.25
Population growth	2.3	2.5	2.3	2.3	2.2	2.2
Employment growth	3.2	2.5	2.75	2.5	2.25	2.0
Unemployment rate	4.4	4.25	4.25	4.25	4.0	4.0
Consumer Price Index growth (CPI)	2.8	2.5	3.5	3.25	3.25	3.25
Wage Price Index growth	3.9	4.25	4.5	4.5	4.5	4.5
Established house price index	-1.2	-2.5	6.7	5.9	5.5	5.6
Crude oil price (\$US per barrel)	89.2	97.5	104.5	101.3	96.7	93.3
Exchange Rate \$US / A\$ (cents)	99.1	103.8	99.0	92.0	84.9	77.9
Iron ore price (\$US/tonne) (FOB)	143.3	146.3	127.3	115.2	102.9	90.6

Source: WA State Government Budget Papers 2012/13 Economic and Fiscal Outlook Budget Paper No. 3, 17 May 2012 page 18.

Table 2: Key economic forecasts - Western Australia (Chamber of Commerce and Industry Western Australia)

Average annual growth	2009/10 actual %	2010/11 actual %	2011/12 estimate %	2012/13 forecast %
Gross State Product growth (GSP)	4.3	3.5	5.25	7.0
Expenditure				
Household consumption	3.4	4.5	5.0	4.25
Dwelling investment	3.1	5.3	-6.0	10.25
Business investment	-3.8	12.6	16.0	12.0
Public consumption	2.7	2.8	2.5	2.0
Public investment	27.1	12.3	-10.0	-14.25
State final demand	2.4	6.5	6.0	6.25
Labour market				
Unemployment rate	4.0	4.2	4.0	3.75
Average weekly ordinary time earnings (AWOTE)	6.0	8.1	8.0	8.0
Consumer Price Index (CPI)	3.5	3.0	3.0	3.5

Source: CCI Economic Compass Outlook March Quarter 2012.



Average annual growth	2011/12 %	2012/13 %	2013/14 %	2014/15 %	2015/16 %
Gross State Product growth (GSP)	4.9	4.6	4.4	4.0	3.8
Population growth	2.7	2.5	2.3	2.1	2.0
Employment growth	2.3	2.8	2.2	2.0	1.5
Unemployment rate	4.2	4.4	4.4	4.4	4.6
Consumer Price Index (CPI)	2.3	3.4	3.2	2.6	2.7
Average weekly earnings	9.8	5.5	5.3	5.1	3.6
Labour price index	4.0	4.3	4.5	4.9	3.8
Retail turnover	7.1	3.3	2.7	3.3	3.4

Table 3: Key economic forecasts (selected) - Western Australia (Deloitte Access Economics)

Source: Deloitte Access Economics Business Outlook, March 2012.

The primary difference between the economic forecasts of WA Treasury and the Chamber of Commerce and Industry Western Australia (CCIWA), is that the CCIWA has a more optimistic forecast for economic growth (GSP) in Western Australia for 2012/13 (Table 3). This reflects the historically more conservative forecasting from Treasury; and an increased level of confidence by private industry for Western Australia. Household consumption, business investment, unemployment and CPI are anticipated to be relatively similar under both forecasts. The CCIWA also forecast a greater increase in dwelling investment in 2012/13, than WA Treasury.

Selected forecasts from Deloitte Access Economics are provided in Table 3.

Global influences

Western Australia's international trade outlook is underpinned by the economic growth prospects of its Asian trading partners and by movements in commodity prices. Figure 4 shows the 30-year trend for commodity prices. It illustrates the rapid increase in commodity prices between 2004 and 2011 and salient pricedrop in 2008/09, caused by the GFC. The commodity price index graph also shows the influence of the high Australian dollar since mid-2010, which has kept export returns low in local currency terms, even though commodity indices have reached new highs in international currencies since the GFC.

Recent strong growth among Western Australia's main trading partners, particularly China, has helped sustain global demand for resources in an uncertain global economic climate.

Global economic conditions slowed in the latter half of 2011, largely driven by worsening sovereign debt issues in Europe and a weaker than expected recovery in the US economy. In its *April 2012 World Economic Outlook* however, the International Monetary Fund revised its global growth projections up to 3.5 per cent noting that "global prospects are gradually strengthening again, but downside risks remain elevated".¹

¹ International Monetary Fund - World Economic Outlook, April 2012.





Figure 4: Commodity price index

Source: Reserve Bank of Australia, Index of Commodity Prices, Statistical Tables - G5.

The strong growth of Western Australia's major trading partners and high prices for Western Australia's key export commodities have created a substantial pipeline of investment activity, particularly in the State's iron ore and LNG sectors. This will drive economic growth in Western Australia over the coming years, resulting in employment and income growth that will increase demand for land and housing.

Global risks

Risks that could affect Western Australia's economy include a sharp downturn in China's economic growth, sovereign debt concerns affecting trading partner growth and volatility in global energy markets.

The World Bank has indicated that China's current economic growth is unsustainable in the long-term, unless it embraces reforms to reduce the power of state-owned companies, breakup monopolies, privatise state enterprise and promote free markets. Economic stability in China is very important to the outlook for Western Australia's economy. Any reduction in demand for Western Australian commodities from key trading partners is likely to have a significant negative impact on the local economy. It is predicted however, that economic growth in China, and Western Australia's other main trading partners in the Asia Pacific will be stronger than most western economies.

Recent evidence of renewed concerns by euro area bond investors highlights the significant downside risks which remain. The sovereign debt concerns and austerity programs in advanced economies are likely to significantly impact global growth in the future. The tight balance between oil demand and supply suggests that oil prices are particularly vulnerable to future supply shocks, which pose risks to the global economic outlook, as well as to domestic prices.²

² Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.



Impacts

- A positive economic outlook for Western Australia points to an increase in business investment and employment; in turn leading to increased labour demand which is most likely to be met from net overseas migration.
- An appreciation of the Australian dollar; and changes to foreign investment can reduce the demand for land and housing.
- Migrants from overseas might be reluctant to bring personal capital into the country while the Australian dollar remains strong and therefore may prefer to rent dwellings, utilising their Australian dollar income rather than 'losing' on the current exchange rates.
- Commodity price movements particularly for base metals – are a good predictor of short-term house price movements.

2.1.2 Monetary and fiscal policy

Key points/issues/risks

- Australia is one of the few countries with any significant room to ease policy cash rates if global conditions again turn down.
- Effective monetary policy is made difficult by Australia's multi-speed (or "patchwork") economy, as interest rates affect the whole country and all sectors, regardless of the particular economic conditions in individual states/ territories or specific industry sectors.

Monetary policy levers

The principal lever of monetary policy is the cash rate set by the Reserve Bank of Australia (RBA), which serves as a reasonable indicator of interest rates. The RBA is responsible for formulating and implementing monetary policy, which is used to influence the behaviour of borrowers and lenders in financial markets.



Figure 5: RBA cash rate and Australian housing interest rates (standard variable)

Source: Reserve Bank of Australia Table F5 Indicator Lending Rates (series - FILRHLBVS) and F1 Interest Rates and Yields - Money Market - monthly (series - FIRMMCRT).



The RBA sets cash rates to achieve several objectives, including maintaining the stability of the Australian currency; achieving full employment and the economic prosperity and welfare of the people of Australia. Additionally, monetary policy is used to control inflation in Australia to the target band of two to three per cent over the medium-term.³ Figure 5 illustrates the RBA cash rate and Australian housing interest rates over the past 20 years, using the banks standard variable interest rates.

The RBA has indicated a downward pressure on interest rates is probable in 2012, as inflation rates are close to target, economic growth is close to trend and lending rates are close to average.⁴

Changes in interest rates and speculation of future interest rate rises are a major determinant in the demand for land and housing. In general terms, interest rate rises weaken demand for land and housing.

Effects of interest rates on incomes

Interest rates have a major influence on the size of the mortgage that can be serviced by a given income.⁵ For the December quarter 2011, the ratio of total debt to disposable income was 149.6 per cent (housing debt to disposable income was 134.3 per cent); with interest payments on this total debt representing 11.2 per cent of disposable income (9.2 per cent for housing interest payments to disposable income - down from a high of 11.1 per cent in the September quarter of 2008).⁶

Rising interest rates affect consumers' ability to repay debt. The proportion of disposable income required to repay debt increases with interest rate rises and decreases with interest rate falls. Rising interest rates therefore can weaken the demand for land and housing and have other effects on the economy, such as reducing household expenditure on general goods and services.

Banks have increased their interest rates independent of the decisions made by the RBA, which has reduced the effectiveness of changes to the cash rate. Should lending interest rates fall further however, this could lead to a faster recovery in the housing market.

Fiscal policy levers

Fiscal policy measures introduced by Commonwealth or State governments can significantly influence the demand outlook for land and housing.

In 2009/10, Western Australia experienced a significant spike in Commonwealth grants due to stimulus funding from the Commonwealth Government in response to the GFC. Commonwealth grants however are expected to decline significantly over the budget forecast period reflecting a withdrawal of stimulus funding and a reduction in Goods and Services Tax (GST) grants. Western Australia's GST grants are forecast to decline by 19.2 per cent or \$662 million in 2012/13. This represents a cut in the State's share of national GST revenue grants from 7.5 per cent in 2011/12 to 5.8 per cent in 2012/13. The State's GST grant share is forecast to fall to 4.2 per cent in 2013/14 and to 2.7 per cent by 2015/16.

The First Home Owners' Grant was an example of a fiscal stimulus, which was originally introduced to offset the introduction of the GST and then kept to mitigate the negative impacts of declining housing affordability. This is discussed in more detail in section 2.4.3 of this document.

The State Government has forecast budget surpluses in each of the forward estimate years, including an operating surplus of \$196 million for the 2012/13 financial year. The net debt levels projected in the budget remain consistent with the State's triple-A credit rating.

Government investment in major projects and infrastructure is expected to drive an increase in public investment spending by 3.5 per cent in 2013/14, with public investment expected to remain at relatively high levels for the forecast period.⁷

³ http://www.rba.gov.au/monetary-policy/about.html.

⁴ Reserve Bank of Australia Media Release.

⁵ BIS Shrapnel Building in Australia 2010-2025.

⁶ Reserve Bank of Australia Statistical Tables - B21 - Household Finances -

Selected Ratios - BHFDDIT, BHFDDIH, BHFIPDT, BHFIPDH.

⁷ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.



Impacts

- Increased public housing investment was a direct consequence of the stimulus package, which has increased housing demand; however, this is unlikely to be repeated at the same level in the foreseeable future.
- General stimulus expenditure has helped maintain high levels of employment, which limited the number of people affected significantly by the GFC – resulting in relatively few forced or mortgagee sales of owner-occupier properties.



2.1.3 Economic growth and inflation

Key points/issues/risks

- Growth forecasts are positive, but will only be achieved if there is economic stability among Western Australia's trading partners and access to skilled labour.
- Growth forecasts depend heavily on private investment picking up over the next two years to replace the public stimulus, which is winding down.

Economic growth

Business investment will play a much stronger role in driving economic growth in the next few years. Business investment and exports are dominant influences on Western Australia's economic growth, resulting in strong labour demand and wage growth, and above average population growth. As additional productive capacity comes on stream from a ramping up of construction on major projects, resource exports are expected to lead economic growth in 2013/14.⁸

From 2012/13 to 2015/16 WA Treasury is projecting GSP to grow at four per cent or more per annum. CCIWA is even more optimistic and is forecasting economic growth rates to reach a high of seven per cent by 2012/13.⁹ Figure 6 outlines historical economic growth; and WA Treasury's, CCIWA's and Deloitte Access Economics' estimates for the future.

⁸ Western Australia Treasury Budget Papers 2012/13.

⁹ CCI Economic Compass Outlook March Quarter 2012; and Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.





Figure 6: Economic growth - Western Australia (Real State Gross Product)

Source: Australian Bureau of Statistics, Catalogue 5220.0 Australian National Accounts: State Accounts (A2336359X); WA State Government Budget Papers 2012/13; CCI Economic Compass Outlook March Quarter 2012; Deloitte Access Economics Business Outlook, March 2012.

Domestic risks

Key domestic risks to economic growth forecasts in Western Australia include a delay in the recovery of housing demand, the high Australian dollar and a shortfall of skilled labour.

A delayed recovery in demand for land and housing may occur as a result of high property prices discouraging first home buyers from entering the market, or perhaps as a consequence of reduced investor confidence, due to continuing uncertainty in the global economy. A strong Australian dollar poses risks to the State's revenue forecasts, as most commodity contracts are priced in US dollars. Positive consequences of a stronger Australian dollar; however, include increased purchasing power of local consumers, assistance in curbing inflation, lowering the price of imports and encouraging investment. The upside risks that robust labour demand and strong population growth pose to the economic outlook is that these trends both boost household consumption and inflation. This increases demand for housing and property values. Strong population growth also increases demand for services and infrastructure provided by the Western Australian public sector.¹⁰

¹⁰ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.



Inflation

Inflationary pressures increase as a result of a strengthening economy, higher domestic prices, an improving labour market, predicted wage growth and the potential for excessive wage claims. Acting against a rise in inflation is the impact of the high Australian dollar, which places some downward pressure on inflation.

WA Treasury predicts Western Australia's Consumer Price Index (CPI) will grow by 3.5 per cent in 2012/13 and by 3.25 per cent for the remaining forecast period, as consumer demand and wages continue to strengthen (Figure 7). The estimates account

for the introduction of the carbon tax in July 2012; both the Commonwealth Treasury and the RBA expect the introduction of the carbon tax to add 0.7 percentage points to the national CPI in 2012/13.

These forecasts are higher than national CPI projections from the RBA. Addressing capacity constraints in Western Australia's economy will be a critical factor in ensuring that inflation remains within the RBA's target range.¹¹





Source: WA State Government Budget Papers 2012/13; CCI Economic Compass Outlook March Quarter 2012; Australian Bureau of Statistics, Catalogue 6401.0 Consumer Price Index, Australia; Deloitte Access Economics Business Outlook, March 2012.

> ¹¹ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.



Impacts

- Increased growth in the Western Australian economy will lead to higher levels of population growth and increased demand for land and housing.
- Higher inflationary pressures can lead to higher interest rates.
- Demand for land and housing weakens as a result of interest rate rises; and expectations of further interest rate rises.
- The RBA's influence over interest rates is therefore a critical influence over the national economic system; however, changes to interest rates are driven by conditions in the national economy, which is currently experiencing markedly different conditions to Western Australia's economy.

2.1.4 Business confidence and investment

Key points/issues/risks

- Business investment in Western Australia is typically very volatile as it is a small domestic economy, yet is driven by some of the world's largest resource projects.
- The Gorgon LNG project is expected to boost the State's economy over the next two financial years with a reduced impact thereafter as the project moves from construction to operation phase.
- Commonwealth government policies could pose a risk to the business investments forecasts in Western Australia i.e. carbon tax and Mineral Resource Rent Tax (MRRT).
- Business investment by small and medium enterprises is constrained by a tight lending market, which may restrain growth in the retail, office and industrial construction sectors for some time.

Business confidence

The Commonwealth Bank-CCI Survey of Business Expectations is a reliable indicator for business confidence in Western Australia. The March quarter 2012 survey shows that business confidence in the Western Australian economy improved for the second consecutive quarter. The survey found that 37 per cent of WA businesses expect economic conditions to improve over the next 12 months; however, concerns remain about short-term prospects.

Ongoing concerns regarding Western Australia's short-term economic prospects reflect the challenging operating conditions faced by many businesses (falling turnover, weak profitability and rising costs); and increasingly common labour shortages. Almost 50 per cent of Commonwealth Bank-CCI survey respondents reported labour to be scarce, which is the highest level recorded since the GFC.¹²

¹² Commonwealth Bank - CCI Survey of WA Business Expectations March Quarter 2012.



Business investment

Business investment is a key driver of economic growth. An optimistic economic outlook encourages businesses to invest and expand their operations to take advantage of increasing demand. The recovery of the global economy will therefore have a major influence on the level of business investment in Western Australia.

Business investment is a critical factor in the direct demand for commercial (including retail and office) and industrial property. As a secondary impact, business investment increases employment and wages, thus increasing underlying demand for residential land and housing.

The strength of the rebound in commodity demand seen over the past year is of particular benefit to Western Australia's investment agenda. Figure 8 illustrates business investment levels in Western Australia since 1994/95 and WA Treasury forecasts to 2015/16.

Projections indicate that business investment will increase in the near future, with WA Treasury forecasting business investment will grow by 11.25 per cent in 2012/13 and five per cent in 2013/14, with the level of business investment expected to remain high in the out-years. CCIWA have similar optimistic forecasts for growth in business investment over its forecasting period (12 per cent in 2012/13).¹³

Business investment will continue to drive economic growth in 2012/13 with Chevron's recently approved \$29 billion Wheatstone LNG project and Shell's \$9 billion Prelude Floating LNG project adding to the already substantial level of existing investment activity. Chevron has also invested \$43 billion in the Gorgon LNG project on Barrow Island, which is anticipated to hit peak construction during 2012/13.

Petroleum and iron ore projects dominate the State's mediumterm investment horizon, accounting for over 80 per cent of current and prospective resource projects. The *Deloitte Access Economics Investment Monitor* shows a significant number of



Figure 8: Business investment - Western Australia

Source: WA Treasury Budget Papers 2012/13. Original Source: ABS Catalogue 5206.0 Australian National Accounts: National Income, Expenditure and Product.

> ¹³ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012; and CCI Economic Compass Outlook March Quarter 2012.



projects in the investment pipeline, with estimates of a total of \$270 billion worth of current and planned projects in Western Australia.¹⁴

Planned expansions by the major iron ore producers are expected to add to business investment towards the end of the forecast period. However, as the Gorgon project passes peak construction (expected around 2012/13), business investment in Western Australia is forecast to slow. This is due to the enormous size of the Gorgon project, and the scale of replacement activity needed to sustain investment spending at such high levels.

Business finance

Access to finance is expected to remain a key constraint to business investment in the short-term, particularly for land developers and builders. The possibility of higher global funding costs may also result in higher credit costs and tighter credit availability in Western Australia, which has the potential to adversely affect business and housing investment.

Bank constraints on the level of pre-sales required before finance is approved are resulting in smaller land developments. Major developers are reported to be returning to offshore sources of non-bank finance as wholesale credit markets thaw. It may be some time before banks regain their pre-credit crunch appetite for lending to land developers.¹⁵

Relative to its pre-GFC position, the Australian banking system has higher levels of capital, is making less use of short-term wholesale funding and making greater use of deposits as a source of funding. A significant downside of this strategy has been that banks are paying retail rates for more of their cash, rather than wholesale rates. This has increased the overall cost of funds to the banks and consequently the RBA's cash rate settings have a less direct effect on the lending rates that banks charge to their business and home loan customers.

In the banks' business loan portfolios, troubled commercial property exposures have been the main contributor to the high impairment rates experienced in recent years. Business loan write-off rates since early 2008 have been above average in the construction, property and business services (including commercial property) sectors.¹⁶

Domestic lending has been growing at a subdued pace in recent years as both households and businesses remain cautious in their borrowing behaviour. Recent industry liaison by the RBA indicates that demand for credit by businesses remains low. This is a result of the continued uncertainty regarding the economic outlook and unfavourable conditions in those sectors most exposed to the strong Australian dollar and weak retail spending. Lenders are having to adapt to much slower rates of credit growth than they were accustomed to in the pre-crisis period. Surveys also point to a reduction (since 2009) in the share of firms reporting difficulty in obtaining finance. Although the RBA indicates that the availability of bank finance has improved over the past year for many firms, credit conditions remain tighter than prior to the crisis.¹⁷

Impacts

- While some land developers have indicated significant concerns with market uncertainty and slow sales in a number of residential developments, other developers are reporting reasonable sales in particular areas of Perth. These mixed signals may be due to a fall-off of demand from first home buyers after changes to the First Home Owners' Grant and a modest pickup from other sectors of the market.
- Reduced investment by land developers due to market uncertainty and restricted access to debt finance is likely to lessen land and housing development rates, regardless of Government increasing the number of subdivision approvals.
- Uncertainty regarding the carbon tax and investment in new resource projects could potentially delay investment decisions, causing uncertainty for workers in that industry sector.
- Business confidence falls during periods of interest rate rises due to the increased cost of conducting business and potential for weakened consumer demand.

17 RBA Financial Stability Review September 2011.

¹⁴ Deloitte Access Economics Investment Monitor, March 2012.

¹⁵ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia October 2011.

¹⁶ RBA Financial Stability Review September 2011.



2.1.5 Employment and incomes

Key points/issues/risks

- Employment expectations are a key factor in households' decisions to purchase residential dwellings, either as a first home, a trade-up buy or as an investment.
- A forecast return to employment growth of over two per cent per annum is increasing demand for housing.
- As finite construction and engineering projects represent much of the State's economic boost over the past decade, this contribution to employment growth will not be maintained, unless there is a steady stream of business investment in new projects.
- Relatively high wages have increased the capacity of some households to afford more expensive dwellings.

Employment

Variations in employment statistics such as job vacancies and job advertisements can be good leading indicators of the labour market trend. Periods of low unemployment and high employment growth lead to an increase in demand for land and housing.

WA Treasury expects employment growth will strengthen in 2012/13 to 2.75 per cent, reflecting demand from the resource sector, as well as solid growth in the broader State economy. Deloitte Access Economics and WA Treasury both forecast employment growth will moderate slightly over the medium-term to 2.25 per cent, with similar projections to 2014/15 (Figure 9). Employment growth is forecast to moderate as construction peaks for a number of major resource projects and growth in the State's working age population contracts.¹⁸



Figure 9: Employment growth - Western Australia

Source: WA Treasury Budget Papers 2012/13; Deloitte Access Economics Business Outlook, March 2012.

¹⁸ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012; Deloitte Access Economics Business Outlook, March 2012.

Development Program

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Job indicators such as the Commonwealth Bank-CCI Survey of Business Expectations and the ANZ Job Advertisement Series indicate a pickup in jobs growth. The ABS official job vacancies series is also pointing to signs of emerging labour shortages. As discussed in section 2.1.4 of this report, tighter labour market conditions will prove to be a major challenge for local employers, who are likely to find it increasingly difficult to fill their vacancies as activity in the local economy gathers pace.

Access Economics and Monash University forecast total employment to grow by 222,000 and 239,000 jobs respectively between 2010 and 2017. The Technology and Industry Advisory Council's projections (based on 2006 data) suggested 224,000 new jobs would be created between 2006 and 2016, while the State Training Board forecast employment growth would average 1.79 per cent per year between 2006 and 2016. Figure 10 illustrates these employment projections for Western Australia between 2002 and 2020.

In addition to the 222,000 to 239,000 workers required to fill new jobs expected to be created by 2017 using the Access Economics and Monash University forecasts, approximately 186,000 additional workers are expected to be required to fill jobs vacated by current workers leaving the workforce through retirements and permanent emigration. Consequently, between 408,000 and 425,000 new workers will be required by 2017.

As a result of the existing and emerging labour shortages, a significant increase in Western Australia's workforce will be required to keep pace with the growing economy. CCIWA predicts that an additional 488,500 workers will be required in Western Australia over the next 10 years if the economic growth experienced over the past decade is to be maintained.¹⁹

Recent analysis by the Department of Training and Workforce Development indicated approximately 275,000 workers will be provided through natural population growth and migration by 2015. This suggests that Western Australian employers may experience a shortfall of 76,000 workers by 2015 (Figure 12).²⁰ CCIWA predict that even with Western Australia's strong population growth there will be a shortfall of more than 210,000 workers in the State by 2020 (Figure 12).²¹

There is therefore a need to increase the level of labour availability through increased migration and workforce participation.²²

In the current changing economic environment, it is very difficult to accurately forecast changes in employment growth, particularly in the medium or long-term, as there are many uncertainties to be considered. While the various forecasts referenced above have undoubtedly been compiled with due care and diligence, forecasts differ due to differences in factors such as the data sources used; models and modelling techniques; underlying assumptions; and many others.²³

Employment in Western Australia is highly concentrated in Perth, where 75 per cent of the State's workers are employed.²⁴ CCIWA predictions indicate that Perth will maintain approximately three quarters of the State's future labour force.²⁵

- ¹⁹ Chamber of Commerce and Industry WA Building WA's Workforce for Tomorrow.
- ²⁰ Department of Training and Workforce Development Skilling WA A Workforce Development Plan for Western Australia Progress Report January-June 2011.
- ²¹ Chamber of Commerce and Industry WA Building WA's Workforce for Tomorrow.
- ²² Department of Training and Workforce Development Skilling WA A Workforce Development Plan for Western Australia.

- ²⁴ Department of Education, Employment and Workplace Relations Australian Jobs 2011.
- ²⁵ Chamber of Commerce and Industry WA Building WA's Workforce for Tomorrow.

²³ Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia Progress Report January-June 2011.





Figure 10: Employment projections - Western Australia (2002-2020)

Source: Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia, 2010 and Australian Bureau of Statistics Catalogue 6202.0 Labour Force, Australia (A184065A).

A significant share of Western Australia's future workforce will be required in the mining and construction sectors. The future labour requirements for Western Australia's service sectors, particularly in community and personal services, professional services and retail is also likely to be high.²⁶ Modelling conducted by the Centre for Policy Studies at Monash University has provided Western Australian employment growth forecasts by occupation (Figure 11).

Table 4 outlines Western Australia's employment structure by industry sector, as at February 2012.

²⁶ Chamber of Commerce and Industry WA - Building WA's Workforce for Tomorrow and Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia Progress Report January -June 2011.



Table 4: Employment by industry – Western Australia

Industry	Employment Feb 2012 Total '000	Per cent of Total
Accommodation and food services	31.6	3.5
Administrative and support services	24.8	2.7
Agriculture, forestry and fishing	26.9	2.9
Arts and recreation services	8.5	0.9
Construction	115.6	12.6
Education and training	54.4	5.9
Electricity, gas, water and waste services	15.9	1.7
Financial and insurance services	25.5	2.8
Health care and social assistance	82.3	9.0
Information media and telecommunications	8.6	0.9
Manufacturing	84.4	9.2
Mining	101.3	11.0
Other services	39.3	4.3
Professional, scientific and technical services	71.9	7.9
Public administration and safety	57.7	6.3
Rental, hiring and real estate services	21.8	2.4
Retail trade	66.1	7.2
Transport, postal and warehousing	47.6	5.2
Wholesale trade	31.6	3.5
Total	915.9	100

Source: Australian Bureau of Statistics Catalogue 6291.0.55.003 Labour Force Australia Table 5 Employed persons by State and Industry (A2542860L)





Figure 11: Projected employment growth by occupation - Western Australia (2010/11 to 2014/15)



Source: Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia Progress Report January - June 2011, (Original Source: Monash University, March 2011).



Figure 12: Labour supply and demand - Western Australia (2002-2020)

Source: Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia, 2010.



Figure 12 provides an illustration of potential labour supply and demand scenarios for Western Australia to 2020.

Demand for land and housing in Perth and Peel is likely to increase as continuing demand for labour encourages new residents to the city in search of work – particularly given the limited employment opportunities in many other parts of the world. If Western Australia's labour market grows faster than what is currently anticipated, it is likely to stimulate a quicker than expected recovery in the housing market.

Skilled vacancies in the job market

The vacancy index for skilled labour is a critical indicator of the status of the labour market in Western Australia. As well as indicating demand in the labour market, it is also a trigger for employer-sponsored skilled migration which directly drives the State's population growth. There is also a strong positive correlation between high vacancy indexes and high demand for additional dwellings.

Of all the critical inputs to business investment, access to sufficient skilled labour can be one of the most difficult to resolve.

Another very important factor of the vacancy index is its direct relationship to the construction industry's capacity to respond to demand. High vacancies for skilled labour are a constraint on additional building and dwelling supply.

Figure 13 shows that the highest growth (and volatility) in skilled vacancies is for professionals, clerical and administrative workers, and technicians and trades workers. In some sectors, vacancy indexes are approaching the same levels as those experienced prior to the GFC.



Figure 13: Vacancy index - Western Australia (trades advertisements)

Source: Skillslnfo, Labour Market Index Vacancy Report – *skilled vacancy index (SVI)* (http://www.skillsinfo.gov.au/skills/LMI/VacancyReport/, accessed 17 December 2010) and Department of Education, Employment and Workplace Relations, Vacancy Report - internet vacancy index (IVI) (http://www.deewr.gov.au/lmip/default.aspx?LMIP/VacancyReport, accessed 9 May 2012).



The long-term skilled vacancies in the construction trades sector in the Western Australian labour market are shown in Figure 14. The figure shows very high vacancy levels through the middle of the last decade, which constrained the capacity of the construction industry. The skilled vacancy index (sourced from newspaper advertisements) has now ceased and has been replaced by the internet vacancy index which began in 2006.

The latest trend data show an upturn in vacancies, which are likely to be in the non-residential construction sector (given that the residential construction industry has relatively low numbers of new dwelling commencements).

Unemployment

WA Treasury forecasts the unemployment rate to remain steady at 4.25 per cent in 2012/13 and 2013/14 and moderating to 4.0 per cent in 2014/15 and 2015/16 as the labour market tightens further. Deloitte Access Economics have forecast an unemployment rate of 4.4 per cent to 2014/15.²⁷

Western Australia's unemployment rate from 1985 is illustrated in Figure 15, along with the three major forecasts for future unemployment rates.





Source: SkillsInfo, *Labour Market Index Vacancy Report – skilled vacancy index (SVI)* (http://www.skillsinfo.gov.au/skills/LMI/ VacancyReport/, accessed 17 December 2010) and Department of Education, Employment and Workplace Relations, Vacancy Report - internet vacancy index (IVI) (http://www.deewr.gov.au/Imip/default.aspx?LMIP/VacancyReport, accessed 9 May 2012).

> ²⁷ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012; and Deloitte Access Economics Business Outlook, March 2012.




Figure 15: Unemployment rate - Western Australia (trend)

The labour force participation rate refers to the proportion of the population aged 15 years and older who are working or able and willing to work. Optimising the labour force participation rate helps to ensure that the supply of labour meets the needs of industry and therefore contributes to the overall health of the economy.

As of early 2012, the Western Australian labour force participation rate was the highest of all Australian states.²⁸ However, labour force participation rate is forecast to decline from its current rate of 76.6 per cent to 56.3 per cent by 2051.²⁹ This is primarily due to the ageing of the State's population; which is discussed in further detail in the population and demographics section of this report.

WA Treasury is forecasting that over the forward estimates period to 2014/15 the participation rate of those aged between 15 and 64 is expected to gradually increase, consistent with expectations of a strengthening labour market and above average wages growth.³⁰

Source: Australian Bureau of Statistics Catalogue 6202.0 Labour Force, Australia – trend (A184075F); WA Treasury Budget Papers 2012/13; CCI Economic Compass Outlook March Quarter 2012; Deloitte Access Economics Business Outlook, March 2012.

²⁸ Australian Bureau of Statistics Catalogue 6202.0 Labour Force - Labour Force Status (Aged 15 years and over), States and Territories: Original - January 2012.

²⁹ Department of Training and Workforce Development - Skilling WA - A Workforce Development Plan for Western Australia.

³⁰ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.





Figure 16: Wage Price Index growth - Western Australia

Source: WA Treasury Budget Papers 2012/13; ABS Labour Price Index, Australia, Catalogue 6345.0.

Wages growth

Strong labour demand and tight supply resulted in high wage growth in Western Australia during the resource boom period of the mid to late 2000s, particularly in the mining and construction industries. Growth in Western Australia's Wage Price Index (WPI) to 2015/16 is expected to stabilise as the demand for labour intensifies and supply tightens. WA Treasury expects wages growth to increase by 4.5 per cent per annum to 2015/16 (Figure 16).³¹

An increase in wages growth leads to an increased demand for land and housing. This is because a continued increase in household discretionary income enables a higher ratio of mortgage repayments to gross household income.³²

Impacts

- High wages growth (reflected in higher incomes) increases the demand for land and housing.
- Predicted high levels of employment growth will lead to an increase in the demand for land and housing.

³¹ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.

³² National Housing Supply Council 2nd State of Supply Report 2010.



2.1.6 Consumer sentiment and private consumption

Key points/issues/risks

- The expectations of future employment and income levels steer decisions regarding housing investment where to live, whether to rent or buy and how much to pay.
- Decisions to purchase housing for occupation or investment are also influenced by interest rates and expectations of capital growth in property prices.
- Residential land sales and dwelling approvals are demand indicators of consumer sentiment over the short-term.
- The strength of the Australian dollar and ongoing reports of Australia benefitting from the commodity boom are factors that can boost long-term confidence in the economy.

Consumer sentiment

There are two reliable indicators of consumer sentiment. For Western Australia, the Curtin Business School-CCI Survey of Consumer Confidence and on a national level the Westpac-Melbourne Institute Consumer Sentiment Index.

The March Quarter 2012 Curtin Business School-CCI Survey of Consumer Confidence shows that 47 per cent of Western Australian households expected the economy to strengthen in the next 12 months; with a 23 per cent expecting the economy to worsen. The significant proportion of households expecting a worsening local economy reflects concerns about the global economy and high living costs. Consumers are spending more on utilities, groceries and transport relative to the previous year.³³

The May 2012 Westpac-Melbourne Institute Consumer Sentiment Index recorded an 8.3 per cent fall from the previous year for all of Australia (Figure 17). Sensitivity to interest rates (with banks not passing on the full RBA cuts) and concerns about the European economy have dampened recent consumer sentiment.³⁴



Figure 17: Westpac-Melbourne Institute Index of consumer sentiment - Australia (to April 2012)

Source: Westpac - Melbourne Institute Survey of Consumer Sentiment, monthly report April 2012.

³³ Curtin Business School - CCIWA Survey of Consumer Confidence March Quarter 2012

³⁴ Westpac Media Release May 2012.



BIS Shrapnel are forecasting Western Australia's economic prospects to be strong over the next five years, driven by the next round of investment in resource projects.³⁵ This increase in economic prospects is likely to lead to improved levels of consumer confidence.

Although the outlook is generally positive, deterioration in overseas economic conditions, turmoil in financial markets, interest rate rise speculation, or unfavourable fiscal policy decisions by the Commonwealth Government all have the potential to dampen consumer sentiment.

Private consumption

Consumer spending remains buoyant in Western Australia with household spending growing at a robust pace in the second half of 2011. Spending on services and discretionary items (including hotels, cafes and restaurants, household furnishings and recreation and culture) led this recovery. The strength in household spending is consistent with Western Australia's



³⁵ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

unemployment rate, higher incomes due to strengthening real wages and a high Australian dollar. It has occurred despite Australia's high household saving ratio, moderating house prices and modest returns from equity markets.³⁶

CCIWA forecasts household consumption will rise by 4.5 per cent in 2012/13 with tight labour market conditions and strong population growth ensuring consumer spending remains firm in the years ahead. The high value of the Australian dollar will also help to boost the purchasing power of domestic consumers.³⁷ WA Treasury forecasts household consumption to grow by 4.5 per cent per annum in both 2012/13 and 2013/14; and 4.25 per cent in both 2014/15 and 2015/16; supported by high household income and strong population growth. Relatively high household debt will continue to act as a constraint on spending.

Retail spending is a sign of consumer confidence. Periods of rising interest rates have a marked impact on discretionary spending, leading retailers to heavily discount items. Consumers are now more sensitive to changes in market conditions and have become increasingly selective.

Low interest rates, growth in the local economy and high labour force participation are likely to increase household consumption and retail spending. Population growth can also be a major driver of retail sales growth.³⁸

Impacts

- Increased wage growth prospects generally increase levels of consumer sentiment.
- Lower consumer sentiment can lead to a decreased demand for land and dwellings.

³⁶ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.

³⁷ CCI Economic Compass Outlook March Quarter 2012; Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.

³⁸ Westpac Outlook for Australian Property Markets 2010 to 2012 - Perth.



2.2 Population and demographic demand drivers

Economic conditions are a key driver of population growth in Western Australia. This is primarily due to the employment prospects created in a strong economy, which attract additional permanent migrants – mainly from overseas. These are most often workers and their families, arriving as part of the the skilled migration program.

Population growth is also a driver of economic growth, as new Western Australians need housing and goods, which stimulate local business and employment. This creates a self-reinforcing cycle of growth that is fundamental to the State's prosperity.

2.2.1 Population growth and components

Key points/issues/risks

- Net overseas migration is the most significant component of Western Australia's population growth and many of these new residents are attracted by highly-paid jobs in the resource sector.
- Economic growth forecasts for Western Australia reflect a renewed strength in the mining industry, with the outlook likely to have a positive flow-on impact that will help drive population growth.
- Both political and economic influences can cause shortterm fluctuations in net overseas migration, which in turn has both short and long-term effects on the demand for land and housing.
- Sizeable deviations from the current migration program remain a risk to population growth forecasts.
- Weaker population growth can be due to slower economic conditions and the consequent reduction in employment prospects (i.e. due to the completion of large resource related construction projects), which has an impact on overseas and interstate migration flows.

The four components of population change are:

- 1. Fertility
- 2. Mortality
- 3. Net overseas migration (in-migration less out-migration)
- 4. Net interstate migration (in-migration less out-migration)

Natural population increase incorporates the first two components and is calculated as births minus deaths.







Figure 18: Components of population change - Western Australia

Source: Australian Bureau of Statistics Catalogue 3101.0 Australian Demographic Statistics Table 2. Population Change, Components - States and Territories (Number) (A2060804T, A2060805V, A2060806W, A2060807X).

Figure 18 shows the components of Western Australia's quarterly population change, from 2000 to September 2011. It shows that net overseas migration forms the major component of population growth in Western Australia.

Estimated resident population figures for the period 30 June 2001 to 30 June 2011 showed the continued primacy of the Perth metropolitan region. The Perth metropolitan region's estimated resident population grew by 24.8 per cent over these ten years from 1,393,002 to 1,738,807, which constitutes approximately 74 per cent of Western Australia's population. In 2010/11, the population of Perth statistical division increased by 2.5 per cent - the fastest growth of any state capital (Brisbane had the next fastest growth during that period, with a 1.7 per cent population increase).³⁹ Perth also generally experiences a higher rate of population growth than regional Western Australia.⁴⁰

Overseas migration

Net overseas migration is the primary driver of population growth in the Perth and Peel metropolitan area. Immigration is a key contributor to growth in the labour force and to economic growth. Net overseas migration has an immediate impact on the demand for housing as migrants require some form of accommodation on arrival, whether as renters or owner occupiers. Migration can fluctuate considerably and is therefore the most uncertain variable affecting new household formation.⁴¹

Since 2005, Perth's population growth has been driven by a strong increase in the net inflow of overseas migration. Perth has attracted an increased share of the national overseas migration due primarily, to greater labour force requirements of Western Australia's large resource projects. This is especially relevant

⁴¹ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

³⁹ Australian Bureau of Statistics Catalogue 3218.0 Regional Population Growth, Australia.

⁴⁰ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.



Year ended June	Natural increase	Overseas migration	Inter/Intra state migration	Total increase
2012	14.6	23.2	0.5	38.3
2013	14.9	29.0	0.0	43.9
2014	15.3	34.9	0.5	50.7
2015	15.8	31.0	0.5	47.3
2016	16.1	28.7	0.5	45.3

Table 5: Annual population growth projections ('000's) - Perth statistical division

Source: BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

given the large proportion of young adults among the immigrant population.⁴² Table 5 illustrates how net overseas migration is forecast to remain the major component of population growth in Perth.

Political and economic factors both greatly affect net overseas migration; which in turn has a major influence on short and long-term demand for housing. Net overseas migration is primarily driven by government policy towards immigration and by labour market and general living conditions in Australia, relative to those in major source countries.⁴³

The diminishing proportion of the working age population (Figure 19) and continued shortages of skilled labour in a number of key industries, particularly the resource sector, indicate that the Commonwealth Government will need to promote higher levels of permanent overseas migration in future years.⁴⁴

Housing demand is also affected by changes in the number of temporary migrants arriving and by changes in the number of Australian residents living overseas.⁴⁵ Department of Immigration and Citizenship figures for 2011/12 (to 31 January 2012) indicate that Western Australia represents the State of intended residence for over 23 per cent of all temporary business entry visa holders (457 visas) issued in Australia, second only to New South Wales. Construction, at 26.2 per cent, and mining, at 22 per cent, were the main industries for 457 visa immigrants.⁴⁶

Natural increase

Western Australia's natural population increase (births minus deaths) averaged of 17,900 persons per year from 2005 to 2011. The birth rate reflects people's confidence in the economy and ability to maintain a family. BIS Shrapnel are forecasting natural increase levels in Western Australia to rise in the five years to 2016, averaging 20,500 persons per annum. An increased population base and higher fertility rate are anticipated to underpin this level of growth.⁴⁷

Interstate migration

Economic conditions and lifestyle choices are the primary drivers of interstate migration patterns. Western Australia has experienced a net inflow of residents from other Australian states since 2003/04, predominantly as a consequence of the mining and resources boom. However, during that period net interstate migration has constituted a relatively small proportion of overall population growth; and therefore underlying demand for new dwellings.

BIS Shrapnel expects net interstate migration to increase to 4,600 persons per annum over the five years to 2015/16 due to strong employment growth, driven by booming investment in the resource sector.⁴⁸

 $^{^{\}rm 42}$ National Housing Supply Council 2nd State of Supply Report.

 $^{^{\}rm 43}$ BIS Shrapnel - Building in Australia 2010-2025.

⁴⁴ BIS Shrapnel - Building in Australia 2010-2025.

⁴⁵ National Housing Supply Council 2nd State of Supply Report.

⁴⁶ Department of Immigration and Citizenship Subclass 457 State/Territory summary report.

⁴⁷ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁴⁸ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.





Impacts

- Strong/sustained population growth is a key driver of increased demand for land and housing; and conversely lower population growth reduces demand for new land and housing.
- The anticipated high levels of population growth, particularly through net overseas migration, will lead to increased demand for land and housing in future years.

2.2.2 Population projections

WA Treasury expects Western Australia's population growth rate to be 2.3 per cent in 2012/13 and 2013/14, and 2.2 per cent for 2014/15 and 2015/16. This is comparable with Deloitte Access Economics forecasts of 2.5 per cent in 2012/13, 2.3 per cent in 2013/14, 2.1 per cent in 2014/15 and two per cent in 2015/16.⁴⁹ BIS Shrapnel have forecast an annual population growth rate of around 2.1 per cent for Perth for the next five years.⁵⁰

The WAPC's Western Australia Tomorrow publication has calculated population projections for Western Australia, planning regions and local government areas (Tables 6, 7 & 8).The forecasts have been developed to provide comprehensive demographic information about the age and sex structure of the future population.

Forecasts are prepared using 10,000 slightly different simulations. The simulations emulate the variability that is shown in past data. The simulations have been broken into bands according to the total population in any given year. There are five bands each with 2,000 simulations. The median value of each band is published to give five forecasts for specific areas. Band A and E contain the lowest and highest forecast simulations respectively. The forecast for Band C is the median value for all the forecasts.⁵¹

⁴⁹ Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012; Deloitte Access Economics Business Outlook, March 2012.

⁵⁰ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁵¹ WAPC - Western Australia Tomorrow, 2012.



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Vear	Projection	Projection Projection		Projection	Projection
Tour	А	В	B C (median)		E
2006	2,064,300	2,065,000	2,065,400	2,065,700	2,066,300
2007	2,108,800	2,112,800	2,115,300	2,117,800	2,121,500
2008	2,158,700	2,166,000	2,171,000	2,176,000	2,183,300
2009	2,219,100	2,231,000	2,239,200	2,247,300	2,259,600
2010	2,276,400	2,293,200	2,304,700	2,316,200	2,333,100
2011	2,329,000	2,350,600	2,365,300	2,380,300	2,402,500
2012	2,377,700	2,403,300	2,421,200	2,439,500	2,467,200
2013	2,423,100	2,452,800	2,473,300	2,495,100	2,526,200
2014	2,464,800	2,498,900	2,521,600	2,546,400	2,581,800
2015	2,504,900	2,542,400	2,568,100	2,595,500	2,634,600
2016	2,543,200	2,584,400	2,612,300	2,642,400	2,685,500
2017	2,581,400	2,625,700	2,655,800	2,688,100	2,735,400
2018	2,618,800	2,667,000	2,699,700	2,734,600	2,785,700
2019	2,657,100	2,708,700	2,744,100	2,780,100	2,836,300
2020	2,696,600	2,750,300	2,788,400	2,827,800	2,887,500
2021	2,734,700	2,793,000	2,834,000	2,874,400	2,938,100
2022	2,773,900	2,835,400	2,879,500	2,922,800	2,990,300
2023	2,812,500	2,878,700	2,924,600	2,971,000	3,043,400
2024	2,852,800	2,921,100	2,970,500	3,019,400	3,095,900
2025	2,890,500	2,963,700	3,015,400	3,067,600	3,147,300
2026	2,931,400	3,006,800	3,060,500	3,116,100	3,201,000

Table 6: Population projections - Western Australia

Source: WAPC, Western Australia Tomorrow, 2012.



Perth and Peel Development Program Development Outlook 2011/12

Vear	Projection	Projection	Projection	Projection	Projection
Tour	А	В	C (median)	D	E
2006	1,521,900	1,522,300	1,522,500	1,522,700	1,523,000
2007	1,555,200	1,558,400	1,560,500	1,562,700	1,565,700
2008	1,592,700	1,599,100	1,603,200	1,607,500	1,613,500
2009	1,638,800	1,649,100	1,655,800	1,662,900	1,673,000
2010	1,682,200	1,696,700	1,706,100	1,716,100	1,729,900
2011	1,722,600	1,740,400	1,752,500	1,765,300	1,783,600
2012	1,759,600	1,780,300	1,795,100	1,810,200	1,832,700
2013	1,793,800	1,817,800	1,834,700	1,852,000	1,878,000
2014	1,825,400	1,852,600	1,871,500	1,891,100	1,919,700
2015	1,855,700	1,885,800	1,906,400	1,928,000	1,959,800
2016	1,885,200	1,917,200	1,939,500	1,962,900	1,997,600
2017	1,913,500	1,948,000	1,971,900	1,997,100	2,034,700
2018	1,941,500	1,979,200	2,004,700	2,032,800	2,073,200
2019	1,970,100	2,010,800	2,037,900	2,067,800	2,111,000
2020	1,998,800	2,041,800	2,071,700	2,103,300	2,148,900
2021	2,028,600	2,073,900	2,105,700	2,138,400	2,187,100
2022	2,058,100	2,106,200	2,139,700	2,174,100	2,225,900
2023	2,088,300	2,138,500	2,174,200	2,210,200	2,265,900
2024	2,118,400	2,171,400	2,208,800	2,246,800	2,305,500
2025	2,148,200	2,202,800	2,242,400	2,283,200	2,345,300
2026	2,177,400	2,235,200	2,276,900	2,320,400	2,384,100

Table 7: Population projections - Perth metropolitan region

Source: WAPC, Western Australia Tomorrow, 2012.



Vear	Projection	Projection	Projection Projection		Projection
Tour	А	В	C (median)	D	E
2006	71,800	71,900	71,900	71,900	72,000
2007	73,800	75,700	76,200	76,700	77,600
2008	75,600	79,400	80,500	81,600	83,200
2009	76,900	83,200	85,000	86,600	89,200
2010	78,600	87,000	89,300	91,800	95,100
2011	80,800	90,900	93,800	96,600	100,600
2012	83,500	95,000	98,200	101,400	106,000
2013	86,700	99,100	102,500	106,100	111,100
2014	90,400	103,300	107,000	110,700	115,900
2015	94,200	107,600	111,400	115,300	120,800
2016	98,400	111,900	115,800	119,900	125,500
2017	102,600	116,200	120,300	124,400	130,100
2018	106,400	120,600	124,700	128,900	134,900
2019	110,600	124,900	129,200	133,400	139,500
2020	114,600	129,200	133,500	137,900	144,200
2021	118,600	133,500	137,900	142,400	148,900
2022	122,500	137,700	142,300	147,000	153,500
2023	126,600	142,100	146,700	151,500	158,300
2024	130,500	146,300	151,100	156,000	162,900
2025	134,600	150,500	155,400	160,500	167,600
2026	138,600	154,600	159,800	164,900	172,200

Table 8: Population projections - Peel sub-region

Source: WAPC, Western Australia Tomorrow, 2012.

Note: Figures refer to the sum of the population projections for the Mandurah and Murray local government authorities.





2.2.3 Demographic trends

Key points/issues/risks

- The rate of new household formation (including changes in persons per dwelling) is a major determinant of the demand for dwellings over the longer term.
- The number and type of households influence household formation.
- Demand for additional housing can be driven by the household formation rate. This includes young homebuyers entering the market for the first time and also people from overseas or interstate.



Figure 19: Projections of age proportions - Perth metropolitan region (2006-2026)

Source: Western Australian Planning Commission - Western Australia Tomorrow, 2012 (Projection Band C).

Figure 19 illustrates the projected changes to Western Australia's age structure between 2006 and 2026. As at 2011, the estimated proportion of residents aged 15 to 64 (traditionally those considered of working age) was 68.4 per cent. By 2026, this age group is forecast to constitute just 63.9 per cent of the population. The proportion of residents aged 65 and over was estimated to be 12.6 per cent in 2011 and is forecast to reach 17.7 per cent in 2026.⁵²

Household formation

The rate of household formation is defined by the growth in the number of households. It can vary for a variety of reasons, including migration, marriage, separation and persons leaving the family home. Household formation determines nearly 80 per cent of the underlying demand for new dwellings and is affected by three factors:

- 1. Population growth;
- 2. Changing age structure; and
- 3. Headship ratio (or age-specific household person ratios).53

Although population growth is the main driver of household formation, other demographic and economic trends also have a large influence on the rate of household formation.⁵⁴

Household formation in the 20-34 age range is expected to be low as more persons in this age range remain in the family home or live in share households due to declining affordability in the residential property market. Traditionally this age bracket has typified household formation. Although the difficulties involved in entering the property market for young people have been mitigated to some extent by the First Home Owners Grant (FHOG), high prices still discourage many, thus reducing demand.

The propensity to form separate households within given age groups is a key factor in the rate of household formation and is strongly influenced by economic and sociological factors. In the younger age groups, the propensity to form separate households is influenced by the incidence of tertiary education (discourages

⁵² WAPC, Western Australia Tomorrow, 2012.

⁵³ BIS Shrapnel Residential Property Prospects 2011-2014.

⁵⁴ BIS Shrapnel - Building in Australia 2010-2025.



household formation) and the social acceptability of staying at home with parents longer. Economic factors also shape the rate of household formation and are largely determined by the cost of borrowing and house prices.⁵⁵

Headship ratios

The headship ratio is the proportion of the population, in any given age group that represents the head of a household. Changes to headship ratios within an age group occur due to sociological as well as economic factors. Sociological factors include people marrying later, increasing divorce rates and personal preferences. Economic factors can include decreasing affordability, which may result in a greater propensity for young adults to remain in the family home or to form group households.⁵⁶

Between the 1986 and 2006 Censuses the headship ratio of the population aged between 20 and 34 – the first home buyer age group – has trended downwards. The main reason for this is that people within this age group have been staying at home for longer, rather than moving out to form separate households. This trend is expected to continue in the future due to the decline in housing affordability over the last few years.⁵⁷

In the upgrader (35–49 years) and the empty nester (50–64 years) age groups headship rations have increased. This is a consequence of a lower proportion of people getting married or co-habiting and a greater number of marriages breaking down, creating more single person households.⁵⁸

Impacts

- As the demographic profile changes over time and the share of age groups characterised by higher rates of household formation increase, a corresponding increase in demand for land and housing will occur.
- This increase in demand is likely to be moderated in the 20-34 age range group; however, as the lack of affordable property will limit the demand for land and housing in this age bracket.



 $^{^{\}rm 55}$ BIS Shrapnel - Building in Australia 2010-2025.

⁵⁶ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁵⁷ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁵⁸ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.



2.2.4 Journey to work and place of work

Key points/issues/risks

• Journey to work patterns are fundamental to both land use and transport decisions.

Proximity to place of employment, particularly Perth's central business district, is a key driver of demand for land and dwellings. The relationship between where people live and where they work is shown in Table 9. The table illustrates the Perth metropolitan and Peel region's dependence on the Central subregion for employment. Approximately two thirds of 'fixed place' employment positions are located in the Central sub-region. The importance of the Central sub-region as an employment hub is further evidenced by comparing rates of employment self-sufficiency. Employment self-sufficiency is a measure of the proportion of the resident workforce who could potentially find employment within their local area. It is expressed as a percentage of the number of jobs in a sub-region relative to the resident workforce of that sub-region.

The highest employment self-sufficiency rate of any sub-region was the Central sub-region with a rate of 135 per cent (135 jobs for every hundred resident workers). The inner sector of the Central sub-region has a significantly higher employment self-sufficiency rate of approximately 226 per cent (226 jobs for every hundred resident workers) and in the City of Perth the concentration of employment is higher still. At the 2006 Census

Table 9. Journey to work batterns	Table	9:	Journev	to	work	patterns
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				Destination								
			Central s	ub-region							Total	Workers
	Sub-region/sector		Inner sector	Middle sector	North- west sub- region	North- east sub- region	South- east sub- region	South- west sub- region	Peel sub- region	Other	workers residing in sub- region/ sector	area residing in sub- region/ sector %
	Central sub-	Inner sector	79,794	20,473	1,829	2,577	1,397	3,435	200	7,190	116,895	15.2
	region	Middle sector	89,294	94,842	7,607	11,712	4,871	6,808	335	16,906	232,375	30.3
	North-west sul	b-region	35,981	30,123	48,815	8,099	599	1,138	88	14,008	138,851	18.1
gin	North-east sub	o-region	18,171	23,835	2,739	33,970	2,223	925	69	8,366	90,298	11.8
0ri	South-east sub	o-region	15,707	22,493	346	3,226	23,557	3,757	399	7,120	76,605	10.0
	South-west su	b-region	19,121	13,688	261	966	2,087	38,670	2,763	8,249	85,805	11.2
	Peel sub-regio	n	1,290	944	63	148	307	2,435	17,339	4,499	27,025	3.5
	Other		4,553	2,119	585	1,271	171	384	359			
	Total jobs in s sector	sub-region/	263,911	208,517	62,245	61,969	35,212	57,552	21,552	66,338		
	Percentage or area in sub-re	f jobs in metro egion	37.2	29.4	8.7	8.8	5.0	8.1	3.0			
	Employment sufficiency %	self-	225.8	89.7	44.8	68.6	46.0	67.1	79.7			
	Employment s	self- %	68.3	40.8	35.2	37.6	30.8	45.1	64.2			

Source: Department of Planning analysis based on Australian Bureau of Statistics, Census of Population and Housing 2006.

Note: The 'other' category for destination columns refers to places of employment outside the metropolitan area (for example fly in fly out workers) and positions that are not in a fixed location and can therefore not be attributed to a specific sub-region. The 'other' category for origin rows shows the number of people who travel from outside the Perth and Peel metropolitan area to each sub-region/sector for employment.

Data is estmated resident population adjusted.





Map 1: Commuter patterns by sub-region





approximately 121,500 fixed place jobs were located in the City of Perth, which had an employment self-sufficiency rate of 2,188 per cent (2,188 jobs for every hundred resident workers).

The two sub-regions with particularly low rates of employment self-sufficiency were the North-west and South-east sub-regions, with employment rates of 45 and 46 per cent respectively. Most workers from these sub-regions commute to the Central sub-region for employment.

One of the key objectives of *Directions 2031 and Beyond* is to improve the relationship between where people live and where they work, to reduce commuting time and cost, and the associated impact on transport systems and the environment.

Employment self-containment is a measure used to gauge this relationship and is represented as the proportion of a resident labour force that is employed in the local area. Unsurprisingly, the Central sub-region has the highest employment self-containment rate at 81 per cent, which is significantly higher than any of the outer sub-regions. It is also noteworthy that over one third of Central sub-region workers who are not employed in the sub-region have a place of employment that falls into the 'other' category. Consequently only approximately 12 per cent of employees residing in the Central sub-region travel to 'fixed place' employment in the outer sub-regions. Areas that do attract workers from the Central subregion tend to contain major industrial areas, such as the City of Swan and the City of Cockburn. The South-east sub-region has the lowest rate of employment self-containment with only 31 per cent of resident workers employed within the sub-region.

Peel, the farthest sub-region from central Perth, has the most independent employment structure of the outer sub-regions with significantly higher rates of employment self-sufficiency and self-containment.

Impacts

- Increasing employment self-sufficiency will be a significant challenge in most outer sub-regions (with the exception of Peel which has reasonably high employment self-sufficiency already).
- Provision of employment generating land, including industrial, commercial and public purpose activity centres need to be Government priorities in outer sub-regions to better distribute employment.



2.3 Residential demand assessment

2.3.1 Residential land and dwelling demand factors

Key points/issues/risks

- Uncertainties with interest rates and falls in consumer sentiment can result in slowdowns in the growth of housing finance commitments.
- Vacant residential lots have negligible economic value. It is not until dwellings are built on those lots that they gain an economic utility and can fulfil the basic human need for shelter. A vacant residential lot is therefore only an option to build a house in the future. Real demand is for housing, not residential land, which is merely a means (production input) to achieving the end.
- Demand for land and housing in Western Australia has been distorted by the volatile level of net overseas migration, high incomes in particular industry sectors and policy changes.
- Commonwealth migration policy favours migrants with reasonable financial assets or skilled workers who have a capacity to earn high incomes as their occupations are in high demand.
- The winding back of the FHOG boost has resulted in a reduction in demand for housing and land from first home buyers.
- Government housing policies such as the provision of public housing, subsidies for homebuyers, concessions for first home buyers and the tax treatment of negative gearing have a significant impact on demand for dwellings.
- Demand for housing is expected to increase in the Perth and Peel metropolitan area as the Western Australian economy expands.

Demand for residential land and housing is driven by the fundamentals of economic prosperity, productivity, population growth, demographic factors (particularly age), employment, income (particularly wages), household formation and family composition.

To forge an optimal understanding of future housing demand, an integrated analysis of all of the above factors is necessary. Table 10 highlights some of the leading demand indicators. Table 11 shows some of the 'lagging' indicators which are also used when assessing demand trends.





Table 10: Leading demand factors and indicators (summary)

Timeframe	Land focus	Leading demand factors	Information sources
20+ years ahead of demand	Rural land and land under investigation for rezoning	 Very long-term population and household forecasts/scenarios Long-term strategies (i.e. intergenerational forecasts) Global economic trends and regional growth outlooks 	 Government policy discussion papers (i.e. migration, ageing) ABS forecasts Global economic forecasts (e.g. World Bank)
10-20 years ahead of demand	Vacant urban and urban deferred zoned land. Vacant industrial and city centre zoned land	 Economic growth cycles Population growth forecasts and estimated dwelling occupancy rates as a basis for household formation and housing demand calculations Level of public and private employment Price of raw land and perceived future development profit (developers and speculators) Long-term infrastructure plans indicating future growth areas. Taxation regime for land development classes 	 National economic forecasts ABS forecasts WAPC (population and employment projections) Purchases of englobo land parcels by known developers
5-10 years ahead of demand	Structure planning over appropriately zoned land (all land uses)	 Economic growth cycles Population growth forecasts and estimated dwelling occupancy rates as a basis for household formation and housing demand calculations Level of public and private employment 	 State economic forecasts ABS trend data WAPC (population and employment projections) Developer intentions and announced projects
2-5 years ahead of demand	Subdivision and development approvals	 Property cycles Demand trend prediction based on factors such as recent sales, nearby developments and new/committed infrastructure Population growth trends Government policy supporting growth 	 Economic and property forecasts WAPC subdivision approvals Developer intentions and development applications/approvals. ABS trends Commonwealth and State infrastructure commitments
0-2 years ahead of demand	Subdivision and development works in progress	 Bank requirements for presales (lots or dwellings) Customer demand segments Interest rate outlooks Consumer and market sentiment (homeowners, investment) Taxation regime (particularly land tax) Lots being developed Property listings, rental vacancy Sales trends 	 Economic and property forecasts Business and consumer sentiment Industry outlooks (incl. REIWA, UDIA, HIA) ABS data on current trends Government policy and commitments



Table 11: Lagging demand factors and indicators (summary)

Timeframe	Land focus	Lagging demand factors	Information sources
0-3 months after demand	Dwelling construction	 Actual lot and housing sales (volume and prices) Approvals for new dwellings Housing finance commitments Employment and wage growth trends First home owner grant statistics Rental vacancy rates and trends 	ABS, property industry, housing industry
3-18 months after demand	Dwelling construction, basic community facilities.	 Migration trends (overseas and interstate) Actual economic growth Consumer Price Index Income (individual and household) 	ABS

For further sub-regional demand issues relating to the six subregions of Perth and Peel, please refer to the *Perth and Peel Development Outlook Sub-regional Profiles* available from the WAPC website at www.planning.wa.gov.au.

Consumer preferences

Changing consumer preferences can lead to an increase or decrease in demand for land and housing. A common example of this type of shift in the housing market occurs during periods of strong economic growth, when increasing household incomes prompt a rise in demand for higher end locations or housing.

Other changes in consumer preference may involve an increase or decrease in demand as different areas or housing types become fashionable. An example of this is the heightened demand for inner city living as the number of small bars and restaurants in central Perth increase.

Investor demand

Expectations of future capital gains are a key factor that affects a buyer's willingness to pay for housing. Forecast periods of high median price growth lead to an increase in speculative investors purchasing land or housing. The return on alternative investments is another factor affecting the demand for land and housing. Higher returns on alternative investments such as equity or currency markets lower the demand for property as speculative investors pursue higher profits elsewhere.

Similarly, the perceived risk involved in property investment, relative to other markets, can also influence demand for land and housing.

Housing finance and approvals

Close to full employment and expectations of continuing income growth bolster the confidence of banks, when approving finance for housing and the confidence of households in committing to mortgages. This mutual confidence underpins demand for land and housing in the Perth and Peel metropolitan area.⁵⁹

The absence of quantitative controls on bank lending combined with a period of low interest rates, encouraged borrowing in the early 2000s. Figures 20 and 21 illustrate the rapid rise in the number of housing commitments; and value of housing finance commitments by owner-occupiers in Western Australia from 2000 until late 2006. Since then the trend has been erratic – falling sharply after the onset of the GFC, then fluctuating with

⁵⁹ Australian Local Government Association - State of the Regions Report 2010/11.





Figure 20: Number of housing loans for owner-occupied dwellings - Western Australia (trend)

Source: Australian Bureau of Statistics Catalogue 5609.0 Housing Finance, Australia, Table 5. Housing Finance Commitments (Owner Occupation), by State, number of commitments, trend (A2412654T).



Figure 21: Value of housing finance commitments - Western Australia (trend)

Source: Australian Bureau of Statistics, Housing Finance, Australia, catalogue 5609.0, Table 7. Housing finance commitments (owner occupation), by State/territory :(A2412655V).



global economic trends. The rising trend since June 2010 is indicative of increasing consumer confidence, although finance commitments have only recovered to levels similar to 2003/04, not the very high numbers experienced during the housing boom.

Figures 20 and 21 also illustrate the greater difficulty, faced by borrowers, in obtaining finance since the collapse of securitisation markets in the middle of 2007. Banks' appetite for risk in the property market in general remains much lower than before the GFC. Reduced availability of finance and difficulties in securing finance has therefore dampened demand for land and housing.

As securitisation markets recover, it is likely that more non-bank lenders will become alternative sources of housing credit. This can lead to increased competition between lenders, prompting cuts to fees and lending rates, which can lead to increased demand for land and housing.

There have recently been some indications that financial institutions are softening their lending requirements to attract customers; including the major banks introducing low cost home loans, through their online mortgage businesses.

Other signs of increased competition in the residential mortgage market in the past year include larger discounts being offered on housing loans, lower fees and increases in maximum allowable LVR from 90 to 95 per cent. There has been an increase in mortgage refinancing activity in recent months as borrowers have sought better deals. Exit fees have also been removed or reduced and a greater volume of fixed-rate loans have matured than is typical.

Despite these positive signs, lending standards remain tighter than before 2009. The share of low documentation lending has continued to fall in recent years, partly in response to the recent introduction of more stringent, responsible lending guidelines, that require lenders to verify a borrower's capacity to repay. Lenders also have more conservative debt serviceability requirements than they did pre GFC, including the use of higher interest rate buffers in their assessments of repayment capacity.⁶⁰

Dwelling investment and residential building approvals

Residential building approvals can be an indicator of consumer confidence. Dwelling approvals indicate either real demand for housing, by people wanting to own and occupy their own home; or investor confidence from people intending to build, and then sell the new dwelling(s) or to rent them out. As dwelling approval data is available for local government areas, it is a useful measure of owner-occupier demand and investor confidence across different areas. It should also be noted that the geographic change in approvals may be indicative of the location of land releases, rather than changes in market conditions.

A building approval means that a development has progressed significantly in planning terms, however it is still not guaranteed that construction will go ahead. Other factors such as access to development finance may mean some of these projects do not proceed to building commencement

The two principal components of dwelling investment are new residential construction; and alterations and additions. Most forecasts predict increasing dwelling investment in the short/ medium-term, as underlying demand increases and population growth remains high. CCIWA are forecasting growth of 10.25 per cent in 2012/13 and WA Treasury are forecasting growth of 7.5 per cent in 2012/13, 4.5 per cent in 2013/14 and 4.25 per cent in 2014/15 and 2015/16.⁶¹

Continued growth in population and incomes will increase underlying demand for dwellings and should result in increased activity if improved confidence in the economy can be sustained.⁶²

⁶⁰ RBA Financial Stability Review, September 2011.

⁶¹ CCI Economic Compass Outlook March Quarter 2012 and Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.

⁶² Western Australia Treasury Budget Papers 2012/13, Economic and Fiscal Outlook, Budget Paper No. 3, 17 May 2012.





Figure 22: Number of dwelling units approved - Western Australia (trend)

Source: Australian Bureau of Statistics Catalogue 8731.0 Building Approvals, Australia Table 05. Number of Dwelling Units; Western Australia; Total building; Total (Sector of ownership) (A422574L).



Figure 22 shows that during the peak of the housing boom in 2006, residential building approvals reached particularly high levels before falling in 2008. The recovery in building approvals during 2009 was clearly attributable to the increase in demand triggered by the boost in the First Home Owner Grant (FHOG) – particularly for new homes.⁶³ The winding back of the FHOG boost (discussed in more detail in section 2.4.3) has contributed significantly to the decline in residential building approvals since the start of 2010.

Impacts

- Improved access to housing credit increases demand for land and housing.
- A positive economic outlook increases the confidence of lenders and prospective home buyers, increasing demand, particularly for investment and higher end properties.

⁶³ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia October 2010.



2.3.2 Underlying demand for dwellings

Key points/issues/risks

- Underlying demand for housing is generally modelled on assumptions about the number of persons per household, population and household growth projections. Model outputs tend to be very sensitive to small variations in their assumptions and data inputs.
- Matching underlying demand with estimates of housing stocks provides an estimate of the under or over-supply of housing.
- This report presents analysis that is contrary to the view purported by the National Housing Supply Council (NHSC) regarding the underlying demand-supply balance. This analysis concludes that there was no shortage of housing in Perth in the last decade in fact there was a substantial surplus of housing between 2003 and 2008 due to building activity being much higher than justified by population growth alone.
- The difference between the NHSC and UDP dwelling demand projection models is primarily due to the NHSC model (as published in 2010) being based on 2001 Census data for household sizes and then ABS projected data for 2002 onwards. In contrast the UDP model uses both 2001 and 2006 Census data for household sizes, and then ABS projected data for 2007 onwards.

The demand for additional dwellings has five components:

- 1. Household formation which includes the:
 - propensity of segments of the population to form new separate households requiring additional dwellings (i.e. the typical young first-home buyers); and
 - relocation of existing households into the study area as a result of positive net migration from other locations in Australia or overseas;
- Demolitions and conversions that cause the removal of dwellings from the dwelling stock, which creates a requirement for them to be replaced to maintain the stock levels;

- 3. Changes in the occupancy rates affected by changes in family and household sizes, which are related to fertility rates and an ageing demographic;
- The propensity for households to hold more than one dwelling including holiday homes and second dwellings; and
- 5. The need for a buffer stock of unoccupied dwellings (i.e. vacant and available for rent and sale etc.), and the increase/decrease in the stock of these dwellings.

Most estimates of the underlying demand for housing are based on demographic projections, which consider migration and other factors affecting population growth. At their simplest level, these demand models divide the estimated total resident population at any point in time by the estimated average household size for a particular area, to determine the number of occupied dwellings required. Future demand is calculated with the same formula using the projected future population and household size.

Underlying housing demand models based on population change and household size have a number of shortcomings, including a simplification of the way they deal with real household formation versus changing household size. Most of Western Australia's population growth is due to net overseas migration and natural population increase, but the following points show that these factors are not sufficiently accounted for in the existing underlying housing models:

• Natural population growth does not generally create a need for additional dwellings. For instance, births increase household size and may trigger the relocation of a household, but most births do not create the need for a new household. Deaths reduce household size and some deaths also release an existing dwelling (i.e. decrease the household size to zero). Therefore as long as there is a positive natural population growth, there is an increasing household size, but not a need for additional dwellings. During the last decade there was a notable increase in fertility which reflected a change from the long-term trend. This change contributed to an increase in the State's population growth rate, but did not increase the need for dwellings;

Development Program

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- Not all migration creates the need for additional dwellings. Recently in Western Australia, the reunification of spouses and fiancés has made up around 12.5 per cent of all overseas migration. Some of this migration may trigger the formation of a new household, but much of it will increase the size of an existing household; and
- Average household sizes of new skilled migrants from overseas are assumed to be the same as the existing population. Australia's skilled migration program includes visas that are issued to the skilled applicant (about 45 per cent) and visas issued to the dependents of the skilled applicant (about 55 per cent). This implies a total household size for new skilled applicants of 2.22 persons (ignoring the situation where both persons in a couple may each qualify as a skilled applicant).

To avoid all these complications, models such as that used by the NHSC, simply wrap all these factors into an assumption about the future size of households. While these assumptions may be reasonable for other Australian states, which have smaller overall population growth rates and more predictable and stable population growth (i.e. from interstate migration and natural population increase), they are not as accurate in predicting Western Australia's housing demand.

While the NHSC model is comprehensive, it is very sensitive to assumptions made regarding 'optimal' household size. At the core of those assumptions is whether people living within a household would leave and form a new household, if the cost of that choice (i.e. the price of housing) was not a constraint. Accordingly, the model extrapolates the long-term trend of decreasing household size and assumes that households will continue to decline in size.

A lack of available and affordable housing is one barrier to household formation. Declining affordability resulting from rising interest rates and/or rising house prices will slow the rate of new household formation. Rising rents in the private rental market will have the same effect, encouraging young people to remain in the family home. The NHSC also predicts that decreasing household sizes will result in underlying demand for smaller dwellings increasing by a greater proportion than demand for separate houses. The increase in the number of people per household between the 2001 and 2006 Censuses may mean that economic considerations were the reason behind decision of many people not to form new households.⁶⁴ This assumption is the reason for the NHSC's decision not to use the household size as determined by the 2006 Census and to instead substitute its own lower estimate of household size based on the long-term trend. An alternative explanation for the 2001 to 2006 increase in household size however, may by an increase in fertility and changes in the household size of new migrants to Western Australia.

Another problem with the underlying demand modelling from the NHSC *State of Supply* report is that it has estimated significant undersupplies of housing at a time when there were high rental vacancy rates and a higher than average listings of properties available for sale. The NHSC reconciles this difference by contrasting underlying demand (which is effectively demographically driven) with the effective demand for housing (what actually happens in the property market). Effective demand is driven by economic as well as demographic factors, being affected by market forces such as incomes, prices, state of the economy, government policy settings and the existing supply of dwellings. Given the differences between the two sets of demand indicators, underlying demand does not necessarily feed through to effective (actual) demand.

2.3.3 Dwelling and population growth modelling for the Perth metropolitan region

The discussion of underlying demand in this report covers some of the complexities of household formation and the influence of affordability on the formation of new households (the classic firsthome buyer).

A simple way of looking at the same issue is to assess whether enough new dwellings are being added to the total housing stock, given the prevailing household size and the total population growth. Using the observed household size avoids all the difficulties associated with trying to estimate a theoretical 'ideal' household size assuming that housing affordability is not a barrier to new household formation. The section of this report covering the influence on household prices in Perth highlights the range of factors other than population growth that can influence housing prices.

⁶⁴ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia October 2011.



The following analysis is limited to the housing market within the Perth metropolitan region, which reduces the complexity of the analysis and limits error due to the number of households in Perth that may own a holiday house in the Mandurah or Murray local government areas.

Data from the Australian Census of Population and Housing show that the observed household size in Perth over the last decade has been fairly stable at marginally over 2.6 persons per dwelling. This follows an Australia-wide 100-year trend of declining household sizes.

Therefore for every additional 2.6 people in the population, one net additional dwelling needs to be constructed and made available for occupation. This figure allows for the demolition of older dwellings and also new dwellings that will remain vacant (or occupied by non-residents who, by definition are not counted in the population growth figures). This analysis uses an estimated demolition rate of 12.5 per cent (based on Department of Planning research on local government demolition data), a vacant dwelling rate of 5.3 per cent (same as that used by the NHSC based on Census data) and includes vacant houses available for sale or rent.

There is another category that can be considered second dwellings or holiday houses, which represent households that own more than one dwelling where the second dwelling remains unoccupied (i.e. is not available for long-term rental). For Western Australia, this represents approximately 2.5 per cent of dwellings, however this factor has been excluded from this model on the basis that most of these second dwellings (holiday houses) are likely to be outside the Perth metropolitan region (which excludes Mandurah and Murray).

Therefore, using these figures, for every 2.6 additional people in the population (the average household size in Perth), a total of 1.21 dwellings need to be constructed to allow for demolitions and vacant dwellings.

The Australian Bureau of Statistics (ABS) collects data quarterly on dwelling construction (commencement and completion) and also the stock of dwellings under construction. The dwelling completions statistic for the Perth metropolitan region has been used as the basis on the actual additional dwellings that are being added to the stock, which has then been adjusted down to allow for demolitions and vacant/second dwellings. This is essentially the same methodology as used by the NHSC for its underlying demand modelling. The key difference being that this modelling uses actual observed household sizes whereas the NHSC model uses an assumed 'ideal' household size based on long-term trends.







Figure 23: Housing surplus/shortage and over-building/under-building - Perth metropolitan region

Source: Department of Planning - based on data from the Australian Bureau of Statistics (unpublished).

The output of the dwelling and population growth model is shown in Figure 23, which indicates:

- Dwelling over/under-building (blue line in Figure 23) whether sufficient additional dwellings are being added to the overall dwelling stock to house the additional population. If more dwellings are being built than are needed to house the additional population, then there is an over-building of new dwellings; if fewer dwellings are being built than needed to house the population growth, then there is under-building. Figure 23 indicates an over-building of dwellings for the first half of the last decade relative to population growth through to mid-2006; followed by an under-building from 2006 through to June 2011. The notable dip in this statistic during calendar 2008 and 2009 was due to the large intake of people from overseas migration at that time (refer to the population growth discussion in this report); and
- Dwelling surplus or shortage (green area in Figure 23) the cumulative number of completed dwellings that represent a surplus, equilibrium or shortage of the dwellings needed to house the population (for a given household size). Based on expert advice from the property industry, Perth was in dwelling equilibrium around 2000. On this basis the cumulative effect of the overbuilding up to June 2006 meant that a dwelling surplus built up over time peaking at over 12,000 dwellings during 2005/06. The under-building since mid-2006 has meant that this stock was gradually depleted, reaching equilibrium by early 2009 and then a dwelling shortage of about 4,000 dwellings by June 2011.





Figure 24: Population growth and dwelling over-building and under-building - Perth metropolitan region

Source: Department of Planning - based on data from the Australian Bureau of Statistics (unpublished).

This analysis challenges a view that rising housing prices in the mid-2000s was caused by a shortage of housing as a result of a perceived demand–supply imbalance. Instead, Figure 23 shows that there was a substantial oversupply of housing through most of the decade until the end of 2008 when a massive post-GFC population boom helped to absorb the surplus housing stock (Figure 24).

The conclusion from the analysis shown in Figure 23 is that as at June 2011, the Perth metropolitan region had a housing shortage of around 4,000 dwellings and that this shortage was getting worse by around 550 dwellings per quarter (the under-building trend line).







Source: Australian Bureau of Statistics (unpublished).

Dwellings under construction

The stock of dwellings under construction is the number of houses and other residential dwellings under construction - as measured by the ABS at the end of each quarter - for the Perth metropolitan region. This stock provides a buffer against shortfalls in dwelling availability in the short-term as the population increases.

The stock of dwellings under construction in Perth increased from 5,200 dwellings in June 2001 to 16,800 dwellings by December 2006. By June 2011, the stock of dwellings under construction had decreased to 10,600 (Figure 25).

Underlying demand forecasts

Net overseas migration and net interstate migration into Western Australia are quite variable as underlying demand for new dwellings changes with economic conditions. BIS Shrapnel states that household formation (primarily due to net overseas and interstate migration), determines nearly 80 per cent of the underlying demand for new dwellings.⁶⁵

The HIFG estimate of underlying dwelling requirement in Western Australia (if based solely on demographic factors) is about 27,000 dwellings per annum, if household sizes were to continue decreasing as per long-term trends prior to 2001. If the number of people per household continued to increase at the same rate as experienced between 2001 and 2006, the underlying demand for new housing would be reduced from 27,000 to just over 20,000 new dwellings per annum.⁶⁶ This demonstrates just how sensitive the underlying demand models are to projected household sizes.

⁶⁵ BIS Shrapnel Residential Property Prospects 2011-2014.

⁶⁶ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia October 2011.



The HIFG's estimate is based on population growth of around 2.2 per cent per annum and a ratio of 2.6 persons per household. The unoccupied dwelling factor (5.3 per cent) and demolitions rate (14.41 per cent) were adopted based on figures calculated by the NHSC from inter-censal stock figures between 2001 and 2006.⁶⁷

The Housing Industry Association (HIA) estimates Western Australia's underlying demand for housing to be around 27,000 additional dwellings in 2011/12 and 27,300 dwellings in 2012/13.⁶⁸

BIS Shrapnel estimate an underlying demand, in the Perth metropolitan area, of approximately 20,000 new dwellings per year.⁶⁹ For Western Australia, they estimate an annual average underlying demand of 27,600 per annum over the period from 2011/12 to 2015/16.⁷⁰

Impacts

- Underlying demand models are very sensitive to the number of persons per household (and consequently persons per dwelling).
- Household formation rates and the composition of population growth are critical to measuring Western Australia's underlying housing demand and yet are not adequately accounted for in the existing models.

2.3.4 House price drivers

The five main drivers of house prices in Perth and Peel are:

- 1. Commodity prices
- 2. Population growth (considered the only real demand driver)
- 3. Employment growth
- 4. Income growth
- 5. Interest rates

This combination of drivers shapes the capacity of potential buyers to purchase housing for occupation or investment. The roots of each of these drivers lie in the economic conditions that shape household confidence in future incomes and expectations of growth.

With all economic statistics it is important to identify causal statistics (what is causing what), rather than just coincident statistics (two statistics that move together because they are being caused by a third).

Commodity prices

International commodity prices for base metals provide a key indicator of the direction of future house price movements in Perth. There are two key links between these factors. The first is that base metal prices directly influence resource company decisions to invest in mining projects and their associated infrastructure. This creates additional employment (generally highly-paid) which flows through to individual's decisions to purchase and trade-up their housing. The second is that economic commentators in the media, reporting on increasing commodity prices, have a positive influence on consumer confidence.

⁶⁷ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia October 2011.

⁶⁸ HIA State Outlook Summer Edition 2011.

⁶⁹ BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁷⁰ BIS Shrapnel - Building in Australia 2011-2026.





Figure 26: Commodity prices and Perth house prices

Strong growth in base metals commodity prices from mid-2003 to 2007 correlated with a period when house prices nearly doubled between 2004 and 2007 (Figure 26).

Considerable 'corrections' in commodity prices since the GFC have been reflected in Perth's house prices, however, house prices do not generally fall rapidly unless there is some shock that causes significant unemployment. This is because households will tend to hold properties rather than sell them at a loss. As the employment shocks caused by the GFC were relatively minor in Perth, few households were forced to sell their properties. This helped mitigate the reduction in median house prices and contributed to an increase in the number of properties on the market, as potential sellers held out for better sales prices.

Source: Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities*, catalogue number 6416.0, tables 7 and 8, (series ID A2333560W); and Reserve Bank of Australia, index of commodity prices, Statistical Tables, G5.





Figure 27: Population growth (Western Australia) and median Perth house prices

Source: Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W) and Australian Bureau of Statistics Catalogue 3101.0 Australian Demographic Statistics Table 2. Population Change, Components - States and Territories (number).

Population growth

Population growth in Western Australia is linked to economic conditions, particularly investment in major projects that require a large workforce for construction. Perth's intake of new residents is therefore a key driver of demand for additional housing. Migration fuelled increases in demand tend to raise property values, particularly if land supply and dwelling construction timeframes fail to keep pace with population growth.

Trends were similar for population growth and median house prices in the decade to 2012. The most significant divergence was from the beginning of 2008 through to early 2011 when the quarterly population increase rose and then fell sharply in comparison to median house prices (Figure 27). The reasons for this include the falling stock market, from the beginning of 2008, the GFC which hit in October of that year, and a reluctance of owners to sell for low prices — as discussed previously.

Employment growth

High employment growth and it's corollary – low unemployment – stimulate demand for housing through direct and indirect mechanisms. One is that high employment encourages population growth, particularly through overseas and (to a much lesser extent) interstate migration. Employment growth also gives households confidence about their future income which helps trigger investment in housing. Increasing employment prospects also tends to increase labour force participation which also has a direct impact on household incomes.

Western Australia and particularly Perth, had very high employment growth and low unemployment throughout the last decade which has helped encourage a sustained period of house price growth (Figure 28).





Figure 28: Employment growth and median Perth house prices

Some house price models factor in a lag between the drivers and actual changes to house prices. Macquarie Bank models indicate a 15-month lag between driver occurrence and the resulting change to house prices. This lag process is particularly evident when utilising employment growth as a leading indicator of housing demand.

Figure 28 shows several periods of very high employment growth for Perth residents, with a few periods of compartively low growth and a brief period of overall employment decline during 2010.

Income growth

Wages directly affect the capacity for households to form, rent or purchase housing and to trade up their owner-occupier housing. They also allow households to invest in residential property for rentals, which further stimulates demand for land and housing. Income is the key determinant in a household's ability to purchase property, be it an investment, a first home or a relocation to a more appropriate dwelling. Consequently, broad trends in household income provide a valuable indication of longterm trends in residential property values.

Figure 29 indicates that during the mid-2000s Perth's house prices increased faster than average weekly earnings would have predicted, however they have since come back to a level that correlates with long-term wage growth.

Interest rates

Low interest rates for home lending encourage owner-occupiers to trade-up and first home buyers to enter the market.

Sustained low interest rates during most of the past decade have increased levels of investment in the property market and encouraged trade-up buyers who release equity in their properties to help buy their next (and more expensive) home (Figure 30).

Source: Department of Education, Employment and Workplace Relations, *Small Area Labour Market* data and Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W).





Figure 29: Weekly earnings and median Perth house prices



Figure 30: Interest rates and Perth house prices

Source: Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W); Reserve Bank of Australia, Statistical Tables: *F5 Indicator Lending Rates* (FILRHCBVS and FILRHL3YF); Department of Planning.

Source: Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W) and Australian Bureau of Statistics, Average Weekly Earnings, Australia Cat. No 6302.0 (A2828757V).



2.4 Demand and property pricing

Property sales price is shaped by production/acquisition costs, which generally provide a baseline for property prices, and the market's willingness to pay, which dictates the maximum amount a seller can realistically charge.

In economic terms, owning a vacant lot is a 'perpetual call option' as it provides a real option to build at some point in the future. The price of that real option is the price paid for the vacant lot and the market price is a function of uncertain future housing prices, interest rates and construction costs. A landowner can either sell the option (vacant lot) or exercise the option by building on that lot so it can be used for an economic purpose.⁷¹

An application of this approach to the Perth property market from 1990 to 2008 indicated that option pricing models significantly under predicted market prices paid for vacant lots. This suggested that purchasers' expectations played a bigger role than generally recognised.⁷²

It is unlikely that a limited supply of housing was the major cause of the sharp rise in Perth house prices over the past decade. In fact during that period there was a significant surplus of houses in Perth, not an undersupply. The Housing Industry Association identified this in its July 2007 State Outlook when it estimated an oversupply of some 20,000 dwellings.

Evidence indicates that the fundamental reasons house prices rose so sharply during the last decade were the factors discussed in the previous section (2.3.3). House price rises preceded a massive investment in additional housing, creating an overall oversupply of houses in Perth.

Section three of this report addresses this issue in more detail, including a critique of the assessments of Perth's land and housng shortage when the stocks of developed lots were higher than usual and the industry assessed a surplus of houses.

2.4.1 House prices and equity

An experimental comparison using median house prices for Perth and average loans for established dwellings for Western Australia suggests that the house price boom in the mid-2000s was driven by household equity (Figure 31). Households bought houses using substantial equity rather than by borrowing significantly more from financial institutions. The gap between the median price and the average loan size represents the apparent deposit size.

There are considerable methodological issues with comparing these statistics as one is a mean across the State and the other is a median for Perth only. Consequently, this comparison should be treated with caution and ideally used as a basis for further investigation.

Building on this comparison, it is possible to calculate an apparent 'loan to price' ratio over time which is comparable to a 'loan to valuation' ratio (Figure 32). Again this should be used with caution, however, statistics from Australian Finance Group (see Figure 38) showing very low 'loan to valuation' ratios in Western Australia also support the hypothesis that Perth's housing boom was largely equity-driven.

One implication of this is that on average, Perth and Peel households should not be overly geared and are therefore unlikely to suffer severely as a result of declining house values. There will however, be some homes, purchased at the market peak, which will be left with negative equity as a consequence of decreasing property values.

⁷¹ Costello, G and Leishman, C, 2010, Option pricing theory to value development land, RICSD Education Trust, available at www.rics.org.

⁷² Costello, G and Leishman, C, 2010, *Option pricing theory to value development land*, RICSD Education Trust, available at www.rics.org.





Figure 31: Mean loan size (Western Australia) and median house price (Perth)



Figure 32: Apparent loan to house price ratio (established dwellings) - Western Australia

Source: Australian Bureau of Statistics, *Housing Finance – Australia*, Cat. No. 5609.0 (A2413033V), Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W) Department of Planning.

Source: Australian Bureau of Statistics, *House Price Indexes: Eight Capital Cities* Cat. No 6416.0 (A233560W); Australian Bureau of Statistcs, *Housing Finance – Australia*, Cat. No. 5609.0 (A2413033V) and Department of Planning.

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Figure 33: Number of dwellings financed by type of buyer - Western Australia

Source: Australian Bureau of Statistics, Housing Finance – Australia, Cat. No. 5609.0 Table 9b (A2412884X and A2412886C).



Figure 34: Home loan comparison (first home owners and non-first home owners) - Western Australia

Source: Australian Bureau of Statistics, *Housing Finance – Australia*, Cat. No. 5609.0 Table 9b (A2412885A and A2412887F).


Statistics on who was buying most of the houses during the past decade, corroborates the thesis that the housing boom was largely equity driven, as established households traded up or purchased investment properties using equity (in the homes they occupied) as a deposit. As illustrated in Figure 33 the number of first home buyers entering the market remained very stable relative to the increase in non-first home buyers. The large number of non-first home buyers was sufficient to distort the entire market and as they were buying higher priced houses, the median house price statistics increased considerably during that time.

Since 1991, home buyers have, on average, borrowed roughly the same amount of money, regardless of whether they are first home-buyers or are buying their second or subsequent home, as Figure 34 illustrates.

2.4.2 Housing prices and affordability

The strong growth in residential land and housing prices during the last period of economic expansion had significant consequences for Western Australia. High prices in the Perth metropolitan area led to decreased housing affordability, and increased demand for social housing.

Figure 35 outlines Perth's median house prices since 1978 (approximately five property cycles). Preliminary data from REIWA indicated that the Perth median house price for the March quarter 2012 was \$467,000, a fall of 3.7 per cent from the previous year.⁷³





Source: Real Estate Institute of Western Australia.

Note: Median house price is derived from all sales of established houses in Perth as at June each year. Established houses include detached dwellings on separate lots. The data was obtained from Landgate.

⁷³ REIWA Market Update March Quarter 2012.



Figure 36: Average home loan - Western Australia



Source: Australian Bureau of Statistics Catalogue 5609.0 Housing Finance, Australia Table 10c. Housing Finance Commitments (Owner Occupation), By Purpose: State, Original (Average Loan Size - \$000) (A2413034W).

BIS Shrapnel are forecasting Perth's median house price to grow by 8.2 per cent in 2012/13, 6.6 per cent in 2013/14, 2.7 per cent in 2014/15 and 6.9 per cent in 2015/16 to reach a forecast median price of $620,000.^{74}$

Significant increases in house and land prices in Western Australia from 2002 to late 2006 made real estate unaffordable for many new home buyers and up-graders, despite strong income growth (for some workers). This is reflected in Figure 36, which shows that the average loan size in Western Australia, increased by nearly five times between 1990 and the end of 2010, when it exceeded \$300,000. The size of the average home loan has since declined to \$274,000 (as at February 2012).⁷⁵

Other estimates suggest that the average size of home loans in Western Australia is considerably larger. Data provided by Australian Finance Group (AFG), Australia's largest mortgage broker, demonstrates that as at April 2012 the average loan size for Western Australia was \$404,000 (Figure 37). First time buyers made up 20.7 per cent of mortgages sold in Western Australia and investors constituted 29.8 per cent of mortgages sold.⁷⁶

Figure 38 shows the LVR (that is the loan stated as a percentage of the property value) for Western Australia in comparison to the other states.

Western Australia's LVR was below 60 per cent from March 2007 to June 2008 which was considerably lower than other Australian states. This adds further weight to the hypothesis that the Perth property boom of the last decade was driven by a high level of equity, rather than borrowing.

The most recent statistics show that this situation has changed considerably and that Western Australia now has the highest LVR of any state. This is a result of considerably reduced trade-up activity, a greater relative proportion of first-home-buyers and the likelihood that migrants from overseas could be reluctant to bring equity into the country with the currently unfavourable exchange rates.

 74 BIS Shrapnel - The Outlook for Residential Land in Perth 2011-2016.

⁷⁶ AFG Mortgage Index, 2012.

⁷⁵ Australian Bureau of Statistics Catalogue 5609.0 Housing Finance, Australia.





Figure 37: Average value and number of mortgages - Western Australia

Source: AFG Mortgage Index, 2012.



Figure 38: Loan to valuation ratios - Australia and states

Source: Australian Finance Group, Mortgage Index, 2012.





Figure 39: Housing affordability index - Perth and Western Australia

Source: HIA-Commonwealth Bank Affordability Report, December quarter 2011.

Figure 39 illustrates the HIA-Commonwealth Bank Housing Affordability Index for Western Australia. It demonstrates that dwelling prices in Perth and Western Australia are more affordable now than in 2008, relative to income and the cost of living. Over the year to December 2011, Perth's affordability index has increased 14.3 per cent, while the rest of Western Australia improved 4.6 per cent.⁷⁷

Strong growth in average weekly earnings and the moderation in established house prices are the major reasons for this increased level of housing affordability. Increases in housing affordability can lead to an increase in demand for land and housing.

The Western Australian Department of Housing forecasts that the affordability gap is set to widen significantly over their forecast period to 2031, with median house prices forecast to increase by a greater proportion than average annual incomes (Figure 40).

Declining housing affordability affects the economy and individuals in many ways. People on moderate incomes are generally renting for longer, as they can't afford to buy a home. This can inflate rental prices, increasing the strain on public housing resources. In many cases key workers such as police, nurses and retail staff cannot afford to live near their places of work. This, in turn slows the State's economic development and productivity.⁷⁸

In May 2011, the Department of Housing released the *Affordable Housing Strategy 2010-2020: Opening Doors to Affordable Housing.* This document sets out a raft of strategies designed to support households struggling under the increased cost of living.

As at September 2010, a family in Perth earning a median income of \$73,300 per annum needed 6.5 times their annual income to purchase a property (at the median house price) - as opposed to 3.9 times their annual income in 2000.⁷⁹

⁷⁷ HIA-Commonwealth Bank Affordability Report December Quarter 2011.

⁷⁸ http://www.housing.wa.gov.au/Files/AHS_Strategy.pdf.

⁷⁹ http://www.mediaStatements.wa.gov.au/Pages/default.aspx?ltemld=140082.





Figure 40: Forecast affordability gap - Perth metropolitan area

Source: Department of Housing, presentation to the Centre for Excellence and Innovation in Infrastructure Delivery capital works briefing session information, 2010.

The strategy promotes a greater role for the private sector in meeting the demand for housing to supplement the State's social housing and Commonwealth's National Affordable Rental Scheme programs. Part of the solution would involve new and improved partnerships with private developers and non-government organisations. The strategy aims to create an additional 20,000 affordable housing opportunities by 2020 to help low to moderate income earners across Western Australia.⁸⁰ As at March 2012 the waiting list for public housing totalled 23,350 applicants.⁸¹

⁸⁰ REIWA Market Update March Quarter 2011 and Department of Housing website.

⁸¹ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update April 2012.



2.4.3 Land prices

Land prices in Perth increased by 215 per cent between 2000/01 and 2006/07 before stabilising during 2007/08 and declining in 2008/09, as land affordability constraints emerged. Speculative activity had become a key feature of the land market between the boom period of 2004 and 2007, through the purchase of multiple pre-sold lots secured on small deposits being on-sold at inflated prices ahead of titles being issued. REIWA research indicates that the re-selling of lots increased from around 10 to 12 per cent of all lot sales in 2003/04 to 25 per cent at the peak of the property boom (Figure 41).

During the housing boom, vacant residential lots became a shortterm investment commodity as price increases at the time far outweighed the transaction costs (stamp duty, selling fees) of buying and selling land.

As at March 2012, the median land price in Perth was \$270,000 – an increase of 12.5 per cent from the previous year.⁸²

Taxes and transfers

Fiscal measures implemented by the Commonwealth and State governments can influence the demand for land and housing. An example is tax treatment, particularly negative gearing of investment in housing which can lead to an increase in demand.

Another example is the boost to the FHOG. In October 2008, the Commonwealth Government announced a tripling of the FHOG for new dwellings from \$7,000 to \$21,000 and an increase to \$14,000 for existing dwellings. The FHOG boost was extended until 30 September 2009; with a progressive phase out, by 31 December 2009. Figure 42 illustrates the spike and subsequent fall in the number of FHOGs issued as prospective first home owners took advantage before the boost was phased out. FHOG applications have steadily increased since late 2010, as new home buyers enter the market that may not have been in a position to capitalise on the FHOG boost when it was available.⁸³ The percentage of new dwellings is back to the long-term average of 25 per cent of total applications as developers and builders increasingly offer relatively affordable land and housing packages aimed at younger homebuyers.⁸⁴

The AFG Mortgage Index for April 2012 saw Western Australia as the most popular state for first home buyers in terms of mortgages sold. In the March quarter 2012 approximately one in five new mortgages (20.7 per cent) in Western Australia was arranged for first home buyers.⁸⁵

At the time of the 2009/10 Developers' Land and Dwelling Intentions Survey, a number of developers identified market demand uncertainties as a constraining factor on making development decisions. The first home owners market formed a significant component of developers' intentions. Respondents expected an average of 37.1 per cent of their intended dwellings between 2010/11 and 2013/14 would be sold to first home buyers; increasing to 43.8 per cent beyond 2013/14. Data from the most recent survey in 2011/12 are not yet available.

82 REIWA Market Update March Quarter 2012.

⁸³ Office of State Revenue - http://www.dtf.wa.gov.au/cms/section.aspx?id=550&li nkidentifier=id&itemid=550.

⁸⁴ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update April 2012.

⁸⁵ AFG Mortgage Index2.





Figure 41: Median land price and percentage of lot resales - Perth

Source: Real Estate Institute of Western Australia, presentation to Population WA Summit, May 2011.



Figure 42: Quarterly First Home Owner Grants - Western Australia

Source: Office of State Revenue - WA Treasury.

2.4.4 Rental prices and availability

Strong demand for housing, predominantly from population growth, and recent upwards pressure on housing prices has led to higher rental prices and tighter levels of vacancies in the Perth rental market (Figure 43). The median weekly rent in Perth, as at the March quarter 2012 was \$420, a new high point for this indicator.⁸⁶ A household needs a gross income of over \$1,400 per week, or \$72,800 per annum, to be able to afford this rent in Perth (i.e. by not paying more than 30 per cent of their income on rent).⁸⁷ The vacancy rate for the March quarter 2012 of 1.9 per cent is the lowest it has been for four years, and well below the accepted equilibrium of three per cent.⁸⁸

Increasing rental yields could potentially attract property investors back into the market and eventually lead to an increase in the overall stock of rental housing. However, there is often a lag period before this new investment helps to alleviate supply pressures, primarily due to the time required to construct new dwellings.

2.4.5 Dwelling commencements

Figure 44 illustrates total dwelling commencements in Western Australia from 1990. There were 19,246 dwelling commencements in the 2011 calendar year – 21 per cent fewer than for 2010. Houses fell 16 per cent, multi-residential starts fell 38 per cent and total public sector dwelling commencements declined 71 per cent as a result of the completion of the social housing stimulus program.⁸⁹

Table 12 outlines forecasts for dwelling commencements in Western Australia to 2012/13 from three prominent industry analysts.

The HIFG has estimated that due to unstable global economic conditions and the withdrawal of the FHOG, there may only be 18,500 dwelling commencements for 2011/12. This would almost certainly mean a reduction in the overall stock of available dwellings in the Perth and Peel metropolitan area.

Table 12: Dwelling commencements forecasts -Western Australia

	2010/11	2011/12 (forecast)	2012/13 (forecast)
HIFG	20,753	18,500	20,500
HIA	20,790	19,490	21,320
BIS Shrapnel	20,817	20,450	N/A

Source: Housing Industry Forecasting Group – Forecast Dwelling Commencements in Western Australia, April Update 2012; HIA State Outlook Summer Edition 2011; BIS Shrapnel Building Industry Prospects February 2012.

Increased levels of consumer confidence, continuing population growth and an increasing demand for rental accommodation are reasons behind the 20,500 forecast dwelling commencements in Western Australia by HIFG for 2012/13.⁹⁰

HIFG also believes that there is an adequate supply of land to meet housing commencements to at least 2012/13. There are however, concerns as to how quickly this land can be brought to the market should there be a rapid rise in the demand for new housing.⁹¹

Impacts

- Low dwelling commencements at present is a major risk factor if population growth increases significantly in the medium-term as there may not be sufficient dwelling stock in the construction pipeline to meet that demand.
- Mixed signals on the demand outlook for land and housing mean that developers and financiers are uncertain and not investing in land development. Although the broad economic indicators are positive, new house sales/approvals continue to stay soft.
- Land and housing are not homogenous markets and developers' product may not cater for the full spectrum of market demand.

⁹⁰ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update 2012.

⁸⁶ Real Estate Institute of Western Australia.

⁸⁷ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update 2012.

⁸⁸ Real Estate Institute of Western Australia.

⁸⁹ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update 2012.

⁹¹ Housing Industry Forecasting Group - Forecast Dwelling Commencements in Western Australia, April Update 2012.





Figure 43: Median rent and vacancy rate per quarter - Perth metropolitan region

Source: Real Estate Institute of Western Australia.



Figure 44: Total dwelling commencements - Western Australia (seasonally adjusted and trend)

Source: ABS Cat No 8750.0 Dwelling Unit Commencements, Australia, Preliminary, Dec 2010, Table 2 A401994T (seasonally adjusted) and A402378F (trend).



3 Land, lot and housing supply

3.1 Land supply process

3.1.1 Key points

- Supply chains for making land suitable for a particular use can be very complex and long, involving numerous regulatory bodies, infrastructure providers and a wide range of private interests. These chains can involve site investigations, environmental assessments, planning, zoning, subdivision/development approvals, servicing, development, sales of lots, building construction and sales of dwellings.
- Individual statistics viewed in isolation can be misleading and do not allow any meaningful understanding of the ever-changing market demand for land and housing. A comprehensive analysis of residential land, lot and dwelling supply is critical to understanding the pressures and constraints involved in the planning and development process.



- At times of peak economic and population growth, no amount of zoned broad-hectare land, endorsed structure plans or conditional subdivision approvals will satisfy real demand. These are all critical milestones in the planning and development system, but they are all intermediate stages in the process.
- No amount of vacant, subdivided and serviced residential lots will satisfy real demand either – residential lots have negligible real value until habitable dwellings are constructed on them. Vacant lots are an intermediate product in the dwelling supply chain and building approval and construction may take another 12 months to complete, sometimes longer if the construction industry is constrained.
- Capacity constraints in the development and construction industry limit the number of lots and houses that can be produced in the short to medium-term. Periods of high demand are generally associated with periods of skills shortages in the construction industry, which limit the capacity of the industry to maintain sufficient lot and dwelling supply.
- Accurate and timely tracking of land, lot and dwelling supply is essential to determining the appropriate responses to changing demand. The supply chain can only deliver dwellings as fast as the slowest point in the chain, unless there are sufficient buffer stocks at various points in the process to absorb large increases in demand.
- The WAPC reports regularly on both land supply (UGM) and lot supply *(State Lot Activity)* to provide detailed statistics of the stocks of land and lots at key stages of the planning and development pipeline.
- Both Government and landowners/developers are responsible for releasing land:
 - Government approval is required to rezone land, for structure plans, land subdivision and development.
 The planning system *releases* land when it rezones land for a purpose allowing subdivision or development and when it grants conditional subdivision approvals.
 Government also has a role in the orderly provision



of infrastructure to stimulate land development and release by private developers; however, this is generally a broader function of Government, not just the planning system.

- It is the responsibility of landowners and developers to develop and subdivide land to the point of 'final' subdivision approval. Government then confirms the land has been developed in accordance with the agreed conditions and the developer is able to release those lots to the market.
- Land supply refers to the amount of land that is appropriately zoned and available for development (with regard to standard environmental, planning and development requirements). This land may yet need to pass through a structure planning process before it can be considered for subdivision.
- Lot supply refers to the number of vacant, subdivided lots that are serviced with appropriate infrastructure, including lots that are available for purchase and those lots that have been purchased, but do not yet have a habitable dwelling(s) on them.
- Housing supply refers to the amount of completed dwellings that are available for occupation. Some of this stock will be vacant and/or available for purchase. The bulk of the dwelling stock is occupied.

3.1.2 Land, lot and housing supply

The term land supply is used often, but in different contexts with quite different meanings. In its broadest sense, it can refer to the amount of broad-hectare land, regardless of whether that land is zoned or suitable for development. It is also used to refer to the amount of undeveloped land that is zoned for urban, industrial or commercial use in a region scheme. From a public perspective, most buyers of residential land view the term "land supply" in terms of the number of developed and serviced lots that are available to purchase.

This report uses the term land supply in reference to broadhectare land that is zoned for urban, industrial or commercial use but not yet subdivided or serviced with infrastructure.

The term lot supply is used to refer to lots that are subdivided and serviced by appropriate infrastructure to enable a final use (once buildings or dwellings are constructed on those lots).

Land is a finite commodity and location is a unique and unalterable characteristic of each land parcel, which underlies the stability and security of land values in the long-term. Land values reflect the suitability of land for a particular purpose, measured by its utility (the ability to use the land for an economic purpose) and its amenity (the 'quality of life' associated with a particular parcel of land and its surrounding facilities and services).

Government assigns land zonings which signal to the market that land is suitable for a particular use. Over time the market responds to land use zonings by developing that land to make it suitable for its specified use, such as residences, commerce or industry.

Land, by itself, has little immediate utility, even when subdivided into lots and serviced with infrastructure. It is generally not until land is improved with buildings that it becomes economically useful. In economic terms, a vacant residential lot can therefore be described as an option to own a habitable house at some time in the future. To exercise the option, a dwelling (or dwellings) must be built on that land.

Research based on Perth house prices from 1990 through to 2008 indicated that expectations of future lot and house values may have a more important influence on future lot prices than actual development costs.⁹²

² Costello, Greg and Lieshman, Chris (2011), Using Option Pricing Theory to Value Development Land, paper presented to the 17th Pacific Rim Real Estate Society Conference, 16-19 January 2011.

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3.1.3 Land release

Land release is not a single event in the planning and development process, but a series of release points or stages. Both Government and developers/landowners are responsible for releasing land and they alternate taking the lead responsibility at different stages of the planning and development process (Table 13).

The Government has a responsibility to release sufficient land through the planning system, however, zoning and to some degree structure planning are the only stages of the land supply process where the Government has full control over the amount of land that is released.

Government does not have full control over the subdivision stage of the land supply process because it relies on landowners and developers applying for subdivision approval and then undertaking the required works on land over which conditional subdivision approval has been granted. Therefore landowners and developers effectively control the latter stages of the land supply process.

In projects where the Government is also the landowner/ developer a greater degree of control over the timing of development is enabled. The Government develops around onefifth of all residential land in the State through the Department of Housing, LandCorp and the Metropolitan Redevelopment Authority. Used strategically, this can give the Western Australian Government sufficient market share to influence lot supply and price outcomes for new residential lots. The Department of Housing uses a development model to accelerate serviced lot production in areas where private sector landholders and developers are not developing sufficient lots to meet expected demand.

While there is debate about what constitutes sufficient land, most Australian capital cities use a benchmark of needing enough zoned land to meet anticipated urban growth for 15 years. The WAPC's UGM provides very detailed tracking of the stock of land zoned for urban development and the rates of consumption of that land. Future editions of the UGM will also assess land at the structure planning stage of the process. A sufficient supply of land must be available to meet the fluctuating demand cycles. The primary public cost of a shortage of developed lots is the effect it has on prices paid by the public to purchase land from developers. When land demand exceeds supply developers are able to inflate prices, which decreases housing affordability.

Land supply is relatively inelastic in the short-term as development may require several months or years of action by developers to obtain all the necessary approvals and to undertake the physical works required to service new land areas.

Assessing whether there is sufficient land being released is therefore not a single-stage or simple process. It requires measurement of the stocks of land at various stages of the planning, zoning and development process as well as the rates at which land is moving from one stage to another. Most jurisdictions use some form of a stocks and flows model to track land development and lot availability. Section 3.2 covers the land supply pipeline model for the Perth and Peel metropolitan area in greater detail.

3.1.4 Land release through a grant of freehold interest over Crown land

The Government can grant a freehold interest over Crown land under the powers of the *Land Administration Act 1997*. This effectively provides the holder of the freehold title with certain rights to use and develop the land within the limits set by legislation. *The Planning and Development Act 2005* establishes the process by which a freehold landowner may use and develop their landholding.

Most of the likely developable land in Perth and Peel has progressed through this release stage and it is generally in freehold ownership – owned either by Government or by the private sector. Despite this, there are still parcels of Crown land that may be suitable and appropriate for development, particularly in regional areas. The UDP includes these parcels in its land supply assessments.

Landowners have significant rights over land, within parameters set by the State through the legislative and planning systems. Owners and developers wishing to change the status and development of land must meet certain obligations in return for those development rights. Those obligations are set by the State in the public interest through legislation and Government policy.



Table 13: Land release responsibility

	Government responsibility	Landowner / developer / public responsibility		
Planning and zoning	 Planning system, policies and procedures. Strategic planning (i.e. <i>Directions 2031 and Beyond</i>). Transfer of Crown land to freehold land. Initiate scheme amendment. Endorse scheme amendment (to rezone land). Prepare high-level structure planning (i.e. subregional and district structure planning). Endorse lower-level structure plans. 	Contribute via public comment process. Owner submits to government to initiate a scheme amendment to rezone land (if not already zoned). Owner decides to develop land or sells to a developer. May prepare a district and/or local structure plan (depending on the size of the development).		
Subdivision assessment and approval	Assess applications for subdivision in consultation with referral agencies. Determine and issue conditional approvals.	 Must prepare and submit a subdivision application to WAPC. Owner/developer may: appeal unreasonable conditions; proceed with development in accordance with conditional subdivision approval; or do nothing or resubmit another subdivision application. 		
Land and infrastructure development	Major infrastructure provided by Government may make land more attractive to develop. Confirm compliance with conditions of subdivision and issue final approval (allowing land titles to be issued).	Developers may pre-fund infrastructure to accelerate land development.		
Vacant lots		Puts lots on the market, sells to a builder or undertakes building development.		
Building development	Development approval (usually local government approval).	Building construction.		



3.1.5 Land release through strategic planning

Government produces strategies to identify potential long-term land use changes to meet future demand. Examples include the EELS and the draft *Outer Metropolitan Perth and Peel Subregional Strategy*. These documents identify urban expansion and investigation areas for land that may be suitable for eventual rezoning to industrial or urban use - providing subsequent planning, environmental and infrastructure assessments demonstrate that development is appropriate.

3.1.6 Land release through rezoning

Land is often deemed to be 'released' at the point it is rezoned for a higher use in a statutory planning scheme. In Perth and Peel, the initial stage is therefore a rezoning under either the MRS or PRS from rural (in most cases) to a higher use such as urban deferred, urban, city centre or industrial. A scheme amendment is also required at a local scheme level if a change in zoning is sought. This can be managed concurrently with a region scheme amendment.

There are generally two triggers that may initiate a scheme amendment. Government can initiate a scheme amendment to ensure a sufficient stock of appropriately zoned land is available for future development or landowners may propose a scheme amendment and commence the necessary investigations and planning required to rezone land. This provides developers with the opportunity to make speculative purchases of rural land and then benefit from its increased value if the land is successfully rezoned for a higher use.

Ultimately, the State Government is responsible for ensuring a sufficient stock of zoned land is available for development. While some landowners/developers argue that there is not sufficient zoned land for development, the UGM 2011 shows that there are sufficient stocks of zoned, undeveloped land in Perth and Peel to accommodate development for approximately 22 years if developed at the same rates and densities as in the past.

Directions 2031 and Beyond outlines targets for increasing urban density on greenfield land and enhancing the level of urban consolidation within the city's existing extent. If achieved, these initiatives will effectively double the number of years that the existing stocks of zoned land could theoretically satisfy demand.

Despite the evidence that the existing zoned land could service urban growth for 43.6 years under the *Directions 2031 and Beyond* policy, the Western Australian division of the Urban Development Institute of Australia considers there is insufficient zoned land in Perth and Peel, arguing that more land should be zoned for urban growth.⁹³

The fundamental issue creating this divergence of perspective is that not all land zoned for urban development is readily available for development. Much of the undeveloped urban zoned land is owned by individuals or investment companies that are holding for long-term investment, rather than by land developers.

Although Perth and Peel have an ample supply of zoned land to meet future development needs and there is no demonstrable need for whole scale land rezoning, it does not follow that there is no need for further rezoning. Rezoning can be used to achieve a variety of planning outcomes, including the promotion of sustainable and transport oriented developments and accelerating development in targeted growth areas.

3.1.7 Land release through structure planning

Structure plans propose land use arrangements; transport networks; open space systems; utility networks; urban water management systems; and development standards. They also establish a framework for staging future subdivision and development. Structure plans are particularly important in areas with fragmented land ownership.

A structure plan might be prepared as a step to securing the rezoning a parcel of land through a scheme amendment. Structure planning may also be required under the provisions of a statutory local planning scheme to provide greater detail about the intended development. In this latter case, a structure plan can apply zoning and residential density codes, or can be of a strategic nature and provide only a land use framework to guide further planning and development.

⁹³ Urban Development Institute of Australia 2010, Submission to the Productivity Commission Inquiry into Performance Benchmarking of Australian Business Regulation: Planning, Zoning and Development Assessments, http://pc.gov. au/__data/assets/pdf_file/0011/102305/sub053.pdf (accessed 11 June 2011).



The planning system provides for a hierarchy of sub-regional, district and local structure plans, each covering different levels of detail appropriate to that stage of planning and design.

The State Government takes the lead in preparing regional and sub-regional structure plans and often plays a lead role in formulating district structure plans. Local governments may lead the preparation of local structure plans, particularly over areas of fragmented ownership. Private landowners and developers with particularly large parcels of land may prepare district structure plans and frequently prepare local structure plans.

State and local governments regulate structure plans through formal processes to adopt/endorse structure plans to provide a greater level of certainty in decision-making for future stages of the planning and development process.

The State Government is streamlining, simplifying and tracking structure plans as a priority action in *Planning Makes it Happen: a blueprint for planning reform*.

3.1.8 Land release through conditional subdivision approvals

Landowners (both private and Government) and developers are responsible for preparing subdivision applications and lodging them with the WAPC for assessment in accordance with Government policy and regulations.

The WAPC makes a determination and grants a conditional subdivision approval or refuses the application according with planning and Government policy. A conditional subdivision approval is therefore the final point in the planning and approval system at which the Government releases land for development. After that point, the developer is responsible for undertaking all development works and releasing land to the public.

Historically, one third of all lots granted conditional subdivision approval in Perth do not proceed to development. In the Peel Region, around two thirds of all approvals expire without proceeding to development. These tend to be smaller landholdings and may represent landowners who keep rolling over a subdivision approval in order to maintain the book value of their undeveloped land.

3.1.9 Land release through provision of public infrastructure

Infrastructure increases the utility and therefore the value of land. Land that is not serviced with infrastructure has a low economic value as the economic function of that land is essentially restricted to rural uses regardless of zoning. Infrastructure transforms the utility of raw land enabling it to be used for residential, commercial, industrial or public purposes. Consequently, landowners and developers generally want as much appropriate public infrastructure as possible around their landholdings in order to increase the value of that land. This infrastructure generally includes transport, recreation, healthcare, education and community facilities.

The conditions of subdivision approval specify essential utility and public infrastructure that the developer must provide in return for the right to develop that land. Depending on the location of the land – especially if it is beyond the existing urban front – the costs of extending trunk services such as sewer, water and electricity can be very expensive and beyond the capacity of smaller landowners and developers. In these areas, larger developments and particularly master-planned communities are therefore more likely to proceed.





There is no requirement for a developer to act on a conditional approval, even if the lot is serviced with the appropriate trunk infrastructure. In some cases developers wait for the development front to catch up or pass them in order to benefit from the infrastructure provided by other developers or the Government. To enable a more equitable division of cost, developers would like a detailed and committed forward program of public infrastructure provision ahead at least 10 years. The Government currently publishes its commitments to new public infrastructure in the capital investment program component of the annual State Budget, which includes the budget year and a four year forward estimate period.

3.1.10 Land release through subdivision and servicing of lots

As most of the residential land in the metropolitan region is developed by private developers/landowners, the viability of projects depends largely on their potential profitability. Therefore, developers may or may not decide to proceed with the development even though conditional subdivision approval has been granted. Various factors that influence the decision to proceed include the outlook for land sales, the costs of development and the works required under the conditions of the subdivision approval.

Developers may assess the feasibility of projects without knowledge of the intentions of other developers. As the decisions of multiple developers can impact the same area concurrently, with little transparency, it is often difficult to effectively manage land supply.

Once the developer has fulfilled the obligations set out in the conditional approval to the satisfaction of the clearing authorities, the WAPC issues final subdivision approval. When this is achieved land titles for the newly created lots are issued by Landgate.

3.1.11 Land release through lots available for purchase by the public

Developers release the majority of subdivided lots for purchase by the public for eventual occupation or investment purposes. Relatively small numbers of lots are sold to builders who will construct dwellings for sale. It is important to reiterate, at this point in the planning and development process, that residential lots cannot immediately satisfy real demand. It is not until a dwelling is constructed that the lot can meet the needs for growth. Therefore, even when there is a sufficient stock of developed lots, there can be a housing shortage if the building industry cannot keep pace with demand.

Under normal circumstances a vacant residential lot has negligible immediate utility – it needs a dwelling in order to become useful. Usually, the transaction costs associated with land purchases (i.e. stamp duty) and sales (i.e. sales agent commissions) discourage the short-term trading of vacant lots. In times of extreme price growth and/or severe supply shortages however, residential land often becomes a short-term investment commodity in itself.

When developed residential lots become an investment commodity in themselves, the normal forces of demand and supply can be overridden by investors seeking speculative gains in a rapidly rising market. This characterised the Perth and Peel residential lot market in 2006 when speculators purchased multiple lots with the intention of reselling at a higher price.

Research by REIWA indicates that lot resales are a key indicator for tracking speculator activity.

3.1.12 Land release through dwelling completion

Government has little control over the overall supply of housing. Most housing in Western Australia is built under contract from the end-users who are either owner-occupiers or investors intending to sell or rent out a finished dwelling. Western Australia has a relatively low rate of speculative dwelling construction — dwellings built by developers with an intention to sell on construction completion. The exception is medium and high density construction in urban centres. Due to high construction costs in Western Australia however, most medium to high density projects are targeted at higher-end consumers and consequently, this type of development constitutes only a small proportion of the overall supply of new dwellings.



3.2 Supply pipeline – a stocks and flows model

3.2.1 Land supply stocks and flows

Using a pipeline approach to monitoring land supply is a wellestablished model for tracking future land development. Most land development programs use a pipeline approach either implicitly or explicitly.

The NHSC has developed a database of future land development, based on a land and housing supply pipeline approach for every capital city and state/territory.

The UDP land supply pipeline provides an assessment of land supply across Western Australia. This was developed for the Metropolitan and Country Land Development Programs to assess whether:

- sufficient stocks of land were available at all stages of the land planning and development process to meet long, medium and short-term needs; and
- 2. land was moving through the planning approval and development process at a sufficient rate to meet demand.

The pipeline starts with the strategic identification of land that may be suitable for a change of use in the long-term. These parcels are identified in planning strategies (i.e. *Directions 2031 and Beyond* and EELS), investigated in more detail and where appropriate, rezoned for a higher order use.

Once a parcel of land has been rezoned for development, there are a series of significant development milestones in the land supply pipeline that are monitored by the UDP to ensure an adequate supply of land and housing. Major milestones include subdivision assessment and approval, land and infrastructure development, vacant lot sales, building approval and construction.



3.2.2 Tracking land supply

The UGM tracks the major stages of land release in areas covered by Western Australia's three region schemes in order to assess the stocks of land at each stage of the planning and development pipeline.

A full version of the *Urban Growth Monitor 2011* is available from the Planning WA website at www.planning.wa.gov.au.

3.3 Planning and zoning phase

3.3.1 Strategic land assessment

The EELS and *Directions 2031 and Beyond* identify land areas that are potentially suitable for future development to meet the city's long-term urban and industrial land needs.

The EELS includes an industrial land capacity assessment study which used a multi-criteria evaluation methodology on 37 sites to develop a short-list of sites most suitable for industrial development. This process is complex; incorporating the opportunities and constraints associated with individual land parcels to identify any serious development issues as early as possible.

Development Program

Perth and Peel Development Outlook 2011/12

The draft *Outer Metropolitan Perth and Peel Sub-regional Strategy*, identifies urban expansion areas and investigation areas where rural land may be considered for rezoning to urban uses (if they are found to be suitable after a comprehensive assessment process). Similar to the multi-criteria process used for the EELS, the draft sub-regional strategy used an opportunities and constraints analysis of areas with potential for urban growth. This was done in conjunction with extensive consultation with infrastructure providers and analysis of performance indicators to identify an initial list of sites likely to be suitable for urban development.

The private sector has a very important role in this process and both the EELS and *Directions 2031 and Beyond* have used their respective public consultation processes to refine and improve strategic land assessment techniques.

The implementation of *Directions 2031 and Beyond* will involve more detailed analysis of future expansion and investigation areas. As these areas are identified and agreed upon, they will be incorporated into the UDP.

In August 2011, the Western Australian Ministers for Planning and Environment and the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities announced that a strategic assessment of the Perth and Peel regions of Western Australia would be undertaken in accordance with section 146 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

All significant developments in Western Australia are subject to State and Commonwealth environmental laws. In order to streamline the environmental approvals process in the Perth-Peel region under the Commonwealth EPBC Act, the State Ministers for Planning and Environment made an agreement with the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities to pursue a Strategic Assessment of the Perth-Peel region.

It is intended that the strategic assessment for *Directions 2031 and Beyond* will help to avoid duplicative approval requirements under State and Commonwealth processes and the adoption of a more strategic approach to environmental approvals. Ultimately this will provide an opportunity for improved environmental outcomes, particularly an integrated regional approach to the protection of biodiversity, as well as more efficient development. Currently, the ad hoc approach and duplication under the EPBC and Environmental Protection Acts emphasises offsets for individual developments, increases costs to developers, adds significant delays to project timelines and can result in the loss of important biodiversity values.

3.3.2 Sub-regional structure planning

Sub-regional structure plans are the highest level of structure plans and provide broad land-use and transport spatial frameworks for future development.

They are generally prepared by the WAPC in conjunction with local government and relevant government agencies, setting out how the overarching principles and desired planning outcomes identified in regional strategies (such as *Directions 2031 and Beyond*), translate to land use outcomes.

Sub-regional structure plans may inform amendments to planning schemes and provide a framework for lower level structure planning. They identify broad level development guidelines and requirements including land use zones, environmental assets, infrastructure requirements, public purpose sites and environmental management strategies.

3.3.3 Scheme amendments (rezoning)

Rezoning from rural to urban deferred or urban zones is a key milestone in the planning process which precipitates a significant uplift in the value of *englobo* (un-subdivided) land.

Investors and developers may acquire rural land with an expectation of rezoning for a higher use at some point in the future. This is a high-risk-high-return investment strategy, which is common in Perth and the south-west of the State.

This uplift is based around the additional level of certainty that the land will at some time in the future be developed, even though it may be many years before there are sufficient infrastructure improvements to enable urbanisation.

Development

Perth and Peel Development Outlook 2011/12

3.3.4 Zoned land (region and local schemes)

The UGM tracks the amount of land zoned for urban development (land zoned urban or urban deferred), including additional land being added through rezoning processes; the stock of land by region scheme and local scheme zoning as well as the consumption of that land by construction (including dwellings and non-residential buildings).

Analysis in the UGM shows that the 'upzoning' of land does not always lead to urban development. Even in times of a perceived land shortage, there have been large stocks of zoned land, which for various reasons have not been developed.

Land banking can be defined as the practice of acquiring land and holding it for future use. Land might be banked at various stages of the development process. The first and perhaps most significant stage of the process in which land banking occurs, is when land has been zoned for development by the WAPC and local government. At this stage, the onus is on the landowner to initiate the next phase of development. There is no obligation to develop zoned land and consequently there are large stocks of zoned, broad-hectare land with owners who are unwilling to develop the land or to sell to developers who would progress the land to development within a reasonable timeframe.

Planning agencies are unlikely to be aware of the circumstances and motivations of land ownership and this makes it difficult to determine whether landowners' intentions are to develop or speculate/hold. The Developers' Intentions Survey gives a limited indication of landowners' intentions, but generally only genuine developers respond, as speculators or land bankers have no incentive to disclose their intentions. Developers' intentions need to be tracked against activity over time, as historically, developers have overstated their intended lot production.

Englobo (un-subdivided) urban zoned land is generally valued from \$500,000 to in excess of \$1million per hectare, so individual speculators are more likely to be holding titled and vacant lots, rather than large areas of **englobo** land. Land may be withheld from development for a variety of reasons such as:

- an ongoing active rural use, such as a poultry farm or horticulture;
- preference to maintain a rural lifestyle, despite urban zoning;
- lack of capacity (financial or other) to develop the land for urban purposes; and/or
- the need for significant infrastructure investment to open up the area (e.g. trunk sewer).

Some developer landowners are asset rich and not market driven. Such owners may have the capacity to wait until they are ready to develop land. Others choose to release land slowly and put through clearances of under 20 lots.

There are significant parcels of urban zoned land with fragmented ownership that are not being developed. While this might be considered as 'holding', owners may not have the technical or financial capacity to develop their land, so their lack of action is understandable.

An example of fragmented land ownership complicating land development is East Wanneroo, where the local government had to undertake structure planning on behalf of owners, establish a developer contributions scheme to coordinate infrastructure development and acquire land for public purposes. The council has now been administering the contributions scheme for some 15 years. The coordination and funding of development of areas such as this presents a major challenge and there is an increasing reluctance from local government to undertake this role, due to risk, cost and the administrative burden.

In general, special rural landholdings (1-4 hectares) would not be considered land banking. These areas are difficult to re-subdivide and redevelop as owners have generally bought for lifestyle reasons and tend to resist full urban zoning.

The UDP includes a comprehensive survey of developers to identify constraints to development; including identifying infrastructure impediments, as these are generally legitimate reasons for development not proceeding, rather than the developer holding land.



3.3.5 Rates of consumption of urban zoned land

Key points

- 1. Land consumption rates vary over time they are volatile and cyclical, changing with market demand.
 - Land consumption varies with economic cycles, therefore average consumption rates need to be treated with caution and allow for cyclical 'booms' and 'busts' in consumption over time.
- An average of 870 hectares of land was consumed per annum in Perth and Peel between 1991 and 2009.
- The two 'boom' years of 2006 and 2007 (calendar years) consumed 2,230 hectares of new urban land which was considered a time of rapid land consumption. A similar amount of land was consumed during the boom of 1994 and 1995, when 2,266 hectares were urbanised.

Year	Central sub-region		North west	North cost	Courth coot	Couth woot	Dool	
	Inner sector	Middle sector	sub-region	North-east sub-region	south-east sub-region	south-west sub-region	Peel sub-region	Total
1991	21	119	257	102	94	143	109	844
1992	36	121	241	123	67	171	142	900
1993	29	190	304	154	57	216	92	1,043
1994	52	102	386	190	118	283	71	1,200
1995	25	68	310	184	115	269	94	1,066
1996	39	63	188	136	82	200	61	770
1997	35	71	147	90	50	132	39	564
1998	27	86	137	91	94	121	57	612
1999	33	83	183	81	76	157	73	686
2000	59	71	222	115	102	133	100	802
2001	51	88	157	107	77	113	68	661
2002	23	128	237	102	94	148	77	810
2003	23	58	262	109	106	205	100	862
2004	16	54	250	133	103	239	139	933
2005	18	32	275	141	95	295	134	991
2006	15	54	329	102	122	335	159	1,117
2007	21	47	294	164	157	247	183	1,113
2008	12	29	212	128	168	216	125	890
2009	7	30	168	107	145	117	91	665
Total	542	1,494	4,559	2,359	1,922	3,740	1,914	16,529
Period average	29	79	240	124	101	197	101	870
Five year average (2005-2009)	15	38	256	128	137	242	138	955

Table 14: Annual urban zoned land consumption (hectares)

Source: Department of Planning unpublished data.

Note: • Figures relate to urban zoned land consumed for residential property development on a frontal basis by calendar year.

• Includes residential development where lot size per dwelling is less than 2000m².

• Figures are based on data provided by the Valuer General's Office. Note that information is not based on Department of Planning subdivision data.

Peel includes Waroona – average land consumption in Waroona amounts to less than two hectares per annum.

Numbers may not sum due to rounding.





Figure 45: Annual urban zoned land consumption (hectares)

Source: Department of Planning unpublished data.

- Land consumption rates vary over geographical sectors

 booms and busts vary across Perth's planning subregions.
 - As major new areas are developed in various sectors, the contribution of each sub-region to the total consumption of land in Perth and Peel varies significantly (Table 14 and Figure 45).
 - Sub-regions go through individual 'boom' 'bust' cycles in consumption.

3.3.6 Structure planning

The structure planning process and outcomes are potentially one of the most powerful tools to facilitate land supply and infrastructure coordination. At present they are not measured as a central part of the performance of the planning system – neither in terms of the time to be approved/endorsed by local governments and the WAPC, nor in terms of whether they achieve their intended outcomes.

The information captured within structure plans could improve infrastructure planning and coordination and enable the State Government to foster a greater understanding of current and future land supply.

Several planning reviews including the Metropolitan Development Program review identified a number of key deficiencies with the manner in which structure plans are dealt with and regarded.



The planning reform agenda as outlined in *Planning Makes it Happen*, included a priority action to simplify, streamline and track structure plans.

Improving how structure plans are prepared, captured and maintained is a critical step to unlocking the strategic value of those plans.

The level of detail included in all levels of structure planning has progressively increased. This has resulted in structure plan preparation becoming so cumbersome that in some cases they cannot be developed, assessed and adopted in a timely manner.

As a consequence of the lack of up-to-date sub-regional and district structure plans, the private development sector has been submitting local structure plans which attempt to address strategic regional issues from a local structure planning perspective. This has resulted in local structure plans having to resolve district and region-wide strategic issues which should be addressed at a higher level.

There is a need for a more balanced approach to clarify what content is required in each level of structure plan to allow for expedited production of regional, sub-regional and district structure plans to enable local structure plans to be undertaken in isolation.

Impetus for structure planning reform has been building for several years and has been identified as a priority to achieve the following strategic outcomes:

- Land supply tracking structure planning is a key milestone in the planning and development process that identifies future supplies of land for urban development. Land identified in structure plans is used nationally as part of the land supply and dwelling development pipeline.⁹⁴ This requires a centralised register of all structure plans, including details on the dwelling yields and current development status of land within each of those structure plans.
- Efficient subdivision/development approvals delays in the structure planning process impede the efficient delivery of developed land to the market. Strategic issues that have not been resolved at the structure planning

phase through timely structure planning can result in subdivision conditions that include strategic issues taking several years to resolve.⁹⁵

- Infrastructure planning and coordination infrastructure agencies have identified structure planning as a critical tool, to identify and secure sites for future infrastructure development, reduce land use conflicts and enable better staging of infrastructure provision to support land development.⁹⁶
- 4. Develop, implement and review planning strategies and policies – structure plans can also be used to implement, monitor and report on certain targets applicable to the wider strategic planning context and enable the review of set benchmarks on a periodic basis.

Since the release of *Planning Makes It Happen - a blueprint for planning reform*, the Department has prepared draft *Structure Plan Preparation Guidelines* and *Structure Plan Digital Data and Mapping Standards* to inform stakeholders on the format and content required in the preparation of structure plans. These documents standardise the scope, format and content of structure plans; define the statutory and non-statutory elements; and detail the information required to be provided for each type of structure plan.

The implementation of the Guidelines and Standards will also support the reform agenda to track and monitor structure plans by ensuring that the provision of structure plan information is sufficiently captured.

The approval process for structure plans will be addressed by the proposed regulations which are currently being prepared. The regulations will set out when a structure plan is required and will provide a uniform approval process throughout the State to reduce the complexity of the approval process and the need for multiple assessments.

It is anticipated that the Guidelines and Standards will be finalised in the second half of 2012.

⁹⁴ National Housing Supply Commission, *State of Supply Report*, 2008 and e-mail correspondence, 2009.

⁹⁵ Thompson, Marion (2007), *The Coordination of Land Release for Perth and Peel.*

⁹⁶ Department for Planning and Infrastructure, Metropolitan Development Program Review, 2008.



Accompanying this document are two A1 district and local planning area maps with explanatory tables, which provide an overview of structure plans in place across the Perth and Peel metropolitan area. These documents provide information on location, expected dwelling yield, status and land use breakdown for each structure plan.

3.4 Subdivision application, assessment and approval phase

The WAPC is responsible for determining all subdivision applications under the *Planning and Development Act 2005* and some strata subdivision applications under the *Strata Titles Act 1985.* The WAPC compiles statistics on subdivision activity in Western Australia at various stages of the subdivision process, from subdivisions lodged, through to lots issued final approval. Regular monitoring of the stock of lots at each stage of the subdivision pipeline, as well as the rate at which lots are moving from one stage to another assists in identifying potential periods of over or under-supply. Further information/data on the subdivision pipeline is available in the *State Lot Activity* bulletin, published by the WAPC on a quarterly basis. Residential development is the predominant purpose of subdivision applications in the Perth and Peel metropolitan area. Subdivision applications can range from two lot battle-axe subdivisions to large suburban developments of over 500 lots.

The level and type of subdivision activity varies across Perth and Peel's central and outer sub-regions. Subdivision activity in the Central sub-region is characterised by numerous small lot subdivisions. In this sub-region, levels of subdivision may not provide a true reflection of actual development activity, given that some development proposals are not assessed by the WAPC (for example, local government development approval), and are therefore not captured by WAPC statistics. In the outer sub-regions, subdivision activity is more likely to be on a much larger scale, as developers are able to take advantage of larger greenfield sites for residential projects.

The statistics in Table 15 cover residential subdivision activity in the Perth and Peel metropolitan area for the 2011 calendar year.

Sub-region	Applications lodged (1 Jan 2011 – 31 Dec 2011)	Applications under assessment (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 – 31 Dec 2011)	Stock of current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals issued (1 Jan 2011 – 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Central sub-region	2,865	863	2,904	5,734	2,127	2,646
North-west sub-region	4,516	1,692	4,644	12,768	1,525	2,621
North-east sub-region	2,232	1,459	2,063	5,492	982	1,287
South-east sub-region	4,231	1,345	3,864	10,439	3,003	1,650
South-west sub-region	3,852	672	3,993	8,837	1,699	2,557
Perth metropolitan region sub-total	17,696	6,031	17,468	43,270	9,336	10,761
Peel sub-region	1,633	220	1,636	6,261	460	489
Total	19,329	6,251	19,104	49,531	9,796	11,250

Table 15: Residential subdivision activity 2011

Source: Department of Planning internal database (2012), Water Corporation (2012).

¹ Refers to conditionally approved lots where a servicing agreement (agreement to construct) has been signed between the Water Corporation and the developer.

These are termed lots on non-cleared agreements. Data not available for 31 December 2011.



3.4.1 Applications lodged

Landowners and developers trigger the subdivision assessment stage of the planning and development pipeline by lodging applications for land subdivision or strata developments with the WAPC. This applies to all freehold land whether it is in public or private ownership.

The WAPC tracks the proposed land use from that subdivision application as well as the total number of lots the application will yield if approved. This data provides a valuable forward indicator of future lot supply, demonstrating confidence from developers in investing in an area. In the ten years to December 2011, residential subdivision applications were received to create an average of 5,567 lots per quarter in the Perth and Peel metropolitan area. Applications were made for significantly fewer lots in 2011 with applications to create an average of 4,832 lots per quarter received by the WAPC.

Subdivision applications in 2011 suggested that growth would remain particularly strong in the North-west sub-region, with applications received to create 4,516 lots. The South-east sub-region recorded an above average share of lots in subdivision applications, at 4,231 lots (Table 15).

Figure 46 illustrates the trend in the proposed number of lots lodged in subdivision applications over the period 2002 to 2011.



Figure 46: Residential lots in subdivision/strata applications lodged



3.4.2 Applications under assessment

Once a landowner or developer submits a subdivision application, the WAPC has 90 days to refer it to the relevant bodies and then determine the application, which if approved, is termed conditional approval.

The WAPC tracks the number of applications and lots that are in this category, which is essentially an accountability measure of the lots that are in the subdivision assessment process. This statistic measures applications which have not been determined, including those for which a decision has been deferred. The number of lots in subdivision applications in the Perth and Peel metropolitan area increased substantially between 2002 and 2006, during a period of high demand. Since 2006 there has been a significant reduction in the number of lots under assessment.

The vast majority (86 per cent as at 31 December 2011) of lots in this phase of the land supply pipeline were in the four outer sub-regions of the Perth metropolitan area (Table 15).

Figure 47 illustrates the trend in the proposed number of lots in subdivision/strata applications over the period 2003 to 2011.



Figure 47: Residential lots in subdivision/strata applications under assessment



3.4.3 Conditional approvals granted

A conditional (or preliminary) approval grants the developer the right to undertake land development and civil works (depending on permits) according to the conditions and construction requirements stipulated in the subdivision approval. The approval is subject to the developer fulfilling obligations outlined in the conditional approval and is valid for four years (more than five lots) or three years (five lots or less).

Developers have a right of appeal against conditions they consider unreasonable. A conditional approval represents the point at which the planning system releases land for development. After this point, the developer is responsible for undertaking development works and releasing land to the public. A conditional subdivision approval is therefore the final point in the planning and approval system at which the Government releases land for development. Following a decision to approve an application subject to conditions, the applicant is responsible for fulfilling the conditions in consultation with the relevant local government, public body or private utility. Conditional approvals provide an indication of short to mediumterm lot supply demonstrating enthusiasm from developers and agreement in principle from the WAPC to develop an area.

Over time, the number of conditions per approval has increased significantly. The primary cause of this trend is that the vast majority of sites with few development constraints have been utilised and the remaining sites are generally more challenging from environmental, planning or development perspectives. The industry perspective is that subdivision conditions are being used to implement a wide range of Government policies and initiatives, inhibiting lot production through excessive regulatory burden.

In the ten years to December 2011, conditional approvals were granted for an average of 5,075 residential lots per quarter in the Perth and Peel metropolitan area. Conditional approvals reached a low in 2008 averaging just 3,338 lots per quarter for the year. The average number of conditional approvals in 2011 was marginally lower than the ten year average at 4,776 lots per quarter.



Figure 48: Residential lots granted conditional approval



In 2011, the North-west sub-region had the largest number of conditional approvals with 4,644 lots (24 per cent of all the conditional approvals granted in the Perth and Peel metropolitan area) for the year (Table 15). The vast majority of these were in the City of Wanneroo. The South-east sub-region also recorded an increased share of conditional approvals, with 3,864 lots approved, equating to 20 per cent of the total for the Perth and Peel metropolitan area.

Figure 48 illustrates the trend in the number of lots granted conditional approval over the period 2003 to 2011.

3.4.4 Stock of current conditional approvals

For larger development projects, developers generally obtain a single conditional approval over a large area and then develop the site in smaller stages, seeking a separate final approval for each stage. The developers' stock of current conditional approvals refers to lots than have a valid (i.e. not lapsed) conditional approval for subdivision, but have not yet been issued with final approval. The stock of current conditional approvals, therefore, represents the outstanding balance of lots, measured at a point in time, that are approved and ready to be developed. In other words, this statistic represents the developers' remaining stock of land approved for subdivision in accordance with the conditions of approval.

The developers' stock of conditionally approved lots has increased in recent years. As at 31 December 2011 there were 49,531 conditionally approved residential lots in the Perth and Peel metropolitan area (Table 15). The sub-region with the greatest number of conditionally approved lots was the Northwest, with 12,768; 26 per cent of the total for the Perth and Peel metropolitan area, followed by the South-east with 10,439 lots or 21 per cent of the total. The sub-region with the smallest stock of conditionally approved lots as at 31 December 2011 was Northeast with 5,492 lots (Table 15).



Figure 49: Residential lots with current conditional approval



Over the period 2002 to 2011, the stock of lots with conditional approval for subdivision has averaged approximately 46,200 lots, equating to three to four years of lot supply. The stock of lots declined from approximately mid-2003 to 2005 averaging approximately 40,750 lots at this time. A significantly higher average has been recorded over 2010 and 2011, with a stock of more than 50,000 lots on hand (Figure 49). This increase is due to higher levels of conditional approval; and relatively flat figures for final approvals.

3.4.5 Active approvals

There is no guarantee that a lot with conditional approval will progress to final approval. A greater degree of certainty regarding the progress of conditionally approved lots can be determined by monitoring infrastructure agreements. Since 2008, the WAPC has obtained data from the Water Corporation identifying those approvals for which a servicing agreement (or agreement to construct) has been signed between the Water Corporation and the developer. These are termed lots on noncleared agreements. This agreement represents a considerable professional investment by a developer, and provides a greater degree of certainty that conditionally approved lots will progress to the final approval stage.

As at 31 March 2012, there were a total of 9,662 residential lots on non-cleared agreements, which represents just under 20 per cent of the stock of conditionally approved lots. The South-east sub-region had the most lots on non-cleared agreements, with 2,644 lots, equating to 27 per cent of the total for the Perth and Peel metropolitan area.

The total number of lots on non-cleared agreements has declined steadily from almost 14,000 lots in June 2008 to less than 10,000 lots at the end of 2011 (Figure 50).



Figure 50: Residential lots on non-cleared agreements



The proportion of lots on non-cleared agreements in each subregion has generally remained steady over the time series, except for the Peel sub-region where the number of lots has declined from approximately 2,100 in June 2008 to less than 500 in March 2012. This decrease in serviced lots is reflected in figures for final approvals, which have declined substantially in the three years to December 2011.

3.4.6 Final approvals issued and lot title registrations

Final approval is an indicator of lots created, and is defined as the WAPC endorsement of the proponent's submitted deposited plan or strata/survey strata plan describing the now complete subdivision (constructed in accordance with the conditions set down in the conditional approval). Final approval permits the issue of new titles by Landgate, for which an application must be made within two years of the WAPC endorsement date. Developers commonly construct lots in stages of 60-80 lots. However, these stages have reduced in size recently, reflecting the more limited access to development finance. In addition, the development industry appears to be moving to a 'just in time' model of lot production.

Developers may also stage lot release within an area or estate to ensure a steady supply and mix of lots. Even within a large estate with potential for over 1,000 lots, there are rarely more than three precincts on the market at once: typically a small lot precinct, a conventional lot offering and a premium lot product consisting of larger lots with high amenity. A listed property developer may be more concerned with maintaining a regular dividend to shareholders, rather than making a super profit and exhausting landholdings early.



Figure 51: Residential lots issued final approval



There was an enormous reduction in the number of lots reaching final approval in the Perth and Peel metropolitan area between 2006/07 and 2009/10. Between 2002 and 2012, on average, 3,162 residential lots per quarter were granted final approval. In 2010, just 2,352 lots per quarter were granted final approval.

A total of 11,250 lots (averaging 2,813 per quarter) were granted final subdivision approval in the Perth and Peel metropolitan area in 2011 (Table 15).

The most prolific areas for final approvals were the Central subregion and the growth corridors of the North-west and Southwest sub-regions. Final approvals in the five Perth sub-regions in 2011, ranged from 1,287 lots approved in the North-east subregion to 2,646 lots in the Central sub-region. Peel had far fewer subdivisions reach final approval than the Perth sub-regions, with 489 lots granted final approval during 2011 (Figure 51).

During the housing boom in the middle of the last decade, subdivision activity was higher than the long-term average for the Perth and Peel metropolitan area. Since the GFC there has been a significant reduction in subdivision applications and approvals, with particularly noticeable declines in the Central and Peel subregions (Figure 52). Although forecasts for local economic growth are positive, there is still a degree of market uncertainty due to the unstable economic conditions in parts of Europe and the USA. These diverging economic outlooks are reflected in a tentative optimism on the part of local developers. Applications and conditional approvals have increased substantially since the GFC, but the increase in final approvals has been much less substantial – causing a large increase in the developers' stock of conditionally approved lots. Many developers have refrained from progressing their lots to final approval immediately; presumably anticipating more favourable market conditions will eventuate before their conditional approvals expire.

The stock of residential lots with conditional approval for subdivision equates to three to four years supply (if one third lapse before reaching final approval, there would still be sufficient lots for approximately two years supply, which is still reasonable).



Figure 52: Residential subdivision activity summary



3.4.7 Special residential and rural residential subdivision

Special residential and rural residential refer to developments that create larger lots, generally ranging from 2000 m² to 5000 m² for special residential uses and 2 ha to 5 ha for rural residential uses. These larger lifestyle lots provide purchasers with an alternative lot product.

In the ten years to December 2011, an average of 317 special rural and special residential lots per year were granted final subdivision approval in the Perth and Peel metropolitan area. In 2011, 342 lots of this type progressed to final approval.

A significantly smaller proportion of special rural and special residential lots, granted conditional approval, reach final approval than is the case for normal residential subdivision. Approximately 46 per cent of conditionally approved special rural and special residential lots progress to final approval in the Perth and Peel metropolitan area, compared to approximately 60 per cent for residential subdivision.

In the five years to December 2011, special rural and special residential lot production has accounted for only about two per cent of the total residential lot production in the Perth and Peel metropolitan area (Figure 53). During 2011, more special rural and special residential lots were granted conditional approval (169 lots) and final approval (195 lots) in the North-east sub-region than any other. As at December 31 2011, the largest stock of conditionally approved special rural and special residential lots was in the North-west sub-region (600 lots).

More information on special rural and special residential subdivision activity is available in the *Perth and Peel Development Outlook Sub-regional Profiles* and *State Lot Activity* bulletins available online at www.planning.wa.gov.au.



Figure 53: Residential and special rural/special residential final approvals

Source: Department of Planning internal database, 2012 (quarterly data).



3.5 Land development phase

3.5.1 Stock of lots on the market and listed for sale

The Urban Development Institute of Australia (UDIA) Western Australia division produces quarterly statistics from a survey of its major developer members and publishes these statistics in the Urban Development Index. This information is based on a survey of around 42 major developers (private and Government) who supply the majority of newly-developed lots to the market. It is an invaluable barometer of both market demand (sales numbers and prices) and supply (lots on the market and in production).

The UDIA Urban Development Index indicates the number of lots that are developed and are on the market available to purchasers (note it does not include any lots that have been presold and are awaiting settlement).

The number of lots that UDIA developers have on the market has been subject to significant volatility in the past. The stock of lots available to the public can drop sharply in certain market climates, from an adequate supply to a shortage, as happened in 2006 (Figure 54). Figure 55 shows the volatility of the number of lots on the Perth market over a 20-year period. In the early 1990s there was a perceived shortage of lots, which prompted the Government to rezone vast areas of land to stimulate the release of more lots to the market.

By the mid-1990s, major private and Government land developers in Perth had between 4,000 and 4,500 lots on the market available to the public at any point in time. From 1996, the number of lots available from UDIA developers decreased, reaching a low point in June 2006 (Figure 55).

A series of factors contributed to this rapid decline in lot availability including:

- increased interest from speculative investors;
- greater numbers of lots being presold before being developed (i.e. not becoming available to the market as developed lots);
- developers reducing holding inventories of developed lots as part of increasing business efficiencies;
- increasing development costs making developers more sensitive to holding costs;



Figure 54: Lots on the market (UDIA developers)

Source: UDIA, Urban Development Index (quarterly data).



- increasing complexity of the planning and environmental systems;
- development of more constrained sites; and
- lags elsewhere in the development pipeline during a period of very high demand.

Since 2006, the number of lots available from UDIA developers has increased significantly but has not returned to the high levels experienced during the 1990s.

The sales price of lots is a reflection of what buyers are willing to pay with a base price component set by actual development costs. The low stock of newly developed lots that developers had available for sale around 2006, was associated with a price bubble, which resulted in the settlement price of newly developed land more than doubling in two years. Figure 55 shows median lot prices in the Perth metropolitan region, which peaked in the December quarter 2008 at \$399,900. In December 2011, the average price of lots sold by UDIA member developers had decreased to \$226,584. From the beginning of 2007 to the end of the March quarter 2008 the median settlement price of newly created lots in Perth was more than \$100,000 over its long-term average. During that time UDIA developers sold 6,800 lots in Perth. On that basis, if there had been no compositional effects in the lots being sold (i.e. the mix of lots in premium locations versus value locations), it can be argued that the public paid up to \$680 million more for newly developed lots than if there had been no shortage of such lots and that lot prices had followed their trend growth. There were however, some compositional effects during that period. Market conditions were slightly skewed by large numbers of people, trading up from existing homes, who had sufficient equity to purchase property at the higher end of the market. Never the less, it is clear that people who purchased property during the housing boom were paying a significantly inflated price.



Figure 55: Number of residential lots on the market and median sales prices - Perth (UDIA developers)

Source: Urban Development Institute of Australia, Urban Development Index.



3.5.2 Stock of completed lots not on the market

There is also a stock of lots that are at practical completion, but are not yet on the market for various reasons, including both Government and developer-controlled factors including:

- Delays in clearances;
- Titles not yet issued; and
- Marketing issues.

This statistic has been volatile in the past, but in most cases the delays have been resolved within one or two quarters. Figure 56 shows that during 2006, there was no significant increase in the number of lots not available on the market. This suggests that the number of lots being withheld from sale was not a major contributor to the shortage of lots available to the public at that time. As at 31 December 2011, there were 1,073 lots in this category in the Perth and Peel metropolitan area.

3.5.3 Urban Land Development Outlook

The Urban Land Development Outlook (ULDO) covers the Perth and Peel metropolitan area, identifying land which will be developed with dwellings over the next 20 plus years. The data covers different land uses including residential uses and special rural land. Residential developments are further categorised into single dwellings, group dwellings and retirement housing. The ULDO includes lot and dwelling yields for different parcels of land and the timing of this development. It includes the location of the development, the type of development, the expected dwelling yield and the timing of this intended development.

This dataset covers the land supply pipeline and provides information on parcels of land at all stages of the development process. Many different sources are used to compile the data. These include undeveloped land zoned urban and urban deferred under the region schemes, region scheme amendments, structure plans, developers' intentions, planning strategies, subdivision applications, development applications, local government projects and media announcements. Information from these sources is assessed and, where appropriate, included in the ULDO to depict the likely form of future residential development in the Perth and Peel metropolitan area.



Figure 56: Lots not the market (UDIA developers)

Source: UDIA, Urban Development Index (quarterly data).



The expected number of dwellings to be released in Perth and Peel are shown by sub-region and timeframe in Table 16. The full dataset is provided in maps and tables which accompany this document.

ULDO analysis identifies approximately 405,333 dwellings expected to be constructed over the next 20 years in the Perth and Peel metropolitan area. It is anticipated that the Northwest sub-region will yield the most new housing, with 102,064 dwellings flagged for construction during this period. The subregion has been Perth's most prolific growth corridor over the past 40 years and the area will continue to see strong residential growth, with substantial recent land releases in areas such as Alkimos.

The Central sub-region has the most grouped dwelling development activity, largely as a consequence of the extremely limited amount of greenfield sites remaining for development in the sub-region. The breakdown of total dwellings into single and grouped dwellings can be found in the attached ULDO maps and tables. They indicate that, of the grouped dwellings expected to be constructed over the next 20 years, 45 per cent will be in the inner sector of the Central sub-region. The development of higher density dwellings, including apartments is generally more complex, involves higher construction costs and is subject to greater fluctuations in market demand than typical greenfield projects. As a result, this type of project is often prompted by periods of high demand and consequently there are relatively few grouped dwelling projects with long-term release timeframes.

More than half of the dwellings included in identified projects were attributed an unspecified release timeframe. Projects may have an unspecified release timeframe for a variety of reasons such as infrastructure constraints; uncertain market conditions; environmental constraints; or planning issues. A summary of the type of constraints associated with specific projects is included in the ULDO tables which accompany this document.

Different types of residential development are more common in certain sub-regions. For example, the South-east sub-region has the largest presence of special rural and special residential type developments, which reflects the rural character of the corridor. Many new housing estates in the sub-region are marketed towards a rural lifestyle.

Sub-region	Short-term dwelling release (0-4 years)	Medium-term dwelling release (5-10 years)	Long-term dwelling release (10+ years)	Unspecified dwelling release	Total dwellings
Central sub-region	6,296	35,536	16,000	31,174	89,006
North-west sub-region	14,908	10,113	6,969	70,074	102,064
North-east sub-region	9,627	5,092	1,469	18,471	34,659
South-east sub-region	13,384	5,598	2,961	34,300	56,243
South-west sub-region	15,944	7,032	1,280	43,816	68,072
Perth metropolitan region sub-total	60,159	63,371	28,679	197,835	350,044
Peel sub-region	13,121	6,578	4,000	31,590	55,289
Total	73,280	69,949	32,679	229,425	405,333

Table 16: Urban Land Development Outlook

Source: Department of Planning internal database (2012).

Note: Dwelling release timeframe is from a 2010/11 baseline.

Development

Perth and Peel Development Outlook 2011/12

Large greenfield sites will continue to dominate the growth and additional dwellings in the Perth metropolitan and Peel subregion over the next 20 plus years. The biggest sites are located in the North-west sub-region in the suburbs of Yanchep and Two Rocks and in the South-east sub-region in Gosnells, Mundijong and Armadale. Large greenfield residential development is also anticipated in areas such as Byford (South-east), Ellenbrook (North-east), Baldivis (South-west) and Butler (North-west). In the Central sub-region urban consolidation projects in activity centres such as Morley, Cannington and Stirling will provide higher density dwellings within the urban front.

3.6 Vacant lots

3.6.1 Stock of vacant lots

The economic value of residential lots, even when serviced with infrastructure, is not actually realised until they are improved with dwellings. The stock of vacant, serviced lots gives an indication of how many new homes could potentially be added to the overall dwelling stock in the short-term.

The number and distribution of vacant residential lots is a crucial statistic as it represents land that is development-ready however, it must be noted that some owners of vacant lots have no intention of either building on or selling them in the short-term.

The Valuer General records the development status of all rateable properties including vacant lots by intended land use. This information provides an indicator of the total stock of lots at any point in time by area. The trend shows that from 2004 to 2008 the market was in a 'lot creation' phase – increasing the total number of lots in Perth and Peel (Figure 57). Since 2008 the market has moved into a lot absorption phase, running down the total stock of vacant lots.

Figure 57: Number of vacant residential lots



Source: Landgate, unpublished data, 2004-2010.




Figure 58: Number of vacant residential lots with water services

Source: Water Corporation, unpublished data, 2011.

The Water Corporation has developed a process to determine the number of vacant residential lots that have a water service but no connection. This is another key indicator of the total stock of vacant serviced lots in different parts of the Perth and Peel metropolitan area (Figure 58).

Note that the Water Corporation statistics are slightly higher than those from the Valuer General's Office (VGO). One explanation could be a temporal issue — the VGO data are as at the end of the calendar year whereas the Water Corporation data are at the end of the financial year. Also there are definitional differences between the two datasets regarding the type of lots included in the data.

Although the Central sub-region contained the greatest stock of vacant serviced lots at June 2011, the largest concentrations of such lots were located toward the urban fringe, with five of the top ten suburbs for vacant serviced lots located in Peel (Table 17).

Table 17: Top ten suburbs for vacant serviced lots

Suburb	Sub-region	Lots
Dawesville	Peel	1,091
Wannanup	Peel	895
Baldivis	South-west	780
Yanchep	North-west	699
Halls Head	Peel	657
Falcon	Peel	462
Secret Harbour	South-west	455
Two Rocks	North-west	437
Mandurah	Peel	428
Byford	South-east	418

Source: Water Corporation, unpublished data, 2011.





3.6.2 Resale of vacant lots

Property listings for land available for sale through REIWA agents represent an additional stock of lots to those sold directly by land developers.

Similar to current trends in the number of listed dwellings for sale, the number of vacant lots for sale also increased markedly during 2010/11. While REIWA has not published an estimate of what constitutes a balanced market for land listings, it is generally agreed that it is currently a buyer's market for land, as it is for dwellings (Figure 59).

3.7 Building development phase

3.7.1 Development and building approvals

Building approvals are a demand indicator as they indicate demand from both prospective owner-occupiers as well as investors who want to build for sale or rental purposes. Approvals are also a leading supply indicator as most approvals proceed to construction, adding to the overall dwelling stock.





Figure 59: Residential lots listed for sale with REIWA agents

Source: REIWA, monthly listings data.

3.7.2 Cycles in dwelling construction

Western Australia has had four major dwelling construction boom-bust cycles in the past 20 years occurring every five to seven years. The peaks of those cycles were in 1998/99, 1994/95,1999/2000 and 2005/06 (Figure 60).

The first three of these cycles followed a fairly consistent sequence:

- 1. a substantial rise in finance commitments for dwelling construction;
- a rise in dwelling approvals (building licences) once the boom started, approvals figures took about two years to reach a peak;
- a rise in dwelling commencements (lagging the dwelling approvals by about one quarter);

- a sustained period of between six and 15 months while dwelling commencements exceeded completions as the housing construction industry increased its capacity, representing the 'boom' period of the cycle;
- an increase in construction industry capacity producing a rise in dwelling completions (lagging by between six and 15 months behind the commencement cycle);
- 6. a coincident fall in dwelling finance commitments, approvals and dwelling commencements;
- 7. a sustained period of 12 to 18 months where dwelling completions exceeded commencements as the industry went through its 'bust' cycle.

The most recent boom cycle peaking in 2005/06 has shown a distinctly different pattern. Firstly, there was no sharp increase in either finance or building approvals to signal the commencement of a new cycle. Secondly and more importantly, there was a sustained period of 66 months (five and a half years) where the building industry was commencing increasing numbers of dwellings but was of unable to increase the number of completions due to a series of labour and to a lesser degree, materials shortages.



Figure 60 shows a cyclical indicator of the annual moving average number of dwelling commencements and completions in Western Australia.

The red areas in Figure 60b indicate periods where commencements exceeded completions. During these periods the number of dwellings under construction increased, with the degree of that increase illustrated by the area of the graph shown in red. These are periods when demand has exceeded the capacity of the housing industry to deliver completed dwellings. The points at which the graph turns red reflect high demand for additional dwellings and these periods have generally preceded reported shortages of developed lots.

Periods where dwelling completions exceeded commencements are shown green and these caused the stock of dwellings under construction to decrease. The size of the areas in green are directly related to the rate of decrease in the number of dwellings under construction. The prolonged period where dwelling commencements exceeded completions (the 'red phase') that began in late 2001 and lasted through to June 2007, represented an atypical building cycle where the construction industry was unable to keep up with the rate of dwelling commencements. While in previous housing booms the construction industry had been able to respond with increased output within a six to 12-month period; in the most recent boom the construction industry took around 48 months (from the end of 2001 to the end of 2005) to increase the number of dwelling completions past 19,000 dwellings per annum. It then took the building industry another 18 months to complete sufficient dwellings to reach parity with dwelling commencements. The result was a quantum shift upwards in the number of dwellings under construction in Western Australia.

The number of dwellings under construction is a critical factor in the land and housing supply chain; however, few housing market commentators track or report on this statistic.



Figure 60a: Dwelling construction pipeline - Western Australia - Dwelling finance and approval





Figure 60b: Dwelling construction pipeline - Western Australia - Dwelling commencements and completions



Figure 60c: Dwelling construction pipeline - Western Australia - Dwellings under construction

Total number of dwellings under construction

Source: Department of Planning and Australian Bureau of Statistics, Housing Finance Australia, catalogue 5609.0; Construction Work Done, catalogue 8755.0 and Building Activity Australia, catalogue 8752.0; Building Approvals Australia, catalogue 8731.0.



The number of dwellings under construction at any one time consists of detached houses, 'other' residential dwellings (flats, townhouses, villas, apartments, etc.) and conversions from other uses into dwellings (warehouses, shops, etc.).

Each additional detached house under construction effectively absorbs a single residential lot from the stock of vacant serviced lots. That lot is no longer readily saleable until the dwelling construction is completed.

Figure 61 shows the stocks of both houses and other dwellings under construction, illustrating the impact of the mid-2000s boom. Across Western Australia, there was an average of 7,800 detached houses under construction at any point in time between 1983/84 and 2009/10. At the peak of house building in September 2006, there were 16,800 houses under construction meaning that 9,000 single lots over and above the long-term average were temporarily consumed by the dwelling construction phase. This contributed to problems elsewhere in the land supply pipeline where developers ran short of developed lots available to the market. It also created downstream problems as there was a shortage of completed dwellings available for new residents. The large number of lots under construction in 2006 meant a suitable buffer stock of vacant lots available to the public could not be maintained. The limited capacity of the dwelling construction industry was therefore a major factor contributing to lot supply shortages in Western Australia in the mid-2000s.

The housing industry has expressed concern that threats to the capacity of its industry include the ageing demographic of the construction workforce and the high attrition rates of apprentices.

The positive side of the high number of dwellings under construction is that most of these dwellings are completed within 12 months (more complex dwellings may take longer), increasing the total dwelling stock. This helps buffer sudden increases in demand through strong population growth.

A major current risk factor is that a sustained period of low building approvals and commencement leads to a reduction in the construction capacity of the building industry. Workers leaving Perth to work on construction interstate (especially Queensland) or on resource construction projects could leave the industry short of workers when demand returns.



Figure 61: Stock of dwellings under construction by type of dwelling - Western Australia

Source: Australian Bureau of Statistics, Building Activity Australia, catalogue 8752.0 and unpublished data.



3.7.3 Skills vacancies and the dwelling construction cycle

The trend of skilled job vacancies in the construction trades is correlated to the number of dwellings under construction in the State. Although the index shown in Figure 62 has spiked a number of times in the past, the more critical factor is the length of time that the index stays high (i.e. the area under the graph. The increase in skilled vacancies in late 2010 shows a distinct tightening of the skilled labour market that, if sustained for an extended period of time, could affect the capacity of the building industry to complete new housing.

While the building industry and Government recognised these capacity constraints in construction at the time, the resource investment boom of the mid-2000s created an acute labour shortage and strong competition for construction workers and tradespeople.

Note that the skilled vacancy index (Figure 62) is no longer published as it was based on newspaper advertisements, which are no longer a good indicator of vacancies. It has been replaced by the internet vacancy index.

Figure 62: Dwellings under construction and the skilled vacancy index for construction trades -Western Australia



Source: Australian Bureau of Statistics, Building Activity Australia, catalogue 8752.0, Department of Education, Employment and Workplace Relations and SkillsInfo.



3.7.4 Dwelling construction industry

Western Australia is unusual with regard to dwelling supply in that a relatively small number of companies build a very large proportion of the State's dwellings. The largest five building companies in Western Australia built 41.7 per cent of dwellings in 2009/10. No other major state in Australia has such a market concentration in the building industry (Figure 63).

Another point of distinction in Western Australia is that very few of the State's major construction companies operate as builder/ developers for their residential projects. Of the 23,270 dwellings built by the top 20 builders in 2009/10, only 1.5 per cent were built by builder/developers. This indicates that builders in Western Australia tend to build under a contract with another party (often owner-occupiers or individual investors) rather than acting as a speculative developer by building houses for sale to the public (Table 18).

Figure 63: Market concentration in the housing construction industry



Source: Housing Industry Association, Housing 100, 2009/10.

One consequence of this is that larger builders are not building a stock of single houses available for purchase. Prospective buyers wanting to purchase a new dwelling rather than buying land and then building a house are generally restricted to choosing from medium or high-density dwellings. These are most often pre-sold off the plan to reduce the financial risk of the development.

The result is that Perth has a relatively small stock of newly constructed houses available for immediate purchase and occupation. While the speculative land development market in Perth is very active there is not the same level of speculative dwelling construction in the single residential market.

Another way to look at it is that while the land development industry carries the bulk of the stock risk of developed lots, the major players in the State's housing construction industry carry negligible inventory risk.

Table 18: Proportion of starts as a builder/ developer for major construction companies

State	Percentage of dwelling starts as builder/ developer*
New South Wales	29.6
Victoria	0.4
Queensland	27.0
Western Australia	1.5
South Australia	0.9

Source: Housing Industry Authority, Housing 100, 2009/10.

Note: * Refers to top 20 residential construction companies in NSW, Vic, WA & QLD and top 15 in SA.



3.7.5 Construction costs

Construction costs throughout Western Australia are generally among the highest in the country. In recent years the resources boom has increased wages and demand for housing. This, coupled with the increasing cost of raw materials has driven up construction costs at a much higher rate than inflation. Although the 2009 GFC slowed growth in the construction industry in Western Australia, the sector is recovering well and strong growth is expected to return (Figure 64).

From 2003 to 2008, growth in construction costs in Western Australia averaged nine per cent per annum, with a total increase of close to 70 per cent over those six years. Although this represents the biggest growth of any state, Western Australia also experienced the largest decline in costs directly after the GFC.⁹⁷ Despite this recent downturn, the State's overall growth in building costs remains high. Residential building costs recorded around eight per cent growth annually from September 2004 to September 2009. This, along with the Northern Territory's annual growth, was the highest in the country during that period, with the national average being 3.6 per cent per annum. Nationally, Macromonitor predicts a 4.3 per cent annual growth in residential output costs over the ten years to 2020, with a similar rate of growth in Western Australia.

Construction costs of infill developments are reasonably consistent across Australia's five major cities with a nine per cent variance. Perth has the highest cost of construction for infill averaging \$308,073 per unit compared to Sydney (lowest) where a comparable project is likely to cost \$282,137.⁹⁸

Perth is also the most expensive major city in the country to construct dwellings on greenfield sites averaging \$219,204 to construct a three bedroom single-storey home. Brisbane is the cheapest major city in the country for this type of project. There, a comparable project would be likely to cost \$201,588. This also represents a variance of about nine per cent between all major Australian cities.⁹⁹



Figure 64: Building construction costs - by state

Source: ABS and Macromonitor 2010.

⁹⁷ Macromonitor, *Australian Construction Cost Trends* 2010.

98 Urbis, National Dwelling Costs Study 2010.

99 Urbis, National Dwelling Costs Study 2010.



Perth's isolation, high demand for housing and high construction industry wages mean dwelling construction in the Perth and Peel metropolitan area is likely to remain costly relative to the other major Australian cities for the foreseeable future.

3.7.6 Housing stocks

Ultimately, buildings are required for urban land to be utilised for residential purposes and therefore much of the value-adding of the planning and development process is not realised until a building is completed and available for use. The key statistic, when monitoring urban development, is therefore the number of residential dwellings being completed and made available for occupation. One way to examine this issue is to contrast the number of additional people and the number of additional dwellings being built, as per Figure 65. The critical element of Figure 65 is the additional persons per additional dwelling. From the 2001 and 2006 Census we know that the average number of persons per dwelling is 2.65, therefore if the additional persons per additional dwelling is less than 2.65 then we are building more dwellings than are required to accommodate the population growth. Figure 65 therefore shows that for an extended period from at least 1997 through to early 2008, dwelling construction was well in excess of what the additional population needed for accommodation.

Much of the debate about the adequacy of housing stocks revolves around assumptions employed in forecasting models. Although the NHSC model is comprehensive, it is very sensitive to assumptions regarding 'optimal' household size. At the core of those assumptions is whether people living within a household would leave and form a new household if the cost of that choice (i.e. the price of housing) was not a constraint. Accordingly, the model extrapolates the long-term trend of decreasing household size and assumes that households will continue to decline in size.



Figure 65: Growth in population and additional dwellings - Western Australia

Source: Australian Bureau of Statistics, Department of Planning.



The NHSC also predicts that changing demographics (particularly a smaller proportion of couples with children and ageing of the population) are likely to increase underlying demand for smaller dwellings. It is probable that this increase will be of a greater proportion than the corresponding increase for detached homes.¹⁰⁰

The NHSC 2010 report is based on 2001 Census data as the base for its model instead of using the more recent 2006 Census data. The decision has proved to be significant as the 2006 Census identified that the long-term trend of decreasing household sizes had ended and the number of persons per household in 2006 was very similar to 2001. Simply substituting the 2001 data with 2006 Census results and keeping all other NHSC assumptions the same, there was a *significant housing oversupply* throughout most of the last decade (Figure 66). The Housing Industry Association has also published corroborating research in its June 2007 *State Outlook* which indicated that Perth had an oversupply of some 20,000 dwellings at that time.



Figure 66: Housing supply and undersupply – Western Australia

Source: Australian Bureau of Statistics, Department of Planning.

¹⁰⁰ National Housing Supply Council State of Supply Report 2011.



3.8 Established housing market

3.8.1 Stock of dwellings listed for sale

REIWA estimates that over the longer-term, 12,000 listings represents a balanced market of relatively equal numbers of buyers and sellers in the Perth metropolitan region. In December 2009 the number of REIWA listings dropped to 9,845. Since then the number of dwellings on the market has increased substantially, with an average of 15,700 dwellings for sale in the first half of 2011 (Figure 67) which is indicative of a buyer's market. The number of dwellings for sale has since fallen to 11,947, as at December 31 2011.

3.8.2 Stock of dwellings listed for rent

Rental vacancy rates are coming down from a high, by historical standards. These are a key indicator of the property market, and influence rents and consequently investment decisions. At March 2012, REIWA reported a vacancy rate of 1.9 per cent (down more than two and a half per cent since the beginning of 2010) – around three per cent is considered a balanced rental market. Rental property is discussed in more detail in section 2.4.4.





Source: Real Estate Institute of Western Australia, monthly listings data.



3.9 Demolition

Demolition is an important part of the urban consolidation and regeneration process. The demolition rate is calculated by the number of dwellings demolished as a percentage of the number of dwellings constructed. Several key factors influence demolition rates including property values, age of the dwelling stock, restrictive housing density policies and the amount of greenfield land available for development. Demolition licences are approved by local government and consequently there are no precise figures for demolition activity. Department of Planning research indicates that the demolition rate across the Perth and Peel metropolitan area over the last ten years has been roughly 12 per cent with annual figures ranging from 10 to 15 per cent.

Generally, a low demolition rate (< 5 per cent) is an indication of significant population growth, with a large number of dwellings being added to the existing stock and few removed. Councils with particularly low demolition rates are generally located in the growth corridors; however the City of Perth also has a low demolition rate, due to the large number of apartments being constructed in the central city area. Local governments with high demolition rates (>50 per cent) are typically well established, affluent suburbs with low population growth rates.

3.10 Infill

The progression from vacant land to developed urban land in Western Australia may take many years and requires the input of a variety of stakeholders. Once the process is complete however, the urban form of an area is not finite. Even in established urban areas there is a continual process of regeneration and renewal.

Directions 2031 and Beyond has set a target for 47 per cent infill for the Perth and Peel regions under the policy's preferred growth scenario. It is intended that 37 per cent of dwellings will be infill projects in the Central sub-region and ten per cent of dwellings will be infill projects in the outer sub-regions. Achieving these targets presents a significant challenge to the planning community with analysis from the UGM indicating that the current rate of infill is approximately 32 per cent.

In the draft *Central Metropolitan Perth Sub-regional Strategy*, 59 targeted growth areas are outlined for residential infill projects by 2031. It is hoped that these projects will yield up to 142,000 dwellings in the sub-region during that time. In addition to the targeted growth areas it is anticipated that small scale incremental growth may account for an additional 40,000 dwellings in the Central sub-region by 2031.



4 Commercial demand and supply assessment

Key points/issues

- The office vacancy rate is considered a key barometer of the strength of the commercial property sector.
- A major impediment to further expansion in the commercial property sector is the scarcity of development and investment capital.
- Some of the commercial projects which were delayed due to the GFC may now proceed; however, it is likely that risk averse attitudes on both debt and equity markets will slow recovery.

4.1 Commercial demand and supply

Drivers of growth in the capital value of commercial property, and subsequent demand for commercial land, include strong underlying economic conditions and outlook, low interest rates and the weight of money flowing into commercial property. As an example, strong household income and wealth gains have underpinned buoyant consumer sentiment; and solid growth in retail sales has historically boosted the demand for retail property and warehouses.

Booms in global and domestic asset markets have been underpinned by a marked expansion in liquidity. Buoyant liquidity leads to an increase in investable funds. These funds have increasingly been attracted into commercial property by relatively high yields and perceptions of reduced risk. This helps drive the demand for commercial land. With construction costs remaining relatively static, several major projects are expected to commence during 2012. However, in the short-term construction activity remains tight, with the market still substantially underpinned by State Government projects. It is likely that the proportion of private sector investment in commercial construction projects in the metropolitan area will increase substantially once major projects in the State's north-west reach capacity. Until there is more activity, construction costs are expected to remain highly competitive across all sectors with the exception of top end CBD projects.¹⁰¹

Commercial subdivision approvals

Table 19 provides statistics for commercial subdivision approvals in the Perth metropolitan and Peel regions for the 2010/11 financial year. Commercial activity can be hard for the WAPC to track as most applications for this type of development are assessed at the local government level.

Impacts

- Drivers of growth in capital value of commercial property, and subsequent demand for commercial land, include strong underlying economic conditions and outlook, low interest rates and the weight of money flowing into commercial property.
- Increased levels of white collar employment will increase the demand for office space.
- Falling office vacancy rates should translate to an increased rate of office building.

Non-residential building activity

Non-residential building includes commercial, retail, industrial and community facilities. This primarily represents investment (public and private) in activity centres and employment areas within each sub-region. Therefore, non-residential building can be used to gauge investor confidence in an area functioning as a vibrant or lucrative economic system.

¹⁰¹ Davis Langdon Market Outlook - Commercial from Property Australia, March 2012.



Table 19: Commercial subdivision activity

Sub-region	Applications lodged (1 Jan 2011 – 31 Dec 2011)	Applications under assessment (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 – 31 Dec 2011)	Stock of current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals issued (1 Jan 2011 – 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Central sub-region	169	72	123	141	31	67
North-west sub-region	23	16	16	39	17	29
North-east sub-region	28	2	27	41	56	8
South-east sub-region	36	29	10	45	26	5
South-west sub-region	24	3	28	184	48	21
Perth metropolitan region sub-total	280	122	204	450	178	130
Peel sub-region	5	0	7	39	0	7
Total	285	122	211	489	178	137

Source: Department of Planning internal database (2012), Water Corporation (2012).

¹ Refers to conditionally approved lots where a servicing agreement (agreement to construct) has been signed between the Water Corporation and the developer. These are termed lots on non-cleared agreements. Data not available for 31 December 2011.

The level of non-residential building work in Western Australia has been high for the last five years, with work underway on a series of major commercial projects including:

- the \$550 million Raine Square office and retail development;
- the \$1 billion Jandakot City commercial development;
- the \$515 million upgrade of Perth's domestic and international airport by Westralia Airports Corporation;
- the \$550 million Perth Arena entertainment complex due for completion in late 2012; and
- Multiplex's \$500 million City Square office development on St Georges Terrace.¹⁰²

Major planned projects include the new \$700 million Perth Stadium at Burswood (planned to start in 2014) and the \$440 million first stage of the Perth Waterfront development.



¹⁰² Deloitte Access Economics-Arup Investment Monitor December 2011.





Figure 68: Value of non-residential building approvals - Western Australia

Source: Australian Bureau of Statistics Catalogue 8731.0 Building Approvals, Australia Table 56 Value of Non-residential Building Approved, By Sector, Original – Western Australia (A420965K, A420941T, A420920F).

Figure 68 illustrates the value of non-residential building approvals in Western Australia; broken up via public and private sector spending. Of particular interest is the spike in public sector building in 2009 driven by the Commonwealth Government's economic stimulus plan.

4.2 Office demand and supply

Office construction forms a significant component of nonresidential building. During strong years it accounts for over a quarter of all non-residential construction, by value. During the GFC the development of office space declined markedly. Stagnant employment growth in the white collar sectors increased office vacancy rates, reducing demand for new space; and the limited availability of credit made it far more difficult for developers to attract finance for office developments.¹⁰³ It is anticipated that improving access to finance will enable some projects that were postponed during the GFC to proceed. Improving economic sentiment generally leads to an increase in the number of office workers and underlying demand for office space is essentially driven by office employment levels. Demand for office space in Perth, is therefore closely aligned with the prosperity of the mining and resource sector – with mining companies and support industries occupying large city centre office buildings.¹⁰⁴

Indicators such as white collar employment and office vacancy rates are therefore key indicators for the future demand and supply for the office market. ANZ have forecast that office fundamentals are set to improve as confidence is restored post GFC.¹⁰⁵

There are, however often long lag times between a development proposal for new offices, construction and ultimate occupancy. The balance between office demand and supply is therefore difficult to manage, which results in periods of office booms and busts.¹⁰⁶

¹⁰³ Deloitte Access Economics Investment Monitor March Quarter 2011.

¹⁰⁴ Property Australia, March 2012.

¹⁰⁵ ANZ Australian Property Outlook June 2011.

¹⁰⁶ ANZ Australian Property Outlook.



After remaining subdued in 2010 an improvement in local and global economies has led to a rebound in demand for leasable office space in Perth. This is reflected in the latest Property Council of Australia's (PCA) Office Market Report which shows the vacancy rate in the Perth CBD dropped to 3.3 per cent in January 2012 (compared to 7.4 per cent for Australia CBD) – the lowest rate in three years. This is a dramatic fall from vacancy rates of 10.2 per cent in January 2011 and 7.8 per cent in July 2011 recorded for the Perth CBD. West Perth, Perth's second largest office market, had a vacancy rate of 4.4 per cent in January 2012.

Net absorption refers to the amount of office space that is leased minus that vacated. The net absorption of office space for the last six months of 2011 in Perth's CBD was almost 47,000 square metres, the equivalent of a new 40 storey office tower.¹⁰⁷ Total net absorption in 2011 was 109,400 square metres which is nearly five times the 40-year average.¹⁰⁸ PCA expects a further 162,000 square metres of office space to become available in the Perth CBD in 2012 with most of this pre-committed. Additionally, the Perth market is likely to experience higher than usual levels of temporary withdrawals of office stock as property owners redevelop or refurbish older buildings in order to compete with new office developments.¹⁰⁹

The PCA forecasts that the strong economic fundamentals in Perth will require a greater increase in the supply of office accommodation than is currently planned and predict that Perth will experience acute shortages of office accommodation in the next two years.

Research by Knight Frank states that during 2011 Perth became the seventh most expensive office market in the world, ranked by highest prime office rents, with rents at \$US86.49 per square foot per year. The rise was a result of strong demand from the resource sector and the lack of available prime space in the CBD due to rapidly falling vacancy rates.¹¹⁰ Despite the strong demand for commercial office space in Perth there has only been a modest rebound in property values in the commercial sector. Annual capital return growth rates for the Perth CBD office market were 20 per cent in 2005, 35 per cent in 2006, 40 per cent in 2007, zero per cent in 2008 and a 10 per cent decline in 2009, with the recovery in commercial property values not commencing until 2011.¹¹¹

4.3 Retail demand and supply

The success of retail property is dependent on the performance of retailers and the level of retail turnover achieved in a particular location and property. In times of recession consumers become more conservative in their spending habits and retail spending is negatively impacted.¹¹² Speculation of interest rate rises can also lead to lower levels of retail spending.

4.4 Activity centres policy

State Planning Policy (SPP) 4.2 – Activity Centres for Perth and Peel is a policy for the planning and development of activity centres throughout Perth and Peel. The main purpose of SPP 4.2 is to specify broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel.

The policy addresses the distribution, function, broad land use, infrastructure requirements and urban design criteria of activity centres. SPP 4.2 reflects the WAPC's intention to encourage and consolidate residential and commercial development in activity centres, so that they contribute to a balanced urban network. While a wide variety of land uses are encouraged in activity centres they are intended to be focal points for commercial activity and investment.

SPP 4.2 was gazetted in August 2010 and replaces the Metropolitan Centres Policy (MCP). The major criticism of the MCP is that it stifled retail development and created a lack of innovation in commercial development.¹¹³ A key initiative of the

 $^{^{\}rm 107}$ Property Council of Australia - Perth CBD Office Market Report February 2012.

¹⁰⁸ Property Australia, March 2012.

 ¹⁰⁹ Property Council of Australia - Perth CBD Office Market Report February 2012.
¹¹⁰ http://www.wabusinessnews.com.au/article/Perth-becomes-worlds-7th-

most-expensive-office-market?utm_source=DBA&utm_medium=email&utm_ campaign=article_click.

¹¹¹ Property Council of Australia, Western Australian Division - Budget Submission 2012/13.

¹¹² CB Richard Ellis - The Recession's Impact on Demand Drivers and their Implications for Market Recovery.

 $^{^{113}\} http://www.propertyoz.com.au/library/PCA\%20-\%20Pracsys.pdf.$



new policy is the creation of activity centres of broad based development that remove the existing limits to the growth of existing metropolitan shopping centres.

SPP 4.2 identifies 10 strategic metropolitan centres (Yanchep, Joondalup, Stirling, Morley, Midland, Fremantle, Cannington, Armadale, Rockingham, and Mandurah) and a further 19 secondary centres as well as five major specialised centres. It should also be noted that the WAPC will approve additional activity centres, as part of future structure planning for new urban areas.

The PCA has been supportive of the introduction of the activity centres policy. The PCA believe that it will result in more vibrant and diversified places for people to operate businesses and create communities. Additionally, the removal of the limits on the growth of activity centres should encourage more innovation and investment in activity centre developments in the Perth and Peel metropolitan region.¹¹⁴



¹¹⁴ Property Council of Australia June 2009.

Development Program

Perth and Peel Development Outlook 2011/12

5 Industrial demand and supply assessment

Key points/issues

- The demand for well-located industrial land will remain strong, given its scarcity in the Perth and Peel metropolitan area.
- The combination of a continued strong export oriented economy, employment growth and a growing population are likely to bolster demand for industrial land in the Perth and Peel metropolitan area for a considerable time.
- Industrial demand forecasts are influenced by a number of key drivers and market trends including population growth, subdivision activity, lot sizes, land values, location and technological and operational changes.

Although population growth is the primary driver of demand for industrial land, economic conditions and market trends also have a significant influence on the rate and type of industrial land consumption. In Western Australia, a unique set of economic drivers, influenced by the State's heavy reliance on the resource sector, affect the level of demand for industrial land.

Long-term economic growth in key international markets such as China, Japan and Korea will stimulate industrial activity in Western Australia, increasing demand for industrial land. State and local government agencies must play a key role in facilitating this growth, by setting policies and providing infrastructure to attract investment from the private sector.

The Western Australian industrial market is closely linked to the fortunes of the State's mining and resource sector and other significant export industries. These include the agriculture and food sector, manufacturing (shipbuilding in particular), and civil engineering and construction. Levels of employment in these industries are closely linked to the economic climate. Downturns in main industries, which underpin occupancy in the industrial market, have significant implications for industrial land demand.

Contribution to GDP, or output, is the most significant economic driver of underlying demand for industrial property.¹¹⁵ Demand for industrial land therefore hinges on the profitability of adding value to locally produced or imported products and demand for those 'value added' outputs.

Industrial demand is also influenced by sector specific characteristics, such as market trends, technological advancement and operational innovations. These include shifts in scale and size of production operations; emphasis on research and development activities; cleaner, less polluting processes; increasing 24 hour and 7 day a week operations; growth of small to medium size enterprises in both the services and manufacturing sectors; greater use of machinery, trucks and computer control of stock; and use of broadband and computer technology.

Differing industry sectors will be influenced by a number of the above elements when determining location, property costs and lot development. The general increase in the service industrial sector has resulted in an increase in demand for smaller industrial lots.

Another major influence on demand for industrial land is the expansion of other non-industrial land uses, such as retail and office space, which are increasingly encroaching on traditional industrial areas, particularly in the Central sub-region.

5.1 Industrial demand and supply

Regardless of what drives demand for industrial land, it is important to examine what supply levels are, and are likely to be, to determine whether there will be sufficient stocks of industrial land available to cater for projected demand levels.

The EELS was predicated on the need to identify future land for industrial use, resulting from an identified shortfall in industrial land, witnessed in the late 1990s and early 2000s. To determine how much industrial land will be required to resolve this shortfall, demand modelling was undertaken to enable forecast demand

¹¹⁵ CB Richard Ellis - The Recession's Impact on Demand Drivers and their Implications for Market Recovery.



Figure 69: Industrial land demand modelling inputs



Source: Economic and Employment Lands Strategy: non-heavy industrial, Perth metropolitan and Peel regions 2012.

rates to be determined. A forecast model was developed based on key data considered relevant to informing future demand levels. The key model inputs used were based on both historical and projected data, which are represented and were used as indicated in Figure 69.

The forecast additional demand for industrial land in the Perth and Peel regions from 2006 until 2031 is calculated to be approximately 4,726 hectares. It should be noted that the forecast demand was based on a "business as usual" case, using *Western Australia Tomorrow* population projections and parameter values that are considered to show consistent trends. Using data derived from studies undertaken as part of the EELS, and confirmed following consultation with industry bodies, existing markets will be able to supply 1,211 hectares (25 per cent) of the projected 4,726 hectares of demand up to 2031. The timeframe for the expected release of the identified lands is:

- 238 hectares is expected to be available in the short-term (zero to four years)
- 430 hectares is expected to be available in the mediumterm (four to ten years)
- 543 hectares is expected to be available in the long-term (ten to twenty years).

Based on a population-driven model, the sub-region with the greatest anticipated demand for industrial land is the North-west, as shown in Figure 70.

Table 20 demonstrates that with the supply of land provided through the EELS, along with the development of short to medium-term sites identified, there will be a shortfall against forecast demand for industrial land in all sub-regions apart from the South-east.





Figure 70: Forecast industrial demand levels by sub-region

Source: Economic and Employment Lands Strategy: non-heavy industrial, Perth metropolitan and Peel regions 2012.

Sub-region	Demand at 2031 (ha)	Pipeline supply from current Land Development Program (ha)	Shortfall/surplus (ha)	
Central	5,243	3,407	-1836	
North-west	2,442	2,004	-438	
North-east	1,646	1,765	-117	
South-east	1,397	1,583	194	
South-west	1,828	1,525	-303	
Peel	910	304	-606	

Table 20: Industrial land demand/supply forecast by sub-region

Source: Internal Department of Planning data, Property Council of Australia.

Development Program

Perth and Peel Development Outlook 2011/12

5.2 Monitoring industrial land demand and supply

The EELS has identified the following three principal objectives, that will underpin the key actions required to supply sufficient stocks of industrial land, to meet forecast demand in the most efficient and expeditious manner possible.

- 1. To provide and ensure the ongoing availability of a supply of industrial land, including a buffer of undeveloped industrial land to be available if demand increases.
- To identify and protect a rolling 20-year "industrial land bank" to ensure a planned supply of industrial land is available to meet future demand on an ongoing basis.
- 3. To appropriately protect existing industrial land to sustain long-term industrial activities.



Based on the current shortfalls in industrial land supply and forecast demand for the Perth and Peel metropolitan area over the next 20 years, it will be approximately 10 years before a balance of supply and demand is likely to be achieved for industrial land.

One of the key indicators of determining whether there is an adequate ongoing supply of industrial land for market consumption is the monitoring of supply. To date, the monitoring of industrial land consumption and the type of occupier has been largely informed by the Industrial Land Use and Employment Survey (LUES). Charting market trends and rates of occupancy, the LUES provides a good reference for industrial land use activities and locations of industrial complexes throughout the Perth metropolitan and Peel regions. A major challenge lies in monitoring the rate of development (in terms of lot size and land consumption) due to the absence of density provisions for industrial estates.

The UDP is improving data collection and analysis of industrial land development information through the Industrial Land Development Program and UDP land supply models. This planned annual monitoring will inform industrial land use planning decisions helping to establish a greater equilibrium between demand for and supply of industrial land.

In 2011, the Department of Planning on behalf of the WAPC, undertook a state-wide Industrial Developers' Intentions Survey. Details from the survey are used to:

- identify the yield and timing. staging of future land development areas over the next 20 years;
- assess infrastructure coordination needs;
- determine the major development issues and constraints in the planning and development process;
- enable the planning process to focus on the most critical factors/areas that are delaying land development and/or increasing development costs; and
- inform regional strategies and other plans.

It is intended that the survey will be undertaken on a regular basis. Private sector engagement and participation will be vital to the success of this process.



Table 21: Industrial subdivision activity

Sub-region	Applications lodged (1 Jan 2011 – 31 Dec 2011)	Applications under assessment (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 – 31 Dec 2011)	Stock of current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals issued (1 Jan 2011 – 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Central sub-region	51	24	34	127	94	24
North-west sub-region	106	3	125	219	24	34
North-east sub-region	30	23	89	149	9	10
South-east sub-region	29	33	18	267	8	14
South-west sub-region	37	1	64	248	19	63
Perth metropolitan region sub-total	253	84	330	1,010	154	145
Peel sub-region	16	0	15	95	2	5
Total	269	84	345	1,105	156	150

Source: Department of Planning internal database (2012), Water Corporation (2012).

¹ Refers to conditionally approved lots where a servicing agreement (agreement to construct) has been signed between the Water Corporation and the developer. These are termed lots on non-cleared agreements. Data not available for 31 December 2011.

5.3 Industrial subdivision approvals

Industrial development can be difficult to accurately monitor. The broad spectrum of projects that fall under the umbrella of industrial development, mean that development costs and timeframes can vary widely.

Table 21 provides statistics for industrial subdivision approvals in the Perth metropolitan and Peel regions for the 2011 calendar year.

5.4 Industrial land values and rents

In recent years there have been very high levels of growth in industrial land values and rents. The economic boom, as well as a shortage of industrial land ready for development, has driven this increase. Perth's industrial land values and rents have traditionally been lower than in other Australian capital cities; however, recent growth has seen the Perth market come more into line with interstate values, largely as a result of limited supply. The rapid increase in land values in Perth between 2006 and 2008 was driven by the mining boom, which led to a rapid take-up and subsequent shortage of available industrial land, both in established and emerging areas.

Traditional industrial precincts, such as Osborne Park and Herdsman have experienced a stark rise in land values as other land uses increasingly compete for land, pushing the value of land in those two areas past \$1,000 per square metre for



serviced lots of 2,000 square metres. A shortage of industrial land in these suburbs has displaced tenant demand to Malaga and Wangara, where land values are now three times higher than in 2004. Figure 71 depicts recent changes in vacant land values (for serviced lots of 2,000 square metres).

The average rental value of industrial sites in Perth has increased more than in any other major Australian city during the 12 months to March 2011. The highest average rental levels are being achieved in the eastern sub-regions, with strong demand for premises close to Perth Airport, the rail yards and the transport hubs to the north and south of the State. Rental levels across the Perth industrial market have increased by an average of 32 per cent over the last five years to an average of \$124 per square metre, as Figure 72 illustrates.







Figure 71: Recent changes in vacant industrial land values (serviced lots of 2,000 m²) - Perth

Source: Jones Lang LaSalle.



Figure 72: Recent changes in rental levels

Source: Jones Lang LaSalle.





Glossary

ABS	Australian Bureau of Statistics
AFG	Australian Finance Group
AWOTE	Average Weekly Ordinary Time Earnings
CBD	Central Business District
CCIWA	Chamber of Commerce and Industry Western Australia
CPI	Consumer Price Index
DTWD	Department of Training and Workforce Development
EELS	Economic and Employment Lands Strategy: non-heavy industrial, Perth metropolitan and Peel regions
EPBC Act	Environmental Protection and Biodiversity Conservation Act
FHOG	First Home Owner Grant
GFC	Global Financial Crisis
GSP	Gross State Product
GST	Goods and Services Tax
HIA	Housing Industry Association
HIFG	Housing Industry Forecasting Group
LNG	Liquefied Natural Gas
LUES	Land Use and Employment Survey
LVR	Loan to Valuation Ratio
MCP	Metropolitan Centres Policy
MRRT	Mineral Resource Rent Tax
NHSC	National Housing Supply Council
PCA	Property Council of Australia
RBA	Reserve Bank of Australia
REIWA	Real Estate Institute of Western Australia
UDP	Urban Development Program
UGM	Urban Growth Monitor
WAPC	Western Australian Planning Commission



Table 22: Local government areas by sub-region

Sub-region		Local government area	
		City of Fremantle	
		City of Nedlands	
		City of Perth	
	Inner sector	City of South Perth	
		City of Subiaco	
		City of Vincent	
		Shire of Peppermint Grove	
		Town of Cambridge	
		Town of Claremont	
Central		Town of Cottesloe	
		Town of East Fremantle	
		Town of Mosman Park	
		Town of Victoria Park	
	Middle sector	City of Bayswater	
		City of Belmont	
		City of Canning	
		City of Melville	
		City of Stirling	
		Town of Bassendean	
North-west		City of Joondalup	
		City of Wanneroo	
		City of Swan	
North-east		Shire of Kalamunda	
		Shire of Mundaring	
South-east		City of Armadale	
		City of Gosnells	
		Shire of Serpentine-Jarrahdale	
South-west		City of Cockburn	
		City of Rockingham	
		Town of Kwinana	
Peel		City of Mandurah	
		Shire of Murray	



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