

# Urban Growth Monitor

Perth Metropolitan, Peel and Greater Bunbury Regions

16  
June 2025



The Department of Planning, Lands and Heritage acknowledges the Aboriginal people as the traditional custodians of Western Australia. We pay our respects to the Ancestors and Elders, both past and present, and the ongoing connection between people, land, waters and community. We acknowledge those who continue to share knowledge, their traditions and culture to support our journey for reconciliation. In particular, we recognise land and cultural heritage as places that hold great significance for Aboriginal people.

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# Executive summary

The *Urban Growth Monitor* is prepared by the Department of Planning, Lands and Heritage to provide Government, industry and the broader community with an objective, repeatable means of tracking several key stages of the land and housing supply pipeline. *Urban Growth Monitor* analysis provides an annual assessment of progress towards strategic development goals and quantifies the stock of undeveloped land zoned for urban purposes.

Figure 1 shows selected key stages of the planning and development pipeline, monitored as part of the Department's Urban Development Program, with stages measured by *Urban Growth Monitor* analysis highlighted in blue.

The *Urban Growth Monitor* is underpinned by Geographic Information System (GIS) modelling of 'urban' and 'urban deferred' zoned land in Western Australia's three region scheme areas. Additional analysis measures the volume of land consumed by urban development each year to provide context to the quantum of undeveloped land. This comparison showed that the stock of undeveloped zoned land in Perth and Peel is very large, relative to the annual rate of land consumption (approximately 26 times larger).

In addition to the stock of zoned land, approximately 12,500 hectares of land is identified for future urban development in the strategic plan for the metropolitan area – *Perth and Peel@3.5million*.

The analysis contained in this report is not intended as a commentary on lot or housing supply relative to demand. The stock of land identified for future development is considered an important indicator for long-term land supply. It does not reflect the amount of land considered 'build-ready' or capable of yielding residential lots in the short-term.

The identification of large volumes of land for future development does not address the more immediate requirement for additional dwellings at a time when housing is in short supply, particularly when constraints are evident further along the supply pipeline.

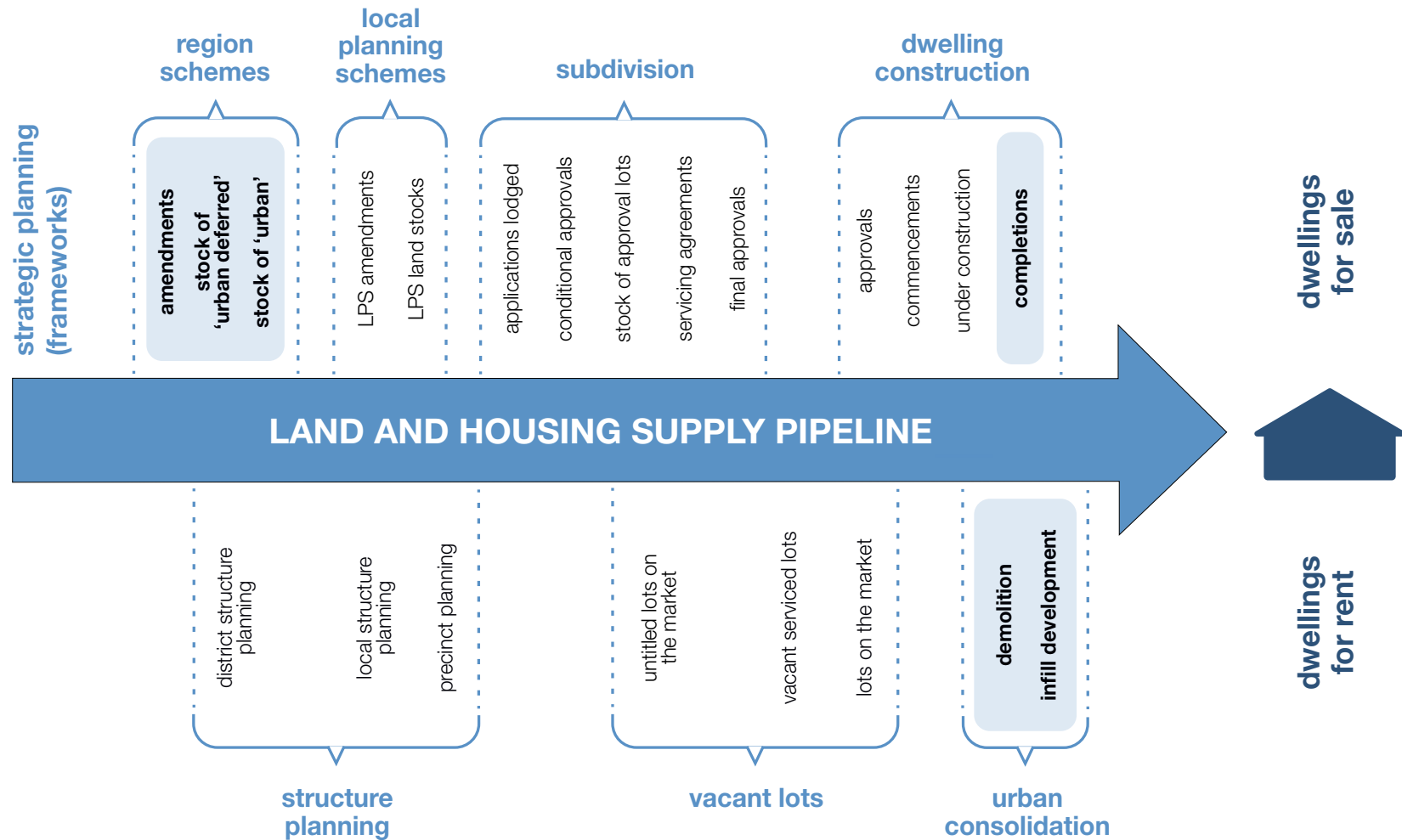
Challenges are evident in delivering sufficient volumes of lots and dwellings to meet demand and Government is working with industry to address these blockages to unlock zoned land, creating more residential lots and dwellings.

*Urban Growth Monitor* analysis of residential development activity shows that greenfield growth is being delivered at a density close to strategic targets. Development density of this nature is sufficient to accommodate a suitable variety of residential and non-residential uses (including environmental features and infrastructure).

The proportion of infill development delivered in 2023 was up slightly from 2022 but well-below target rates. High construction costs and challenging market conditions for high-density development have restricted overall infill rates across Perth and Peel. Almost three quarters of infill housing completed in 2023 was delivered through single dwellings.

This is the 16th edition of the *Urban Growth Monitor*, presenting information relating to land zoned for urban development (calculated as at 31 December 2023) and development activity in the 2023 calendar year. The report is prepared on behalf of the Western Australian Planning Commission (WAPC) to fulfil the requirements for tracking and modelling land supply as outlined in the *Planning and Development Act 2005*.

Figure 1: Land and Housing Supply Pipeline – monitoring



# 1 Key points

## Land for urban development

- At the end of 2023, there was approximately 117,300 hectares of Urban and Urban Deferred zoned land in the Perth metropolitan, Peel and Greater Bunbury regions.
- In addition, there was 350 hectares of land intended for urban development within DevelopmentWA areas that is not zoned Urban or Urban Deferred.
- During 2023, there was a 20-hectare net reduction in urban zoned land in the Metropolitan Region Scheme due to a rationalisation of land in Redcliffe adjacent to Perth Airport.
- There was no change in the stock of Urban or Urban Deferred zoned land within the Peel Region Scheme.
- A 190-hectare net increase in land zoned for urban development was recorded in the Greater Bunbury Region Scheme, with the addition of the Treendale East Urban Expansion Area.
- Around 77 per cent (90,960 hectares) of land is developed and 23 per cent (26,680 hectares) is undeveloped.
- In addition to the stock of Urban and Urban Deferred zoned land, Perth and Peel@ 3.5million identifies 5,680 hectares for urban expansion and 6,940 hectares for urban investigation to support future urban growth.

## Non-residential land uses

- Analysis over time shows that between one third and one half of Perth and Peel's urbanised areas will be required for non-residential purposes. These land uses service and complement residential development and create healthy urban environments.
- As at the end of 2023, 41 per cent of urbanised areas were utilised for non-residential uses such as for public purposes and commercial uses.
- A comparable assessment of undeveloped areas zoned for urban development showed that 16 per cent of these stocks were committed for public purposes and commercial uses.
- In addition to this analysis, a new assessment of policies relating to key environmental features was undertaken to determine the degree to which these features might be integrated within future residential development.
- In addition to land identified for non-residential purposes through local planning schemes, a further five per cent of undeveloped land contained environmental features likely to prohibit residential development.



## Land consumption

- In 2023, 530 hectares of land within the Perth metropolitan, Peel and Greater Bunbury regions were consumed by subdivision. Approximately 630 hectares was consumed through construction activity.
- In the 20-year period to December 2023, an average of 770 hectares of land per annum was consumed by subdivision, and 760 hectares per annum was consumed by construction in the Perth metropolitan and Peel regions.
- In the Greater Bunbury region, an average of 60 hectares per annum was consumed by both subdivision and by construction in the 20 years to 2023.
- If land consumption continues at a rate consistent with the 20-year average, it would theoretically take an estimated 26 years to deplete existing stocks of undeveloped land in the Perth metropolitan and Peel regions.
- Based on the Greater Bunbury region's historical consumption rate, existing stocks of undeveloped land could theoretically meet demand for the next 63 years.

## Infill

- In the context of the Urban Growth Monitor, infill refers to the delivery of new residential dwellings in urbanised areas irrespective of the type of dwelling constructed.

In 2023, in the Perth metropolitan and Peel regions:

- a total of 12,620 dwellings were constructed. Of these, 4,860 dwellings were constructed in infill areas, and 7,750 in greenfield areas.
- net infill totalled 3,870 dwellings. Net infill refers to dwellings constructed within infill areas minus the number of dwellings removed from the existing stock through demolition.
- of the 3,870 net infill dwellings completed, 2,670 were in the Central sub-region and 1,200 were located in the outer metropolitan sub-regions and Peel.
- the net infill rate was approximately 34 per cent in 2023, up from 31 per cent in 2022.
- almost three quarters of all infill dwellings built comprised of single dwelling developments including duplexes and triplexes. This is significantly higher than the average of 57 per cent for the period from 2011 to 2023.
- large-scale infill projects yielding over 50 dwellings per lot comprised seven per cent of all infill dwellings completed in 2023. This contrasts with 2019, when these high-density infill projects accounted for over a quarter of all infill development.

## Dwelling density

- *Perth and Peel@3.5million* sets a target of 15 dwellings per gross urban zoned hectare for new residential development, which is equivalent to 26 dwellings per net site hectare.
- The gross dwelling density measure is converted to an equivalent 'net site dwelling density' target to enable the density of only new residential development to be measured.
- The 'net site dwelling density by build year' is a measure of the average number of dwellings per net site hectare, based only on lots with dwellings constructed within each calendar year.

In 2023:

- the 'net site dwelling density by build year' for greenfield development areas in the outer Perth metropolitan sub-regions and Peel was 23.5 dwellings per net site hectare. This represents a significant increase, from approximately 15 dwellings per net site hectare in 2010, but remains slightly below the long-term strategic target of 26 dwellings per net site hectare.
- the 'net site dwelling density by build year' for all sites (including infill areas) in the Perth metropolitan and Peel regions was 25.3 dwellings per net site hectare.



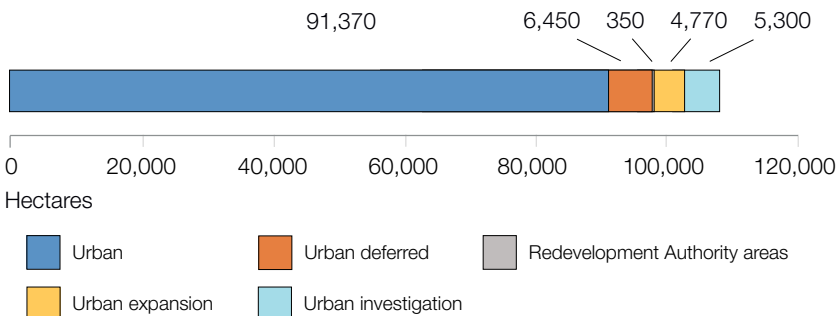
# 2 Land for urban development

## 2.1 Zoned land stocks

Within the context of the *Urban Growth Monitor*, the term ‘land zoned for urban development’ encompasses urban and urban deferred zoned land under the Metropolitan, Peel and Greater Bunbury region schemes, as well as land identified for urban purposes in redevelopment authority areas.

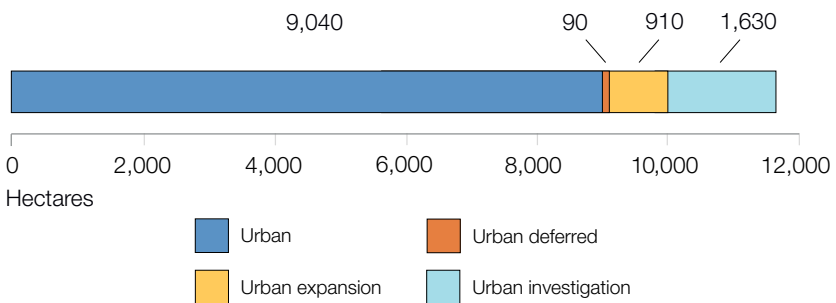
In addition to current stocks of land for urban development, *Perth and Peel@ 3.5million* identifies 5,680 hectares for Urban Expansion and 6,940 hectares for Urban Investigation to support future urban growth across both Perth and Peel (Figures 2, 3, and 4).

Figure 2: Land for urban development – Perth metropolitan region



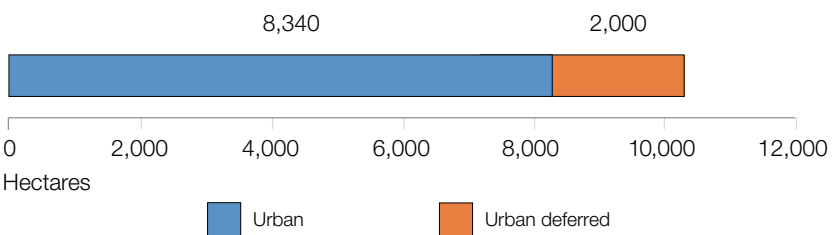
Source: Department of Planning, Lands and Heritage (internal databases) (2024)

Figure 3: Land for urban development – Peel region



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

Figure 4: Land for urban development – Greater Bunbury region



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

## 2.2 Urbanised and undeveloped land

Across Perth and Peel, around 79 per cent of the stock of land zoned for urban development is developed, while around 63 per cent of urban and urban deferred land stocks are developed in the Greater Bunbury region (Table 1).

**Table 1: Urbanised and undeveloped land**

Region/sub-region	Urbanised area (ha)	Undeveloped (ha)	Total land zoned for urban development (ha)	Urbanised (per cent)
Central sub-region	28,770	1,010	29,780	97%
North-West sub-region	14,650	8,230	22,880	64%
North-East sub-region	12,310	3,270	15,580	79%
South-East sub-region	10,030	4,880	14,920	67%
South-West sub-region	12,110	2,910	15,020	81%
<b>Perth metropolitan sub-total</b>	<b>77,880</b>	<b>20,300</b>	<b>98,180</b>	<b>79%</b>
Peel region	6,580	2,560	9,140	72%
<b>Perth metropolitan &amp; Peel sub-total</b>	<b>84,450</b>	<b>22,860</b>	<b>107,310</b>	<b>79%</b>
Greater Bunbury region	6,510	3,820	10,340	63%
<b>Total</b>	<b>90,960</b>	<b>26,680</b>	<b>117,650</b>	<b>77%</b>

Source: Department of Planning, Lands and Heritage (2024)

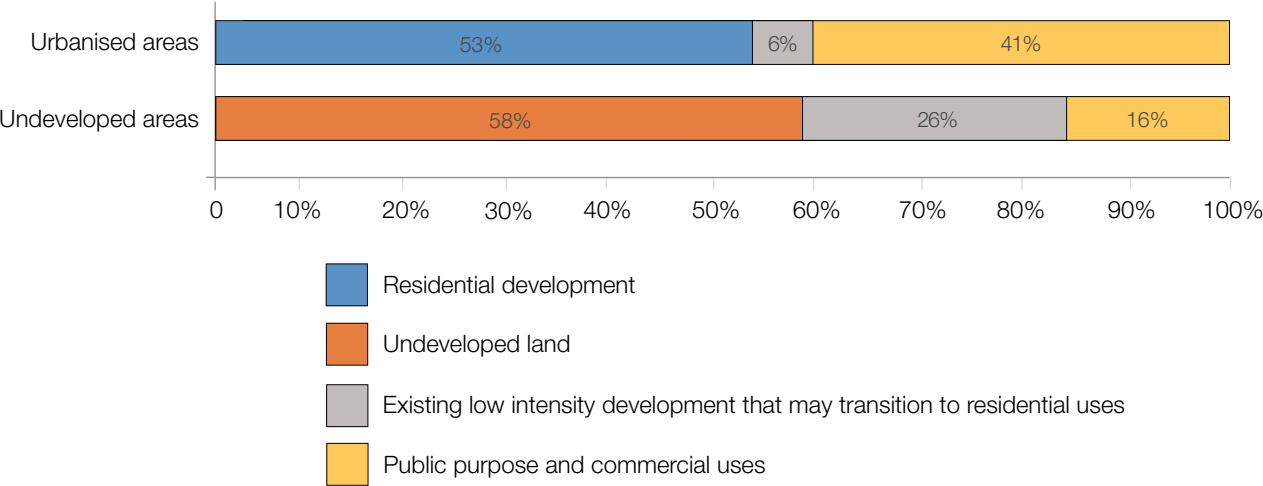
Note: Figures may not sum due to rounding.

### 2.2.1 Land use assessment

Analysis over time shows that between one third and one half of urbanised areas will be required for non-residential uses. At the end of 2023, approximately 41 per cent of urbanised land is used for public purposes (schools, reserves, infrastructure corridors) and commercial uses (Figure 5). Around six per cent of urbanised land constitutes existing low-intensity development that may transition to residential uses over time.

In undeveloped areas, public purpose and commercial uses comprise a smaller portion of the stock compared to developed areas. As areas urbanise over time, it is expected that the share of these uses will increase as more detailed planning progresses to reflect the dynamics of urbanised areas.

Figure 5: Land-use assessment



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

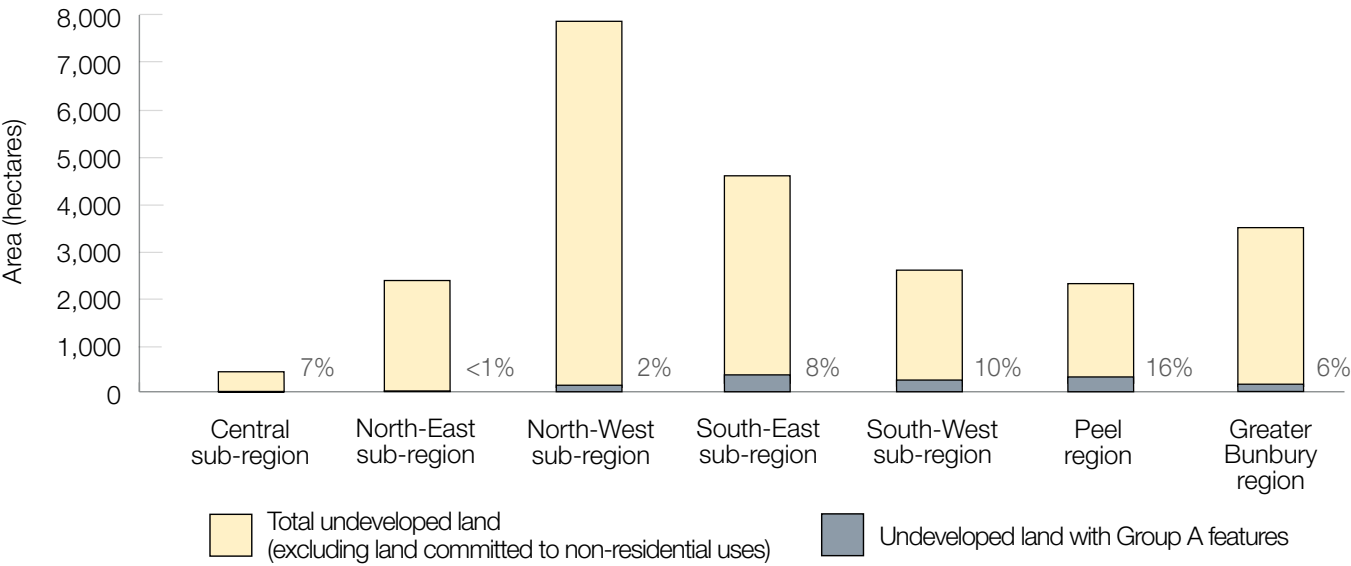
### 2.2.2 Environmental values in undeveloped areas

Supplementing the land use assessment, this edition of the Urban Growth Monitor assesses the spatial distribution of environmental features likely to be incorporated within future urban areas as the city’s urban form expands.

Environmental features in this assessment are grouped into three categories (see Appendices). Group A environmental values include features such as Bush Forever that have specific policy provisions that require protection from the impacts of residential development. These areas comprise around six per cent of undeveloped areas outside of land identified for public purposes (Figure 6).

Once these features are considered, approximately 5,640 hectares (21 per cent) of the undeveloped area is committed to public purpose uses or Group A environmental policies.

Figure 6: Group A features in undeveloped areas



Source: Department of Planning, Lands and Heritage (2024)

2.2.3 Additional considerations for greenfield development

In addition to the assessment of land uses, it is acknowledged that other factors may need to be considered in the delivery of new greenfield residential projects. This section presents separate analyses on two key considerations: the volume of potentially fragmented land and active policies identifying environmental features to be considered as part of any future development.

Environmental features

As the *Urban Growth Monitor* focuses on land for urban development, environmental features are included in the assumptions on the availability of urban land for housing. While Group A features are generally protected from the impacts of urban development, Group B consists of features that require further consideration for integration into future residential development. Projects proposing impacts to these values may require

environmental assessments and minimisation or rehabilitation measures or offsets. Examples of greenfield estates developed in the presence of Group B environmental values include Atwell, Banksia Grove, Parmelia and Madora Bay.

Group C includes features not formally protected under current policy, such as native vegetation, yet it is increasingly expected that impacts from development on these values will need to be considered as part of future development.

While balancing the conservation of environmental features with urban development can be challenging, these areas form part of the urban fabric, providing opportunities for innovative and biodiversity inclusive urban design. Integrating environmental values into urban development offers economic and social benefits such as creating attractive, liveable spaces, supporting recreation and health, improving air quality and reducing heat and energy costs. Table 2 shows the distribution of Group B and C environmental features across the study area.

Table 2: Group B and C environmental features

Sub-region	Group B (ha)	Group C (ha)	Total undeveloped land* (ha)	Group B (%)	Group C (%)
North-East sub-region	140	320	2,350	6%	14%
North-West sub-region	2,180	2,250	7,880	28%	29%
South-East sub-region	570	20	4,590	12%	0%
South-West sub-region	480	140	2,580	18%	5%
Peel region	490	50	2,280	21%	2%
Greater Bunbury region	830	160	3,480	24%	4%

Source: Department of Planning, Lands and Heritage (2024)

Note: Figures may not sum due to rounding.

\* Excludes land committed for public purposes

**Land fragmentation**

Land with fragmented ownership may require coordination/amalgamation prior to development. Although fragmentation may hinder development progress, it is not considered a ‘hard’ impediment to urban growth.

Lots ranging from 2,000 square metres (sqm) to five hectares were used to indicate potential land fragmentation for this analysis. If adjacent lots under the same ownership aggregate to five hectares or more, they were not considered as fragmented. Lots smaller than 2,000 sqm were excluded from the analysis as the *Urban Growth Monitor’s* land consumption model classifies lots of 2,000 sqm or less as ‘consumed for urban development’.

Across the outer metropolitan and Greater Bunbury regions, around 25 per cent of the undeveloped stock (excluding land committed for non-residential uses) was estimated as potentially fragmented based on the above criteria (Table 3).

**Table 3: Estimate of land fragmentation**

Sub-region/region	Estimate of potential land fragmentation (ha)	Total undeveloped land* (ha)	Share (%)
North-East sub-region	790	2,350	34%
North-West sub-region	1,460	7,880	19%
South-East sub-region	1,560	4,590	34%
South-West sub-region	680	2,580	26%
Peel region	380	2,280	17%
Greater Bunbury region	640	3,480	18%

Source: Department of Planning, Lands and Heritage (2024)

Note: Figures may not sum due to rounding.

\* Excludes land committed for public purposes



# 3 Land consumption rates

The *Urban Growth Monitor* calculates land consumption in two ways:

**Land consumption based on built form (construction):** where undeveloped land is consumed by the construction of new buildings; and

**Land consumption based on subdivision:** where subdivision occurs, with the assumption that subdivision into lots smaller than 2,000 sqm is done so for urban purposes.

Both methodologies assess the gross area consumed by urban development, which includes residential and non-residential requirements such as schools, roads, reserves and commercial projects.

## 3.1 Land consumption trends

The two approaches to measuring land consumption reveal similar trends, with annual changes in land consumption by subdivision generally preceding the corresponding change in built form land consumption (Table 4 and Figure 7).

Table 4: Land consumption trends

	Consumption in 2023 (ha)	Change from 2022	Average consumption (2004-2023) (ha)	2023 comparison to average
Land consumption by construction	630	21% higher	820	23% below average
Land consumption by subdivision	530	11% lower	830	36% below average

Source: Department of Planning, Lands and Heritage (2024)

Changes to land consumption rates are largely driven by population growth and economic conditions which affect the level of investment in housing. In 2023, the State’s population grew by 3.3 per cent, the highest in many years (Figure 7). There is typically a delay between population growth and land consumption as new residents generally enter the established property market before considering purchasing land to build new homes.

The current challenges in delivering serviced lots and newly constructed homes are contributing to this lag. Both metrics of land consumption are expected to rise as the rate of lot creation and dwelling completion increases to meet the heightened demand for new housing.

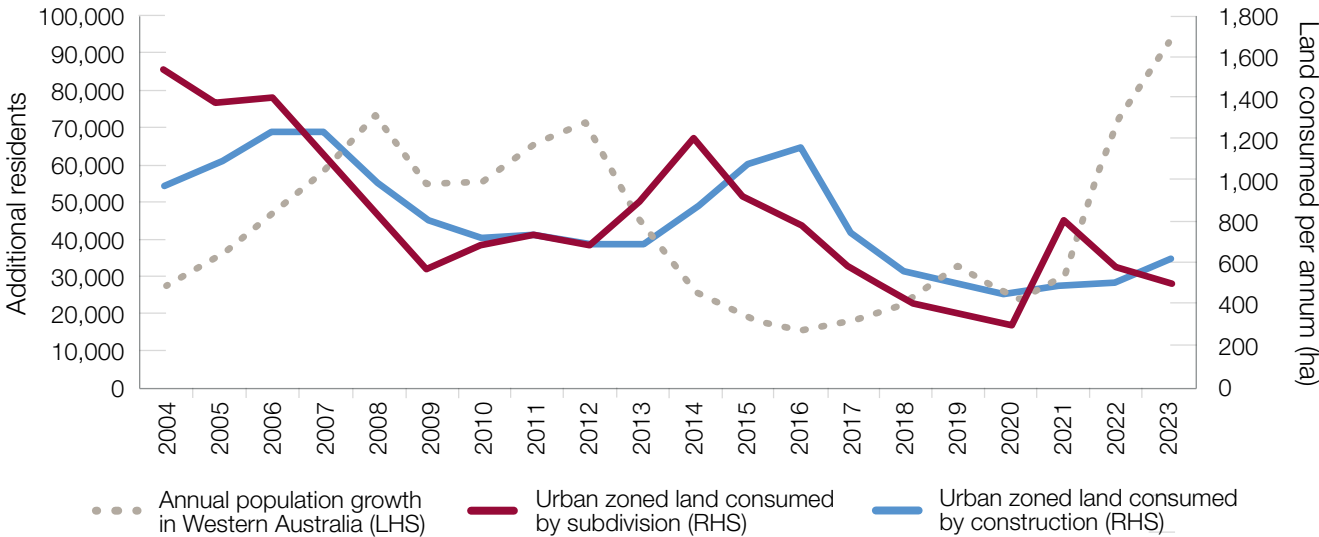
### 3.2 Temporal land supply

Temporal land supply is an estimate of the theoretical timeframe to consume the stock of undeveloped land currently zoned for urban development. Land consumption in the Urban Growth Monitor assesses the gross area consumed by urban development, so both residential and non-residential uses are considered in these estimates.

Temporal land supply estimates depend on two key variables:

- the stock of undeveloped urban and urban deferred land; and
- the 20-year average rate of land consumption.

**Figure 7: Annual consumption of land zoned for urban development for the Perth metropolitan, Peel and Greater Bunbury regions**



Source: Department of Planning, Lands and Heritage (2024) based on Landgate State-wide Property Records and Cadastre, Landgate (2024)

Not all areas of undeveloped land is readily available for development. Urban land may be withheld from development for a variety of reasons, including:

- an ongoing active rural use, such as poultry farm or horticulture
- owner preference to maintain a rural lifestyle, despite an urban zoning
- land fragmentation
- environmental considerations
- lack of capacity (financial or other) to develop the land for urban purposes

**Table 5: Temporal land supply estimates based on highest and lowest consumption rates – Perth metropolitan and Peel regions only**

2023 stock of undeveloped land*	20,100 hectares
Highest rate of land consumption (2007)	1,110 hectares
Average rate of land consumption (2004-2023)	760 hectares
Lowest rate of land consumption (2020)	440 hectares
Years at highest consumption	18 years
Years at average consumption	26 years
Years at lowest consumption	46 years

Source: Department of Planning, Lands and Heritage (2024)

Note: These estimates assume no further addition to the stock of land zoned for urban development.

\* Excludes undeveloped land committed for public purposes that is adjacent to developed areas.

- the need for significant infrastructure investment to open up the area (for example, trunk sewer)
- owners’ and developers’ intentions regarding the timing of any potential development.

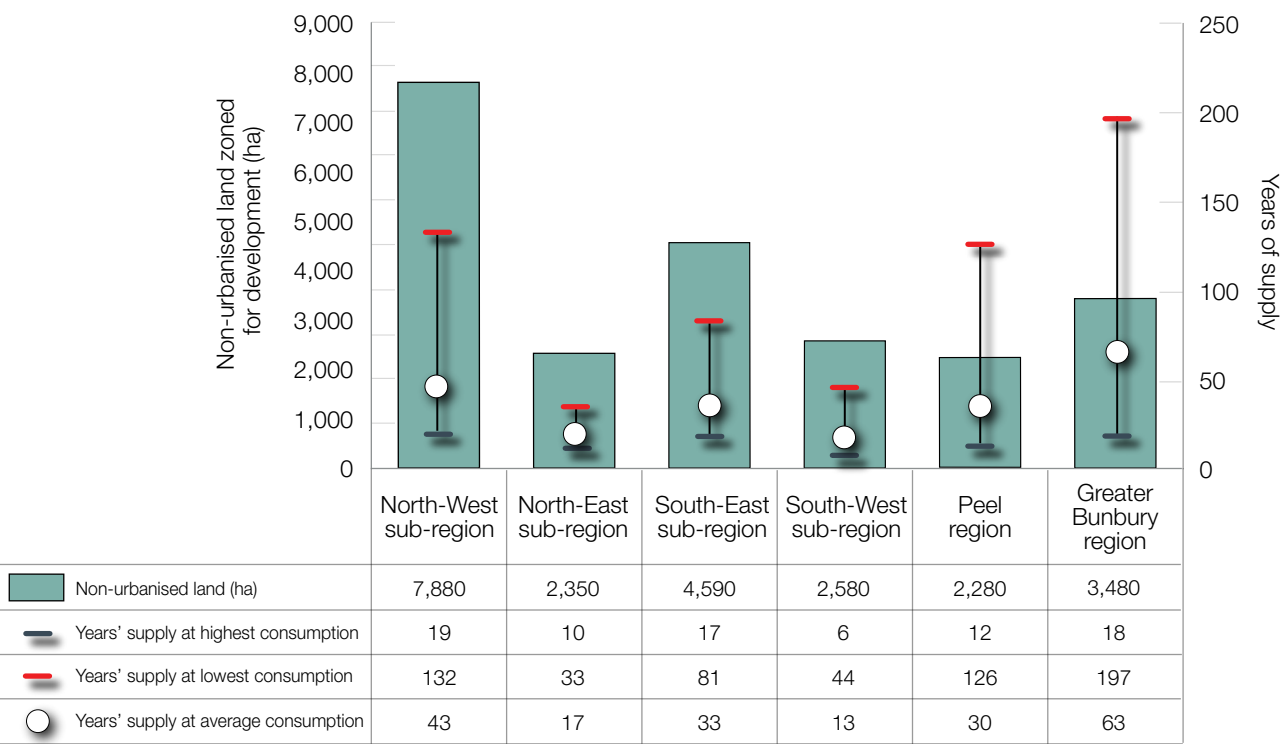
The frequency and scale of such impediments can be uncertain and may have a significant impact on temporal land supply estimates. Some development sites contain a larger share of environmental assets than others which may restrict traditional greenfield development. It is envisioned, however, that housing targets can still be achieved in these areas through innovative density solutions that seek to leverage the amenity of local environmental assets.

Based on historical development patterns, the current stock of undeveloped land in the Perth metropolitan and Peel regions is equivalent to approximately 26 years of average land consumption (Table 5). The theoretical estimate may be extended if rates of residential infill development and greenfield densities improve in the future.

### 3.2.1 Temporal land supply of outer metropolitan sub-regions, Peel and Greater Bunbury regions

The Central sub-region has not been included in this section as future development will be dependent on urban consolidation rather than greenfield land supply. All sub-regions and regions shown in Figure 8 theoretically have many years' supply of undeveloped land available for development, based on historical average consumption rates.

Figure 8: Estimated temporal supply of land zoned for urban development by sub-region



Source: Department of Planning, Lands and Heritage (2024)

# 4 Infill development

## 4.1 Demolitions and infill

Demolitions can represent a leading indicator of future dwelling construction, as dwelling demolition often facilitates further dwelling construction at higher densities. Measuring the loss of dwellings through demolition allows the calculation of the net infill rate, which provides a better representation of changes to the dwelling stock than the gross infill rate.

**Gross infill:** refers to the number of dwellings constructed within infill areas regardless of the number of dwellings removed from the dwelling stock through demolition.

**Net infill:** refers to the number of dwellings constructed within infill areas minus the number of dwellings removed from the existing stock through demolition.

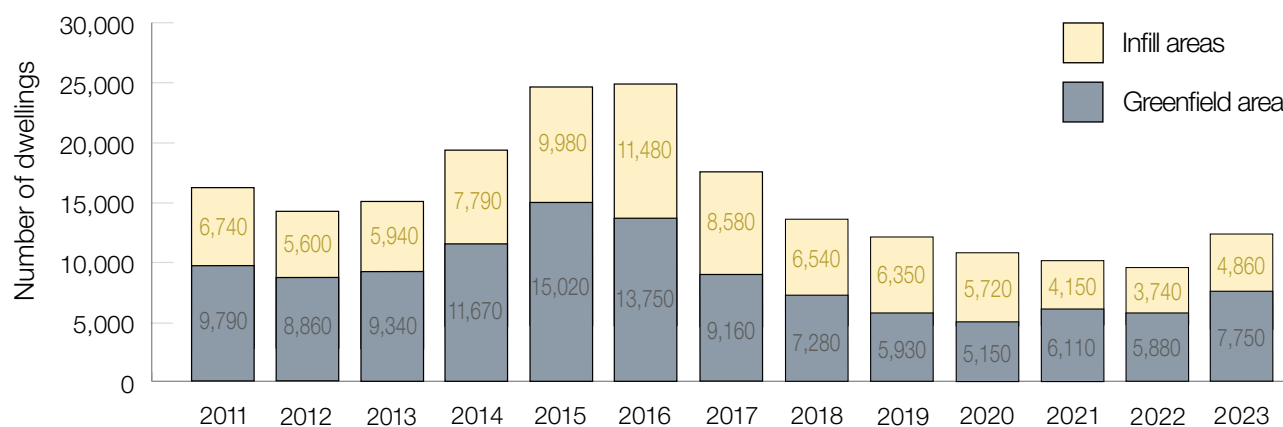
Department of Planning, Lands and Heritage research indicates that the average demolition rate (demolitions as a proportion of new dwellings constructed) across Perth and Peel over the past decade has been roughly 13 per cent, with annual figures between eight and 18 per cent.

## 4.2 Infill and greenfield dwelling construction

It is the interplay of a range of dynamic demand-side and supply-side drivers for land and housing that ultimately results in the delivery of both infill and greenfield dwellings.

In 2023, a total of 12,620 dwellings were constructed in Perth and Peel, a 31 per cent increase from 2022 (9,620 dwellings). If dwellings lost through demolition activity are considered, there was a net addition of 11,510 dwellings to the housing stock across Perth and Peel (Figure 9).

Figure 9: Gross dwelling construction 2011-2023



Source: Department of Planning, Lands and Heritage (internal databases) (2023)

Note: Numbers have been rounded.

Demolition activity in 2023 was the lowest recorded since monitoring commenced in 2011, while significant increases (from 2022) were observed for both greenfield and infill dwelling completions (Table 6). The resulting net infill rate was approximately 34 per cent in 2023, up from 31 per cent in 2022.

**Table 6: Dynamics of dwelling development 2011-2023**

Measure	Year												
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Gross infill</b>	6,740	5,600	5,930	7,790	9,980	11,480	8,580	6,540	6,350	5,720	4,150	3,740	4,860
<b>Demolitions</b>	2,200	2,050	2,360	2,520	2,180	1,910	1,910	1,990	1,950	1,950	1,880	1,260	1,110
<b>Net infill</b>	4,560	3,570	3,630	5,330	7,810	9,600	6,720	4,580	4,450	3,980	2,450	2,600	3,870
<b>Greenfield</b>	9,790	8,860	9,340	11,670	15,020	13,750	9,160	7,280	5,930	4,970	5,940	5,770	7,640
<b>Net infill rate</b>	32%	29%	28%	31%	34%	41%	42%	39%	43%	44%	29%	31%	34%

Source: Department of Planning, Lands and Heritage (internal databases) (2024)

Note: Numbers may not sum due to rounding. Net greenfield reported from 2020 onwards.



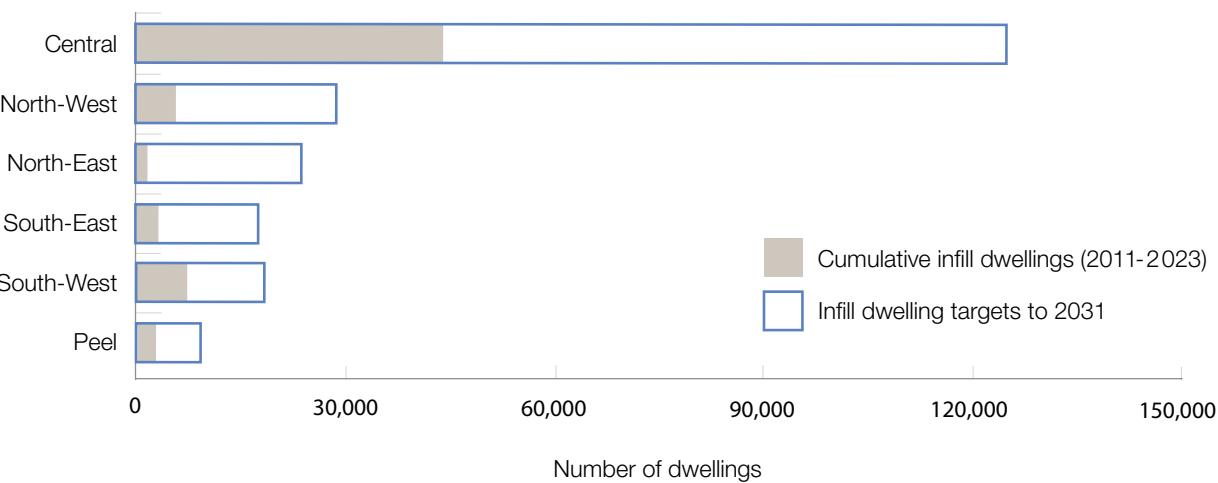
### 4.3 Infill dwelling targets

*Perth and Peel@3.5million* sets out infill dwelling targets to 2031 and 2050. These targets, in conjunction with annual *Urban Growth Monitor* assessments, are intended to be used as a policy evaluation tool by State and local governments when reviewing local planning frameworks.

Figures 10 and 11 show the progress towards these targets by sub-region, representing the cumulative number of net infill dwellings built from 2011 (when monitoring began), through to 2023.

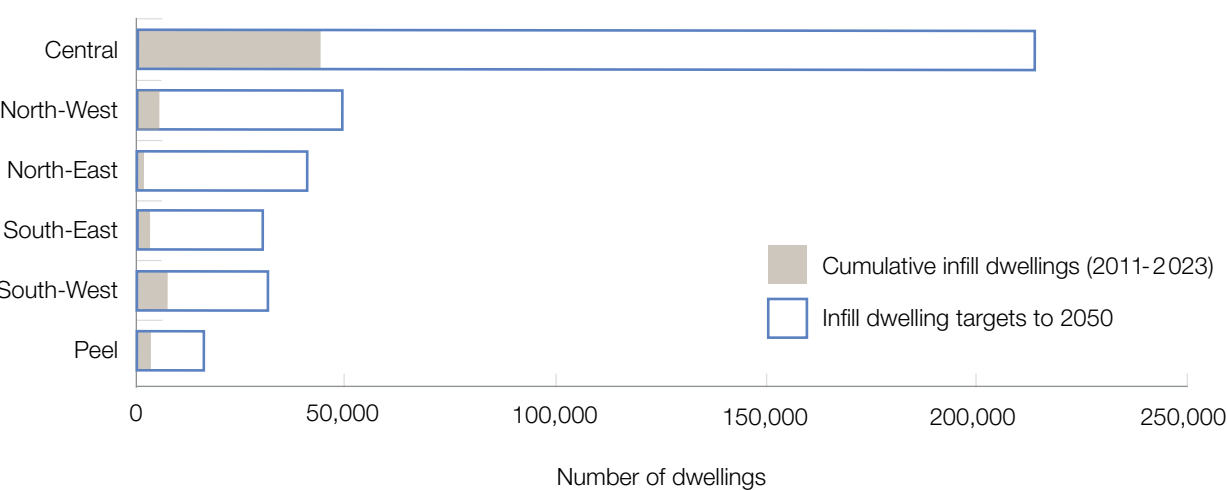
It is important to note that residential dwelling development is expected to vary from year to year and is unlikely to progress in a linear fashion. In addition, the rate of infill in the outer sub-regions is likely to grow over time as these areas become increasingly urbanised.

Figure 10: Progress towards infill dwelling targets to 2031



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

Figure 11: Progress towards infill dwelling targets to 2050



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

## 4.4 Infill profile

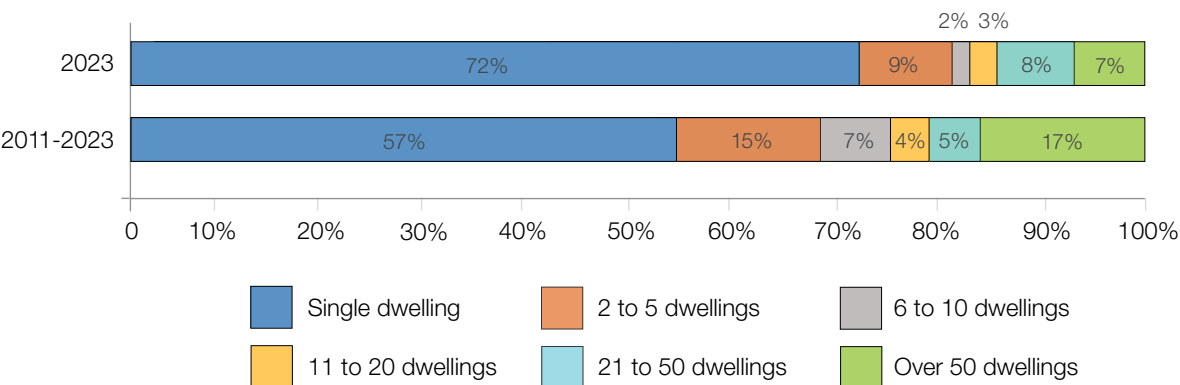
### 4.4.1 Infill dwellings per lot

Infill development in 2023 is characterised by an increased share of lower density developments compared to the historical average (Figure 12). In 2023, just under 20 per cent of infill dwellings were delivered through projects yielding more than five dwellings per lot, compared to one in three projects for the 2011 to 2023 period. Higher density projects as a proportion of all infill have fallen in recent years after peaking at just over a quarter of all infill dwellings in 2019.

### 4.4.2 Infill dwellings by lot size

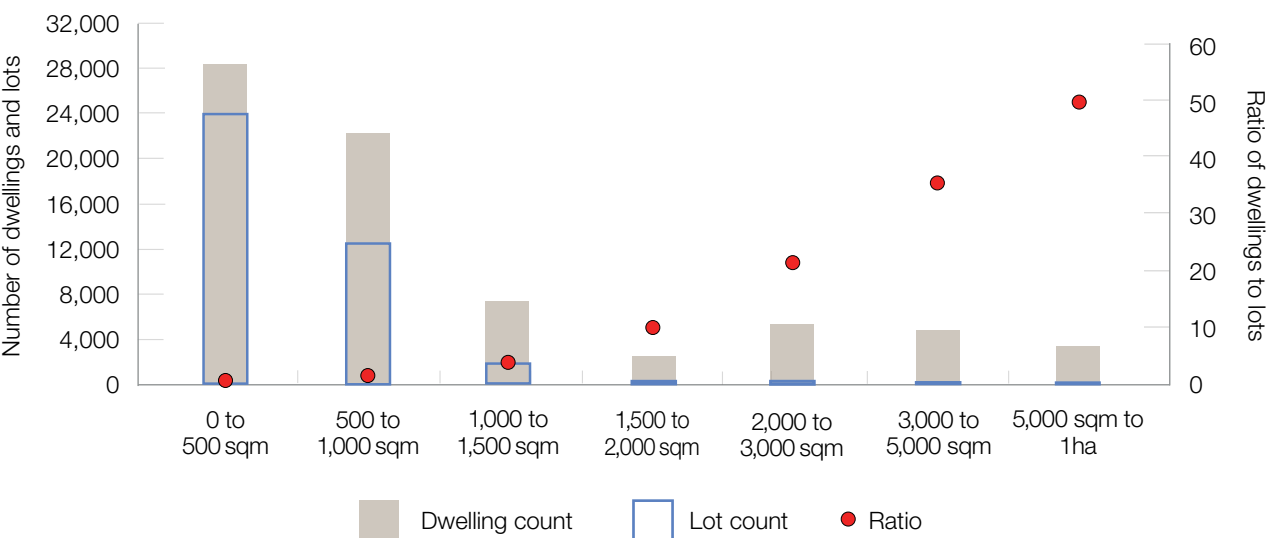
Figure 13 indicates that larger lots typically yield a higher number and density of dwellings than smaller lots, highlighting the importance of land assembly for the delivery of high density. The ratio for larger sized lots is based on a relatively small number of projects each year and can result in a variable ratio between dwellings and lot size. High-density residential infill projects may also incorporate other complementary land uses such as retail, commercial and office activities.

Figure 12: Number of infill dwellings per lot, 2023 comparison with 2011 to 2023 average



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

Figure 13: Average number of infill dwellings by lot size, 2013-2023



Source: Department of Planning, Lands and Heritage (internal databases) (2024)

# 5 Dwelling density

Dwelling density is the relationship between the number of dwellings and the available or utilised land area. It is usually described in terms of the number of dwellings per hectare.

## 5.1 Gross zone dwelling density

Gross zone dwelling density measures the number of dwellings per gross urban zoned hectare, based only on urbanised land. As this measure relates to the entire stock of urbanised land, including local roads, parks

and incidental uses, it is less sensitive than other measures to additions to the dwelling stock or increases in the intensity of residential dwelling development.

Table 7 presents the calculation of gross zone dwelling density by sub-region.

The *Perth and Peel@3.5million* suite of documents sets a target of a 50 per cent increase to the 2010 average residential density of new (greenfield) residential areas in the Perth metropolitan and Peel regions, to 15 dwellings per gross urban zoned hectare.

**Table 7: Gross zone dwelling density by sub-region – urban zone**

Measure	As at December							
	2016	2017	2018	2019	2020	2021	2022	2023
Central	11.9	12.0	12.1	12.1	12.2	12.8	12.9	12.9
North-West	9.3	9.4	9.4	9.5	9.5	9.4	9.5	9.4
North-East	6.9	7.0	7.3	7.3	7.4	7.1	7.2	7.2
South-East	8.8	8.7	8.7	8.8	8.9	8.6	8.7	8.7
South-West	9.5	9.8	9.9	10.0	10.0	9.6	9.7	9.6
<b>Perth metropolitan average</b>	<b>9.9</b>	<b>10.0</b>	<b>10.1</b>	<b>10.2</b>	<b>10.3</b>	<b>10.2</b>	<b>10.3</b>	<b>10.3</b>
Peel region	7.9	8.2	8.2	8.2	8.3	7.8	7.8	7.7
<b>Perth metropolitan and Peel average</b>	<b>9.8</b>	<b>9.9</b>	<b>10.0</b>	<b>10.1</b>	<b>10.1</b>	<b>10.1</b>	<b>10.2</b>	<b>10.1</b>
Greater Bunbury region	6.2	6.2	6.4	6.4	6.4	5.6	5.7	5.6

Source: Property valuation database, Landgate (2024) and Integrated Land Information Database, unpublished data, Department of Planning, Lands and Heritage (2024)

Note: Density figures may change depending on the date of extraction as the Landgate property valuation database is periodically updated which may affect historical dwelling counts. This dataset is based only on urban and urban deferred zonings and is a subset of the full dwelling count.

Figures may not sum due to rounding

Progress towards the gross dwelling density target of 15 dwellings per gross urban zoned hectare is challenging to measure, as new residential development may not be easily separated from the entire urbanised extent based on location alone.

The gross zone dwelling densities presented in section 5.1 relates to all residential development and does not correspond to the residential density targets set for new greenfield development.

For this reason, the measure of net site dwelling density by build year represents a better method for accurately assessing the density of new dwelling development. The inclusion of the year of dwelling construction at a net site density scale of reporting allows for temporal changes in dwelling density to be more clearly observed.

## 5.2 Net site dwelling density by build year

Net site dwelling density by build year is a measure of the number of dwellings per net site hectare, based only on lots on which new dwellings were constructed within the stated calendar year.

Annual fluctuations to the net site dwelling density by build year are expected, as the sample size is restricted to lots on which dwellings were constructed in the reporting year. As a result, it is important to consider the overarching density trends of residential development over time in relation to the strategic target.

In the ten-year period to the end of 2023, the density of dwellings delivered in the outer sub-regions have generally increased (Table 8).

The Central sub-region has recorded substantial variations in the density of dwellings constructed. The lower densities observed in recent times are reflective of the lower volumes of high-density projects completed in the Central sub-region.

**Table 8: Net site dwelling density by build year – urban and city centre zone**

Local government area	Year of dwelling construction									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Central sub-region										
Bassendean	33.6	20.4	35.8	28.7	31.4	22.6	22.5	24.2	21.0	24.6
Bayswater	25.7	29.1	40.4	32.3	29.5	25.6	39.2	24.6	24.8	25.8
Belmont	47.8	72.8	53.6	59.5	37.4	75.6	57.1	20.5	24.3	26.9
Cambridge	16.0	31.1	45.8	33.7	23.2	17.2	16.2	77.9	24.4	15.7
Canning	24.9	28.9	34.6	36.0	27.1	30.0	26.2	24.6	26.0	25.8
Claremont	20.9	55.9	61.5	21.7	207.7	89.1	22.1	99.1	17.9	24.5
Cottesloe	17.7	19.8	17.9	21.6	27.3	20.0	18.1	19.7	23.1	21.8
East Fremantle	18.7	23.7	78.0	20.2	19.6	22.0	25.6	14.9	17.7	15.5
Fremantle	28.8	47.0	55.3	34.8	63.9	30.9	67.7	22.4	58.4	32.6
Melville	18.2	19.4	22.3	20.9	24.6	31.8	23.3	20.4	36.1	26.6
Mosman Park	14.5	17.0	13.4	18.7	17.6	17.4	19.8	61.0	18.9	61.0
Nedlands	15.7	14.1	34.5	13.6	12.4	12.9	14.3	16.8	20.3	33.0
Peppermint Grove	-	6.0	8.6	11.3	8.8	9.3	7.4	-	12.2	7.6
Perth	277.6	267.8	359.7	542.4	537.3	545.4	1,103.2	-	-	701.5
South Perth	20.6	19.4	24.2	33.4	52.1	29.5	32.3	28.8	38.5	33.1
Stirling	32.7	34.2	38.9	40.7	34.9	28.0	27.5	35.1	30.4	31.4
Subiaco	82.7	31.9	33.7	26.8	25.9	21.7	26.4	20.5	254.5	41.3
Victoria Park	31.1	32.2	55.1	29.5	37.0	60.5	42.4	24.8	31.6	33.0
Vincent	80.0	114.7	83.6	114.7	49.1	45.9	51.0	40.5	51.3	60.8
<b>Central sub-region average</b>	<b>33.9</b>	<b>37.6</b>	<b>44.0</b>	<b>38.8</b>	<b>37.0</b>	<b>36.1</b>	<b>34.3</b>	<b>31.2</b>	<b>32.9</b>	<b>30.7</b>

Local government area	Year of dwelling construction									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
North-West sub-region										
Joondalup	19.9	19.6	19.3	22.2	22.3	28.1	35.6	29.3	27.0	24.9
Wanneroo	23.9	25.8	25.1	26.4	26.5	26.6	25.7	23.4	26.0	25.1
<b>North-West sub-region average</b>	<b>23.4</b>	<b>24.9</b>	<b>24.2</b>	<b>25.6</b>	<b>25.3</b>	<b>27.1</b>	<b>28.9</b>	<b>24.9</b>	<b>26.2</b>	<b>25.1</b>
North-East sub-region										
Kalamunda	23.7	25.0	25.0	28.4	16.7	14.8	13.6	20.5	17.4	19.8
Mundaring	15.7	16.2	12.9	19.3	5.8	5.6	7.9	6.4	6.5	10.3
Swan	10.4	8.9	8.0	8.6	26.3	26.2	26.4	25.4	26.0	23.9
<b>North-East sub-region average</b>	<b>21.3</b>	<b>21.5</b>	<b>21.2</b>	<b>24.1</b>	<b>22.7</b>	<b>21.5</b>	<b>22.2</b>	<b>22.6</b>	<b>22.2</b>	<b>22.4</b>
South-East sub-region										
Armadale	21.5	23.5	24.8	23.9	24.5	25.0	26.5	24.4	25.3	24.7
Gosnells	23.4	28.7	26.5	27.0	27.5	25.1	26.0	22.5	24.6	25.9
Serpentine-Jarrahdale	20.1	20.4	13.1	18.8	20.4	21.8	19.9	20.6	18.9	22.2
<b>South-East sub-region average</b>	<b>21.7</b>	<b>23.9</b>	<b>20.6</b>	<b>23.5</b>	<b>24.5</b>	<b>24.3</b>	<b>24.9</b>	<b>23.2</b>	<b>23.5</b>	<b>24.3</b>
South-West sub-region										
Cockburn	33.7	30.1	34.1	38.3	33.7	31.6	30.4	30.7	30.3	30.9
Kwinana	24.2	25.9	27.0	26.8	26.0	25.1	26.1	25.9	26.0	26.7
Rockingham	22.3	22.6	26.2	25.1	26.2	27.0	22.5	22.3	22.7	23.6
<b>South-West sub-region average</b>	<b>25.6</b>	<b>25.8</b>	<b>29.0</b>	<b>30.5</b>	<b>29.4</b>	<b>28.7</b>	<b>26.8</b>	<b>27.4</b>	<b>26.5</b>	<b>27.0</b>
<b>Perth metropolitan average</b>	<b>25.7</b>	<b>27.2</b>	<b>29.0</b>	<b>29.7</b>	<b>28.8</b>	<b>28.9</b>	<b>28.7</b>	<b>26.4</b>	<b>26.6</b>	<b>26.2</b>



Local government area	Year of dwelling construction									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Peel region										
Mandurah	19.2	21.0	21.5	22.7	20.1	17.8	17.3	18.1	19.2	19.7
Murray	16.5	16.5	18.2	16.0	13.4	15.1	17.0	17.6	15.9	12.7
Waroona	9.0	10.1	10.1	13.9	8.4	0.5	5.6	9.5	5.9	6.8
<b>Peel region average</b>	<b>18.3</b>	<b>20.1</b>	<b>21.0</b>	<b>21.7</b>	<b>18.8</b>	<b>11.7</b>	<b>17.0</b>	<b>17.9</b>	<b>18.0</b>	<b>17.7</b>
Greater Bunbury region										
Bunbury	20.5	18.7	19.6	20.6	18.8	21.7	20.3	19.7	19.0	19.5
Capel	12.6	16.3	18.9	6.0	11.2	7.7	10.1	11.2	8.3	12.5
Dardanup	14.7	15.0	13.8	16.7	17.3	18.8	16.2	19.2	16.3	14.5
Harvey	9.8	10.2	9.2	7.5	9.2	11.1	11.2	11.7	12.1	12.5
<b>Greater Bunbury average</b>	<b>12.0</b>	<b>13.6</b>	<b>13.6</b>	<b>9.1</b>	<b>11.2</b>	<b>12.5</b>	<b>12.5</b>	<b>13.3</b>	<b>11.6</b>	<b>13.8</b>

Source: Property valuation database, Landgate (2024) and Integrated Land Information Database, unpublished data, Department of Planning, Lands and Heritage (2024)

Note: Density figures may change depending on the date of extraction as the Landgate property valuation database is periodically updated which may affect historical dwelling counts. This dataset is based only on urban, urban deferred and city centre zonings and is a subset of the full dwelling count.

## 5.3 Greenfield net site dwelling density by build year

The strategic target of 15 dwellings per gross urban-zoned hectare for new residential areas (as set out in *Perth and Peel@3.5million*) can be expressed as an equivalent target of 26 dwellings per net site hectare.

Residential development in greenfield areas across Perth and Peel during 2023 constituted a collective net density of 23.5 dwellings per net site hectare (Table 9). This was slightly below the strategic target of 26 dwellings per net site hectare, but represents significant progress from 2010 (when targets were initially set), when the prevailing trend was a density of approximately 15 dwellings per net site hectare.

Annual fluctuations to the net site dwelling density by build year are to be expected as the sample size is restricted to lots on which dwellings were constructed in the reporting year. As a result, it is important to consider the overarching density trends of residential development in relation to the strategic target.

**Table 9: Net site dwelling density by build year – greenfield**

Region/sub-region	Year of construction							
	2016	2017	2018	2019	2020	2021	2022	2023
North-West	22.2	13.9	24.1	25.2	25.4	24.9	25.4	24.9
North-East	18.1	21.8	21.5	20.5	21.9	22.3	22.2	22.4
South-East	15.3	21.6	23.1	23.4	24.1	21.7	23.3	24.3
South-West	26.9	25.1	23.4	26.6	26.5	27.3	26.6	26.6
Peel	12.8	17.9	16.2	9.7	16.7	17.4	17.8	17.4
<b>Perth metropolitan and Peel average</b>	<b>19.3</b>	<b>19.9</b>	<b>22.2</b>	<b>21.3</b>	<b>23.4</b>	<b>23.4</b>	<b>23.5</b>	<b>23.5</b>

Source: Property valuation database, Landgate (2024) and Integrated Land Information Database, unpublished data, Department of Planning, Lands and Heritage (2024)

Note: Density figures may change depending on the date of extraction as the Landgate property valuation database is periodically updated which may affect historical dwelling counts. This dataset is based only on urban and urban deferred zonings and is a subset of the full dwelling count.

# Appendices

## Appendix 1: Environmental features for spatial analysis

The following details the spatial data used in the analysis of environmental features in non-urbanised areas and the Urban Expansion and Urban Investigation areas. The environmental values utilised in the Urban Growth Monitor's analysis were selected based on current State environment and planning policy and practice, with all values having a notable presence in the Perth metropolitan and Peel regions and commonly being a material consideration in the planning and design of urban development.

The environmental values were prioritised using a grouping system, with Group A being the highest category. This method avoids double counting, as values that fall in multiple groups are only counted at the higher group category. It should be noted that while all environmental values used are supported by current Government policy provisions, there is currently no single agreed method for the grouping of the values and strategic spatial analysis, and different approaches could be used with different results.

### Group A environmental values:

Group A values are considered to have the highest conservation significance under current policy and practice, with a presumption that new urban development proposals will seek to avoid impacts to these values.

**Bush Forever** (Region Scheme – Special Areas DPLH-022)

**RAMSAR wetlands & a 50m buffer** (Ramsar Sites DBCA-010)

**Conservation Category wetlands & a 50m buffer** (Geomorphic Wetlands, Swan Coastal Plain DBCA-019)

**Directory of Important Wetlands & 50m buffer** (DBCA – 045)

**Threatened Ecological Communities (State only)** (Threatened Ecological Communities DBCA-038) – uses the State classification that are anything except a “priority”

**Tuart Woodlands Threatened Ecological Community** (Tuart Woodlands DBCA-048)

**Commonwealth Critically Endangered Threatened Ecological Communities** (Threatened Ecological Communities DBCA-038) – uses the Commonwealth classification that is “critically endangered”

**Western Swamp Tortoise EPP** (Western Swamp Tortoise Habitat DWER-071)

**Threatened Flora & 50m buffer** (Threatened and Priority Flora DBCA-036) – only “threatened” flora

### Group B environmental values:

Group B values are considered as significant considerations under current policy and practice, with a presumption that new urban development that proposes impacts to these values may be required to undergo a detailed environmental assessment, and will need to avoid, minimise or rehabilitate environmental values or provide offsets. Development or site design provides opportunities to be biodiversity inclusive.

**Commonwealth Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community** (DBCA\_BanksiaWoodland\_20170303)

**Commonwealth Endangered or Vulnerable Threatened Ecological Communities** (Threatened Ecological Communities DBCA-038) – uses the Commonwealth classification (and remainder that are not “critically endangered”)

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**Resource Enhancement Wetland & a 30m buffer** (Geomorphic Wetlands, Swan Coastal Plain DBCA-019)

**Swan Bioplan** (Swan Bioplan Regionally Significant Natural Areas 2010 DWER-070)

**Carnaby's Black Cockatoo feeding investigation area** (Perth & Jarrah) (Carnaby's Cockatoo areas requiring investigation as feeding habitat in the Swan Coastal Plain IBRA Region DBCA-057)

**SPP 2.4 exclusion areas** (State Planning Policy 2.4: Shires with completed SGS mapping DMIRS-075)

**Ringtail possum areas** (Western Ringtail Possum Habitat Suitability (DBCA-049) and Ringtail Possum Habitat (20141231/2017 Rem Veg Update))

**Native vegetation complexes where less than 10% is remaining on the Swan Coastal Plain portion of the Perth metropolitan area** (MRS)

- Beermullah
- Guildford
- Serpentine River
- Cannington
- Swan
- Vasse
- Forrestfield

## Group C environmental values:

Group C includes all other areas of native vegetation. While most of these areas are not currently formally protected from residential development (subject to relevant approvals), under the State Native Vegetation Policy there is an expectation that clearing of native vegetation will increasingly need to be minimised.

- **Native vegetation** (Native Vegetation Extent DPIRD-005)
- **Priority Ecological Communities** (Threatened Ecological Communities DBCA-038) – uses State classification that are “priority”

# Appendices

## Appendix 2: Environmental assets in Strategic growth areas

Urban Expansion and Urban Investigation areas identified in *Perth and Peel@ 3.5 million* represent growth areas in addition to the existing non-urbanised area discussed in earlier sections. Planning for these sites, however, is less mature with planning schemes and structure plans yet to address the more nuanced planning required to support urban development.

The spatial distribution of known environmental features were assessed in the Urban Expansion and Urban Investigation areas to estimate the degree to which these features may possibly influence patterns of future residential development. The analysis indicates that only a small portion of the 5,680 hectares of Urban Expansion and 6,940 hectares of Urban Investigation land contain these features.

**Table 1: Environmental features in Urban Expansion areas**

Sub-region	Group A (ha)	Group B (ha)	Group C (ha)	Group A (ha) (% of Urban Expansion)	Group B (ha) (% of Urban Expansion)	Group C (ha) (% of Urban Expansion)
North-East sub-region	10	140	10	1%	15%	1%
North-West sub-region	90	470	30	14%	75%	5%
South-East sub-region	30	50	-	4%	7%	-
South-West sub-region	280	60	50	11%	2%	2%
Peel region	10	40	0	1%	4%	0%
<b>Total</b>	<b>420</b>	<b>760</b>	<b>90</b>	<b>7%</b>	<b>13%</b>	<b>2%</b>

Source: Department of Planning, Lands and Heritage (2024)

Note: Figures may not sum due to rounding.

**Table 2: Environmental features in Urban Investigation areas**

Sub-region	Group A (ha)	Group B (ha)	Group C (ha)	Group A (ha) (% of Urban Investigation)	Group B (ha) (% of Urban Investigation)	Group C (ha) (% of Urban Investigation)
North-East sub-region	150	240	100	7%	11%	5%
North-West sub-region	10	30	0	2%	6%	0%
South-East sub-region	20	30	0	1%	2%	0%
South-West sub-region	40	40	40	6%	6%	6%
Peel region	-	<1	-	-	-	-
<b>Total</b>	<b>220</b>	<b>350</b>	<b>140</b>	<b>3%</b>	<b>5%</b>	<b>2%</b>

Source: Department of Planning, Lands and Heritage (2024)

Note: Figures may not sum due to rounding.