



Perth & Peel
Development Outlook 2011/12:
North-west Sub-regional Profile

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1. North-west sub-region overview

The North-west sub-region consists of the cities of Joondalup and Wanneroo. Having experienced major urban expansion over the past thirty years, the area is now the most populous of the outer sub-regions, with more than 320,000 residents (Table 1).

Despite consistent population growth in the sub-region, there has not been a corresponding increase in employment opportunities and its employment self-sufficiency rate is less than 50 per cent. The need for residents to access employment opportunities further south in the Central sub-region and particularly the Perth CBD, puts pressure on transport links via the Mitchell Freeway and northern suburbs railway.

Perth's beaches are one of its greatest natural assets and as greenfield land in the coastal areas of the Central sub-region is scarce, the North-west sub-region provides a more affordable option for coastal living north of the river. The area has been particularly popular with migrants, with only 60 per cent of the sub-regions residents born in Australia.

The North-west sub-region is predominantly developed at low residential densities with single houses making up 91 per cent of all dwellings. With vast stocks of undeveloped, zoned land the North-west sub-region is likely to be the site of much of Perth's greenfield development during the next 30 years (Table 2).

While Joondalup's population growth has slowed markedly since the 1990s, the City of Wanneroo's population growth has increased substantially, making it one of the fastest growing local government authorities in the country. The sub-region's rapid population growth is forecast to subside over the coming decade as the remaining greenfield land available for residential development becomes increasingly distant from the city.

The North-west sub-region has 7,450 hectares of undeveloped land zoned urban or urban deferred under the Metropolitan Region Scheme (MRS). Urban development consumed an average of 265 hectares of land per year between 2003 and 2010 ('boom' years for land development) for uses such as suburban feeder roads, neighbourhood parks, community/recreation facilities and local shops/petrol stations as well as for new dwellings (Table 2).

In addition to the undeveloped land, the sub-region has a stock of 220 hectares of land zoned for urban development in the MRS, which is developed at very low densities. Over time, some of this land will be further subdivided for higher density urban development.

Table 1: Key urban statistics – historical

Local government authority	Suburban area (ha)	Commercial and light industrial area (ha)	2006 data		2011 data		Average annual population growth rate (2006 to 2011) (%)	Average frontal development density dwellings per zoned ha (1991–2008)
			Dwellings	Estimated resident population	Dwellings	Estimated resident population		
Joondalup	6,400	80	56,561	157,871	58,524	161,783	1.2	9
Wanneroo	5,200	460	41,639	115,897	56,334	160,332	6.2	10
Total	11,600	540	98,200	273,678	114,858	322,115	3.4	10

Sources: Western Australian Planning Commission, 2011, Urban Growth Monitor. Australian Bureau of Statistics, 2006 & 2011, Census of Population and Housing, Regional Population Growth, Australia, Cat. No. 3218.0.

Note: Land areas under 1,000 hectares are rounded to the nearest ten. Land areas over 1,000 hectares are rounded to the nearest 100. Dwelling figures include unoccupied dwellings.

Table 2: Key urban statistics – outlook

Local government authority	Undeveloped urban and urban deferred land area (ha)	Under-developed areas of urban zone (ha)	Average land consumption rate (ha per year) (2003–2010)	Forecast population growth 2011–2021 (median) (%)
Joondalup	180	10	22	0.8
Wanneroo	7,300	200	243	4.0
Total	7,400	220	265	n/a

Source: Western Australian Planning Commission, 2011, Urban Growth Monitor. Western Australian Planning Commission, 2012, Western Australia Tomorrow.

Note: Land areas under 1,000 hectares are rounded to the nearest ten. Land areas over 1,000 hectares are rounded to the nearest 100.

1.1 Key issues for planning and development

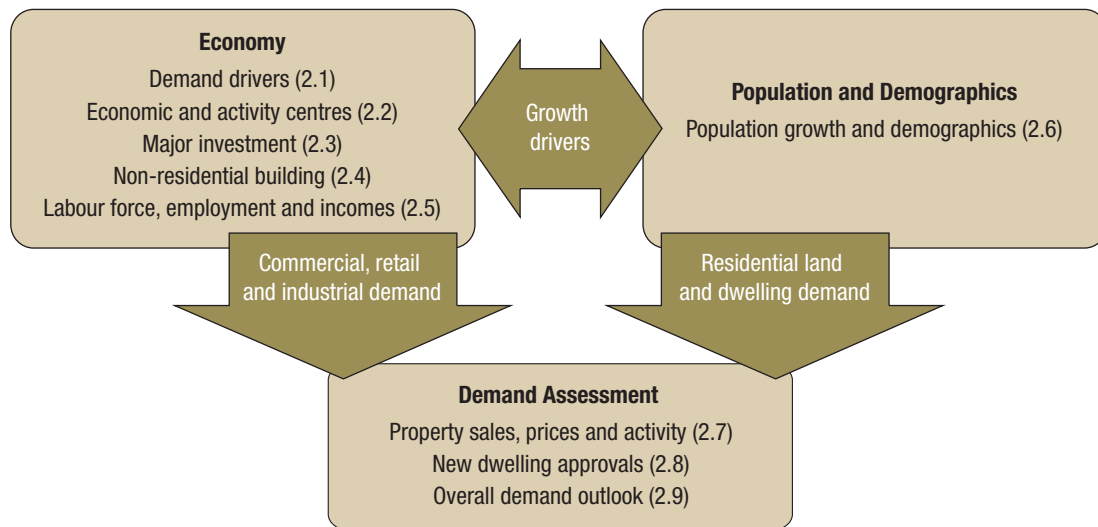
State and local government agencies have identified a number of key short and long-term planning and development issues in the North-west sub-region, which include:

- Larger developers in the region, particularly those with master-planned developments, have previously coordinated and delivered major frontal infrastructure. The coastal corridor of the sub-region is an example where large land holdings have enabled developers to provide expensive sewer, water and power extensions. Frontal areas of the sub-region with more fragmented land holdings in East Wanneroo are more difficult to develop.
 - The East Wanneroo Structure Plan (EWSP) delineated a potential urban area. The EWSP also highlighted infrastructure capacity (water, sanitation, roads, electricity) is not sufficient to allow urbanisation of East Wanneroo. Detailed feasibility and costing analysis is required in order to determine the requirements for infrastructure provision in this area so that an informed decision regarding potential Metropolitan Region Scheme amendments and Developer Contribution Schemes could be made.
 - The North-west sub-region has several areas subject to matters of national environmental significance, such as those protecting the endangered Carnaby's Black Cockatoo and Golden Sun Moth. An assessment of these areas will be undertaken as part of the Strategic Environmental Assessment under the federal *Environmental Protection and Biodiversity Conservation Act 1999* currently being undertaken by the State Government, in order to streamline the environmental approvals process for public agencies and developers.
 - Protection of raw material sources is needed as part of a sustainable solution and time for adequate planning must be given. Geological mapping has allowed a 50-year period for defining raw material areas. The envisaged Sub-regional structure plan and review of the State Planning Policy will need to address the current policy framework.
- There are significant land parcels reserved for parks and recreation with unresolved environmental issues. Mechanisms are needed to protect these and ensure adequate funding; including attracting private sector funding.

2. Demand assessment

Economic conditions and population growth are inter-related and together, they create demand for land and dwellings. This section is structured as shown in Figure 1.

Figure 1: Demand assessment for land and dwellings



2.1 Demand drivers

The North-west sub-region has been one of the fastest growing areas in the country for the past five to ten years. Close proximity to beaches and Yanchep National Park make the area attractive to home buyers, and demand for residential land is extremely high. Transport links to the central business district via the northern suburbs railway line and Mitchell Freeway bolster property demand in the sub-region, enabling residents to work elsewhere in central Perth.

Overseas immigration is the biggest contributor to population growth in Western Australia, and the North-west sub-region is particularly popular with new arrivals. In the City of Joondalup, only 59 per cent of residents were born in Australia; in the City of Wanneroo, this figure is 60 per cent.

The State's thriving economy is also a catalyst for growth in the sub-region. The area has a relatively high proportion of residents in the construction, retail and finance sectors which prospered during the mining boom. This has made large, new housing (typical of the sub-region) affordable to the broader community.

2.2 Economic and activity centres

- Activity centres are areas of economic activity and are defined in a hierarchical framework under *State Planning Policy 4.2: Activity Centres for Perth and Peel* (August 2010). This policy and *Directions 2031 and Beyond*, identify Joondalup as a strategic metropolitan centre and Yanchep as an emerging strategic metropolitan centre to support long-term urban growth.
- *Directions 2031 and Beyond* identifies Two Rocks, Clarkson, Wanneroo, Whitfords, Warwick and Alkimos as secondary centres. Alkimos is expected to become the next major commercial hub of the northern metropolitan area.
- Most industrial land in the North-west sub-region is in the City of Wanneroo. These industrial estates are located in Wangara, Landsdale, Yanchep and Neerabup. 1,828 hectares of the sub-region is industrial zoned land (two per cent) – representing 17 per cent of all industrial zoned land in the Perth metropolitan area.

2.3 Major investment

This section covers major projects in the North-west sub-region financed by government and the private sector. Such investment can stimulate demand for additional land and dwellings in the area. Projects for additional residential, industrial or commercial development are covered in later sections.

There has been significant recent investment in Joondalup by State and local governments and the private sector. The City of Joondalup is developing a new city centre structure plan to guide future commercial and residential development in the area.

Major State Government capital works projects

- \$68.7 million on Joondalup Health Campus Stage 1. This will improve the level of health services in the North-west sub-region.
- \$53 million for a secondary school at Butler.
- \$34 million for two engineering buildings at Edith Cowan University, Joondalup.
- \$21 million on development of Ashdale College, Darch.
- \$22.7 million for construction of the northern suburbs rail extension to Butler. The railway will provide increased accessibility and has increased demand for land and housing in the North-west sub-region.
- \$20 million for improvements to wastewater treatment.

Major local government projects

- \$500 million for Ocean Reef Marina and boat launching facility.
- \$8 million on extending the Ocean Reef Road dual carriageway beyond Wangara.

2.4 Non-residential building

Non-residential building includes commercial, retail, industrial and community facilities. This primarily represents investment (public and private) in activity centres and employment areas within the sub-region. Therefore, non-residential building can be used to gauge investor confidence in an area functioning as a vibrant or lucrative economic system, rather than merely a place to live, while work and recreation are pursued elsewhere.

The value of non-residential building in the North-west sub-region was \$199 million in 2010/11, which represented approximately 10 per cent of the total value of non-residential building in the Perth and Peel regions for the period.

The dramatic construction cycles of the past few years are shown in Figure 2, with booms in construction spending largely driven by government stimulus.

2.5 Labour force, employment and incomes

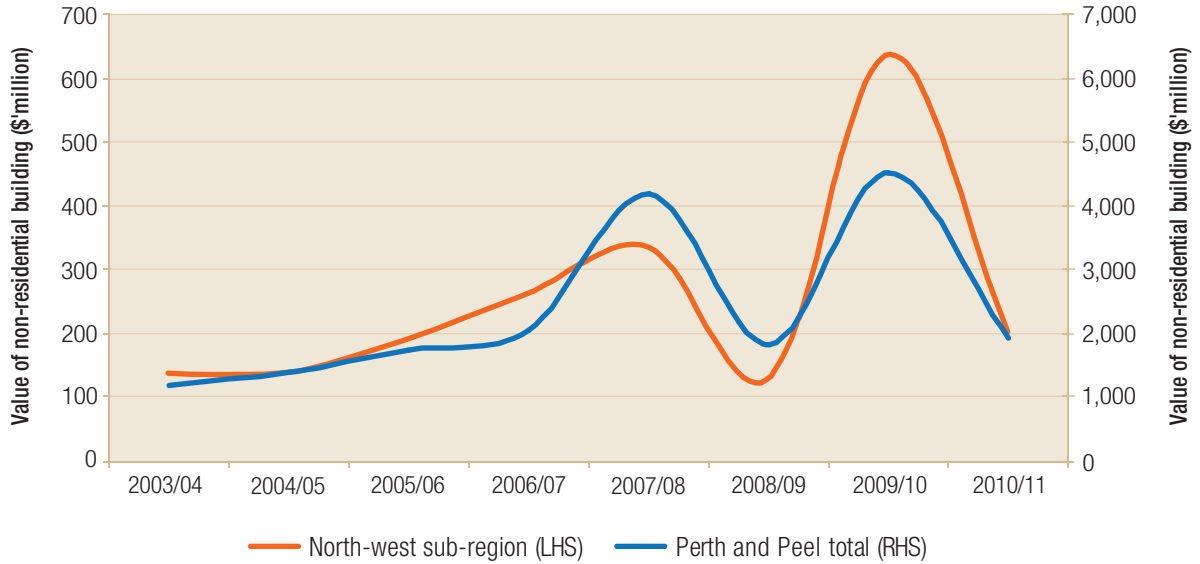
2.5.1 Employment growth and unemployment

Key employment statistics for the North-west sub-region as at March 2012¹

- Total labour force was 180,645, comprising 174,876 employed and 5,769 unemployed people (Figure 3).
- Main employment industry sectors were retail, construction, healthcare and social services.
- Fastest growing sectors until 2006 were mining and construction. Given the State's economic outlook, these sectors have solid growth prospects over the next few years. Many people employed in construction also benefit from growth in the mining sector.
- Unemployment rate in the City of Wanneroo was 5.3 per cent or 3,714 people unemployed (the unemployment rate was 4.2 per cent for the Perth metropolitan area). In March 2011, the unemployment rate was six per cent with 4,203 people unemployed.

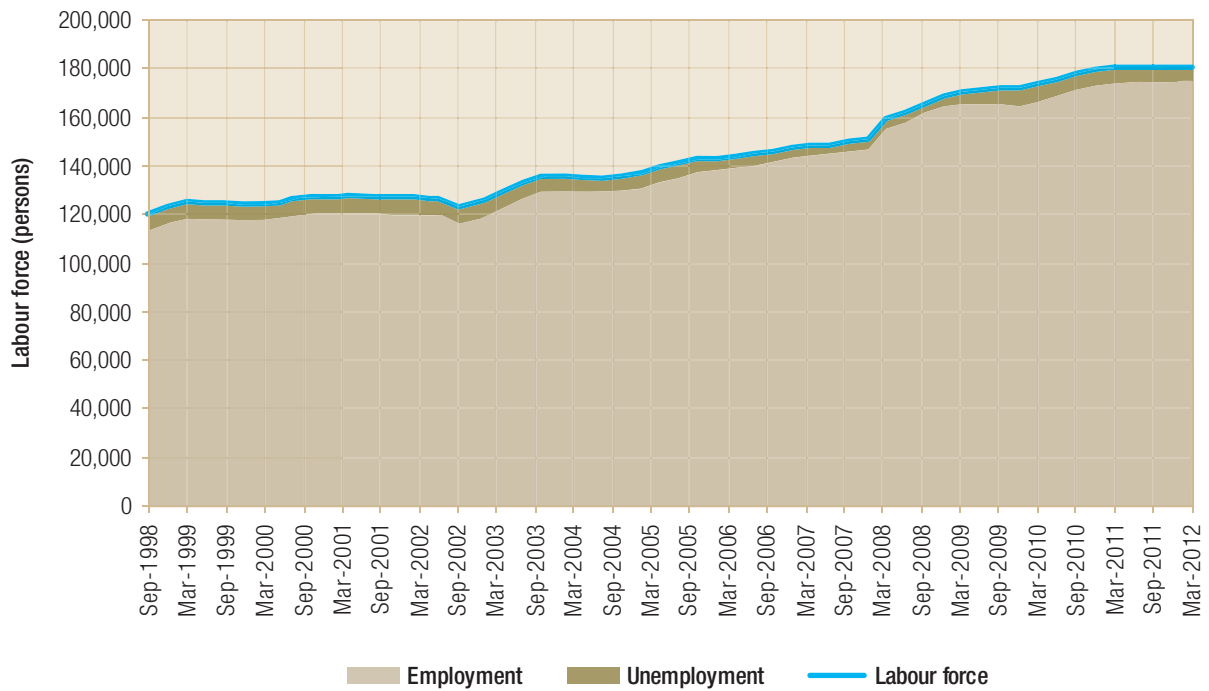
¹ Department of Education, Employment and Workplace Relations, Small Area Labour Market data, March Quarter 2012

Figure 2: Total value of non-residential building



Source: Australian Bureau of Statistics, 2011, Building Approvals, Australia, Cat. No. 8731.0.

Figure 3: Labour force



Source: Department of Education, Employment and Workplace Relations, 2012, Small Area Labour Market data.

- Unemployment rate in the City of Joondalup was 1.9 per cent or 2,051 people out of work, in comparison to March 2011, when 2,490 people were unemployed and the unemployment rate was 2.3 per cent.
- Overall the unemployment rate for the North-west sub-region was 3.2 per cent. This was a 0.5 per cent decrease from the unemployment rate in March 2011 (Figure 4).
- A rise in unemployment may affect residential property sales. However, leading indicators (e.g. job advertisements, business employment expectations and consumer sentiment) indicate strong employment growth in the short term, which should improve employment in the sub-region.

2.5.2 Employment self-sufficiency and self-containment

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.

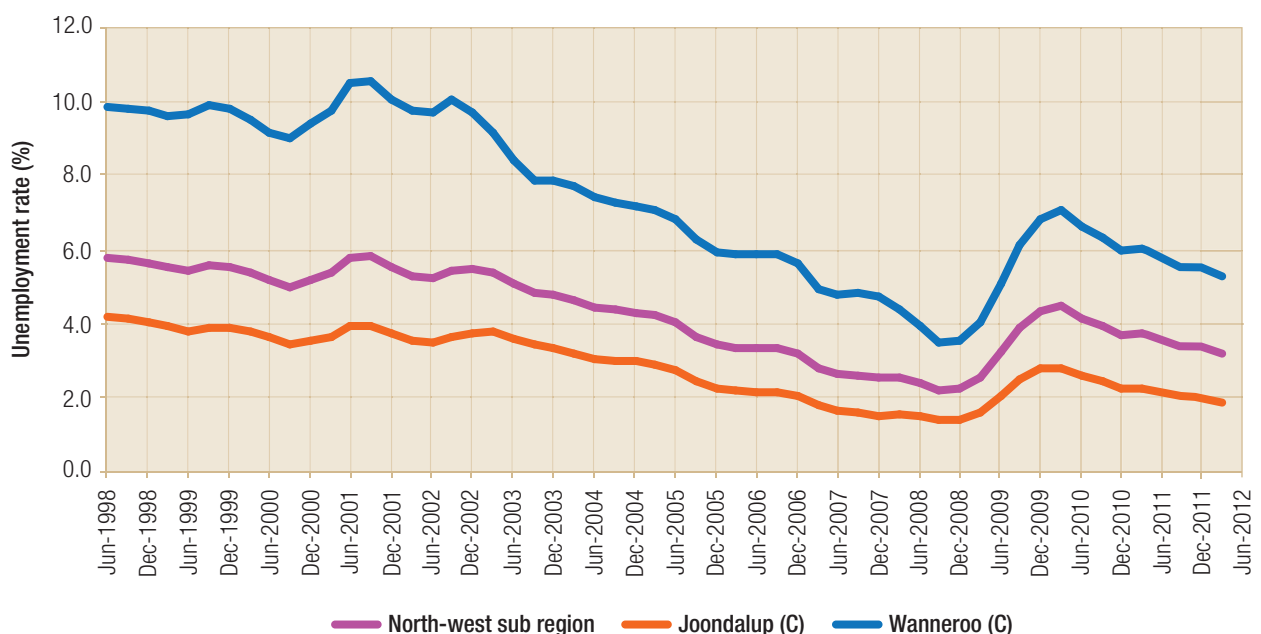
Employment self-sufficiency is a measure of the proportion of the resident workforce who could potentially find employment within their local area. It is expressed as a percentage of the number of jobs in a sub-region relative to the resident workforce of that sub-region.

The North-west sub-region has a poor level of employment self-sufficiency, at just 45 per cent (45 jobs for every hundred workers). As at the 2006 Census the sub-region had a resident workforce of 139,000 employees (18 per cent of the total for the Perth and Peel metropolitan area) and 62,000 jobs (9 per cent of the total for the Perth and Peel metropolitan area).

Achieving the *Directions 2031 and Beyond* targets for employment self-sufficiency in the sub-region will require the creation of approximately 69,000 additional jobs by 2031.

Employment self-containment is a measure of the proportion of a resident labour force that is employed in the local area.

Figure 4: Unemployment rates



Source: Department of Education, Employment and Workplace Relations, 2012, Small Area Labour Market data.

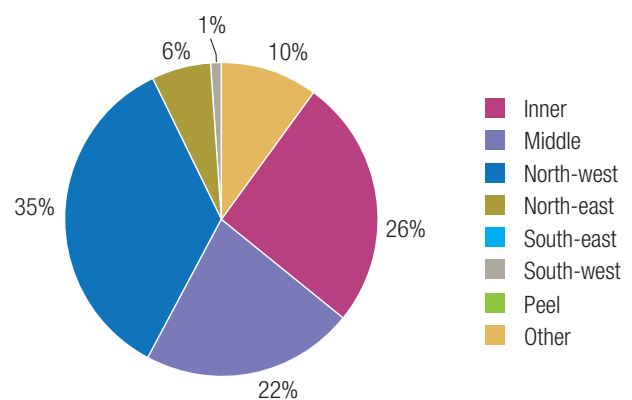
The North-west sub-region has a modest level of employment self-containment with 35 per cent of the resident labour force employed within the sub-region (Figure 5).

A high level of employment self-containment is dependent on a strong positive correlation between the skill sets of the local resident workforce and the types of employment opportunity within the sub-region. As illustrated in Figure 6 there is a shortage of jobs relative to the resident labour force across all industry sectors in the North-west sub-region.

There are a limited number of major employment nodes in the North-west sub-region, the most significant are Joondalup city centre (commercial and industrial) and the Wangara industrial area (Map 2). Almost half (48 per cent) of the labour force residing in the North-west sub-region commutes to the Central sub-region for employment. The local government areas that host the most of these employees are the City of Stirling (which is adjacent to the North-west sub-region) and the City of Perth.

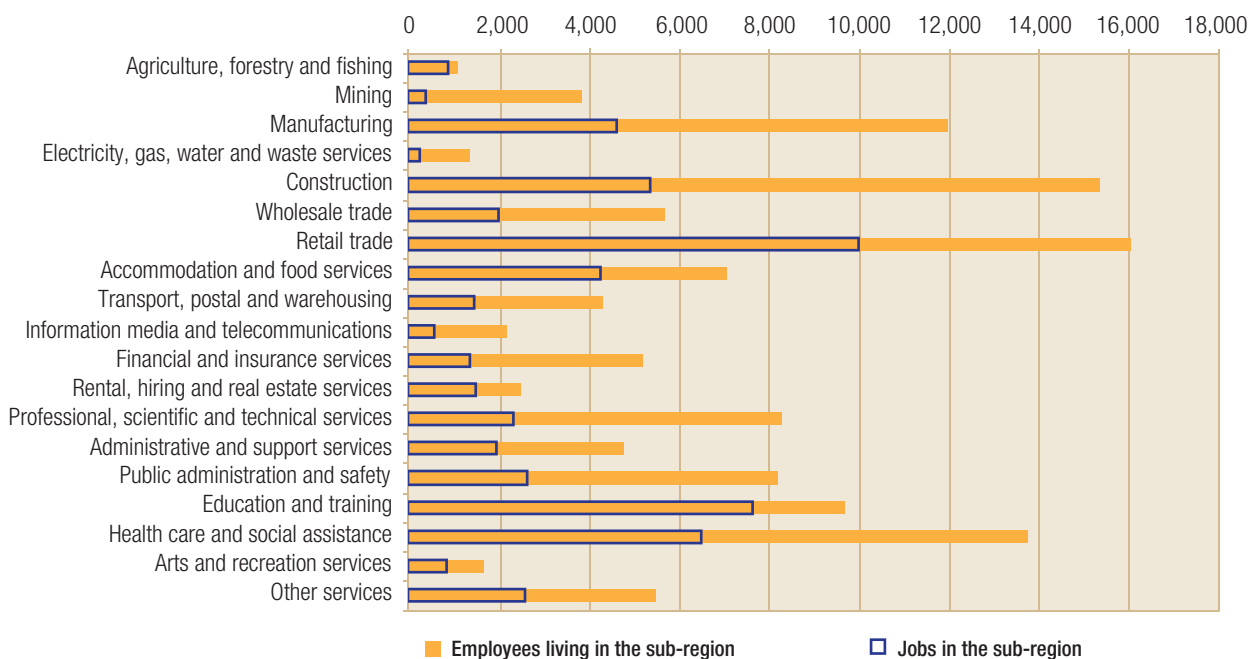
Most workers from other parts of the metropolitan area, who are employed in the North-west sub-region, travel from the middle sector of the Central sub-region. Almost half of these commuters (approximately 46 per cent) reside in the City of Stirling.

Figure 5: North-west sub-region resident labour force - place of work



Source: Australian Bureau of Statistics, 2008, Census of Population and Housing 2006.

Figure 6: Employees and jobs by industry



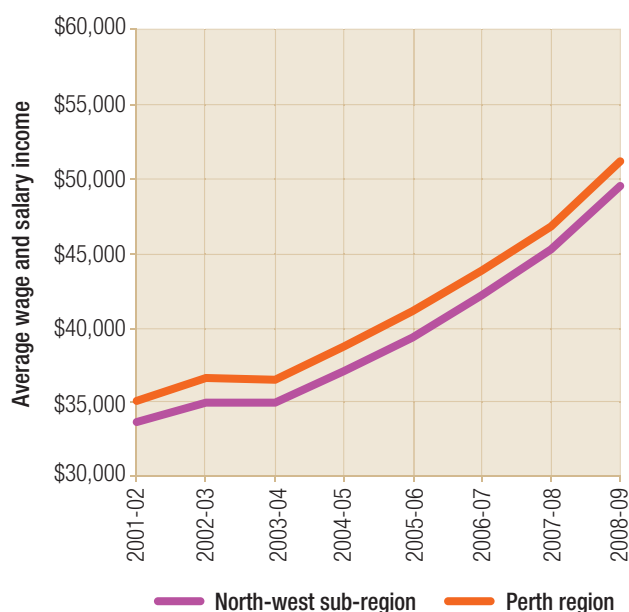
Source: Australian Bureau of Statistics Census of Population and Housing 2006.

2.5.3 Wages and salaries

The average wage and salary income of residents in the City of Joondalup was \$51,194 in 2008/09, which was slightly higher than the average for the Perth metropolitan region. In the City of Wanneroo, the average income of residents was lower at \$47,266.

Residents of Wanneroo and Joondalup experienced greater average annual income growth than the Perth metropolitan region between 2001/02 and 2008/09 (Table 3) and the north-west sub-region is gradually getting closer to the average for the Perth metropolitan region (Figure 7).

Figure 7: Trend of average wage and salary incomes



Source: Australian Bureau of Statistics, 2011, Wage and Salary Earner Statistics for Small Areas, Time Series, 2001/02, 2002/03 & 2003/04 to 2008/09, Cat. No. 5673.0.

2.6 Population growth and demographics

The North-west sub-region has the largest population of the outer sub-regions. Its estimated resident population at June 2011 was 322,115, consisting of 161,783 residents in Joondalup and 160,332 in Wanneroo (Table 1 and Figure 8).

The City of Wanneroo experienced a population boom in the mid-2000s, when it was one of the fastest growing local government authorities in the country. Although growth has slowed, the current rate of four per cent is still comfortably higher than that for the wider metropolitan area. After a brief period of population decrease, the City of Joondalup has experienced modest growth since 2004/05 (Figure 9).

The North-west sub-region has a high proportion of slightly older families relative to other outer sub-regions, with a high percentage of residents in their late teens and early twenties, and residents in their forties and fifties (Figure 10). Like the Perth metropolitan area, the forecast is for a significantly older age profile in the North-west sub-region by 2031.

Table 3: Wage and salary earners

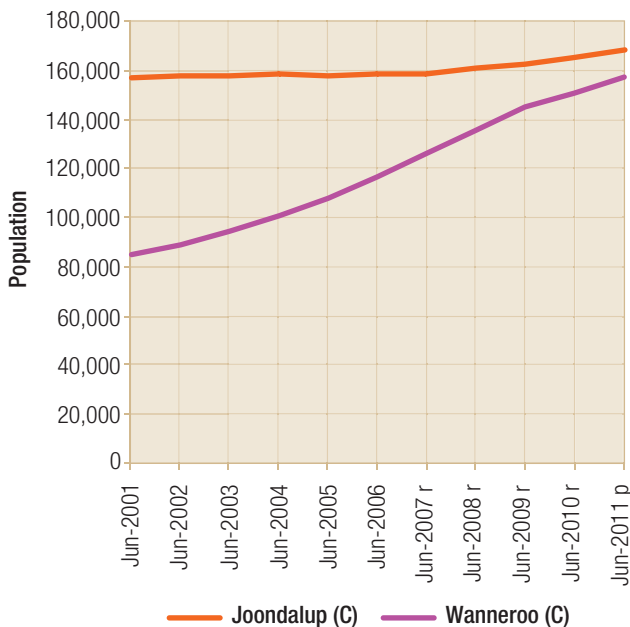
Area	Median income 2008/09 (\$ p.a.)	Average income 2008/09 (\$ p.a.)	Average annual income growth 2001/02 to 2008/09
City of Joondalup	41,510	51,194	5.7%
City of Wanneroo	41,040	47,266	6.1%
Perth metropolitan region	41,847	51,125	5.5%
Peel sub-region (Mandurah and Murray local govt. authorities)	38,554	49,268	5.5%
Western Australia	41,180	50,438	5.5%

Source: Australian Bureau of Statistics, 2011, Wage and Salary Earner Statistics for Small Areas, Time Series, 2003/04 to 2007/08, Cat. No. 5673.0.

Key population and demographic statistics for the North-west sub-region

- The sub-region exhibits a high proportion of the population representing family formation age groups. The City of Wanneroo has higher proportions of younger children aged 14 years and under and parents aged 25-40 and the City of Joondalup has older children aged 15-24 and parents aged 40-60².
- Growth areas have a higher proportion of residents less than 35 years old compared to the rest of the sub-region, suggesting younger families with children form a large part of the new home market³.
- There is a substantial annual immigrant intake, evidenced by the area's unusually high proportion of residents born overseas (almost 40 per cent). The sub-region is particularly popular with migrants from Britain, New Zealand and South Africa.

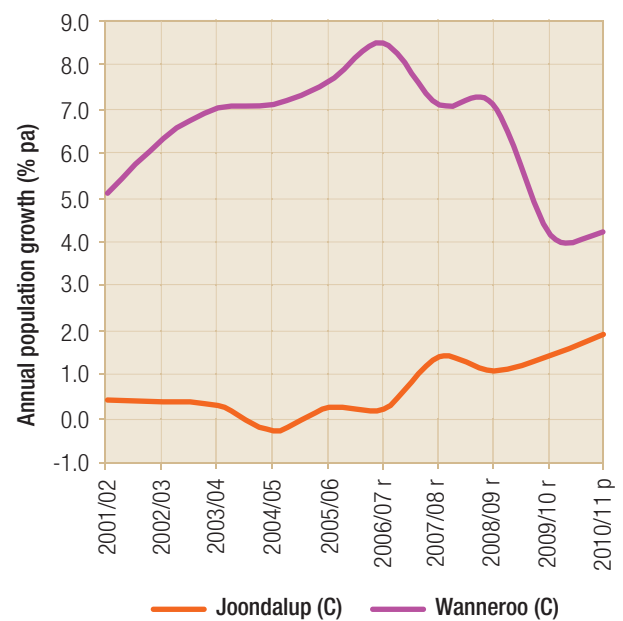
Figure 8: Estimated resident population, 2001 to 2011



Notes: r – revised, p – preliminary

Source: Australian Bureau of Statistics, 2012, Regional Population Growth, Australia, Cat. No. 3218.0.

Figure 9: Annual population growth, 2001/02 to 2010/11



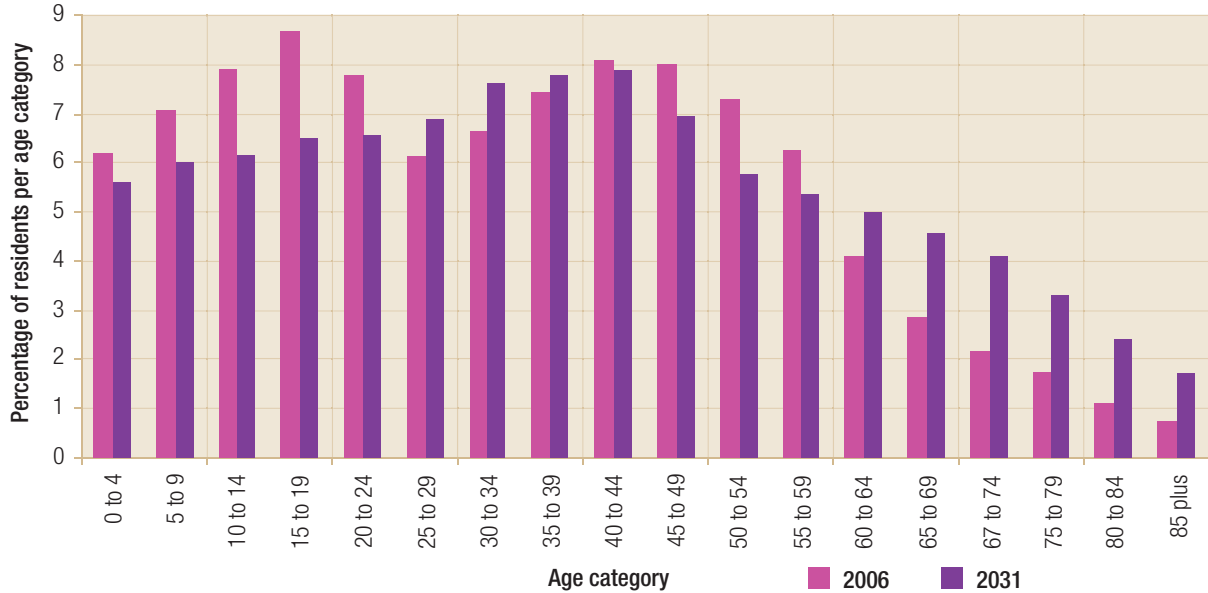
Notes: r – revised, p - preliminary

Source: Australian Bureau of Statistics, 2012, Regional Population Growth, Australia, Cat. No. 3218.0.

² Draft Outer Metropolitan Perth and Peel Sub-Regional Strategy

³ BIS Shrapnel – The Outlook for Residential Land in Perth 2010–2015

Figure 10: Projected age profile (2006 and 2031)



Source: Western Australian Planning Commission (2005), Western Australia Tomorrow.

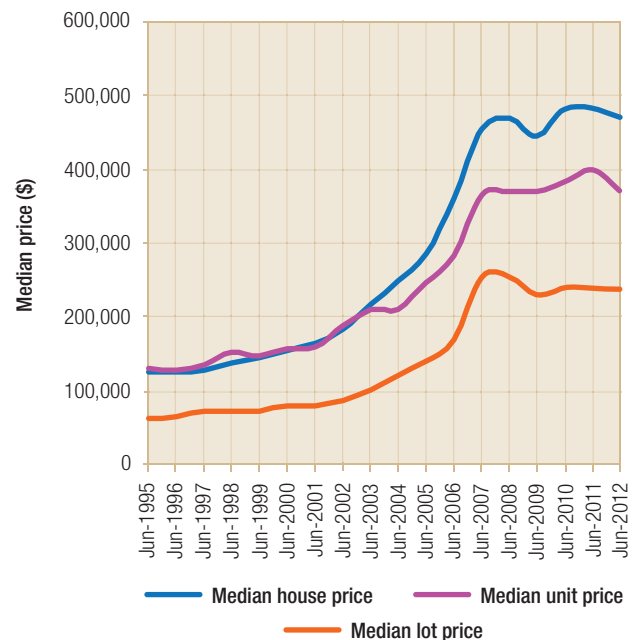
2.7 Property sales, prices and activity

Long-term trends in sales activity and prices indicate demand for real estate and reflect the fundamentals of population growth, household formation, rising incomes and employment growth.

2.7.1 Median house, unit and lot prices

Over the past 17 years, the median house price in the North-west sub-region has increased from \$125,000 to \$470,000. Over the same period, the median price of units increased from \$130,838 to \$370,000 and the median price of lots from \$64,000 to \$237,000, having reached a peak of \$255,000 in 2007/08. Most of this capital growth occurred from 2002/03 to 2006/07 (Figure 11).

Figure 11: Median house, unit and lot prices



Source: Real Estate Institute of Western Australia.

2.7.2 Indices of median house, unit and lot prices

Figure 12 shows indices of median house, unit and lot prices from June 1995 to June 2012.

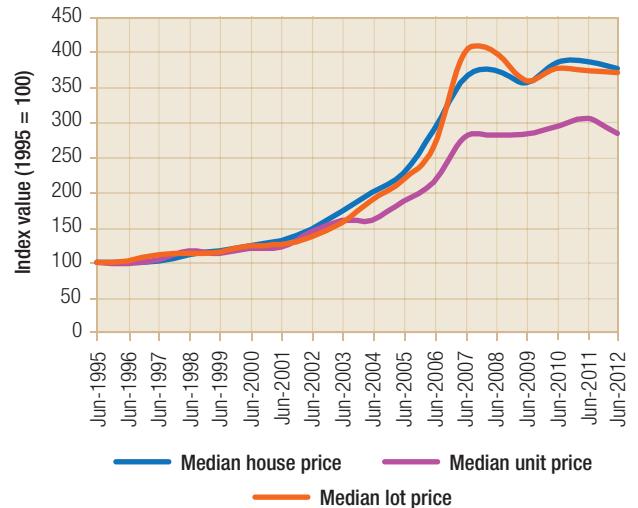
The North-west sub-region has been one of the fastest growing areas of the wider Perth region over the last 16 years. The indices for median property prices reflect broader trends across the city over that period. The sub-region experienced steady growth for all property types until the onset of the mining boom, when house and lot prices increased sharply. Median prices then flattened or fell during the global financial crisis.

Notably median unit prices did not increase as sharply as house or lot prices in the sub-region during the mining boom. This reflects the strong demand for larger homes in the North-west sub-region during that period.

2.8 New dwelling approvals

Dwelling approvals represent a key demand indicator, and represent either owner-occupier demand or investor confidence. As most dwelling approvals proceed to construction and eventually completion, they also provide a leading indicator of short-term dwelling supply.

Figure 12: Indices of median house, unit and lot prices



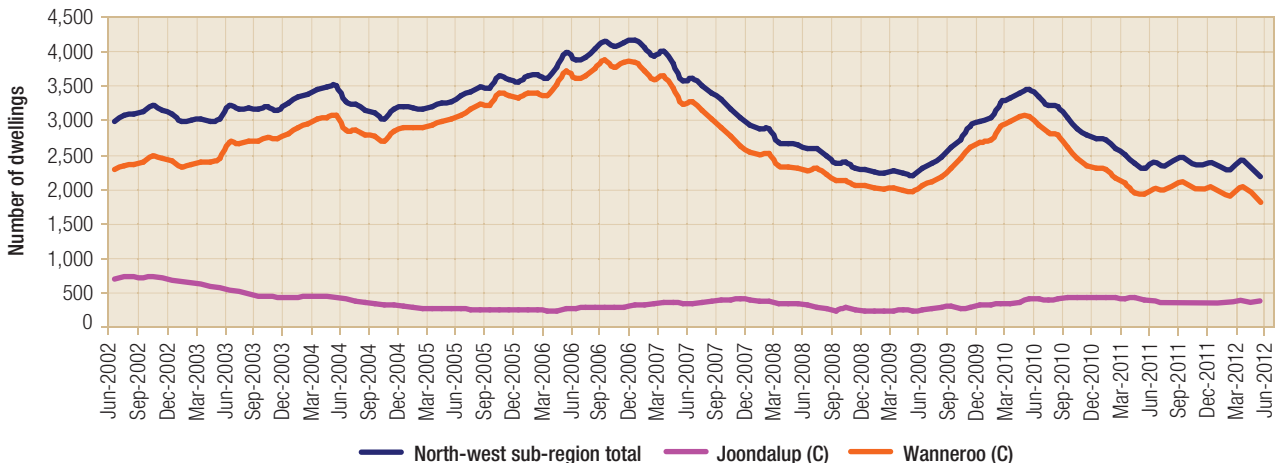
Source: Department of Planning and Real Estate Institute of Western Australia.

2.8.1 New dwelling approvals (houses only)

The North-west sub-region has experienced consistently high levels of new housing approvals in the past decade. Although figures are generally high, there was a marked decline in activity from late 2006 to mid-2009, followed by an increase to mid-2010 when dwelling approval numbers declined across the outer sub-region, and more recently a marked decline (Figure 13).

New house approvals in the City of Joondalup represent primarily infill and some redevelopment (i.e. demolition and rebuild). In contrast, the majority of approvals in Wanneroo are new houses constructed on newly created vacant lots.

Figure 13: New house approvals (annualised monthly data)



Source: Australian Bureau of Statistics, 2012, Building Approvals, Australia, Cat. No 8731.0.

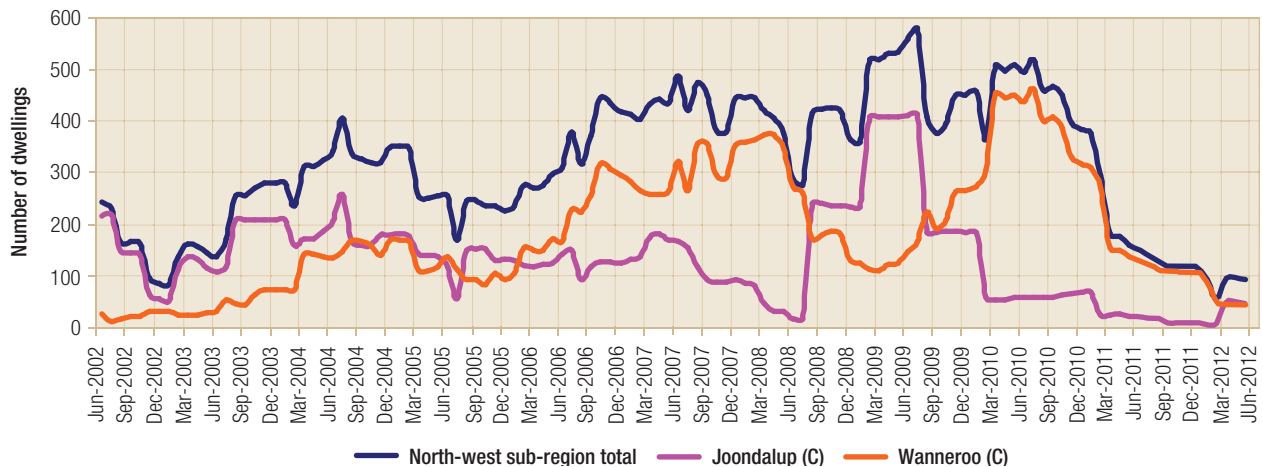
2.8.2 New dwelling approvals (other than houses)

Statistics for dwelling approvals other than houses (e.g. flats, villas and apartments) indicate erratic activity in the North-west sub-region, with significant approvals in both the City of Joondalup and the City of Wanneroo (Figure 14).

2.9 Overall demand outlook

- Overseas migration is important for the North-west sub-region as it helps drive demand for additional land in the area; however, short-term outlook for migration is moderate and depends largely on economic growth (particularly in the mining sector) and government policy.
- High demand for residential land in the sub-region, particularly in coastal developments from Butler to Two Rocks, will be influenced by the State economy. Wedged between the Indian Ocean and Yanchep National Park and serviced by a major transport corridor, property in this area is likely to be reasonably expensive, and demand will depend on the number of people able to invest there.
- Infrastructure upgrades, particularly to Northern Suburbs Rail, will further increase the appeal of the sub-region, bolstering demand.

Figure 14: New other dwelling approvals (annualised monthly data)



Source: Australian Bureau of Statistics 8731.0, 2012 Building Approvals, Australia.

3. Residential land supply

3.1 Overview

The North-west sub-region has more undeveloped land zoned for development than any other sub-region. Residential subdivision, lot construction and building activity is particularly high in the sub-region. Demand for property in the sub-region is also very high. Consequently the stock of serviced vacant lots declined by over 2,000 lots between 2007/08 and 2009/10 – a greater reduction than any other sub-region.

The Residential Developers' Land and Dwellings Intentions Survey 2009/10 includes projects of five or more residential lots or dwellings. Survey respondents identified 43 such projects in the North-west sub-region, which are expected to yield 11,323 dwellings (i.e. single lots plus group dwellings) in the four years from 2010/11 to 2013/14. Another 12,481 dwellings were identified for development in 2014/15 or later (Figure 15).

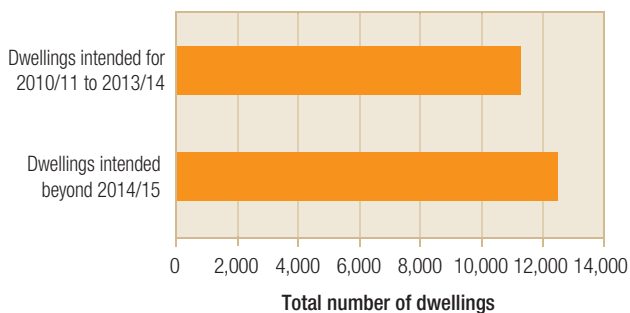
The results from the Residential Developers' Land and dwelling Intentions survey 2009/10 suggests an increase in confidence in forward lot production in the North-west sub-region to just over

3,000 lots per year by 2012/13 (Table 4). Around 90 per cent of this subdivision will be in the City of Wanneroo, as the urban front moves north from Butler into Jindalee and Alkimos. Further inland, Banksia Grove will also be a major area of subdivision activity during the next few years.

3.1.1 Average dwelling yield

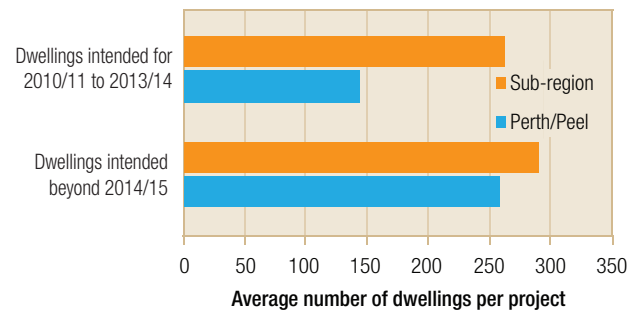
An average residential development project in the North-west sub-region will yield 263 dwellings in 2010/11 to 2013/14, compared to the average across Perth and Peel of 144 dwellings per project. The average dwelling yield per project in 2014/15 or later is even greater (Figure 16). This reflects the larger landholdings of greenfield sites in the North-west sub-region, most of which are owned by experienced developers. The size and experience of developers can play a major role in facilitating the planning, development and infrastructure required to bring new lots to the market.

Figure 15: Dwelling yield from residential development projects (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Figure 16: Average dwelling yield from residential development projects (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Table 4: Intended dwelling development (survey responses)

Local government	2011/12	2012/13	2013/14	2014/15 – 2018/19	2019/2020+	Unknown year
Joondalup	329	285	291	662	163	255
Wanneroo	2,627	2,760	2,536	9,141	6,374	3,182
North-west sub-region	2,956	3,045	2,827	9,803	6,537	3,437

Source: Residential Developers' Land and Dwellings Intentions Survey 2009/10.

Note: Dwelling development 2010/11, 2011/12, 2012/13 and 2013/14 include single lot production only.

3.2 Urban expansion and investigation areas

The initial stage of urban growth often involves the identification of lands suitable for future development, in strategic Government planning policies.

The draft *Outer Metropolitan Perth and Peel Sub-regional Strategy* identifies 1,600 hectares of urban expansion areas (development anticipated by 2015) and 400 hectares of urban investigation areas (development anticipated by 2020) in the North-west sub-region. It is estimated that urban expansion and investigation areas in the sub-region, coupled with undeveloped zoned land, will yield between 131,000 and 168,000 dwellings.

Major urban growth in the North-west sub-region continues northward toward Two Rocks, as large greenfield projects are developed between the coast and Yanchep National Park. Further inland, the East Wanneroo Structure Plan has outlined several large greenfield sites for future development – but infrastructure supply issues mean these projects are likely to be delayed.

Additional land for urban expansion and investigation will be identified through a sub-regional structure planning process. Once these sites are specified in more detail, they will be included in the Urban Development Program and tracked through the planning and development process.

3.3 Planning and zoning

Once a parcel of land has been identified as a suitable growth area planning schemes and structure plans are created or altered to guide development. This promotes coordinated, appropriate development, with zoning and structure planning providing parameters for development within a prescribed area.

3.3.1 Land being rezoned to urban or urban deferred

The ‘upzoning’ of land to urban, under the relevant region scheme, represents a significant progression toward urban growth, as it removes the primary statutory constraint to an area’s development. As at July 2011, there was one region scheme amendment in progress in the North-west sub-region affecting 96 hectares of rural land in the City of Wanneroo.

The Residential Developers’ Land and Dwellings Intentions Survey 2009/10 identified that three projects needed region scheme amendments and two projects needed local scheme amendments (Table 5). The majority of projects proposed in the North-west sub-region do not require rezoning to proceed.

Table 5: Intended developments requiring scheme amendments (survey responses)

	No. of projects	Dwellings affected 2010/11 to 2013/14	Dwellings affected 2014/15 and beyond
Region scheme amendment (rezoning) required	3	80	145
Local planning scheme amendment (rezoning) required	2	80	110
No scheme amendment (rezoning) required	40	11,243	12,336

Source: Department of Planning, Residential Developers’ Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Note: Some projects will require both a region and a local scheme amendment (rezoning).

3.3.2 Zoned land

The North-west sub-region contains 18,580 hectares of land zoned urban and 1,900 hectares zoned urban deferred under the *Metropolitan Region Scheme*. Of this, 7,810 hectares (38 per cent) is either undeveloped, or developed at very low density. This constitutes approximately 30 per cent of the total stock of available zoned land in the Perth and Peel metropolitan area.

Table 6 describes the make up of the undeveloped and under-developed land zoned for development in the North-west sub-region. ‘Committed for other purposes’ refers to land that is likely to be zoned for purposes other than residential, under local planning schemes.

Based on land consumption trends over the past 20 years (see section 3.7.3), existing stocks of zoned land are potentially sufficient to meet demand for approximately 35 years. As at December 31 2010, there were 8,380 green title and 390 strata lots with conditional approval in the non-urbanised areas of the North-west sub-region.

The *Urban Growth Monitor* (UGM) tracks and models zoned land supply and land consumed by development for the Perth metropolitan, Peel and Greater Bunbury regions. The assessment of land supply in the North-west sub-region from the UGM is shown in Figure 17. The UGM breaks down the zoned land into

tiers showing the number of hectares of land in each category. The full report from the *Urban Growth Monitor 2011* is available from the WAPC website www.planning.wa.gov.au.

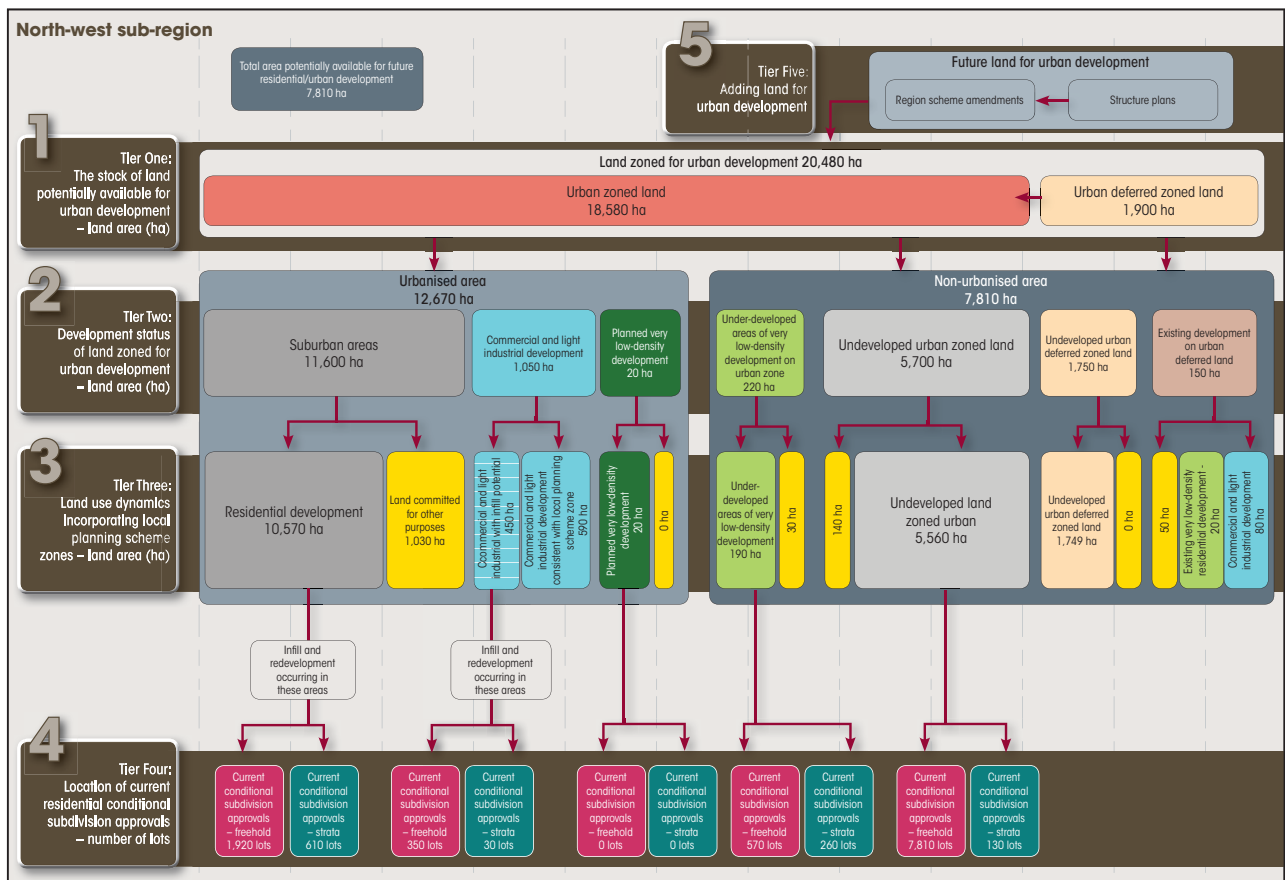
Table 6: Land available for future development

	Under developed areas of very low density development (ha)	Undeveloped urban zoned land (ha)	Undeveloped urban deferred zoned land (ha)	Existing development on urban deferred land (ha)	Total (ha)
Total	220	5,700	1,750	150	7,820
Committed for other purposes	30	140	0	50	220
Potentially available for development	190	5,560	1,750	100	7,600

Source: Western Australian Planning Commission (2011), Urban Growth Monitor.

Note: Figures may not sum due to rounding.

Figure 17: Urban Growth Monitor land supply assessment



Source: Western Australian Planning Commission (2011), Urban Growth Monitor.

3.3.3 Structure plans

As at August 2012 there were 14 structure plans being considered for endorsement by the WAPC and 19 being considered for adoption by local government in the North-west sub-region.

Structure planning and land release within the North-west sub-region is dominated by greenfield development, however a small number of town centre structure plans are anticipated to yield high density development in metropolitan centres such as Joondalup and Two Rocks.

There are three particularly high yielding District Structure plans in the sub-region: Butler-Jindalee District Structure Plan, Yanchep - Two Rocks District Structure Plan and Alkimos-Eglinton District Structure Plan. These structure plans have been endorsed by the WAPC and are expected to yield more than 95,000 lots and support a population of at least 230,000 when fully developed.

In order to facilitate the long term release of appropriately zoned land, the Department of Planning is currently undertaking the preparation of a Sub-regional Structure Plan which will ensure sub-regional structure planning for the Sub-region which will make provision for a continuous 25 year supply of potential urban land and an ongoing land bank of at least 15 years of undeveloped Urban and Urban Deferred zoned land.

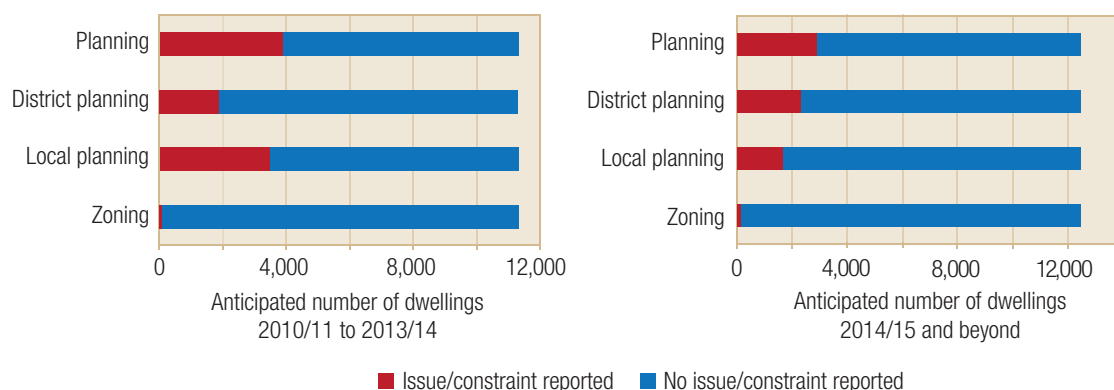
3.3.4 Planning issues

Developers have identified a number of areas that have planning issues, including district and local level planning concerns (Figure 18). Planning issues affect delivery of around one-third of dwellings in the short-term up to 2013/14. Developers indicated they expected these constraints to be addressed by the end of 2010/11.

In particular, developers expressed concerns about the time taken at both State and local government level to adopt or endorse structure plans. There was also concern that structure planning was irregular in several areas, with a lack of high-level structure plans to provide necessary guidance for more detailed planning undertaken by developers.

Note that the term 'developers' includes all developers including private, State or local government authorities.

Figure 18: Developers' planning issues (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

3.4 Subdivision

The North-west sub-region is one of the city's main urban expansion fronts and in the 12 months to December 2011 has experienced more residential subdivision activity than any other sub-region (Table 8). As at 31 December 2011, the City of Wanneroo had 11,477 residential current conditional approvals, which constitute approximately 90 per cent of the stock of conditionally approved lots in the North-west sub-region.

Between March 2004 and March 2012, the developers' stock of lots was greater in the North-west, than in any other sub-region. An average of approximately 930 lots per quarter was granted final approval, until the onset of the global financial crisis, when subdivision activity declined to less than 400 final approvals per quarter (Figure 19). Since late 2009, there has been a

substantial increase in conditional approval activity, however as at December 2011, the increase in final approvals had not been as pronounced.

The North-west sub-region has the lowest levels of special rural and special residential activity of the outer sub-regions. Between March 2004 and December 2011, there have been several quarters where large numbers of lots have been granted conditional approval in the North-west sub-region, however; during this time, just 87 lots progressed to final approval (Figure 20).

Since the 2007 September quarter, only 39 special rural and special residential lots have progressed to final approval (to December 2011).

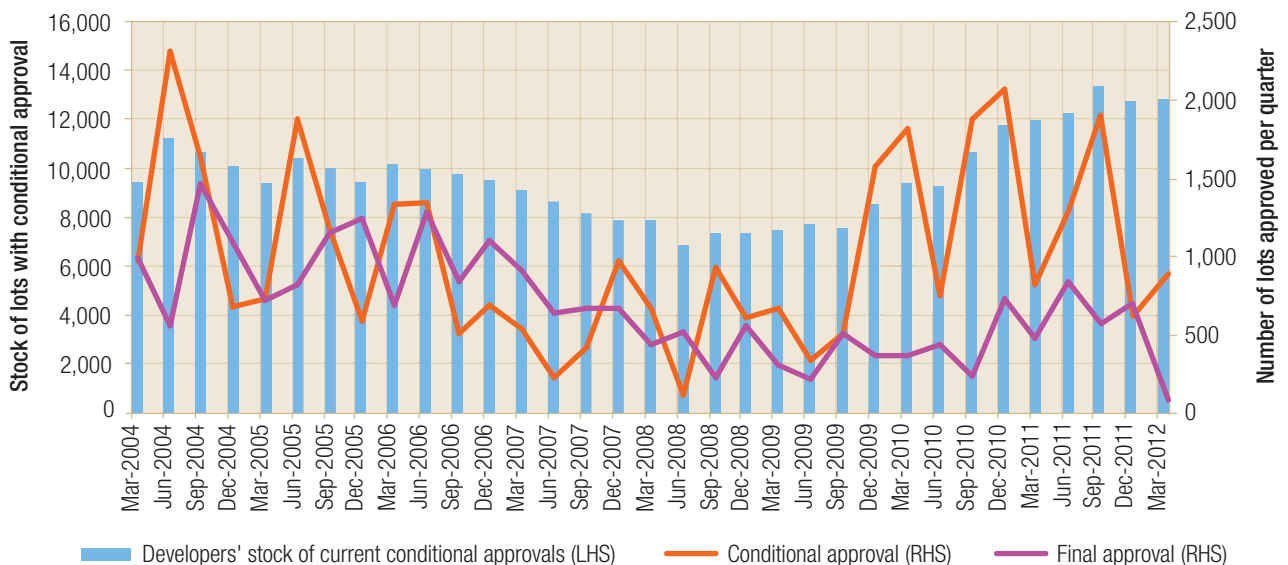
Table 7: Subdivision approvals

Land use	Applications received (1 Jan 2011 - 31 Dec 2011)	Applications pending (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 - 31 Dec 2011)	Current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals (1 Jan 2011 - 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Residential	4,527	2,286	4,627	12,819	1,525	2,591
Special residential and special rural	9	9	1	600	0	33

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

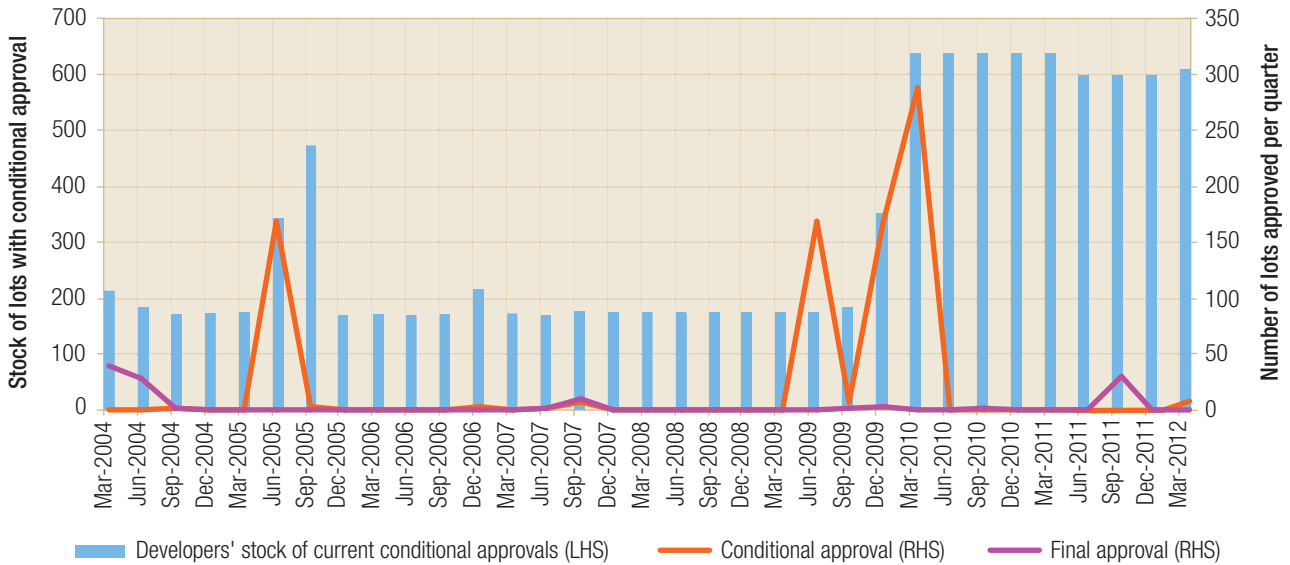
¹ Refers to conditionally approved lots where a servicing agreement (agreement to construct) has been signed between the Water Corporation and the developer. These are termed lots on non-cleared agreements. Data not available for 31 December 2011.

Figure 19: Residential subdivision approvals



Source: Western Australian Planning Commission 2012, State Lot Activity.

Figure 20: Special residential and special rural subdivision approvals

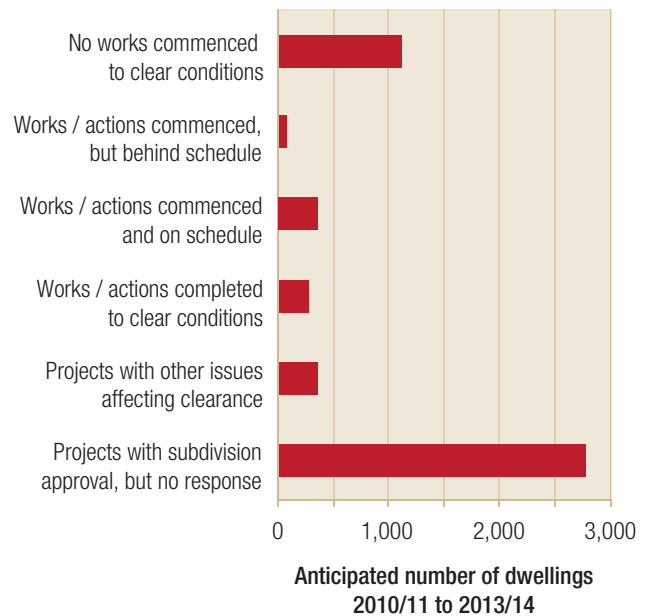


Source: Western Australian Planning Commission 2012, State Lot Activity.

3.4.1 Clearance of subdivision conditions

Respondents in the Developers' Intentions Survey 2009/10 assessed progress of their projects with regard to obtaining clearances to subdivision conditions (Figure 21). Developers in the North-west region had difficulty meeting conditions imposed by the WAPC, local government and the Water Corporation. No developers experienced delays with consultants and civil contractors, or shortage of materials.

Figure 21: Progress to clear subdivision conditions (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

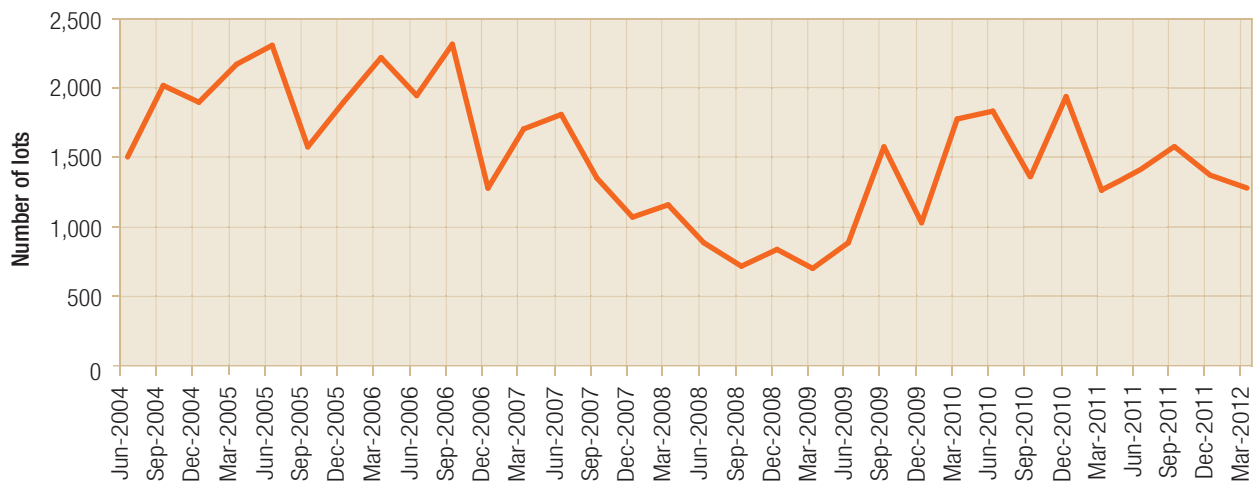
3.5 Development

Once approval has been granted to develop a piece of land for residential purposes, a significant amount of land and infrastructure development is still required to prepare each lot for sale to the public.

3.5.1 Lots under construction

Figure 22 illustrates lots under construction in the North-west sub-region from analysis by the Urban Development Institute of Australia (UDIA). It is expected that these lots will be released to the market within 12 months. Approximately one third of UDIA member lots under construction in the Perth metropolitan area during the March 2012 quarter were in the City of Wanneroo.

Figure 22: Lots under construction (UDIA member developers)



Source: Urban Development Institute of Australia, 2012, Urban Development Index.

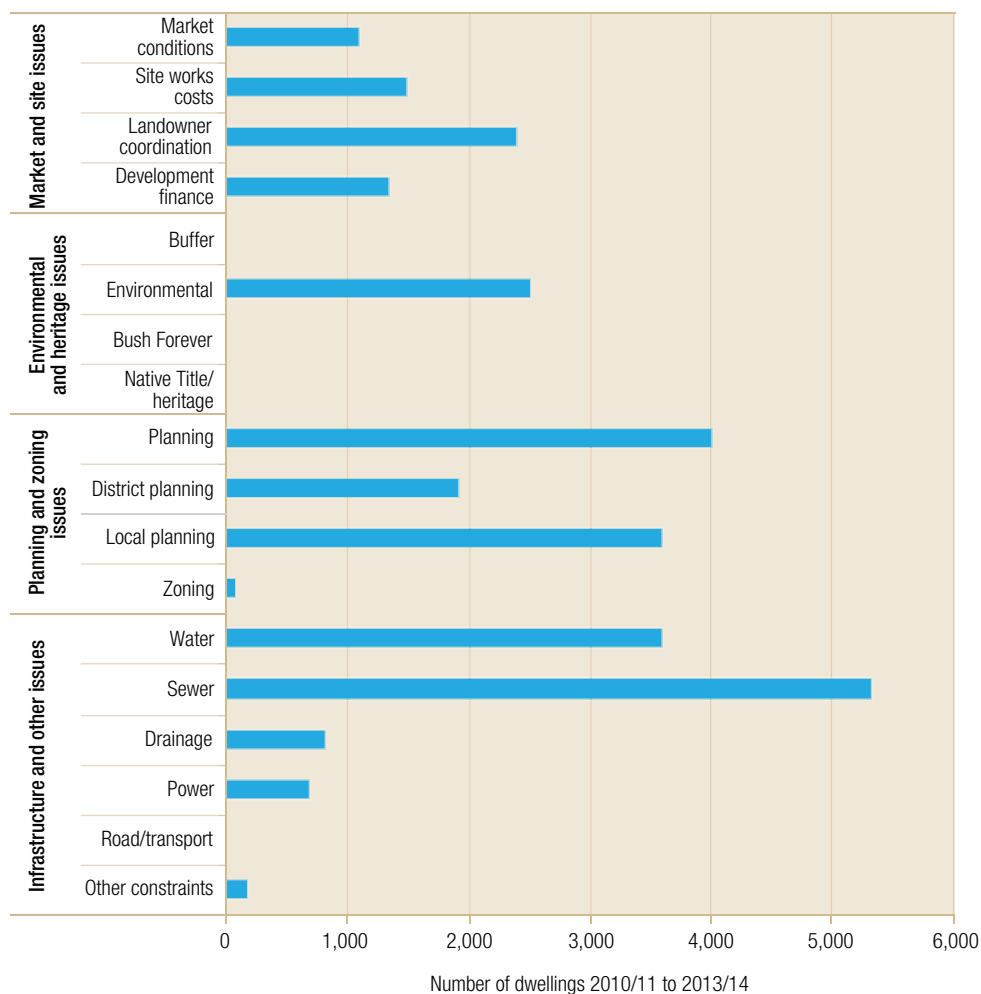
3.5.2 Short-term development issues 2010/11 to 2013/14

Major issues with the development of additional dwelling sites as identified by land developers are shown in Figure 23. This indicates that provision of hydraulic services (water and wastewater) constrain over 5,300 dwellings, while planning issues (particularly local planning) constrain about 4,000 dwellings.

Developers in the North-west sub-region also cited environmental concerns as a significant issue constraining projects. The area is home to the endangered Carnaby's Black Cockatoo and Golden Sun Moth, and preserving their natural habitat is important when considering development applications.

While market and site issues are a concern to developers, these are relatively minor compared to other sub-regions. The North-west sub-region has the benefit of large landholdings owned by experienced developers (private and government), with the capacity to create dwelling lots for the market in the next four years.

Figure 23: Major short-term development issues (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

3.5.3 Long-term development issues (2014/15 and beyond)

Constraints are similar for the long-term release of dwelling sites to the market, but with a greater need for district planning to develop these sites (Figure 24).

Market conditions and development finance are also more of a concern in the long-term (2014/15 and beyond).

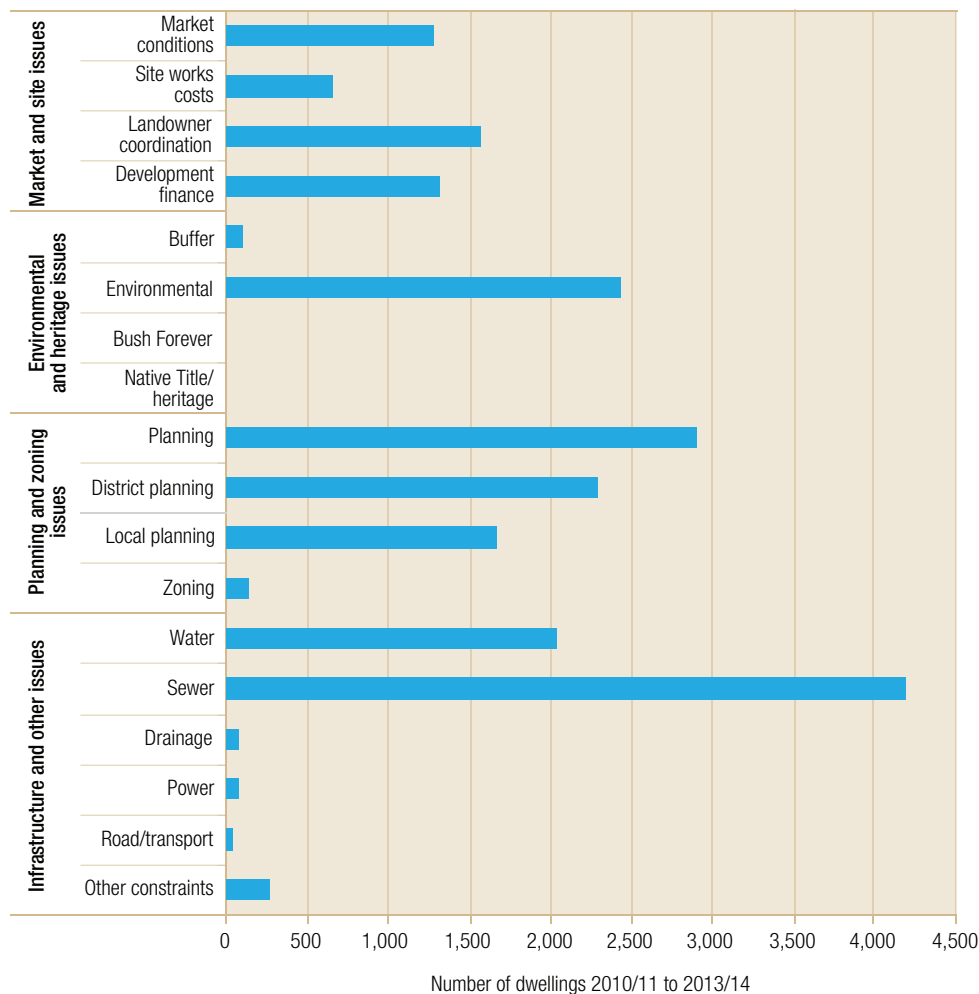
3.5.4 Environmental issues affecting development

Significant environmental issues affecting development in the North-west sub-region include:

The sub-region has a number of ecological and environmental issues that affect the planning and development of the area.

The area has a diverse range of natural areas, including coastal foreshore, groundwater dependent wetlands and natural bushland ecosystems as major landscape and ecological features, which have a significant impact on the development of the sub-region.

Figure 24: Major long-term development issue (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

One of the key environmental considerations in the area is the need to protect a number of endangered species and threatened ecological communities, including Banksia woodlands, the Carnaby's Black Cockatoo and the Graceful Sun Moth. Preserving their natural habitats is an important aspect which should be considered, particularly where development may encroach on native bushland. To facilitate this, the Strategic Environmental Assessment undertaken as part of the preparation of the Structure Plan has identified the key areas which must be protected.

In order to deal with the potential impact of sea level rises due to climate change which may affect the coastal areas, *State Planning Policy 2.6 State Coastal Planning Policy* requires planning to make allowance for sea level rise based on a vertical sea level rise of 0.9 meters over a 100 year planning timeframe to 2110.

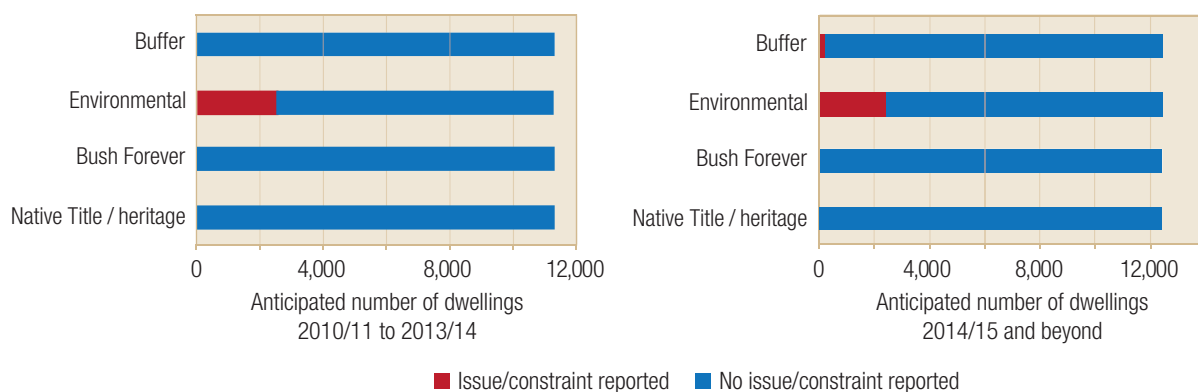
Another important environmental consideration is the management of the Gnangara Mound which provides drinking water to 60 per cent of Perth's population and supports a natural environment of wetlands and associated vegetation. However, declining rainfall and increasing groundwater usage means that groundwater levels are dropping which impacts on the viability of rural activities and the integrity of wetlands. In order to protect water quality for consumption, development is generally prohibited or restricted in water source protection areas which apply to the State Forest and Rural zoned land⁴.

The development of the sub-region is also constrained by the presence of acid sulfate soils, with large areas identified as moderate or high risk. It is crucial that these acid sulfate soils are adequately managed, as disturbance of the soils presents a major hazard to the Gnangara Mound and to Perth's drinking water supply, the irrigation of nearby food production areas and wetland ecological values of the wetlands in the area.

In addition to the issues outlined above, other environmental issues which affect the planning and development of the sub-region include:

- Possible contamination of some sites (particularly in East Wanneroo) due to previous land uses;
- Buffer policies for various land uses (such as poultry, mushrooms, wastewater treatment plants and agriculture spray drift) which limits the development of surrounding areas;
- Noise and dust issues from transport and extractive industry, particularly around the Neerabup and Flynn Drive industrial areas;
- Coastal management issues particularly at activity nodes such as Ocean Reef Marina and Two Rocks;
- Unexploded ordnance in the northern part of the area.; and
- The need for midge and mosquito management in areas surrounding wetlands.

Figure 25: Developer's environmental and heritage issues (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

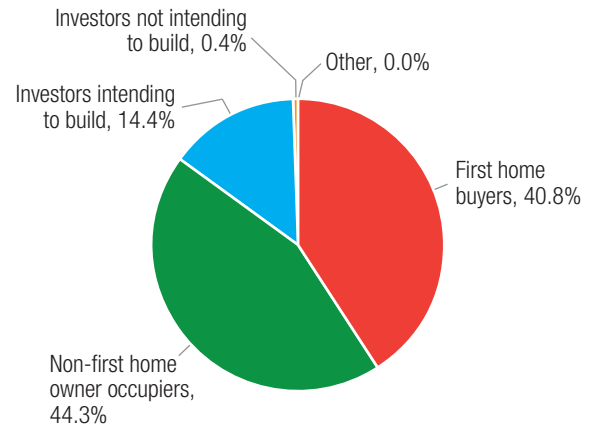
⁴ The *Draft Gnangara Sustainability Strategy* recommends a review of the boundaries of the water resource protection areas to allow development where it is compatible with groundwater protection.

3.5.5 Environmental issues (survey responses)

The Developers' Intentions Survey identified four projects with environmental issues constraining the development of around 2,500 dwellings in the short-term (2010/11 to 2013/14), and a similar number of dwellings in the long term (2014/15 and beyond) (Figure 25).

Given the vast scale of greenfield development and complex environmental issues in the North-west sub-region, the number of lots constrained by environmental issues is relatively small.

Figure 26: Market segment of dwellings for development 2010/11 to 2013/14 (survey responses)



Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Table 8: Target market segments (survey responses)

	First home buyers	Non-first home owner occupiers	Investors intending to build	Investors not intending to build	Other
Dwellings 2010/11 to 2013/14	3,541	3,843	1,253	38	–
Dwellings 2014/15 and beyond	3,493	3,176	1,133	2	35

Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Notes: 'Other' includes aged-care facilities.

3.5.6 Market segment of dwellings for development

Developers of 43 projects in the North-west sub-region – yielding 11,323 dwellings in the short-term (2010/11 to 2013/14) and 12,481 dwellings in the long-term (2014/15 and beyond) – provided information on their expected target market segments (Figure 26).

Land developments in the North-west sub-region are targeted at non-first home owner-occupiers (44.3 per cent of all dwellings), first-home buyers (40.8 per cent) and investors intending to build (14.4 per cent). Investors not intending to build include speculators intending to re-sell lots at higher price; few developers target this market segment.

3.5.7 Market and site issues affecting development

Developers expressed concerns about market conditions regarding six development projects, yielding 1,109 dwellings from 2010/11 to 2013/14 and 1,274 dwellings in the long-term (2014/15 and beyond) (Figure 27). This is relatively low in comparison to other sub-regions and reflects the long-term steady growth of the North-west sub-region.

Two projects were identified by developers where site work costs were a constraint. One of these indicated that lack of hydraulic and power infrastructure was also a constraint. In total, these projects were anticipated to yield 1,504 dwellings from 2010/11 to 2013/14 and another 661 dwellings long-term (2014/15 and beyond).

Seven projects were affected by landowner coordination constraints, with an anticipated yield of 2,393 dwellings in 2010/11 to 2013/14 and another 1,569 dwellings longer term (2014/15 and beyond). Most of these concerns were expected to be resolved during 2010/11. Of these, two developments were constrained by the need for service extensions through neighbouring landholdings.

Development finance was cited as a constraint in only two projects; however these were both relatively large, with a total dwelling yield of 1,350 in 2010/11 to 2013/14 and 1,315 dwellings long-term (beyond 2014/15).

3.6 Vacant lots

It is once vacant lots are created and serviced, that land generally becomes available to the public. Most new homes in Western Australia are sold as vacant lots, on which the purchaser will select a construction company to build a new dwelling. Consequently the availability of vacant lots is perhaps the most important indicator of short-term dwelling supply.

3.6.1 Stock of developed lots available to the market

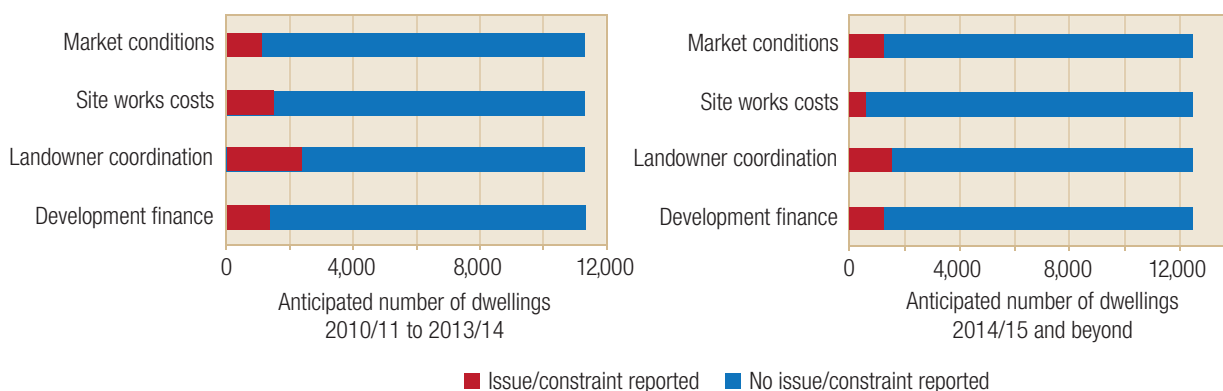
Time-series data for lots available on the market is shown in Figure 28. This suggests developers are releasing sufficient numbers of new lots to meet existing levels of demand in the North-west sub-region. Figure 28 also illustrates the very low number of lots available in June 2006, which caused public concern in a time of high demand for residential land.

3.6.2 Vacant lots with estate agents

Major land developers do not usually list their lots with real estate agents, but instead sell them directly to the public. Lots listed with real estate agents therefore provide an additional stock of serviced lots available to the public. The Real Estate Institute of Western Australia (REIWA) has tracked listings of vacant lots for sale since March 2008 (Figure 29).

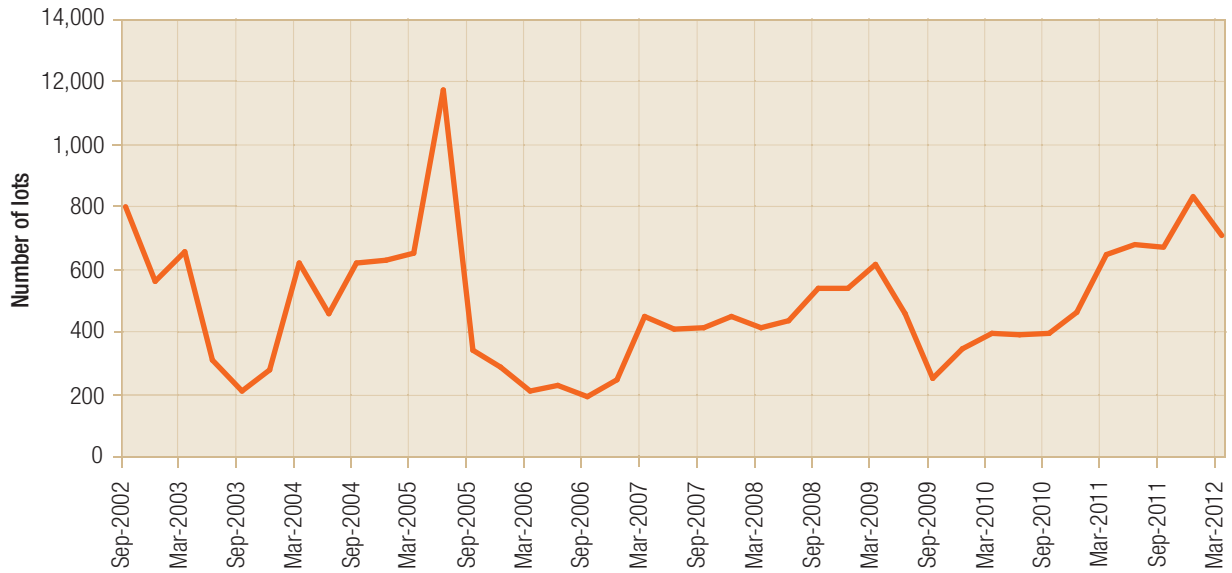
REIWA data show the number of lots for sale in the North-west sub-region has varied between 300 and 600 lots in the four years to March 2012.

Figure 27: Market and site issues affecting development (survey responses)



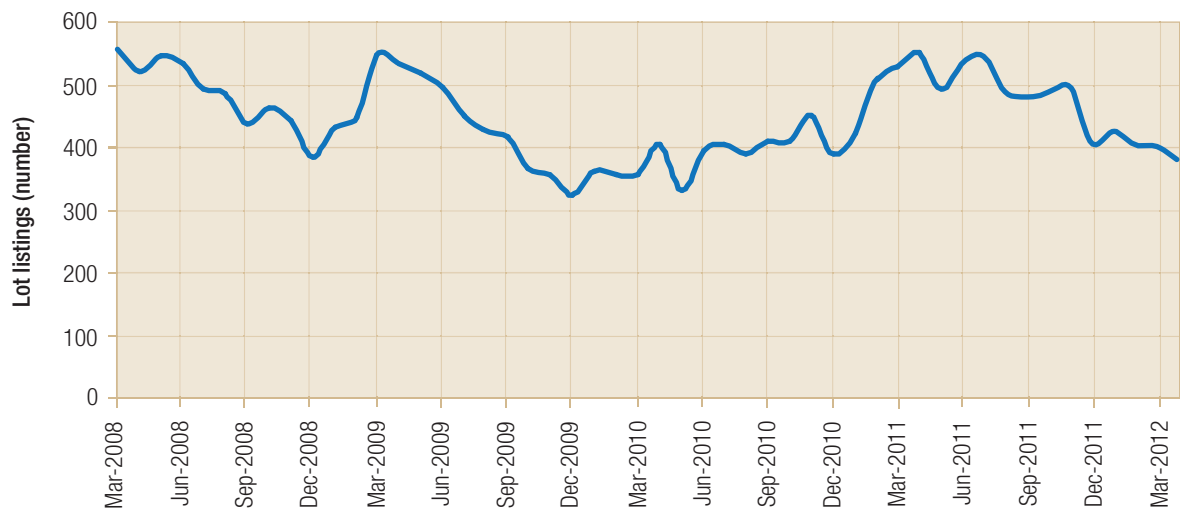
Source: Department of Planning, Residential Developers' Land and Dwellings Intentions Survey 2009/10 (unpublished data).

Figure 28: Residential lots on market (UDIA member developers)



Source: Urban Development Institute of Australia, 2012, Urban Development Index.

Figure 29: Vacant lots listed for sale with real estate agents



Source: Real Estate Institute of Western Australia.

3.6.3 Lots not available to the market

The Urban Development Institute of Australia also collects information from developers for lots that have reached practical completion, but not listed for sale. This may be due to reasons such as:

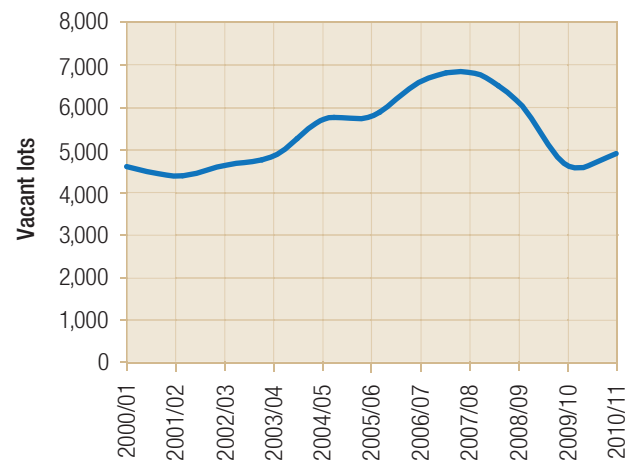
- clearance delays on subdivision conditions;
- issue of title; and
- marketing issues.

Due to the large number of lots developed in the sub-region there is consistently a significant number of lots not on the market. Figure 30 shows fluctuations for lots not listed for sale from 2002. Sharp peaks suggest that issues preventing release of lots for sale were resolved fairly quickly – allowing the lots to be put on sale without lengthy delays.

3.6.4 Stock of properties available

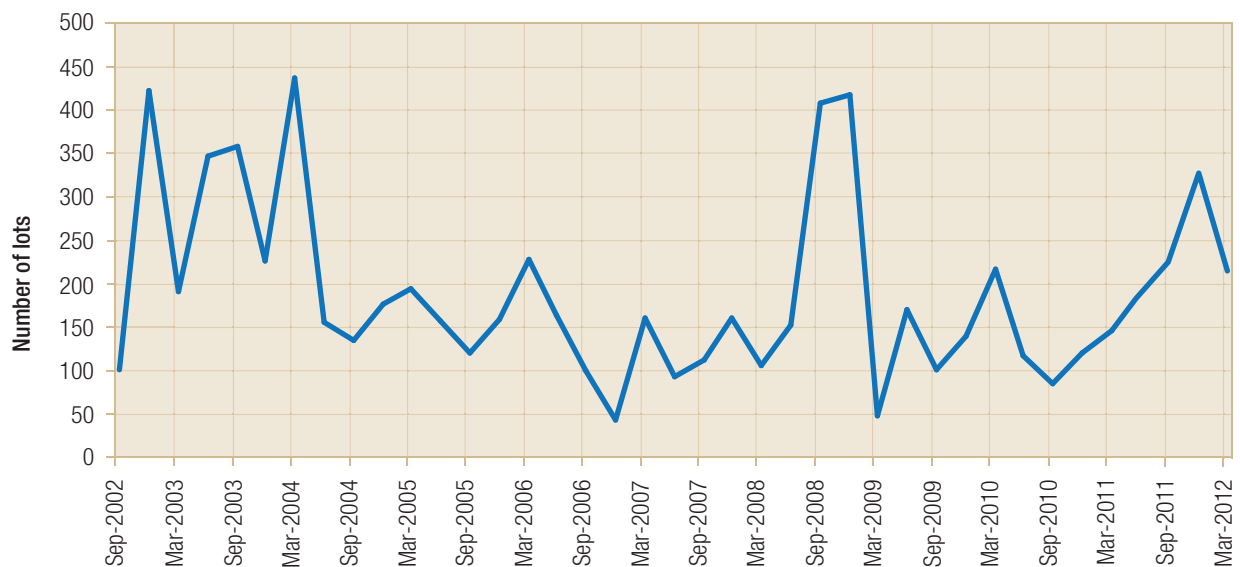
In addition to vacant lots available for sale or recently created, there is generally a stock of vacant lots in urban areas that are latent for some reason. The Water Corporation tracks the number of vacant lots with water services. As at June 2011 there were 4,887 vacant, serviced lots in the North-west sub-region, which constitutes approximately 15 per cent of the total for the Perth and Peel metropolitan area. Figure 31 shows a general increase in the overall stock of vacant lots in the sub-region followed by a substantial reduction after 2007/08.

Figure 31: Stock of vacant serviced lots



Source: Water Corporation, 2012.

Figure 30: Lots not on market (UDIA member developers)



Source: Urban Development Institute of Australia, 2012, Urban Development Index.

3.6.5 Lots sold

Figure 32 shows lots sold by major land developers who are members of the UDIA (including lots presold prior to development or title issue).

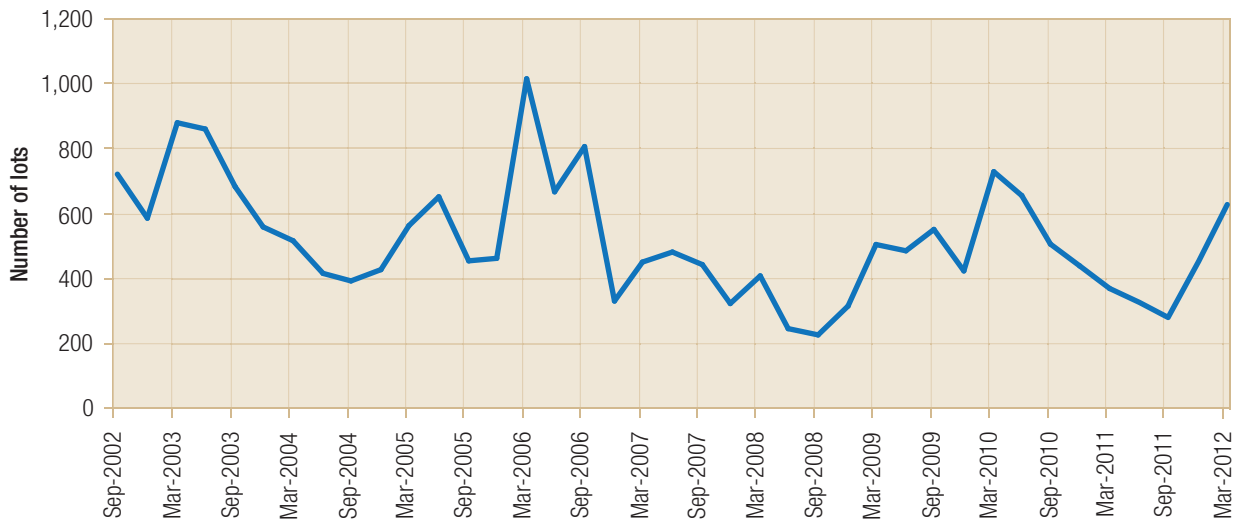
The sales peak in mid-2006 reflects a shortage of developed lots for sale during the resource-led economic and population boom. Capacity constraints made it difficult to release lots through the planning and development process to meet demand. Sales figures in the North-west sub-region were low during the global financial crisis, and have been volatile since.

Lots sold by smaller developers (comprising less than half of the total land development market) have not been shown in the UDIA's Urban Development Index.

3.7 Building development

The economic value of residential lots, even when serviced with infrastructure, is not actually realised until they are improved with buildings. Dwelling construction marks the final phase of the residential development process, enabling land to be used for its proposed purpose. Building approval is generally granted at the local government level and is discussed in section 2.8, as it is also a leading indicator of demand.

Figure 32: Lots sold (UDIA member developers)



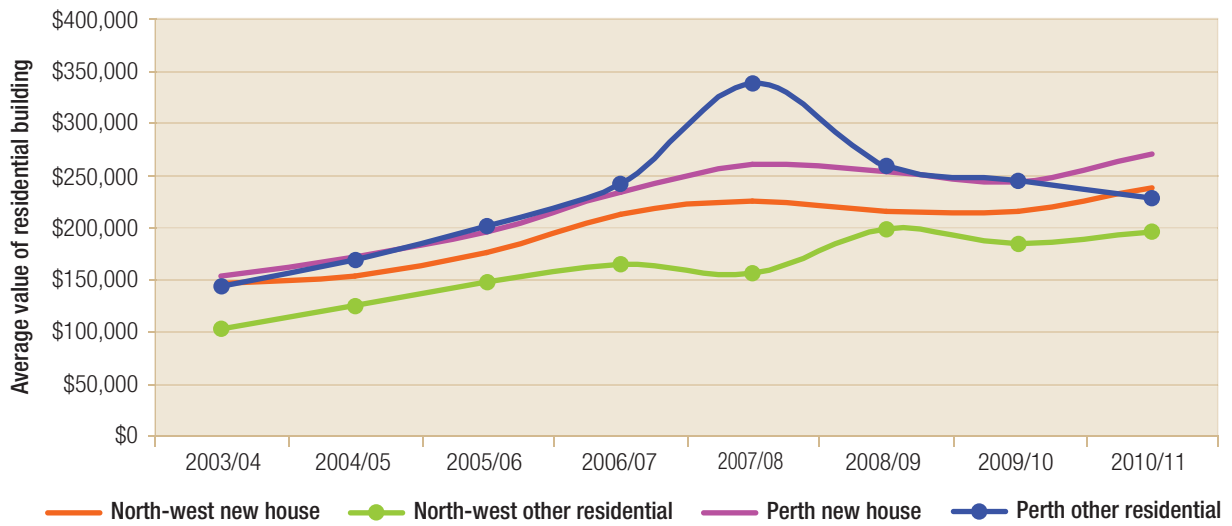
Source: Urban Development Institute of Australia, 2012, Urban Development Index.

3.7.1 Average value of new dwellings constructed

The trend in the average value of new houses and new other residential dwellings is a good indicator of the investment by individuals and building developers respectively. Figure 33 shows the trend since 2003/04 for the North-west sub-region compared to the Perth metropolitan region.

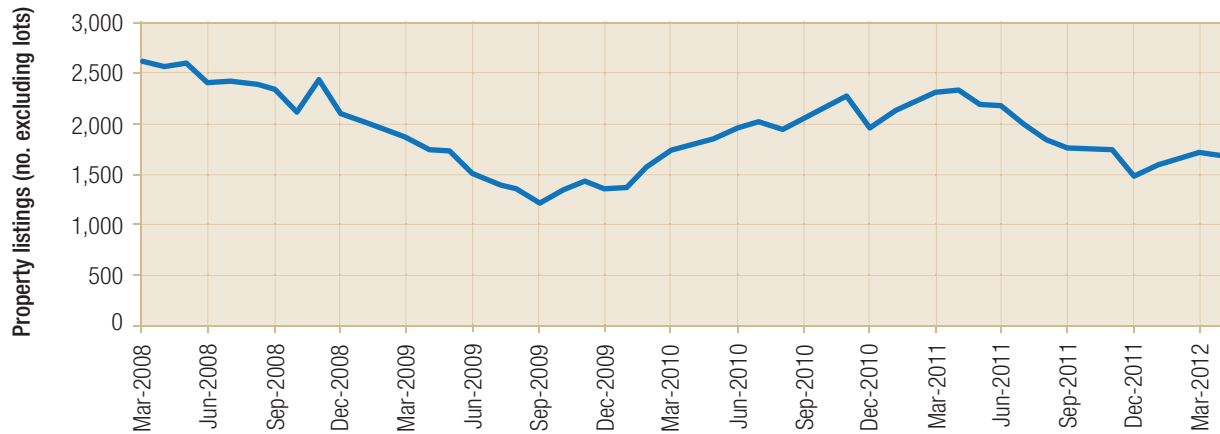
Generally, the average value of new dwellings in the North-west sub-region has been lower than the average for the Perth metropolitan region. After a dip in recent years, the figures to June 2011 show an increase in the average value of all new dwellings in the sub-region.

Figure 33: Average value of residential building



Source: Australian Bureau of Statistics, 2011, Building Approvals, Australia, Cat. No 8731.0.

Figure 34: Properties (excluding vacant lots) listed for sale with real estate agents



Source: Real Estate Institute of Western Australia.

3.7.2 Stock of dwellings available to the market

Figure 34 shows a decline in property listings in the North-west sub-region during the global financial crisis. In September and October 2009, relatively few properties were listed for sale, representing a seller's market. Listings steadily increased into 2011 but have since declined again into 2012.

3.7.3 Land consumption and density

Between 1991 and 2008, an average of 224 hectares of land per year has been consumed by urban development in the North-west sub-region (Table 9, Figure 35). If this trend continues for the next 30 years, 7,320 hectares of land will be required to meet demand, leaving the sub-region with a surplus of 180 zoned hectares in 2041.

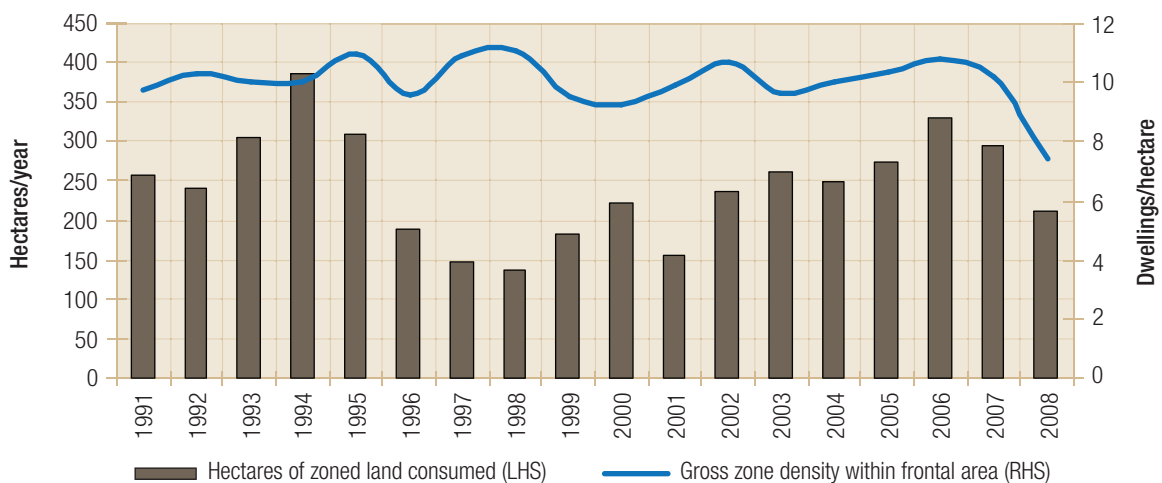
Table 9: Land consumption for urban development and dwelling density

Land consumption	Hectares per year
18 year average (1991-2008)	224
5 year average (2004-2008)	272
2 year average (2007-2008)	253

Dwelling density	Dwellings per zoned hectare
Average 1991-2008	10.02
Minimum over period	7.41
Maximum over period	11.07

Source: Western Australian Planning Commission (2011), Urban Growth Monitor (unpublished data).

Figure 35: Land consumption and density



Source: Western Australian Planning Commission (2011), Urban Growth Monitor (unpublished data).

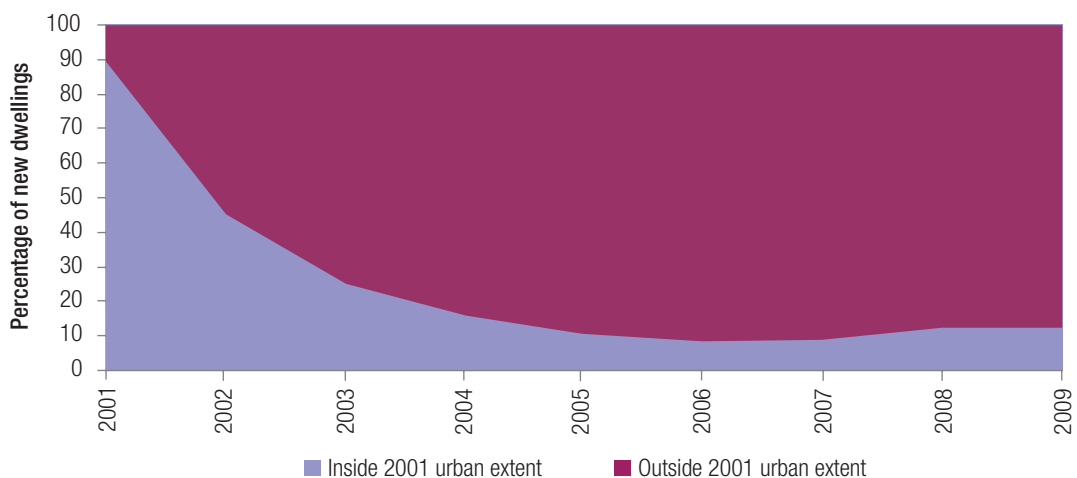
3.8 Infill development and redevelopment

Directions 2031 and Beyond defines strategic metropolitan centres such as Joondalup and Yanchep as multi-purpose centres that provide a mix of retail, office, community, entertainment, residential and employment activities, and which are well serviced by high- frequency public transport. As urban growth continues in the sub-region it is likely that these strategic metropolitan centres will accommodate increasing levels of urban consolidation. The City of Joondalup has released a Draft Local Housing strategy which aims to facilitate higher density development around transport nodes and activity centres.

Figure 36 illustrates the proportion of new dwellings that were constructed within the urban extent of the sub-region, as at 2001. It shows that the number of dwellings constructed inside the 2001 urban extent decreased sharply for 3-4 years after 2001; suggesting that frontal development is the prevailing pattern of urban growth in the sub-region.

The rate of infill development reached a low of 8.5 percent in 2006 and then increased slightly, as homes in the area began to age and were replaced. In all outer sub-regions, the rate of infill development stabilises at between 10 and 20 per cent, demonstrating that even in established suburbs there is a continual process of renewal.

Figure 36: Cumulative percentage of new dwellings relative to 2001 urban extent



Source: Department of Planning (unpublished data).

4 Industrial and commercial land demand and supply

4.1 Commercial development

Table 10 provides statistics for commercial subdivision approvals in the North-west sub-region for 2011. The sub-region had a good deal of commercial subdivision activity in the 12 months to December 2011, with 23 per cent of all lots granted final approval for the Perth and Peel metropolitan area.

Commercial subdivision activity in the North-west sub-region was particularly high from 2004 to 2006 (Figure 37), with numerous commercial projects progressing to service the developing residential areas of the sub-region such as Butler and Jindalee.

Analysis of development applications and approvals for commercial developments suggest that the North-west sub-region is currently drawing modest interest from investors in the commercial sector relative to the high level of residential investment in the area. The estimated total value of commercial sector construction in the North-west sub-region constitutes approximately six per cent of the total for this type of development in the Perth and Peel metropolitan region.

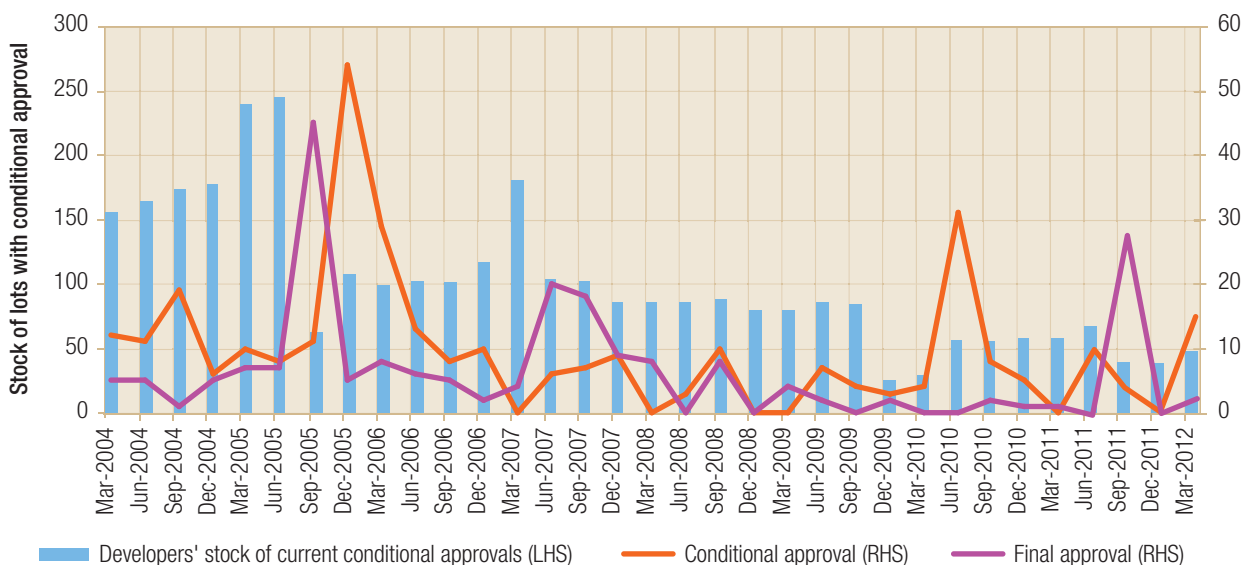
Table 10: Commercial subdivision approvals

Local government authority	Applications received (1 Jan 2011 - 31 Dec 2011)	Applications pending (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 - 31 Dec 2011)	Current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals (1 Jan 2011 - 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Joondalup	3	0	1	14	8	28
Wanneroo	6	1	13	25	16	1
North-west sub-region	9	1	14	39	24	29

Source: Department of Planning (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.

Figure 37: Commercial subdivision approvals



Source: Western Australian Planning Commission 2012, State Lot Activity.

Joondalup has the majority of commercial development in the sub-region, with Carramar, Butler and Hillarys also drawing significant commercial investment (Map 1). There is scope within several large mixed-use developments – at Two Rocks, Alkimos and Tamala Park, for significant additional commercial development.

Table 11 provides a list of selected major commercial sector construction projects of the North-west sub-region.

4.2 Industrial development

Table 12 illustrates that the City of Wanneroo provides all the industrial zoned land in the MRS for the North-west sub-region.

The North-west sub-region is the most rapidly growing area in the Perth and Peel regions. It also suffers from one of the lowest employment self-sufficiency levels – largely attributed to the high proportion of residential or urban zoned land in this area.

The need for industrial land close to population centres is clear. However, as the corridor is elongated, some locations at the fringes may be less affordable or unattractive to industry, because of accessibility constraints and land use conflicts that may arise.

There are currently four industrial estates in the City of Wanneroo that service the North-west sub-region – Wangara, Landsdale, Neerabup and Yanchep-Two Rocks.

Table 11: Major commercial projects

Project	Suburb	Description	Completion
Hillarys Boat Harbour – tavern	Hillarys	Tavern/retail unit and boardwalk development	2008
Lakeside shopping centre	Joondalup	2-storey, 2900 m ² extension to existing shopping centre	2008
Beldon shopping centre	Beldon	Shopping centre extensions and renovations	2009
Carramar (Millendon Street) shopping centre	Carramar	New shopping centre	2009
Currambine Marketplace shopping centre	Currambine	Shopping centre	2012
Yanchep Beach Road shopping centre	Yanchep	Shopping centre including supermarket and 15 specialty stores	2013

Source: Department of Planning analysis (data not verified).

Table 12: Industrial zoned land (Metropolitan Region Scheme) in the North-west sub-region

Industrial zoned land (ha) as at July 2012	Local government authority	Industrial zoned land (ha) as at July 2012	Percentage of sub-region total
1,827.6	Joondalup	0	0
	Wanneroo	1827.6	100

Source: Department of Planning internal database (2012).

1. Wangara industrial estate attracts medium-sized business, especially manufacturing and producer services. Some of these use advanced computer technology in their operations. The estate located along north-south and east-west arterial roads, with easy access to the Perth CBD, domestic and international airports, northern haulage routes and Fremantle Port.
2. Landsdale industrial estate, located east of and adjacent to the Wangara estate, provides for lighter and more general industry.
3. Neerabup industrial estate to the north is being developed, and will provide up to 20,000 local jobs.
4. Yanchep-Two rocks is the most northerly industrial estate in the sub-region and is in the early stages of development.

Land for industry must be well-serviced and accessible in the North-west sub-region. It is expected that 35,000 to 45,000 jobs will be available in the sub-region by 2031.

Table 13 provides a further breakdown of vacant and developed land for industrial complexes in the North-west sub-region, as reported in the Department of Planning's 2008 Land Use and Employment Survey. Note that survey complexes are identified based on the zoning of the land at the time of the survey, however activities occurring on inappropriately zoned land may also be included if discovered during the data collection process.

Industrial land supply in this sub-region to 2031 is represented in Figure 38. This is based on a forecast model prepared in 2010 as part of the *Economic and Employment Lands Strategy: non-heavy industrial* report.

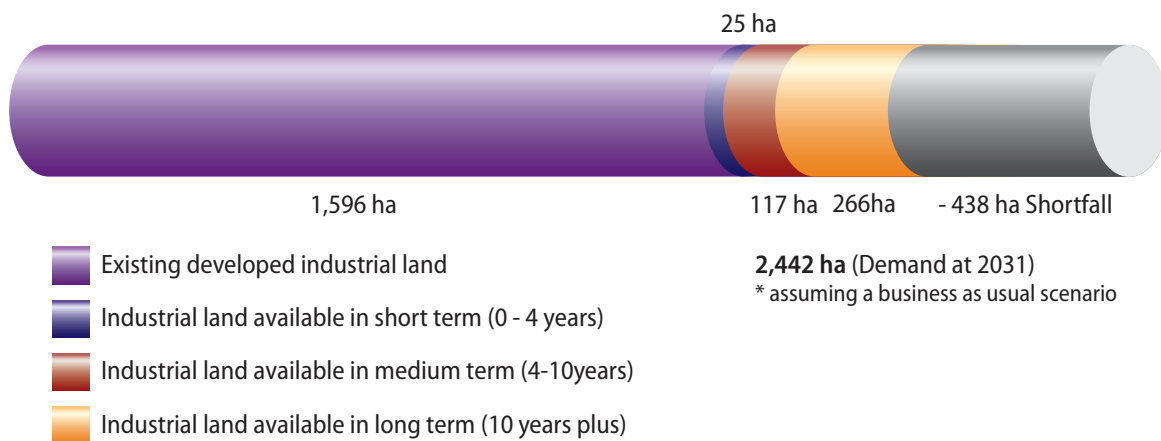
As the North-west sub-region has the highest population of the outer sub-regions, demand for industrial land is the highest at 2,442 hectares.

Table 13: Industrial complexes in the North-west sub-region

Complex	Developed (ha)	Vacant (ha)	Total (ha)	Percentage vacant
Flynn Drive (Neerabup)	358	649	1,007	64.45
Landsdale	59	55	114	48.25
Two Rocks East	0	136	136	100
Wangara	202	199	401	49.63
Total	619	1,039	1,657	62.70

Source: Department of Planning internal database – Land use survey preliminary statistics (2010).

Figure 38: Current industrial zoned land supply: North-west sub-region



Source: Economic and Employment Lands Strategy: non-heavy industrial, Perth metropolitan and Peel regions, Department of Planning (2012).

Based on a forecast demand for the North-west sub-region of 2,422 hectares by 2031 and existing data on potential supply, the sub-region will need an extra 438 hectares if no additional industrial land is released to the market by 2031. Note that this excludes any of the 37 potential sites identified in the *Economic and Employment Lands Strategy: non-heavy industrial* report.

Table 14 provides statistics for industrial subdivision approvals in the North-west sub-region for 2011.

Figure 39 provides an overview of industrial subdivision approvals in the North-west sub-region. The North-west subregion has had the largest number of conditional industrial sub-division approvals outside the South-west sub-region since January 2004. Although the sub-region maintains a large stock of conditionally approved industrial lots, most of these do not progress to final approval.

Analysis of development applications and approvals for industrial developments suggests that the North-west sub-region is currently receiving a small amount of investment in the industrial sector – given the scale of the area’s residential development.

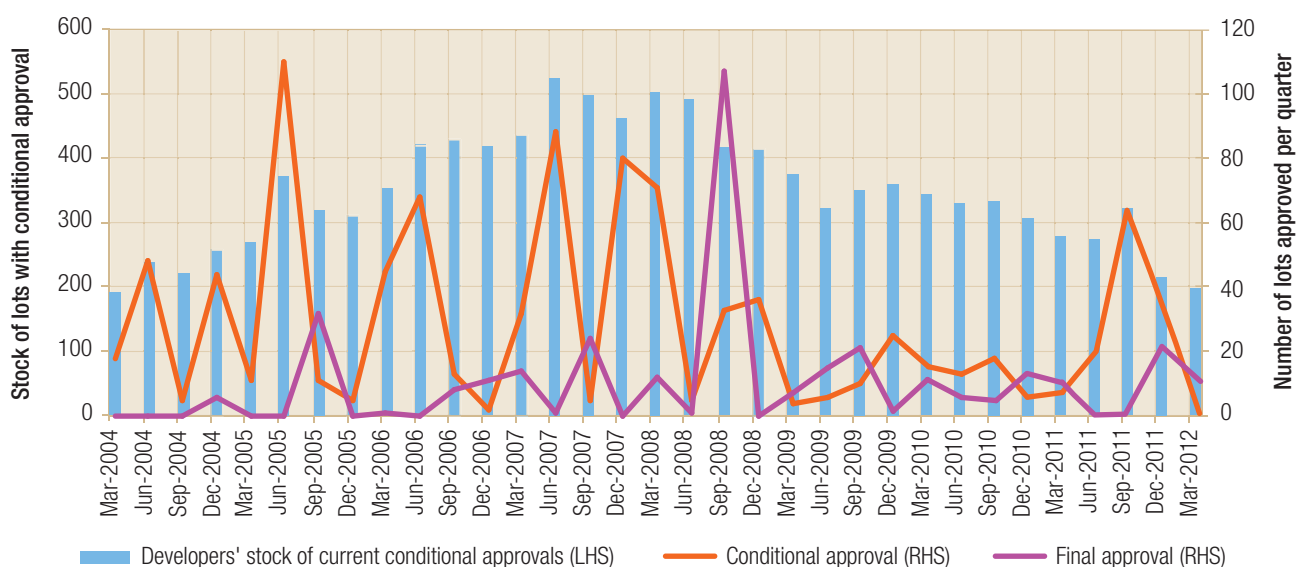
Table 14: Industrial subdivision approvals

Local government authority	Applications received (1 Jan 2011 - 31 Dec 2011)	Applications pending (as at 31 Dec 2011)	Conditional approvals granted (1 Jan 2011 - 31 Dec 2011)	Current conditional approvals (as at 31 Dec 2011)	Active conditional approvals ¹ (as at 31 Jan 2012)	Final approvals (1 Jan 2011 - 31 Dec 2011)
	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Proposed lots	Lots
Joondalup	0	0	0	0	0	0
Wanneroo	72	48	50	272	33	29
North-west sub-region	72	48	50	272	33	29

Source: Department of Planning (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.

Figure 39: Industrial subdivision approvals



Source: Western Australian Planning Commission 2012, State Lot Activity.

The estimated total value of industrial sector construction projects in the North-west sub-region constitutes approximately ten per cent of the total for this type of project across the metropolitan area.

The vast majority of industrial construction projects in the North-west sub-region are in the City of Wanneroo with significant activity in Landsdale, Neerabup, Clarkson and Wangara (See Map 1). Most projects are owned by private enterprise, however State and local government have also prompted several large industrial construction projects in the sub-region.

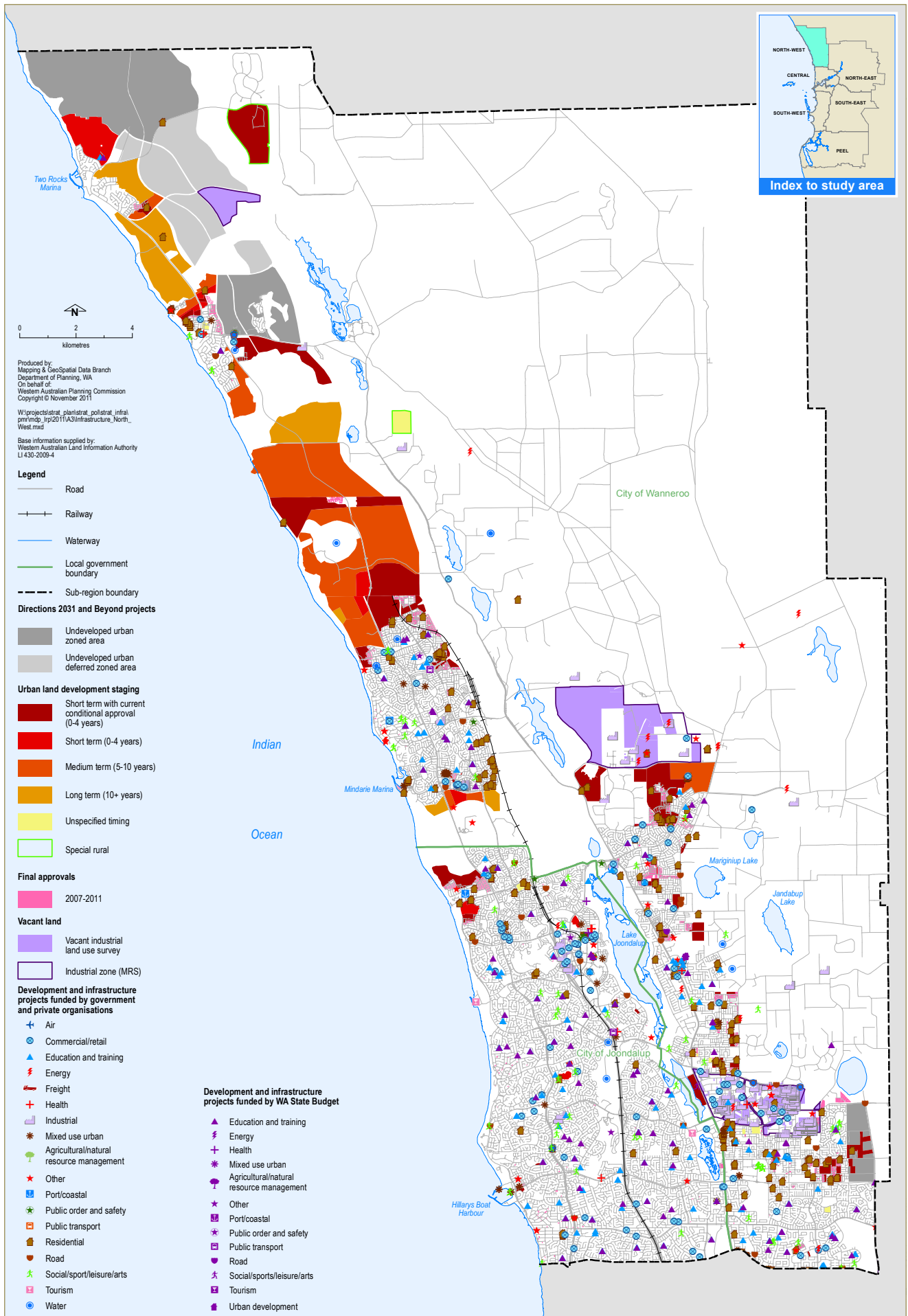
Major industrial structure plans for the North-west sub-region

- Cell 7 Wangara West – East Wanneroo;
- Cell 8 Enterprise Park – Wangara;
- Neerabup Industrial Area; and
- Pederick Road L1000 – Neerabup Industrial Area.

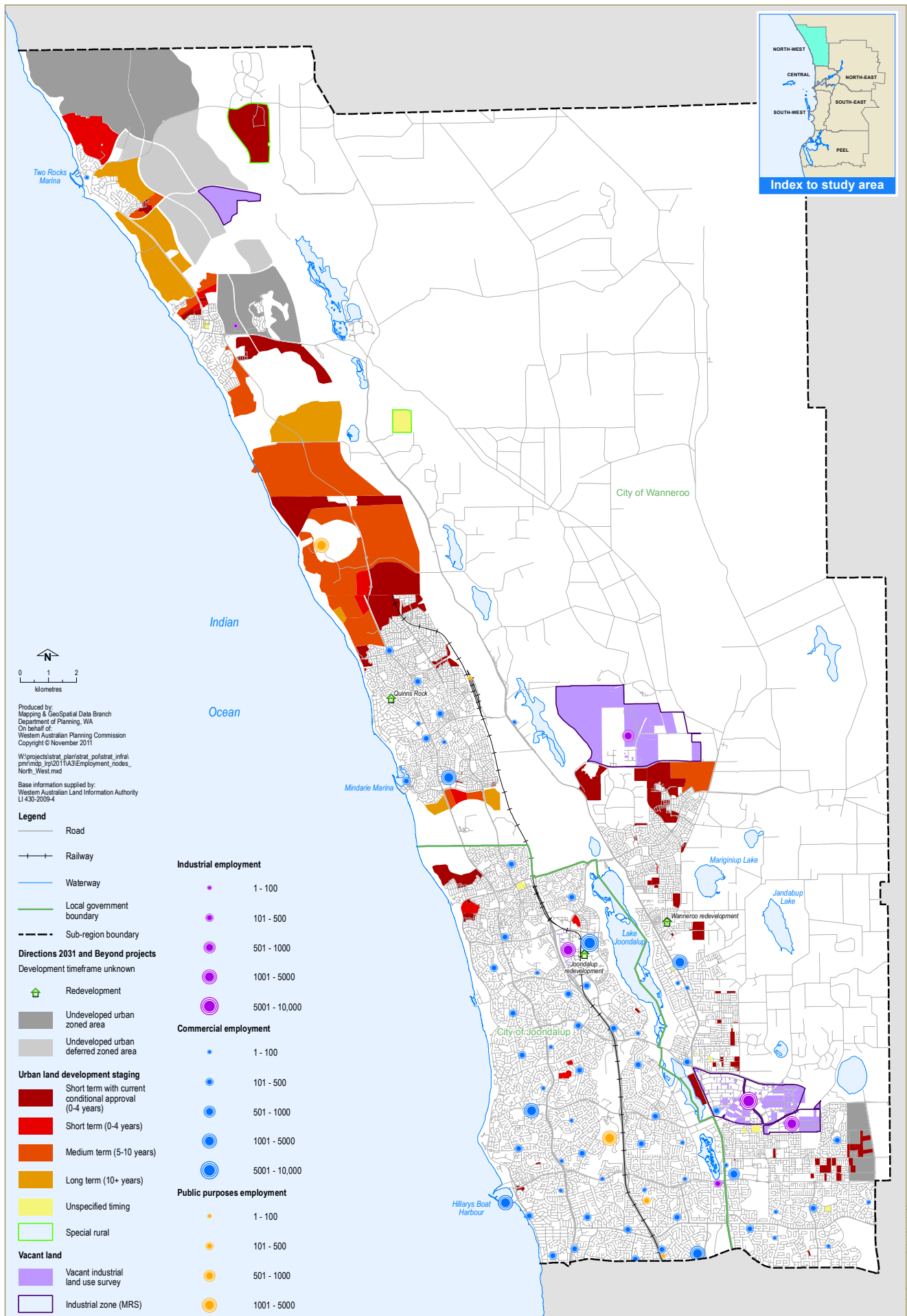
Major industrial projects of the North-west sub-region include:⁵

- Prestige Parade 21 lot industrial sub-division (Wangara);
- Flynn Drive 80 lot industrial sub-division (Neerabup);
- Motivation Drive 34 lot industrial sub-division (Wangara); and
- Distinction Road Warehouses (Wangara).

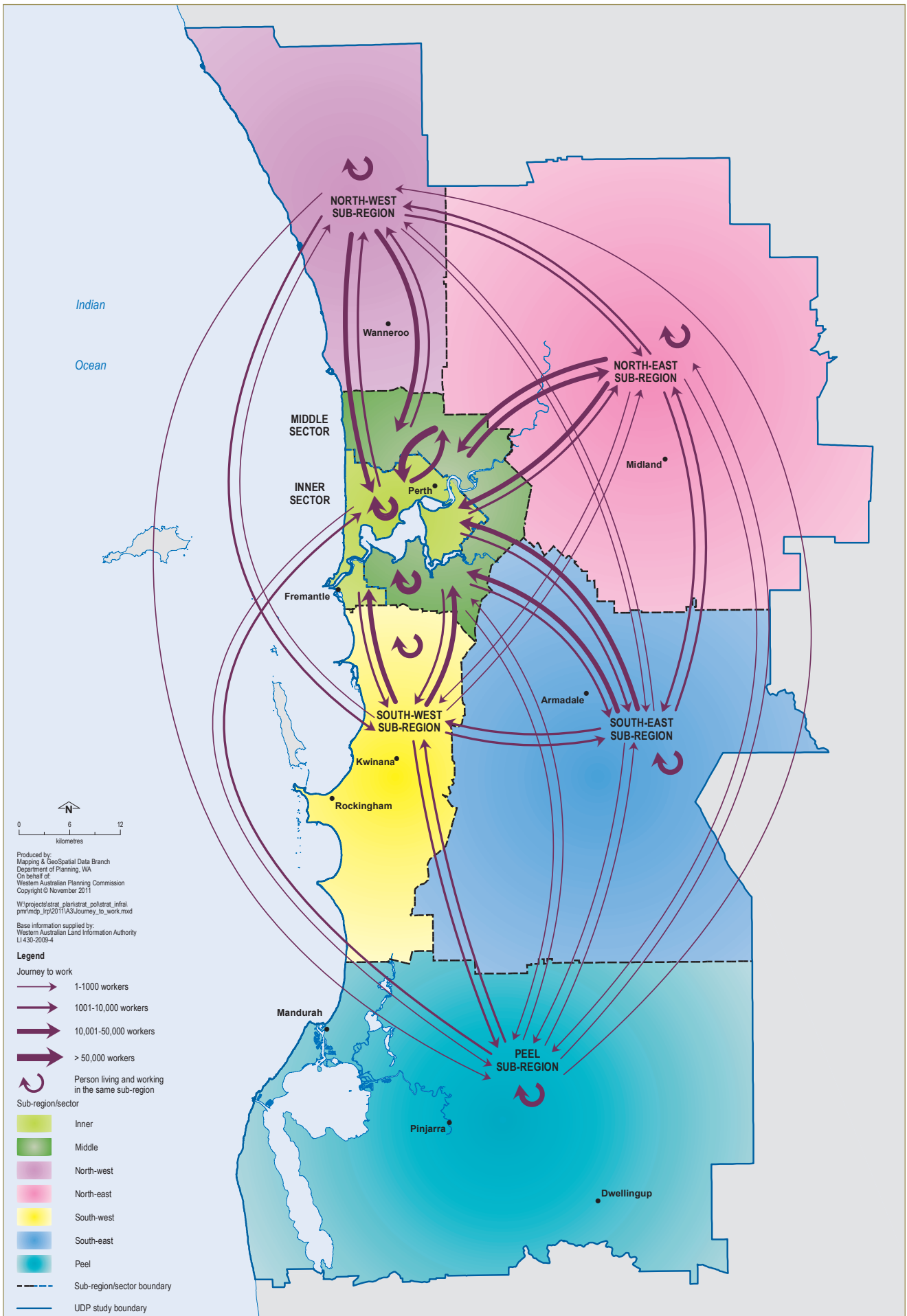
⁵ Department of Planning analysis.



Map 1: Infrastructure - North-west sub-region



Map 2: Employment nodes - North-west sub-region



Map 3: Journey to work - Perth metropolitan region and Peel sub-region