

DRAFT LOCAL HOUSING STRATEGY

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EXECUTIVE SUMMARY

The City of Joondalup is planning to meet the future housing needs of its residents. The Perth Metropolitan Region is growing rapidly and better use of existing urban land is needed to create a more intense metropolitan city that works better and is less expensive to service. Perth has become more diverse with new and different types of housing emerging. State Government policies in particular *Directions 2031*, are encouraging this movement towards a more efficient use of land and the City of Joondalup's draft *Local Housing Strategy* has be considered in this context.

The principal purpose of the draft Strategy is to provide the City with a firm rationale for determining future housing needs and to recommend appropriate policy measures for the provision of a range of housing types and densities. Research undertaken has shown that the combination of changes in household size to smaller households combined with an ageing population illustrates a need for a variety of housing options in the City of Joondalup.

The draft Strategy identifies 10 Housing Opportunity Areas which are considered the most suitable for increases in residential densities. A range of medium density R-Codes is recommended for these areas. The rest of the City, which accounts for around 80% of all properties, will not change.

The Joondalup City Centre, which will play a vital role in providing more apartment style living in the future, is subject to a separate set of planning controls through the *Joondalup City Centre Structure Plan*.

The draft *Local Housing Strategy* is, however, only the first step in the process of reviewing subdivision and housing opportunities within the City.

Any recommendations of the draft *Local Housing Strategy* adopted by Council will need to be implemented through a new District Planning Scheme. The District Planning Scheme is the statutory or legal document that Council and the State Government uses to determine land subdivision and development. The actual timing of the new District Planning Scheme is dependent on the finalisation of the draft *Local Housing Strategy* and ultimately requires the approval of the Minister for Planning. Finalisation of the District Planning Scheme would be anticipated for 2011 and beyond.

The draft *Local Housing Strategy* has a planning horizon of around 10 to 15 years after which time it is expected to be reviewed.

PART ONE

1. INTRODUCTION

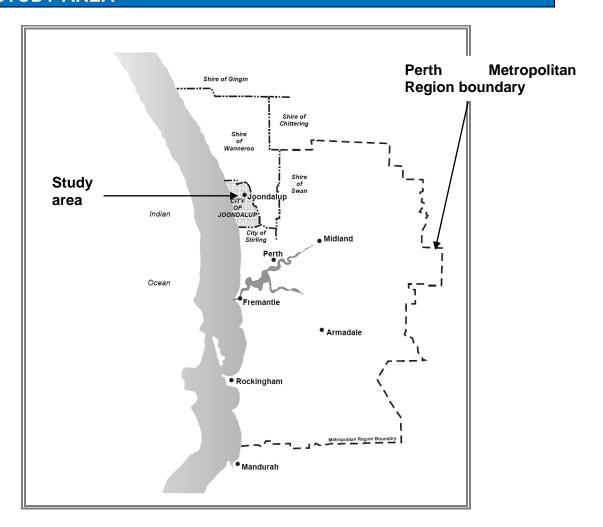
The City of Joondalup's Draft *Local Housing Strategy* sets out a strategy for meeting the future housing needs of its community and managing the character and amenity of existing residential areas. It is a key implementation task of the City's draft *Local Planning Strategy*.

The draft *Local Housing Strategy* will provide a firm rationale for determining the future housing needs of the community and in turn, should be used to provide the strategic basis for future recodings and amendments to the District Planning Scheme.

The Strategy has been prepared using the Department for Planning and Infrastructure's "Guidelines for the preparation, form and content of Local Housing Strategies".

The draft *Local Housing Strategy* is not a statutory plan and the District Planning Scheme remains the principal instrument for local planning and development control.

2. STUDY AREA



3. OBJECTIVES OF THE DRAFT LOCAL HOUSING STRATEGY

The principal objectives of the draft Local Housing Strategy are to:

- 1) Encourage residential development which protects amenity and ensures that growth in the City occurs in a sustainable way
- 2) Identify areas where the existing housing stock and residential density should generally be retained for the future housing needs of families.
- 3) Identify suitable areas for increased densities which:
 - a. are strategically located close to or well connected to existing and future services (for example, employment centres, transport hubs and major shopping centres)
 - b. are in need of private investment to regenerate ageing housing stock
 - c. will make more effective use of existing community infrastructure and facilities
- 4) Maintain the role of the City Centre as the focus for high density residential development.
- 5) Ensure that a wide range of housing can be provided to meet the social and economic needs of the changing demographics of the City.
- 6) Identify mechanisms to ensure new infill development is based on good design principles thus improving the amenity of existing neighbourhoods.
- 7) Provide the City with a coherent framework for applying residential density codes and development control in the new district planning scheme and for determining future development and recoding applications.

4. THE METROPOLITAN CONTEXT

The City of Joondalup's southern boundary is located 15 kilometres north of the Perth CBD, positioning it within the north-west metropolitan region, one of the fastest growing areas in Australia. With a population of approximately 160,000 people and total land area of 96.55 square kilometres, the City is also the second largest local government in Western Australia by population.

From its inception, the Joondalup City Centre was planned to be the sub-regional centre and commercial centre of the northwest region and is currently home to over 7,000 businesses with strong health, retail, finance and professional service sectors. The City Centre services not only the City's population, but also a growing regional population of 285,000 which is expected to increase to 395,000 by 2031. Despite this continued growth and significant investment in the Joondalup City Centre, the north-west region is yet to develop a strong local employment base.

The development of the City (and the north-west corridor) has predominantly been driven by its attraction as a 'lifestyle destination' rather than the draw of local employment. The rapid growth era of the 1970s to 1990s saw a pattern of residential development that was typically suburban with large housing blocks in neighbourhoods characterised by cul-de-sac roads, extensive open space and well–used community facilities. Most residents have good access to the many pristine beaches along the 17km stretch of coastline.

Unlike its near neighbours to the south, the City's residential housing stock, with the exception of apartments in the City Centre, is predominantly single residential with ad hoc pockets of medium density developments on sites such as former school sites and in newer subdivisions like Burns Beach and Harbour Rise. As metropolitan Perth continues to grow outwards, councils like the City of Joondalup that are currently regarded as 'outer metropolitan' councils will eventually be seen more as transitioning between the inner metropolitan area and the new suburban growth areas to the north.

5. POLICY CONTEXT

The policy objectives of the various State and Western Australian Planning Commission (WAPC) strategic policies and statutory mechanisms for the planning of residential zonings and density codings have influenced the preparation of the Housing Strategy.

The following have been identified as being the most relevant to the City of Joondalup:

- Directions 2031 Draft Spatial Framework for Perth and Peel
- State Planning Policy 3.1 Residential Design Codes of Western Australia
- Liveable Neighbourhoods
- Development Control Policy 1.6 Planning to Support Transit Use and Transit Oriented Development
- Draft Perth Coastal Planning Strategy
- Odour buffer associated with the Beenyup Waste Water treatment plant

5.1 Directions 2031 Draft Spatial Framework for Perth and Peel

Directions 2031 is a high level spatial framework plan to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate the future growth of Perth and Peel. It has considered that the connected city is the most realistic model for growth of the city over the next 20 to 25 years and that a significant shift from 'business as usual' growth patterns will be required. Directions 2031 anticipates a 50% increase in infill development rates and a 50% increase in average densities in new development areas. To achieve the connected city scenario Directions 2031 proposes that new growth occurs in a more balanced way around a diverse activity centres network, linked by a robust movement network and supported by a green network of parks, conservation and biodiversity areas.

Relevance to the City of Joondalup:

- Activity Centres: The Joondalup City Centre is the best example of a 'higher order' activity centre where the greatest range of activities occur and is positioned as the Primary Centre of the North-West Corridor. Other activity centres are the regional shopping centres of Westfield Whitfords City, Centro Warwick and the district centres of Currambine, Greenwood Village and Woodvale. Westfield Whitfords City and Centro Warwick are well serviced by buses which are integrated with the northern suburbs train service at Whitfords and Warwick stations.
- Activity corridors: The most notable examples in the metropolitan area include Beaufort Street, Albany Highway Victoria Park and Stirling Highway. Although Beach Road, Hepburn Avenue, Whitfords Avenue, Burns Beach Road and Shenton Avenue are important public transport routes and connect people to the district and regional centres and the railway stations, it would not be easy to retrofit development to the same extent as the aforementioned examples.
- The location of activity centres adjacent to public transport routes provides opportunities for the City to accommodate a greater variety of housing in the context of *Directions 2031*.

5.2 SPP 3.1 Residential Design Codes of Western Australia

The *R-Codes* are a set of regulatory tools for local planning and have been in place since the 1980's with a number of revisions having occurred since then, the most recent being in 2008. The purpose of the *R-Codes* is to provide local governments, the community and the development industry with a comprehensive tool for the control of the built form and density of residential development throughout WA. Its principal uses are:

- at a strategic level, to ensure that there is an appropriate choice and distribution of housing types and densities to meet the needs of the community as a whole.
- at a detailed level, to ensure that the design and planning of residential development occurs in a way that is appropriate to the needs of its occupants and protective of the amenity of the locality.

The *R-Codes* have three special provisions elements which allow for specific design requirements to be accommodated:

- special purpose dwellings ancillary, aged or dependent persons and single bedroom housing
- mixed-use development
- inner city housing

Local planning schemes adopted by local authorities can also include provisions or policies which add to the requirements of the *R-Codes* by either altering the standards or including additional standards for the development of housing in the locality. A number of local authorities utilise this approach and have adopted design guidelines as policies under their schemes to achieve desired outcomes - for example, protecting the unique character of a residential area or to better control contentious issues such as height and overlooking.

R Code densities (R20, R30 and so on) are generally applied by local authorities to define the residential density and development potential of its area. Strategic planning objectives such as those articulated in Network City and the transit oriented development policy can be achieved through the application of appropriate R-Codes.

The R-Codes can also be applied with a "dual coding" to facilitate a better development outcome, for example a coding of R20/30 means that although the base code is R20, development at the higher density of R30 can be allowed provided certain conditions are met. Some common conditions are: retention of an existing house, meeting the requirements of design guidelines and construction to plate height prior to titles being issued.

Relevance to the City of Joondalup:

- The R-Codes are applied throughout the City via the District Planning Scheme
- Dual coding is a useful tool and is one way to achieve a good urban design outcome for areas considered suitable for infill or redevelopment
- Community concerns about the impact of infill housing can be addressed by the application of additional standards (design guidelines)

5.3 Liveable Neighbourhoods

Liveable Neighbourhoods is an operational policy for the design and assessment of structure plans and subdivision for new urban areas in the metropolitan area and country centres.

Relevance to the City of Joondalup:

• Liveable Neighbourhoods is applied in the City in the design and approval of urban development, structure planning and subdivision for greenfield sites and for the redevelopment of large brownfield and urban infill sites.

5.4 Development Control Policy 1.6 Planning to Support Transit Use and Transit Oriented Development

DC1.6 sets out the WAPC's position in relation to future development in a transit oriented precinct.

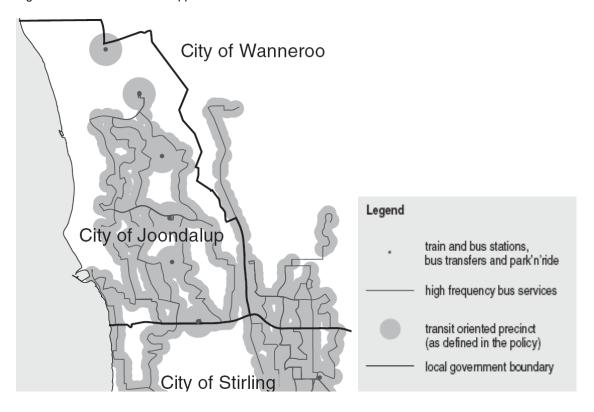
One of the policy objectives is to ensure the "optimal use of land within transit oriented precincts by encouraging the development of uses and activities that will benefit from their proximity and accessibility to public transport and which in turn, will generate a demand for the use of transit infrastructure and services."

The policy defines a transit oriented precinct as one in which the threshold for walking to those facilities is:

- approximately 10-15 minutes, or an 800m distance for rail stations, transit interchanges or major bus transfer stations or terminals; and
- approximately 5-7 minutes walking time or 400m for bus stops located on bus routes with multiple bus services that are high frequency of 15 minutes or less during peak periods.

When local governments are reviewing their local planning schemes that include transit precincts, the WAPC will expect them to identify and promote opportunities for residential development at a minimum of 25 dwellings per hectare and will expect this to be higher where sites have the advantage of being close to a rail station, major bus interchange or bus route that provides service frequencies equivalent to those of rail. Figure 5.4 provides an indicative area for application under the policy.

Figure 5.4: Indicative area of application of DC 1.6 ¹



WAPC DC Policy 1.6

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Relevance to the City of Joondalup:

- The City of Joondalup has a high concentration of transit precincts in its established areas (refer Figure 5.4). The high frequency bus routes will need to be identified more clearly.
- The six railway stations have walkable catchments which are transit-oriented precincts

5.5 Draft Perth Coastal Planning Strategy

The draft strategy is to provide guidance and support to decision-making on the future land use, development and conservation of the Perth metropolitan coastline from Two Rocks to Singleton. The Strategy makes recommendations for 56 coastal precincts, 7 of which are located within the City.

Relevance to the City of Joondalup:

A number of the Strategy's objectives are applicable to the City -

- To promote, protect and retain areas of open space for the purpose of conservation, recreation and amenity;
- To protect areas that provide views of the coast;
- To protect the coastline while still allowing people to live near the coast and use the coast for activities such as recreation;
- To develop tourism and recreation nodes along the coast in appropriate locations;
- To provide sufficient infrastructure to ensure that people can enjoy and recreate at the beach; and
- To provide for public access on the coast.

5.6 City of Joondalup draft *Local Planning Strategy*

The draft Local Planning Strategy (LPS) is a key component of the review of District Planning Scheme 2 (DPS2). The requirement for preparing a strategy is established under legislation, and monitored by the Western Australian Planning Commission (WAPC) and its advisory department, the Department of Planning.

The draft LPS is a statement of strategic direction that will provide the rationale for future decision making by Council. It will inform the spatial planning initiatives to be included in a new District Planning Scheme and related strategies. The draft LPS was adopted by Council in February 2010 and has been forwarded to the WAPC for endorsement.

The draft LPS recommends a series of specific actions with respect to preparing a Local Housing Strategy namely:

"Prepare a Local Housing Strategy which will:

- investigate and determine the additional housing requirements over the next 20 years;
- identify areas for infill or redevelopment which are strategically located within walking distance to Activity Centres (including the City Centre), bus/train stations, or on public transport corridors.
- identify areas which, due to the age of housing stock, are suitable for infill or redevelopment;
- prepare residential design guidelines to guide future redevelopment outcomes in the above areas and to ensure high-levels of liveability and amenity;

- use innovative approaches to codings, rather than blanket up-codings that have no design criteria supporting them, in order to ensure that in the above areas higherdensity is only permitted, subject to good design outcomes being achieved;
- identify areas where it is highly desirable to retain existing housing stock and residential density for the future accommodation needs of families;
- recognise that changes in housing density occur gradually and need community support;
- examine the potential for higher-density residential or mixed-use developments above existing and future bus/train station car parks (in consultation with the Public Transport Authority and the Department for Planning (formally Department of Planning and Infrastructure)); and
- incorporate the neighbourhood amenity, urban design, and access provisions of the Western Australian Planning Commission's operational policy, *Liveable* Neighbourhoods 2007, and document, Designing Out Crime Planning Guidelines (2006)."

5.7 Beenyup Waste Water Treatment Plant

The Beenyup treatment plant is at capacity. Its catchment area extends as far east as Ellenbrook and in the immediate future, the Water Corporation would have difficulty supporting additional development beyond minor infill and what has already been planned.

The Beenyup Waste Water treatment plant is proposed to be upgraded until it reaches its full planned capacity, catering for a population of 900,000. The Water Corporation expects the Alkimos WWTP to be operational by late 2010, which will temporarily reduce the input into Beenyup, allowing for the proposed upgrade of the treatment plant. The odour buffer associated with the WWTP is also planned to be upgraded.

Odour buffer

The EPA's guidance statement on the separation distance between industrial land uses and sensitive land uses does not specify a buffer distance between waste water treatment plants and residential – rather it is dealt with on a case by case basis.

It is likely the Water Corporation will oppose higher densities within the 600m buffer of the treatment plant.

Relevance to the City of Joondalup:

- Once the Alkimos plant is operational, development can occur at a much greater rate than at present.
- Areas within 600m of the Beenyup WWTP should not be considered for higher density at this point in time.

6. POPULATION AND HOUSING DEMAND

6.1 Population characteristics

The City of Joondalup is one of the largest local government areas as well as being one of the most recent.

While the area has experienced significant population growth, the total population has been quite stable from 2001 to 2006, with positive and negative population growth alternating in the past 4 years.

6.1.1 Population growth

At the time of the 2006 Census of Population and Housing, the population of the City of Joondalup was 147,129. As is demonstrated on the chart below, the City's population in 2001 was 147,126, in 1996, it was 140,159 and in 1991 it was 123,210. This indicates that from the late 1990s, the City's population has remained largely static. The most recent population estimate for the City of Joondalup is 159,986 for 2008. In terms of the Perth Metropolitan Region, the City of Joondalup has retained approximately 10% of the Region's population over the same period. The chart below illustrates the population growth in the City of Joondalup since 1991.

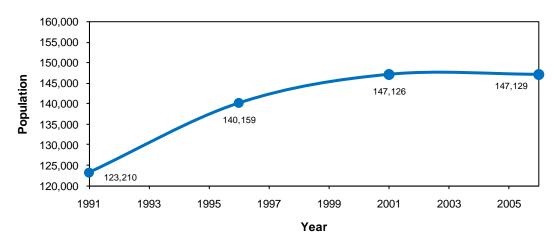


Figure 6.1.1: Population growth in the City of Joondalup 1991–2006.²

6.1.2 Projected population growth

Based on the 2001 Census of Population and Housing, the City's population is projected to remain relatively stable over the next 2 decades. (However, it should be noted that these projections do not take into account the 2006 Census of Population and Housing and are likely to be slightly higher due to rising fertility rates). Notwithstanding, these are minor population changes across a large population base and reflect the fact that much of the City has already been developed. In a regional context, the estimated population for the North-West Corridor is expected to rise to over 350,000 by 2021 and over 415,000 by 2031.

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² ABS 2006, WAPC 2005

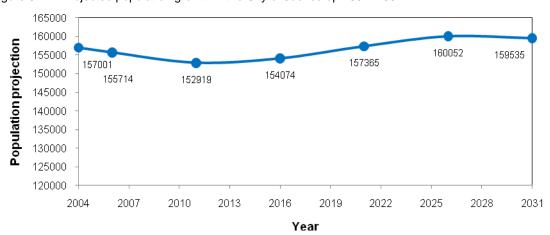
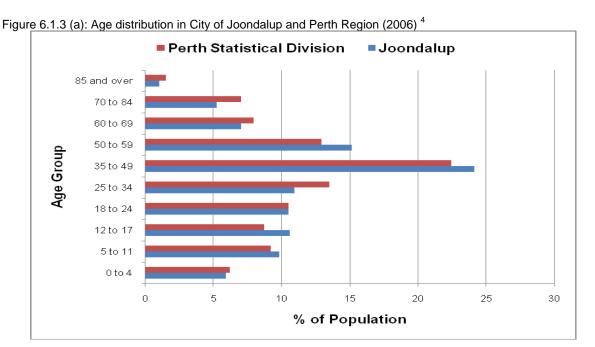


Figure 6.1.2: Projected population growth in the City of Joondalup 2004–2031³

6.1.3 Demographic profile

Overall in 2006, 26.3% of the population was aged between 0 and 17 and 13.2% were aged 60 years and over, compared with 24.1% and 16.4% respectively for the Perth Statistical Division.⁴

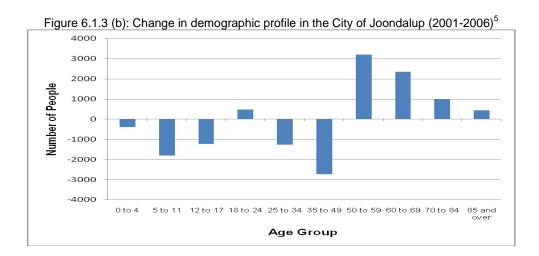


Between 2001 and 2006, the median population age increased from 33 to 36 with the largest changes in age profile being in the age groups: 50 to 59 (+3,196 persons); 60 to 69 (+2,352 persons); 35 to 49 (-2,730 persons); and 5 to 11 (-1,804 persons).

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³ WAPC 2005(a)

⁴ ABS 2006

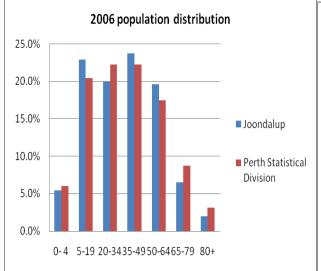


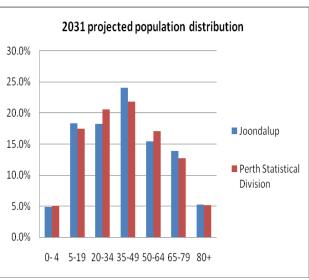
6.1.4 Projected demographic profile

Based on the 2001 *Census of Population and Housing*, population projections for age profiles in the City of Joondalup show general declines in the number of older children and young adults (aged between 10 and 24) between 2006 and 2031 and general increases in the number of older people (aged over 60) between these same years⁶. Whilst there is predicted to be general ageing across the metropolitan areas over this time period, these changes will occur more rapidly within the City

The most noteworthy issue is the sharp increase in the percentage of residents aged over 65 which is tipped to exceed the comparable figure for the Perth Region. As the population ages, the number of persons per household decreases (empty nesters, partner attrition). Other trends worth noting are the decrease in the 20-34 year old age group which is in line with the Perth trend and the decrease in the 50-64 year old age group as opposed to the Perth trend which is stable⁶.

Figure 6.1.4: Comparison of projected demographic profiles between City of Joondalup and Perth Statistical Division. 6





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⁵ ABS 2001, ABS 2006

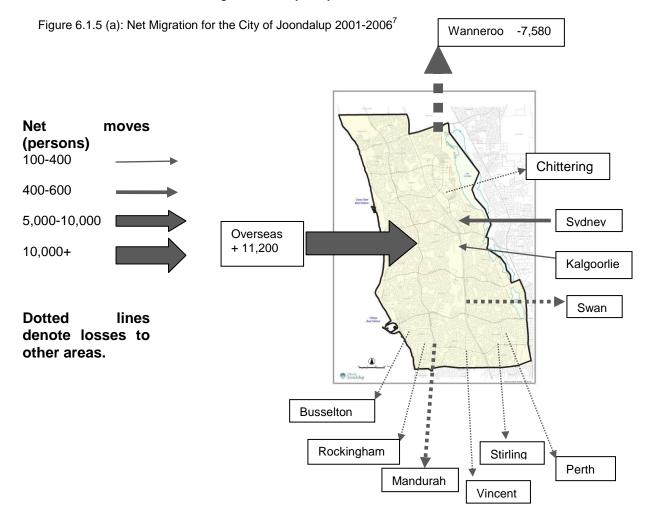
⁶ WAPC 2005 (a), WAPC 2005 (b)

6.1.5 Migration patterns

The migration information presented below has been derived from the 2006 Census and indicates the extent to which the City of Joondalup attracts and loses people and households from various key sources.

As is the case with many local government areas in the Perth Metropolitan Region, there is a significant gain from overseas migration without which the City's population would have declined over the inter-censal period 2001-2006.

The most notable loss of population has been to the City of Wanneroo - the growth area of the north-west corridor. The rest of the outflows have largely been to the east (City of Swan) and south. There was a net gain from Sydney.



The age specific net migration chart below identifies in net terms what age ranges these losses occurred in and has been derived from the Census questions, 'Where does the person usually live?' and 'Where did the person usually live five years ago (at 7 August 2001)'. It is important to note that the pattern of migration is dominated by the general losses across the 15-64 year old age groups.

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⁷ ABS 2001, ABS 2006

Young adults would generally be leaving home to seek dwelling opportunities closer to tertiary education facilities or employment to the south, young people/families seeking their first home would be attracted to the neighbouring City of Wanneroo with its extensive greenfields land releases and older households would also be leaving in order to upgrade or down size to a new home.

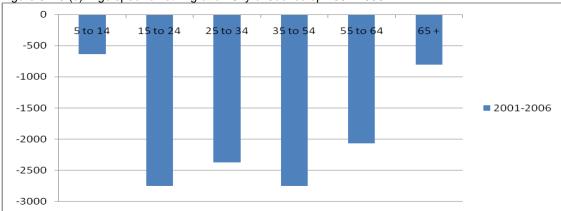


Figure 6.1.5 (b): Age specific net migration City of Joondalup 2001-20068

Key points:

- The City of Joondalup's population is not expected to grow significantly by 2031 without constant overseas immigration, the population would decline.
- The ageing of the population will be one of the key drivers influencing the size, direction and composition of the housing market in the City of Joondalup.
- As people age, their housing preferences will change with demands for smaller, lower maintenance housing.
- Young adults may continue to leave the City of Joondalup and the issue is whether more affordable and varied housing choices could slow down that trend.
- The escalation in the proportion of people aged over 65 will require a shift in planning policy direction through this draft *Local Housing Strategy*.

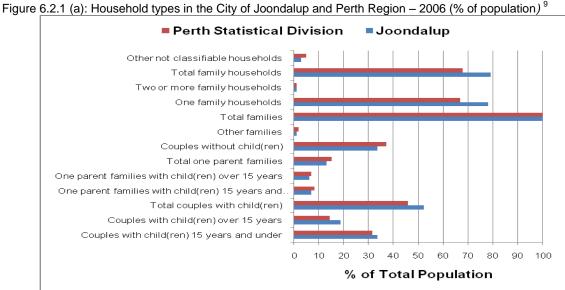
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⁸ ABS 2001, ABS 2006

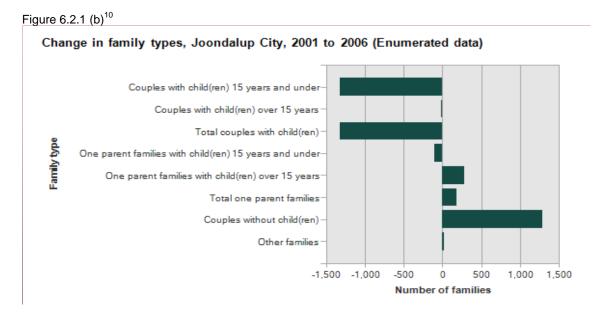
6.2 Household characteristics

6.2.1 Household types

The household and family structure within an area provides an indicator of an area's residential role and function. In 2006, approximately 52% of household types in the City of Joondalup were couples with children, higher than the percentage found in the metropolitan region⁹.



However since 2001, the number of couples with children have been decreasing while there has been a corresponding increase in couples without children.



⁹ ABS 2006

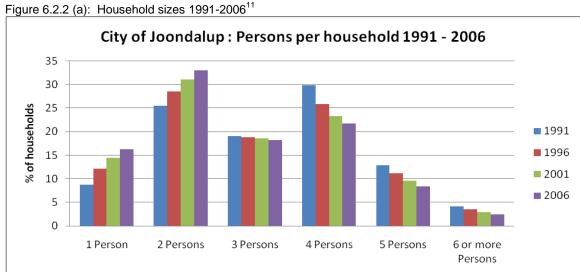
¹⁰ ABS 2001, ABS 2006

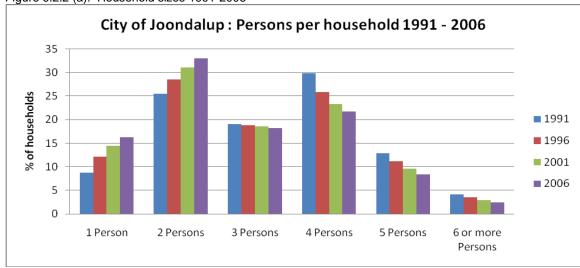
6.2.2 Household size

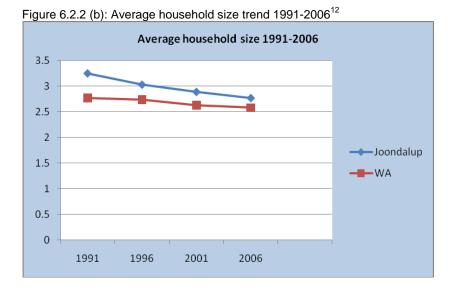
There has been a strong and consistent trend in decreasing household sizes throughout Australia which has created additional demand for housing where populations are stable. Despite the above average percentage of couples with children, the City of Joondalup has been following this trend. Since 1991, there has been a significant rise in the proportion of 1 and 2 person households with a corresponding drop in households with 4 people or more. (Figures 6.2.2 (a) and 6.2.2 (b))

It should be noted that this pattern of demographic change is not uniform across the City and is highlighted in the comparison between Kinross and Warwick (Appendix 2). The newer suburbs will continue to be typically family-oriented while the older suburbs will experience an increasing proportion of lone households and couples without children, typically the elderly and empty nesters.

The fall in household size corresponds directly with the ageing population and this trend will continue as the aged population increases its share of the total population.







11 ABS 1991, ABS 2006

¹² ABS 1991, ABS 2006

6.2.3 Implications for housing supply

Table 6.2.3 below gives us an idea of how many additional dwellings would need to be constructed by 2031 to accommodate 160,000 people – the projected population for the City of Joondalup - using different scenarios of household sizes. This is a very basic assessment of future housing supply ("business as usual") and does not include proactive measures and external influences which could influence expected population growth.

Table 6.2.3: Scenarios of household sizes and number of dwellings

2031 Average household size scenarios (persons per household)	2031 Dwellings needed for a population of 160,000	2006-2031 Additional dwellings needed
2.77 (unchanged from 2006 – unlikely)	57,553	1,027
2.7	59,259	2,733
2.6	61,538	5,012
2.5	64,000	7,474
2.4	66,700	10,174
2.3	69,565	13,039

Key points:

- The declining average household size will be another key driver influencing the size, direction and composition of the housing market in the City of Joondalup.
- The City's future housing supply will need to accommodate the increasing share of smaller households comprising the aged, singles and couples without children.
- The challenge is not only to ensure that there is an adequate housing supply for the future population of the City of Joondalup but to ensure that there is the right mix of housing to avoid a mismatch between demand and supply.

6.3 Patterns of residential development

6.3.1 Suburban and urban development

The first large-scale subdivisions which occurred in the older suburbs like Duncraig and Warwick moved away from the old quarter-acre block patterns of subdivision and were predominantly in the range of 700-900 m². There was little variety in the size of lots being produced as the new suburbs were rolled out. The residential density applied was R20 which means that lots between 900-999m² can be strata-titled and lots over 1,000m² can be subdivided.

However over the decades, average lot sizes progressively reduced and now in the new suburbs of Currambine, Joondalup, Burns Beach and Iluka, lots below 500m² are not uncommon with density codes in these suburbs ranging from low density R20 and R25, medium density R30, R40 and R60 to high density R80 and above.

From its inception, the Joondalup City Centre has been the focus for high density and high rise apartment development as befits its status as the Strategic Regional Centre (Primary Centre in *Directions 2031*) for the north-west corridor. In 2006, there were 370 high density dwellings in the City Centre and this figure is expected to grow over time given the presence of a large parcel of land owned by the Department of Housing as well as a number of vacant landholdings.

6.3.2 Availability and accessibility to facilities and services

To date, the City of Joondalup has experienced mostly greenfields development and the provision of infrastructure such as sewerage, drainage, power and telecommunications has been a relatively simple task. Recent infrastructure programs include infill sewerage for some areas, the upgrading of Beenyup treatment plant and a new substation at Padbury. In the long term, as the urban infrastructure of the City ages and infill development becomes more common, issues associated with insufficient infrastructure capacity may arise. It is not expected to be a problem in the short term.

The City provides a large range of community facilities across the local government area in the form of libraries, local halls, purpose-built multi-function centres, sporting clubrooms and recreation centres. The newer suburbs of the north such as Burns Beach and Iluka are likely to experience significant growth which in turn will place pressure on existing community facilities. The remainder of the City, being more established, enjoys access to a good range of community facilities.

The City maintains 719 hectares of active and passive parks and reserves distributed evenly across its borders. This represents 7% of the total land area of the City and equates to, in built-up areas, a greater than 10% provision of public open space. In addition, there are a number of regional parks and public purpose sites (Yellagonga National Park, Pinnaroo Memorial Park) which add to the wealth of open space in the City.

The transport network is based on a major road grid system - the Mitchell Freeway is the major north-south transport corridor and incorporates the Northern Suburbs railway line. Marmion Ave is also an important north-south transport corridor. The east-west district distributor roads are four-lane divided roads with generous reservations for future widening. This well planned system of roads gives residents easy access all their social, recreational and work-related destinations by car. However, despite the presence of six railway stations and connecting bus routes, public transport usage is very low. Congestion on the Freeway has increased travel time, pollution emissions and placed pressure on major intersections.

6.3.3 Residential lot sizes

The pattern of lot sizes as shown in Table 6.3.3 is interesting in that only about 9.6% of the total number of lots in the City are currently over 900m² whereas around 86% of lots are in the range 600-899m². In other words, only about 9.6% of the total number of lots in the City are able to be subdivided at the predominant density code of R20.

The suburb of Kallaroo has the highest proportion of lots over 900m² (R20 lots) – around 24% whereas in most of the older suburbs, only about 10-14% of their lots are capable of being developed at the R20 density code.

Structure plans exist over the newer areas of Currambine, Iluka and Burns Beach as well as large infill sites and residential densities here are applied through a variety of housing lots. Apart from the remainder of Burns Beach and Iluka, there are a number of superlots in Currambine and the Joondalup City Centre which are undeveloped to date.

Table 6.3.3: Residential lot sizes by suburb

Suburb	Under 440m2	440- 519m ²	520- 599m ²	600- 699m ²	700- 899m ²	900- 999m²	>1000m ²	Total
Dalla	0		4			00	0.5	4 570
Beldon	0	3	4	487	994	60	25	1 573
Burns Beach	6	17	49	54	30	9	10	175
Connolly	119	33	27	67	793	84	83	1 206
Craigie	20	35	16	1 070	958	115	88	2 302
Currambine	103	251	508	704	557	32	20	2 175
Duncraig	12	76	55	1 377	3 424	247	181	5 372
Edgewater	0	20	16	289	1 063	107	105	1 600
Greenwood	14	38	26	1 619	1 678	138	181	3 694
Heathridge	4	81	89	798	1 511	153	45	2 681
Hilarys	203	189	93	1 004	1 720	223	98	3 530
Iluka	76	23	53	470	656	13	2	1 293
Joondalup	408	126	82	477	1 010	83	125	2 311
Kallaroo	38	24	8	473	840	283	174	1 840
Kingsley	41	17	38	1 751	1 935	262	251	4 295
Kinross	51	156	314	1 097	573	47	29	2 267
Marmion	3	3	4	28	552	42	92	724
Mullaloo	5	21	8	265	1 488	186	120	2 093
Ocean Reef	3	44	22	106	2 095	229	141	2 640
Padbury	2	126	71	1 333	1 415	133	114	3 194
Sorrento	11	32	38	113	1 877	135	210	2 416
Warwick	11	35	10	172	1 108	43	25	1 404
Woodvale	6	131	90	275	2 211	152	82	2 947
Total	1 136	1 481	1 621	14 029	28 488	2 776	2 201	51 732

6.3.4 Patterns of infill

Despite the efforts over the last two decades to diversify residential densities, the predominant density code in the City of Joondalup is R20 even though the great majority of blocks cannot be developed at that density. This has limited the amount of infill that has occurred across the City to opportunity sites, undeveloped vacant land and suburban 'Mums and Dads' subdivisions or strata development of lots over 900m².

Rare opportunities to redevelop redundant sites or large vacant lots in the established areas have been taken up across the City and consistent with Liveable Neighbourhoods principles, these developments have produced densities ranging from R25 to R40, including laneway lots, which have made efficient use of existing infrastructure and services in their respective neighbourhoods. Suburban 'backyard' infill has occurred throughout the City and the remaining potential is described in Table 6.3.4.

[22]

Table 6.3.4: Infill development in the suburbs

Suburb	Residential Lots	Lots>= 900m ² (dwellings including stratas)	Lots>=900 m ² currently available for infill at R20	% uptake of R20 lots i.e. where infill has occurred
Beldon	1 573	85(146)	30	64.7
Burns Beach	175	19(23)	16	15.8
Connolly	1 206	167 (307)	131	21.6
Craigie	2 302	203 (381)	78	61.6
Currambine	2 175 ¹	52 (201)	29	44.2
Duncraig	5 372	428 (594)	179	58.2
Edgewater	1 600	212 (338)	147	30.7
Greenwood	3 694	319 (500)	166	48.0
Heathridge	2 681	198 (319)	81	59.1
Hillarys	3 530	321 (633)	207	35.5
Iluka	1 293	15 (15)	15	0
Joondalup	2 311	208 (659)	86	58.7
Kallaroo	1 840	457 (641)	401	12.3
Kingsley	4 295	513 ² (780)	174	66.1
Kinross	2 267	76 (213)	19	75
Marmion	724	134 (217)	87	35.1
Mullaloo	2 093	306 (412)	210	31.4
Ocean Reef	2 640	370 (531)	235	36.5
Padbury	3 194	247 (421)	131	47
Sorrento	2 416	345 (820)	203	41.2
Warwick	1 404	68 (126)	43	36.8
Woodvale	2 947 ³	234 (504)	127	45.7
Total	51 732	4 918 (8790)	2 795	43.2

¹includes approx 150 lots zoned R80 which have development potential

Key points:

- The suburban nature of the City of Joondalup's development with its ample provision of public utilities, social infrastructure and continually improving public transport system has served the community well.
- The prevalent residential coding across the City is R20.
- A strong urban form of development is occurring in the City Centre and apartment blocks offer a type of accommodation not available elsewhere in the City.
- Infill of suburban areas has occurred steadily but only 5.4% of all lots or around 2,800 lots can be further developed at the current coding of R20. There are about 310 lots zoned R30 and R80 in Woodvale and Currambine which also can be further developed.
- 86% of residential lots are in the range 600m² 899m² (55% are in the range 700-899 m²) and cannot be subdivided or strata-titled at the current R20 coding.

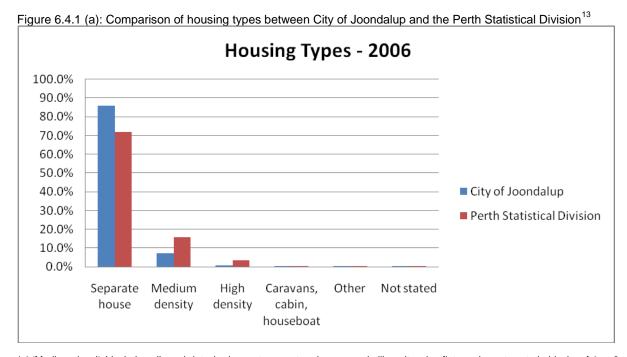
²includes R5 east of Lake Goollelal

³includes 160 lots zoned R30 which have development potential

6.4 An assessment of the housing system

6.4.1 Housing stock

The City of Joondalup's housing stock in 2006 was characterised by the dominance of single houses (85.8% of total dwellings) and the relatively low percentages of medium and high density housing options (7.9%) compared to the Perth Statistical Division¹³. These housing products currently do not reflect the shifting demographic trends that have been forecast for the City and described in Section 6.2.



(a) 'Medium density' includes all semi-detached, row, terrace, townhouses and villa units, plus flats and apartments in blocks of 1 or 2 storeys, and flats attached to houses.

(b) 'High density' includes flats and apartments in 3 storey and larger blocks.

Despite efforts in recent years to provide a range of housing densities particularly in the City Centre, a comparison between the City of Joondalup and some selected Councils notably the City of Wanneroo (Figure 6.4.1 (b)), highlights the slow rate at which progress has been made.

In 2006, the proportion of separate houses in the City of Joondalup was greater than that for neighbouring City of Wanneroo - the growth council of the North West region which also had proportionately more medium density housing than the City. Other local governments examined also displayed greater shares of medium density housing.

It is clear the City has fallen behind its contemporaries in the provision of varied housing densities and types.

¹³ ABS 2001, ABS 2006

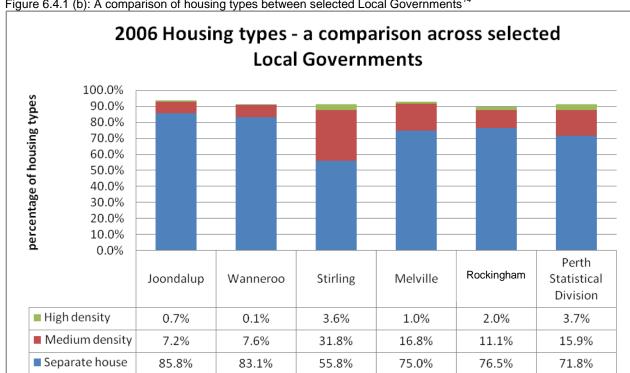
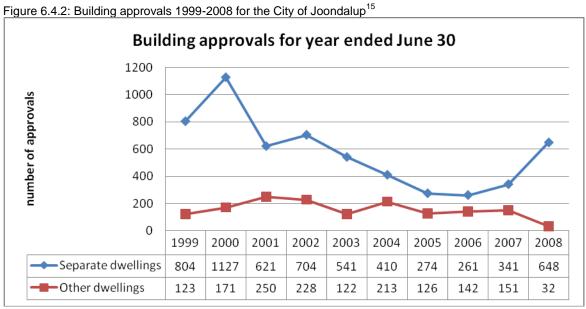


Figure 6.4.1 (b): A comparison of housing types between selected Local Governments¹⁴

Building activity – historic and recent

Over the past twelve years, the trend in building approvals has largely reflected the rate of 'greenfields' subdivisions as the City heads towards a completion of its remaining urban front. During that time 7,289 building approvals were issued for dwellings and of these, 21% were clustered developments, flats and units¹⁵.



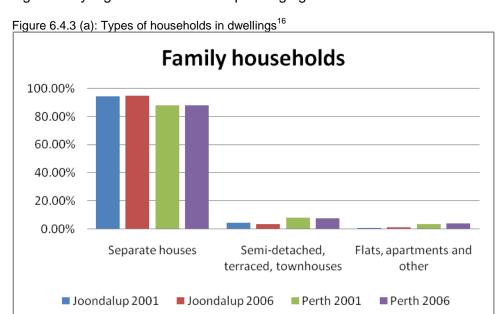
¹⁴ ABS 2001, ABS 2006

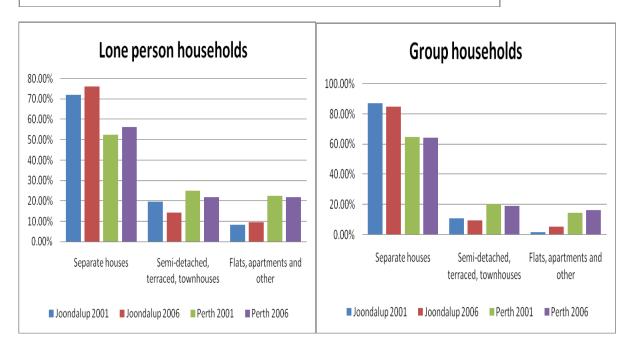
¹⁵ ABS 1999-2008

The most recent data for the 2007-2008 financial year indicates a marked upsurge in building approvals for separate dwellings which reflects the Burns Beach and Iluka subdivisions, but of note is the sharp decline in the number of approvals for other dwellings such as flats and units. This may not represent a long term trend but is worthy of attention.

6.4.3 Housing and household types

As Figure 6.4.3 (a) demonstrates, there is an ample supply of single houses for family households. The percentage of family households living in separate houses is not significantly higher than the corresponding figure for the Perth Statistical Division.





A trend worth noting is the share of lone person households living in units or apartments in the City which increased slightly between 2001 and 2006 compared with the corresponding figure for the Perth Statistical Division.

-

¹⁶ ABS 2001, ABS 2006

The supply of apartments needs to be maintained in order to meet this demand and there is no shortage of suitably zoned land in the City Centre. The relaxation of density and plot ratio provisions in the new City Centre Structure Plan will provide incentives for more high rise developments in the future.

What noteworthy however, is the significantly higher proportion of lone person households in the City (76%) living in separate houses than for the Perth Region (56%).

Lone person households in 2006 made up 15% of the households in the City and demographic trends indicate that this figure will increase over the next twenty years. They are not strictly confined to the aged and as the demographic structure changes, these households will include single professionals and young adults.

The locations of lone person households are identified in Figure 6.4.3 (b). Having regard for existing aged persons accommodation, the conclusion is that there is a significantly higher than average share (23-36%) of lone person households in suburban Craigie and Heathridge with parts of Beldon, Greenwood, Padbury having between a share of 15-23%.

The supply and location of semi-detached housing and duplexes as affordable housing options for non-family households needs to be addressed in the draft *Local Housing Strategy* given the relatively high percentage of lone person households currently living in separate houses. It is therefore apparent that the housing system currently does not provide that flexibility.

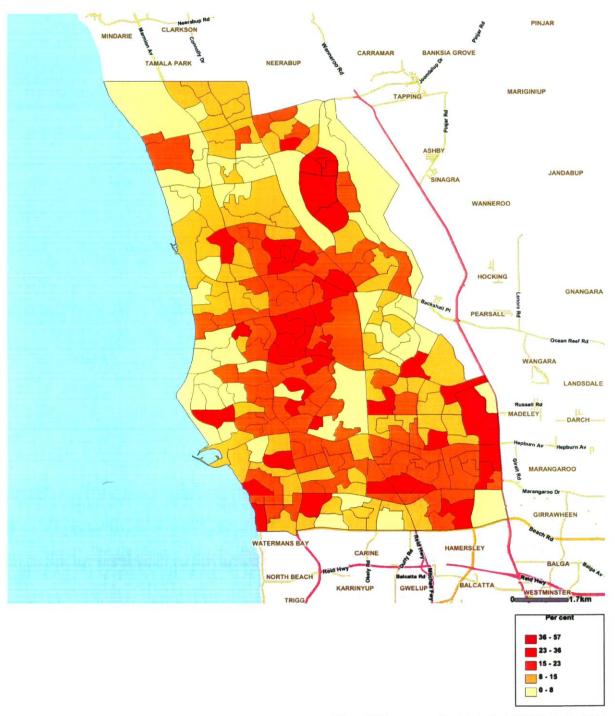
Given the rate at which the population in the City of Joondalup will continue to age, a proactive approach to increase the availability of alternatives to single houses on large blocks for this household type clearly needs to be taken.

Figure 6.4.3 (b): Distribution of lone person households in the City of Joondalup



Lone Person Households

As a percentage of all households Based on Place of Usual Residence, 2006 Joondalup (C) (Local Government Area) by Census Collection District



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6.4.4 Current housing opportunities for the aged.

Understanding the housing requirements of retirees, the frail and aged is a central concern of Local Governments. In particular, councils like the City of Joondalup that are faced with an increasing share of an ageing population, need to proactively plan to ensure that the housing needs of this demographic are met in the future.

In general, there is a range of housing options for the elderly, such as government housing (not a big presence in the City of Joondalup), private rental, home ownership, hostels, nursing homes and retirement villages.

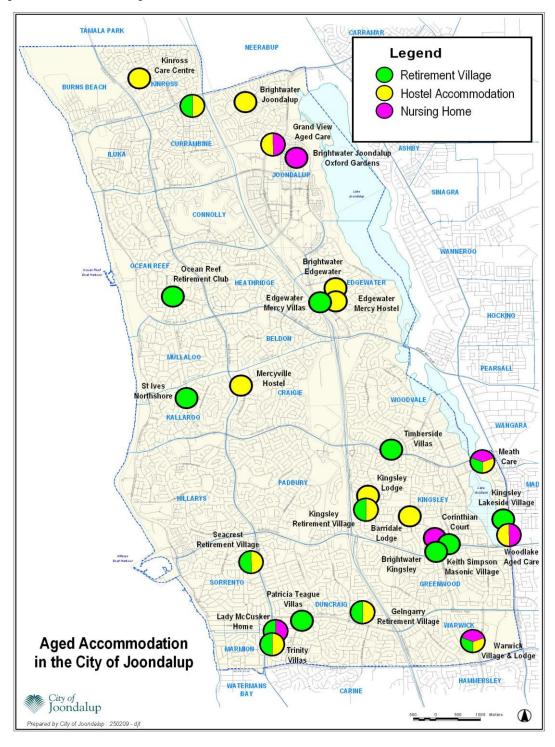
The location of retirement villages, hostels and nursing homes within the City are shown in Figure 6.4.4. In total, there are 966 retirement village units, 678 hostel accommodation beds and 345 nursing home beds. Two of the facilities (Seacrest and Ocean Reef Country Club) are privately owned individual units managed by a council of owners and there are waiting lists for all the other facilities. There are a very small number of small-scale private housing developments for the over 55's - in the City Centre, Connolly and Heathridge for example.

The City of Joondalup Positive Ageing Plan 2009-2012 outlines the City's commitment to advocate for the need of affordable housing options that allow people to age in place particularly in the community, near public transport and service centres. Hence, the issue of housing choices for 'over 55s' needs to be addressed in the draft *Local Housing Strategy* and in the review of the District Planning Scheme.

Retirement Villages and associated accommodation and facilities are best provided by the large and experienced private organisations, but at the other end of the spectrum, small-scale 'over 55s' grouped housing, privately owned and strata managed are viable alternatives. There is sufficient anecdotal evidence to suggest that there is a sector of the ageing population who would prefer to downsize and invest in their own 'bricks and mortar' rather than purchase a long-term lease in a retirement village which may not be an affordable option. Small 'cluster home' developments for the 'over 55s' could be encouraged by providing density incentives over and above those stipulated in the *R-Codes*. Section 7 will discuss this in more detail.

With respect to the privately owned and managed aged accommodation facilities, development opportunities are dependent on the availability of large parcels of land, such as former school sites, which are becoming increasingly scarce in the City. When these opportunities do arise, there is a need to ensure that planning controls do not inhibit development to their full potential. Section 7 will discuss this in more detail.

Figure 6.4.4: Location of Aged Persons accommodation



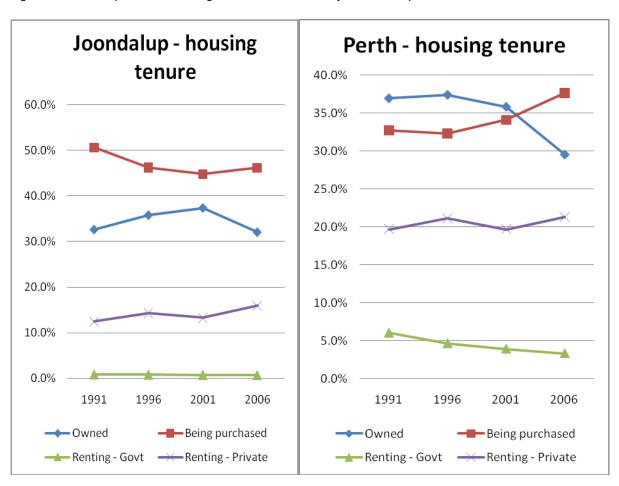
6.4.5 Housing tenure

Housing tenure data, to some extent, provides insight into the socio-economic status of an area as well as the role that the area plays in the housing market. For example, a high concentration of private renters may indicate an area attractive to specific housing markets such as young singles and couples, while a concentration of home owners indicates a more settled area (i.e. less transitory), with mature families and empty-nester household types.

Tenure can also reflect built form, with a significantly higher share of renters in high density housing and a substantially larger proportion of home-owners in separate houses, although this is not a mutually exclusive pattern.

Government housing, through the Department of Housing, has an almost negligible presence in the City of Joondalup although this could change in the future as the department has a large landholding in the City Centre. The private sector dominates the rental market and like Perth, there has been a sharp increase between 2001 and 2006 in the percentage of people renting which may be an indication of the tightness of the home-buyers market during that period.

Figure 6.4.5: A comparison of housing tenure between the City of Joondalup and the Perth Statistical Division 17



¹⁷ ABS 1991, ABS 2006

6.4.6 Age and condition of housing stock

The City of Joondalup covers an extensive area therefore it was not practical to conduct a comprehensive age and condition survey of its housing stock. Instead, the field was narrowed down to the oldest suburbs namely, Duncraig, Padbury, Beldon, Craigie, Heathridge, Warwick and Marmion. Median house prices over the past five years were examined which gave a fair indication of the extent of private investment in those suburbs.

Median house prices in Duncraig, Warwick and Marmion were well above the Perth average but those in Beldon, Heathridge and Craigie, although rising, were consistently below the Perth average with Padbury displaying a very recent upward trend of matching the Perth average. For these reasons, an age and condition survey was restricted to those four suburbs.

The survey results did not support the view that these suburbs were in poor condition. On the whole, Beldon and Padbury rated as being in satisfactory/good condition while Heathridge was less so. The western half of Craigie displayed the most compelling evidence of a long-term under investment of private capital. The redevelopment of the old Craigie High School site will inject a much-needed level of investment into Craigie with a possible flow-on to the rest of the suburb. Notwithstanding the benefits this future development will bring, incentives for redevelopment need to be introduced to this part of Craigie.

1 Source: REIWA

6.4.7 Capacity for additional housing at current density codes and structure planning

Burns Beach and Iluka are the only areas left with substantial land releases in the pipeline. The approved Structure Plan for Burns Beach indicates housing for approximately 1,600 families and there are about 530 lots yet to be released in Iluka.

There is some remaining development potential of vacant land at Currambine and Edgewater, the former Craigie High School site as well as potential for around 1,500 apartments in the Joondalup City Centre. Elsewhere in the City, the total number of lots with potential for infill at the current R20 density, referred to as 'Mums and Dads development', is approximately 2,800 (Table 6.3.3). There are also an additional 310 lots zoned R30 and R80 in Woodvale and Currambine that can be further developed. At the current densities, each lot could accommodate one additional dwelling. It would be unrealistic to expect all those lots to be developed to their full potential by 2031.

At the current densities and approved structure planning, it would appear that the housing 'land bank' of the City is around 7,040 dwellings. However, the only certainties in the short term are the land releases of Burns Beach and Iluka totalling 2,130 dwellings. Redevelopment of the remaining lots will occur at varying stages and paces and is influenced by external factors such as the economic environment and levels of migration.

Based on the information to date, a best case scenario would be around an additional 5,000 dwellings by 2031.

Table 6.4.7: Estimated additional dwellings by 2031

Source of additional dwellings ('land bank')	Estimated additional dwellings
Burns Beach and Iluka	2,130
City Centre	1,500
Known development sites	300
Infill (suburban 'Mums and Dads') potential - 3,110 lots	@35% uptake = 1,088
TOTAL	5,018

Key points:

- An analysis of the composition of different housing types and densities in the City indicates that the City has fallen behind other Councils in the provision of medium density housing
- The recent changes in housing types do not reflect the forecast demographic shift that was highlighted in Section 6.2
- There needs to be significant increase in housing choices to allow residents the opportunity to move into dwellings best suited to their circumstances.
- There is a significant concentration of lone person households in the older suburbs of Heathridge, Beldon, Craigie, Padbury and Greenwood.
- More varied and possibly affordable housing options should be available for younger household types seeking to enter the housing market. Empty-nesters should also have the opportunity to downsize from dwelling types that are too large and as they grow old and frail, into more suitable accommodation.
- As the demographic data illustrates, it is likely that more aged persons' accommodation will be needed in the future and opportunities that may arise in the future for the construction of new aged care accommodation should be realised to their full potential.
- Since 1991, there has been an increase in the percentage of people renting which
 indicates that the provision of medium and high density housing in the City of
 Joondalup is most likely attracting its share of the rental market.
- The older suburbs are generally in satisfactory condition but some attention needs to be paid to parts of Craigie and Heathridge.
- At the current density codes and structure planning ('business as usual'), the housing stock could increase by around 5,018 dwellings by 2031. Of that figure, only about 1,088 dwellings are expected to come from infill ('suburban Mums and Dads') development.

7. CONSTRAINTS AND OPPORTUNITIES

7.1 Constraints to future housing provisions

Land bank

As described in Section 6, Burns Beach and Iluka are the last remaining greenfields sites in the City of Joondalup, and once completed, the City will no longer have a land bank in the urban growth area of the north west corridor. The City Centre has a land bank which should be adequate for future apartment development of around 1,500 units. There are very few known opportunity sites – notably, the former Craigie High School site.

R20 coding - residential areas

- The R20 coding which has been applied over most of the City's District Planning Scheme area, significantly limits the range and diversity of housing which could be accommodated in the suburban areas. As was highlighted earlier, only a relatively small number of lots remain that can be developed and the great majority of lots in the City cannot be developed at this density.
- One of the objectives of the Housing Strategy is to ensure that a wide range of housing can be provided to meet the social and economic needs of the changing demographics of the City. Retaining a comprehensive R20 coding will not achieve that objective.

R20 coding - commercial zones

- The R20 coding also applies to all the commercially zoned land in the DPS. Given the age of a number of commercial centres within the City, it is highly desirable to introduce mechanisms in the DPS to encourage medium density residential development of land surplus to a commercial centre's requirements or comprehensive redevelopments which could include a mix of commercial and residential units.
- The R20 coding is an inadequate density for a modern commercial centre the
 development yield of residential units is not high enough to be an incentive for any
 centre owner who may wish to invest in a redevelopment which could provide many
 benefits for the community. A coding of at least R80 should be considered for
 commercial areas.

Policy 3-2 – Height and scale of buildings within residential areas (outside City Centre)

- Council's Policy 3-2 is one factor taken into consideration when determining building or development applications. The specified limit in the Policy for areas that do not fall within an approved structure plan is 8.5m or roughly 2 storeys. The policy applies to all residential development in residential zones irrespective of the R Coding.
- This height limit is appropriate for most of the residential development covered by the Policy particularly for the low density coded areas and should continue to be applied there.
- For areas coded R60 and above where an urban built form of 3 or 4 storeys is
 desirable, should the height limit as expressed in the Policy be applied rigidly, it
 would be difficult, if not impossible to achieve the prescribed density in order to
 maximise the use of land zoned for that density.
- 3 or 4 storey height limits are more appropriate for the higher R-Codes outside the City Centre

 Aged persons accommodation which are classed as residential development, are also subject to Policy 3-2. Council has approved taller buildings in retirement villages for example, in Currambine, one 4 storey and three 3 storeys apartment blocks as part of a 231 unit retirement village complex was recently approved. Although it may not be a constraint in practice, in principle, the Policy may serve to inhibit the full realisation of the potential of the land.

Given the scarcity of sufficiently large parcels of land for aged persons' accommodation, as a practical measure, the height limit for aged persons' accommodation should be increased to 3 or 4 storeys. This will provide certainty for the community as well as for potential developers of such facilities which are going to be much needed in the short to medium term.

Existing residential built form

In suburbs such as Kallaroo which have R20 lots capable of being developed, the
existing houses are often substantial and built to maximise coverage on those lots. It
is extremely unlikely that in the short to medium term, those lots would be developed
to their R20 potential.

Design and layout of streets

 Curvlinear streets and cul-de-sacs characterise much of the pattern of road development in the older suburbs of the City. Whilst this is not strictly a constraint to the provision of future housing, it is true that a more traditional grid-like system of roads and laneways makes it easier to develop medium-high density residential or mixed-uses particularly along Activity Corridors.

Residential lots backing onto Activity Corridors

 Roads such as Shenton Avenue, Burns Beach Road and Whitfords Avenue have residential lots backing on to them. Ideally, activity corridors would have development that addressed the street. It would not be easy to retrofit development to achieve this good urban design outcome along these roads.

7.2 Opportunities for future housing

The following provide the more important opportunities for future housing:

Greenfield sites

Burns Beach and Iluka contain the last remaining greenfield lots within the City and once developed, there will be no more urban land which could be described as greenfield – on the urban fringe.

Railway Stations and Transit Oriented Development sites

The land use pattern around the six railway stations is reflective of a low density suburban style of development and not in line with transit oriented development principles. The street system of curvlinear roads and cul-de-sacs do not easily lend themselves to comprehensive medium-high density redevelopment as experienced in the more traditional grid systems of the older parts of Perth. However, suburban infill at R25, R30 or even R40 can occur quite easily with adequate planning controls and policies in place.

The new City Centre Structure plan proposes to extend the City Centre boundaries to capture the station precinct on the eastern side of Edgewater Station and promotes this area as a future Transit Oriented Development opportunity site.

Railway station car parks

Opportunities may exist in the longer term to develop these car-parks for a mix of additional car-parking and other uses – ideally, housing.

Commercial Centres

Medium to high density housing can coexist with existing commercial activities in the major town centres in line with the new draft Activity Centres Policy.

Redevelopment of large sites which are no longer needed for their original purpose.

These large sites such as former school sites, will be rare and any residential development yield should be maximised but at the same time, have regard for existing residential amenity and character of the surrounding area.

Provision of additional density bonus for Aged Persons' housing.

As described in Section 6.4.4, the low take-up of small-scale and privately owned 'over 55's' grouped developments should be addressed. The current provisions of the Residential Design Codes do not appear to be enough of an incentive for the 50% density bonus to be taken up. It could be argued that a R20 coding is too low for this type of specialised housing.

In order to encourage the amalgamation and development of between 2 and 4 residential lots in appropriate locations for 'over 55's' housing, a policy should be developed which allows for a greater density yield than that allowed under the *R-Codes*.

8. COMMUNITY CONSULTATION

8.1 BACKGROUND

During April and May 2009, a Housing Intentions Survey was undertaken to find out what housing options Joondalup residents are likely to require over the next 5-10 year span. The consultation commenced on 28 April 2009 with 2,200 surveys being mailed to randomly selected residents across all six wards of Council. An online version of the survey and a downloadable version of the survey were also made available on the City's website.

The survey was designed in-house with a view to informing development of the City's Housing Strategy based on the needs and requirements of local residents. The intent was to take respondents through consideration of their present housing circumstances and how well their current needs are being met, to thinking about what housing options they might consider, given some change in circumstance, in 5 and then 10 years.

8.2 RESULTS

The results of the data analysis are presented in four sections as follows:

Section One

Provides a profile of total sample (n=625 respondents) including demographic information (residence by ward and suburb, age, gender, household make up and type of housing occupied at present). The profile is presented in the body of the report.

Section Two

Concerns the features that originally attracted the respondents to their present location/area where they own property.

Section Three

Provides insights into the aspirations respondents have for their present residence/investment in property with respect to future block sizes and types of housing. This information is broken down by Ward and Suburb.

Section Four

This section provides information from respondents who identified a desire/need to change their housing circumstances within 5 years (20% of total sample) and from 10 years onward (68% of total sample).

8.3 SECTION ONE

Profile of Total Sample

For ease of reading, statistical information on the total sample is provided in a series of tables in the following order.

Table 8.3.1 (a): Total Sample by Suburb and Ward

Table 8.3.1 (b): Total Sample by Gender

Table 8.3.1 (c): Total Sample by Age Range

Table 8.3.1 (d): Total Sample by Household Makeup

Table 8.3.1 (e): Total Sample by Housing Type

Commentary on Tables 8.3.1 (a) and 8.3.1 (b)

A comparison with the demographic profile of the City identified that the sample population (age and location) was a close match, lending validity to the representative nature of the

sample. It was however notable that more women (59%) than men (32.9%) completed the survey.

Commentary on Tables 8.3.1 (c) and 8.3.1 (d)

A review of the age range of respondents identified that 45.3% were of middle to retirement age (48-65). On the basis that this is likely to be a time when major life changes are occurring that may have a significant impact on decisions about future housing, cross tabulations were performed with age range by household make up.

The cross tabulation identified that 35% of couples without children are of working middle age. This group may own their homes outright and have disposable income that would allow them to consider alternative options for the future.

A further cross tabulation with respect to age (65+) and retirement showed that 76.6% identified themselves as retiree singles and couples. However, it was notable that the remaining group of 65+ respondents (23%) identified their household make up as being those in which there are school aged and adult children at home and of shared housing arrangements. This finding may be indicative of the fact that this group of 65+ aged respondents have (a) begun their families later (b) remarried at some point and begun a new family at a later stage in life or (c) been through a partnership breakdown. Given these circumstances, this population segment may not have the disposable income or freedom from mortgages available to those in middle age without children at home. Flexible options for lower cost housing may be indicated.

Commentary on Table 8.3.1 (e)

By far the largest type of housing respondents lived in (75.2%), was a single storey house on a block. That 305 (80%) of these dwellings had 4 bedrooms and a further 343 (80%) had two bathrooms is indicative of housing demand and development over the last 20 years. It should be noted that type and bedroom size does not always equate to household makeup. Of those living in 4 bedroom properties, 38.4% are single people, couples without children and retirees. This could mean that expectations of housing design may continue to require the provision of four bedroom properties.

TABLE 8.3.1 (a): TOTAL SAMPLE BY SUBURB AND WARD

Ward	Suburb	No. Respondents	% Total Respondents
NORTH	Burns Beach	7	1.1
	Connolly	32	5.1
	Currambine	23	3.7
	Iluka	27	4.3
	Joondalup	17	2.7
	Kinross	26	4.2
	Ward Total	132	21.1
	Edgewater	35	5.6
NODTU	Heathridge	24	3.8
NORTH – CENTRAL	Mullaloo	30	4.8
CENTRAL	Ocean Reef	27	4.3
	Ward Total	116	18.6
	Beldon	22	3.5
	Craigie	23	3.7
CENTRAL	Kallaroo	19	3
	Woodvale	29	4.6
	Ward Total	93	14.9
	Hillarys	28	4.5
SOUTH WEST	Padbury	35	5.6
	Sorrento	27	4.3
	Ward Total	90	14.4
SOUTH EAST	Greenwood	61	9.8
	Kingsley	32	5.1
	Ward Total	93	14.9
SOUTH	Duncraig	35	5.6
	Marmion	33	5.3
	Warwick	31	5.0
	Ward Total	99	15.8
Residence not indicated		2	.3
Total Respondents		625	100.0

TABLE 8.3.1 (b): TOTAL SAMPLE BY GENDER

Gender	No.	% Total	
Gender	Respondents	respondents	
Male	245	39.2	
Female	369	59.0	
Total	614	98.2	
Not identified	11	1.8	
	625	100.0	

TABLE 8.3.1 (c): TOTAL SAMPLE BY AGE RANGE

Age Range	No. Respondents	% Total respondents	
24 - 29	25	4.0	
30 - 35	34	5.4	
36 - 41	76	12.2	
42 - 47	83	13.3	
48 - 53	96	15.4	
54 - 59	92	14.7	
60 - 65	95	15.2	
66 - 71	64	10.2	
72 - 77	36	5.8	
78+	24	3.8	
Total	625	100.0	

TABLE 8.3.1 (d): TOTAL SAMPLE BY HOUSEHOLD MAKEUP

	No.	% Total
Household Make Up	Respondents	respondents
Single person (not retired)	28	4.5
Single parent with children below school age	7	1.1
Single parent with school aged children	16	2.6
Single parent with adult children living at home	19	3.0
Couple no children	122	19.5
Couples with children below school age	45	7.2
Couples with school aged children	123	19.7
Couples with adult children living at home	98	15.7
Retiree couple	120	19.2
Single person retiree	26	4.2
Shared house (adults)	14	2.2
Sub Total	618	98.9
Not identified	7	1.1
Total	625	100.0

TABLE 8.3.1 (e): TOTAL SAMPLE BY CURRENT HOUSING TYPE

Current Housing Type	No. Respondent	% Total respondent
	S	S
Detached single storey house on a block	470	75.2
Detached two storey house on a block	95	15.2
A townhouse (attached to others on adjoining blocks)	2	.3
A townhouse (a group of dwellings on one block)	2	.3
A unit in an apartment block	3	.5
A duplex/triplex on one block	23	3.7
A villa (a group of villas NOT duplex or triplex on one block)	2	.3
Separate dwelling in a retirement village/complex	6	1.0
Sub Total	603	96.5
Not identified	22	3.5
Total	625	100.0

8.4 SECTION TWO

ATTRACTIONS TO CURRENT LOCATION

To analyse respondent feedback on the elements that attracted them to live in their present location a cross tabulation was completed by Ward, Suburb and for each of the following attractions, namely:

- Close to shopping
- · Schools in the area
- Parks/open space/bushland
- Close to beach
- Proximity to Joondalup City Centre
- Close to work
- Close to public transport
- Community centres/ libraries
- Close to friends/family
- Investment potential
- Development potential
- Other (to be specified by respondent)

Respondents who identified "other" reasons for their choice of location were provided with space in the survey for that purpose.

The top three attractors for all six wards of the City were consistently identifiable as:

- Close to the beach 47.7%
- Parks/open space/bushland 35.8%
- Close to shopping 32%

Qualitative analysis on feedback for "Other" comments received

Of particular note was the frequency with which the respondents identified affordability of the land or house and land packages at the time of purchase rather than facilities and other infrastructure, which appeared after most housing developments, were completed. This was particularly the case for suburbs being developed inland away from the coast (yet still with access to it), during the 70s, 80s and 90s.

Linked to the affordability attraction factor was the opportunity attraction factor. Opportunity to invest (financially and emotionally) in a new area and then to create ones place (physically and emotionally) within it would have been strong attractor. Many respondents expressed pride in, and satisfaction with, their achievement. This was most evident in the number and extent of comments received from respondents living in the south and south eastern wards.

Other matters identified as attractors were of a more intangible nature. These included perceptions of quietness, tranquillity, spaciousness and safety from crime – a type of 'retreat' - across all wards of the City, regardless of the age or location of their home.

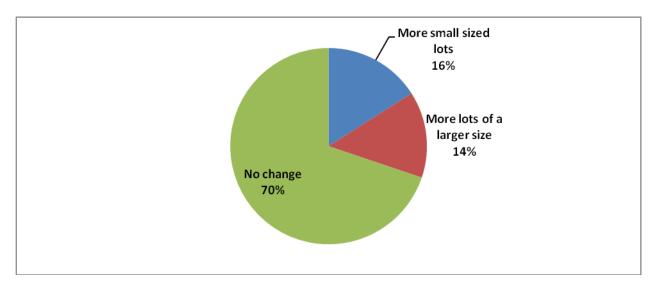
8.5 SECTION THREE

DEVELOPMENT OF THE 'HOME' AREA

Attitudes towards Lot Sizes

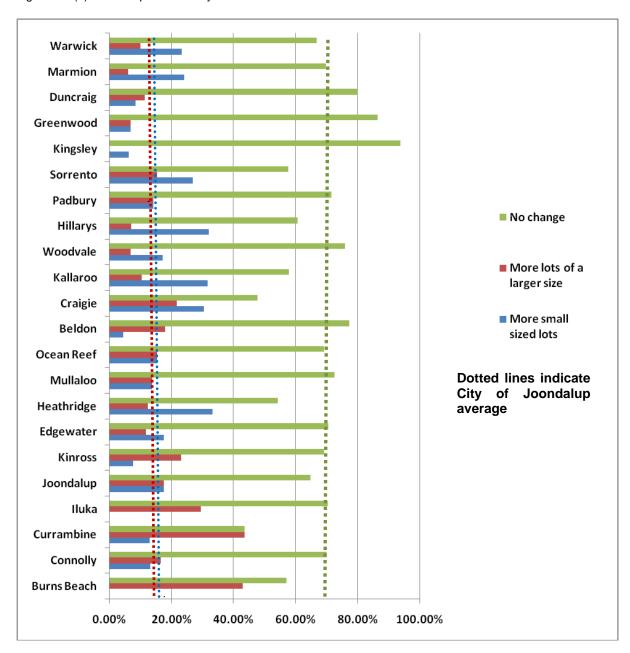
Around 70% of respondents from all the suburbs feel that there is no need for any changes to lot sizes of properties in their local area.

Figure 8.5 (a): Overall lot size preference in the City of Joondalup



The results varied for individual suburbs. A greater than average percentage of residents living in Joondalup, Edgewater, Heathridge, Craigie, Kallaroo, Woodvale, Hillarys, Sorrento, Marmion and Warwick wanted to see more small sized lots, but in Burns Beach, Conolly, Currambine, Iluka, Kinross and Beldon there was a greater than average percentage of respondents wanting larger lots.

Figure 8.5 (b): Lot size preference by suburb



Attitudes towards Housing Types

A further cross tabulation to identify preferred housing types in addition to those currently available within each area identified that overall townhouses, duplexes and villas were most desired (21.1%) followed by large family housing (19.7%) and aged/dependent dwellings (16.6%).

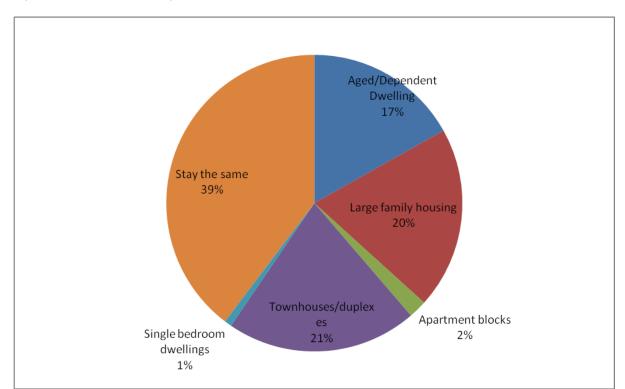


Figure 8.5 (c): Overall housing type preferred in the City of Joondalup

The preferred finding is interesting because in circumstances where there is no land available for development within wards, subdivision may be the only way for this occur, thereby contradicting the 'no change' feedback on block sizing.

8.6 SECTION FOUR

MOVING IN 5 YEARS AND FROM 5 TO 10 YEARS

To analyse this data, the first step was to identify which respondents find their current housing does not meet their needs or will not do so (a) within a 5 year period and/or (b) within 5 to 10 years.

The analysis showed that between 14% and up to 21% of all respondents envisage making a move within 5 years whilst those considering doing so in 5 to 10 years make up 48% to 72% of the total sample. It would appear that those **least** likely to make a change in the short term are living in Edgewater, Heathridge, Mullaloo and Ocean Reef and in the long term reside in Greenwood and Kingsley.

Moving in 5 years

In the North Ward, 35% of respondents were interested in moving outside the City of Joondalup altogether, usually to upgrade on their original investment. Similarly, 31.3% of South East Ward residents indicated a desire to move out of the City of Joondalup. In the

North Central and Central Wards, respondents were evenly split between either staying in their present area whilst moving house or opting to renovate their homes to meet changed requirements. In the South West Ward a preference to stay in the area but move house (42%) was indicated. Finally, 31.6% of respondents living in the South Ward identified renovation as their preferred option. The majority of respondents in this group were interested in buying an established single storey house on a block.

Moving in 5 – 10 years

Across all wards the main reason given was that properties/gardens would be too big to manage in future. These respondents indicated that the top three attractions for them would be locations that were

- Close to shopping (49%)
- Close to the beach (41.2%) and
- Close to public transport (35.7%).

Respondents were also asked to nominate their preferences for housing type in the event they did move. Of note was the category "too big for me to manage – house/garden" in which respondents identified a separate dwelling in a retirement village (25.8%) followed by a single storey house on a block (22.2%) as their preferred options. In all other categories, a detached single storey house on a block would seem to be preferred.

With respect to preferred future housing locations, respondents identifying that their present home would be "too big to manage" were most interested in living in the North Ward (20.4%). Respondents identifying that their home would not meet the needs of their growing families expressed most interest in the South West Ward comprising Hillarys, Padbury and Sorrento (14%). Of note were the respondents that identified their reason for moving was "children have left home" as 20% did not seem to have a preference. This suggests that although children's leaving was anticipated, they had not thought that far ahead about their preferred location.

Conclusion

There is not enough community demand to justify sweeping density increases based purely on the survey results. Other pressing issues which have been identified in this strategy, must also be taken into consideration when determining the need and opportunities to increase housing diversity within the City. Strategically increasing densities in areas which would allow more people to access community amenities, meet sustainability objectives and to support commercial centres are consistent with sound planning principles. This would have the added benefit of maintaining current densities across most of the City.

9. SUMMARY AND IMPLICATIONS FOR THE CITY OF JOONDALUP

- 1. This analysis has highlighted the City of Joondalup's changing role in the metropolitan area from a growth Council of the 1970's and 80's to one with a stable, albeit ageing population and decreasing household sizes.
- 2. Current WAPC population forecasts in WA Tomorrow indicate minor growth of around 2,000 for the City of Joondalup up to 2031. Whilst this is a modest increase, it is the changing household structures which will place pressures on housing supply. Providing a greater range of housing products will not only help to alleviate these pressures but also go some way towards providing housing which is more affordable for singles, young couples and the aged.
- 3. The two factors of an ageing population and falling household sizes will be the key drivers influencing the size, direction and composition of the housing market in the City of Joondalup.
- 4. The housing products currently available in the City of Joondalup do not reflect the emerging demographic trends predicted for the City. The challenge is not only to ensure that there is an adequate housing supply for the future population of the City of Joondalup but to ensure that there is balanced mix of housing to avoid a mis-match between housing demand and supply.
- 5. At the moment, the 'land bank' for future housing in the City of Joondalup comes from a few known sources new land releases at Burns Beach and Iluka, known future development sites, apartment development in the City Centre and limited suburban infill at the current coding. Based on **current** residential densities, known development opportunities particularly in the City Centre and the greenfield land releases, a best case scenario would yield around 5,000 additional dwellings by 2031. As household sizes are likely to fall over the next 25 years, this is unlikely to meet the expected future housing demand.
- 6. An 'age and condition survey' of the older suburbs of the City of Joondalup has identified areas which would benefit from an increase in private investment through increased development potential.
- 7. A number of constraints to development have been identified which will require policy changes to overcome. Without these changes, the full development potential of residential and commercial land is unlikely to be achieved.
- 8. Community consultation conducted to date demonstrates that there is not enough community support to justify extensive density increases. Other pressing issues which have been identified in this strategy must be taken into consideration when determining the need and opportunities to increase housing diversity within the City.
- 9. The higher order State and WAPC policies are very clear in the direction local governments are required to take when preparing new town planning schemes and local planning strategies. As stated in *Directions 2031*, better use of existing urban land and accommodating urban growth within the context of the core *Directions 2031* elements of activity centres, activity corridors, communities and natural environments are the key principles to be followed.
- 10. With respect to developing a housing strategy to meet the future needs of the City's population, accessibility factors like proximity to public transport and activity centres

will be important when considering which areas to select for higher residential density increases. Given the location of major regional and district centres, six railway stations and good bus connections, land use changes to encourage more compact lifestyles and better use of public transport should be a feature of the draft *Local Housing Strategy*.

PART TWO

10. THE DRAFT LOCAL HOUSING STRATEGY

10.1 Overview

- The City of Joondalup's pattern of land use is now well established with extensive suburban development and a hierarchy of commercial centres ranging from the Joondalup City Centre which is the Primary Centre for the north-west corridor to numerous local centres serving the everyday needs of the community.
- The many natural features of the City including over 17km of coastline and 719 hectares
 of active and passive open space and reserves, provide a high level of recreational
 opportunities and amenity for residents, tourists and the workforce.
- The Joondalup City Centre will continue to develop as the economic hub of the north-west corridor with current developments such as the expansion of the Joondalup Health Campus and the future expansion of Edith Cowan University in the pipeline. Given the expected growth of the City Centre and the projected changing demographics and household sizes within the City, it is important to ensure that a suitable housing supply is available for future City of Joondalup residents and workers.
- The draft Local Housing Strategy does not propose a blanket increase in residential densities across the City. As outlined in the City's draft Local Planning Strategy, a strategic approach is required by identifying areas close to public transport and main centres.
- The draft Local Housing Strategy recognises that changes in residential density should occur gradually and seeks to build on the existing strengths of the City – its commercial centres, significant future employment opportunities, public transport, excellent parks, natural features and community facilities.
- The focus of the draft Strategy is on accessibility to transport and local services thus reducing private transport costs and at the same time, increasing opportunities associated with living, working and shopping locally. Higher density options are proposed for areas that are already well served by public and community infrastructure reducing the need for the City of Joondalup and the State to provide new infrastructure. The residential densities in the remaining areas of the City are proposed to stay the same.
- The draft Strategy also recognises that a high standard of redevelopment in infill areas will have a positive impact on streetscapes and residential amenity.
- With its good public transport network and well placed commercial centres, the City of Joondalup offers excellent opportunities for more compact living. The draft Strategy suggests that a wide range of housing can be provided to meet the social and economic needs of the changing demographics within the City and ensure that growth in the City occurs in a sustainable way.

10.2 Criteria for identifying areas suitable for higher residential density

A key recommendation of the City of Joondalup draft *Local Planning Strategy* is that a Local Housing Strategy be prepared which will:

- Investigate and determine the additional housing requirements over the next twenty vears
- Identify areas which are strategically located within walking distance to activity centres including the City Centre, stations or on public transport corridors - for infill or redevelopment
- Identify areas which, due to the age of housing stock, are suitable for infill or redevelopment
 - Prepare Residential Design Guidelines to guide future redevelopment outcomes in the above areas and to ensure high levels of liveability and amenity; consultation with the community will occur during this process
 - To ensure that in the above areas higher density is only permitted subject to good design outcomes being achieved, use innovative approaches to density codes rather than use blanket up-codings that have no design criteria supporting them
- Identify areas where it is highly desirable to retain existing housing stock and residential density for the future accommodation needs of families
- Recognise that changes in housing density occur gradually and need community support

Based on the principles set above, broad selection criteria were developed to assist with selecting areas within the City for higher density investigation.

- ❖ 800m catchment around Currambine, Joondalup, Edgewater, Whitfords, Greenwood and Warwick railway stations
- ❖ 800m catchment around Joondalup City Centre and the regional centres of Westfield Whitfords and Centro Warwick
- ❖ 400m catchment around district centres of Woodvale, Greenwood and Currambine
- ❖ 400m catchment around neighbourhood centres close to high frequency public transport services
- 400m catchment around high frequency bus routes
- Suburbs which would benefit from revitalisation
- Land abutting Right of Ways (laneways)

These areas were further refined taking into account the age and density coding of existing housing, road layouts, connectivity and good pedestrian access. The final areas are shown on the draft Local Housing Strategy Map in 10.4 and described in detail in 10.5

10.3 Recommendations of the draft Local Housing Strategy

Recommendation 1

Accept the Housing Opportunity Areas shown on the Local Housing Strategy Plan Map in Section 10.4 as areas suitable for higher residential density codings in the new District Planning Scheme.

Recommendation 2

Use the proposed new residential densities and zonings in each of the Housing Opportunity Areas described in Section 10.5 as the basis for new density codings and rezonings in the new District Planning Scheme. The rest of the City is unchanged.

Recommendation 3

As part of the District Planning Scheme review process, adopt a new planning policy - "Dual Density Code Policy – Subdivision and Development Requirements" - to guide development in the Housing Opportunity Areas.

Recommendation 4

As part of the District Planning Scheme review process, adopt a new planning policy – "Additional Density Bonus for Aged Persons' Housing" - to encourage amalgamation and development of between 2 and 4 residential lots for aged persons' housing in appropriate locations. It will apply across the whole City with the exception of the City Centre.

Recommendation 5

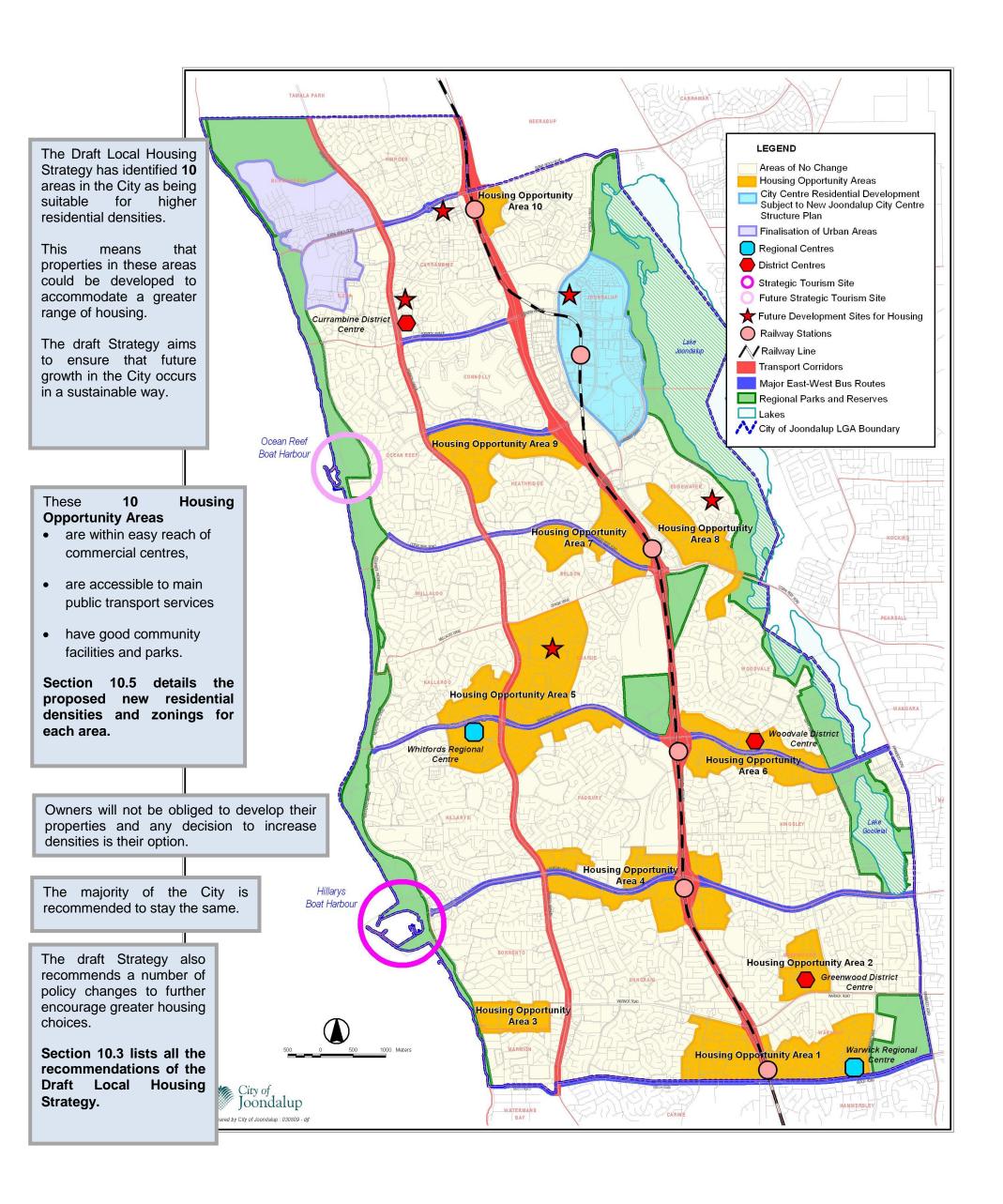
In the new District Planning Scheme, replace the residential coding of R20 which currently applies to all commercial and mixed use zoned land outside the City Centre with R80. It will apply to lots over $1,000 \text{ m}^2$.

Recommendation 6

As part of the District Planning Scheme review process, amend Policy 3-2 – "Height and Scale of Buildings Within Residential Areas (outside the City Centre)" to allow the height of i) large-scale aged persons' accommodation such as retirement villages and ii) residential development in areas coded R60 and above, to be increased to 3 or 4 storeys instead of being limited to 2 storeys. It will apply across the whole City with the exception of the City Centre.

Recommendation 7

As part of the District Planning Scheme process, adopt a new planning policy - "Minimum Density for Large Opportunity Sites" which will be in line with government policy and set a 'target' density for such sites. It will apply across the whole City with the exception of the City Centre.



10.5 Housing Opportunity Areas

The proposals for each Housing Opportunity Area are outlined in more detail on the following maps.

There are two maps for each Housing Opportunity Area.

The first map describes the proposed changes to residential density codings and zonings in the Housing Opportunity Area. Below the map is a summary of the attributes and features of the area and a description of the future directions envisaged by the draft *Local Housing Strategy*.

The second map, which is printed on the reverse page, depicts the sizes of lots in the area. This map is for the reader's information only and contains no recommendations.

10.5.1 Dual Density Codes

Each Housing Opportunity Area is proposed to include dual density R-Codes for example, R20/R30. This is where the lower R-Code (R20) will apply unless the criteria for the higher R-Code (R30) is fulfilled. The criteria for the higher R-code is outlined in a draft Dual Density Code policy, and will address environmentally sustainable/energy efficient building design; water sensitive design; maintaining compatibility with surrounding lower density development and good urban design.

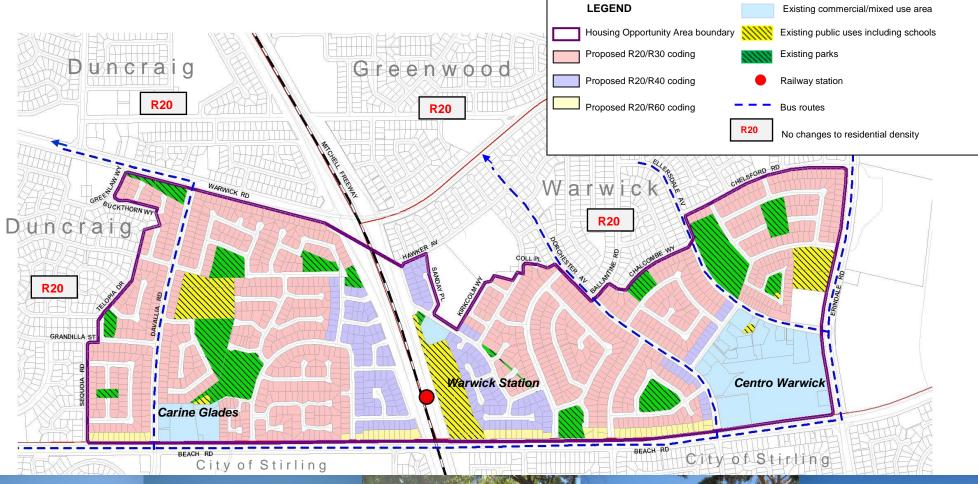
The aim of the dual density code approach is to encourage new development to contribute positively to the appearance of the area.

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HOUSING OPPORTUNITY AREA 1 - Davallia Road to Warwick Centre - proposed R Code changes





Connecting people to places

- Warwick Station a transport hub where train and bus services are wellintegrated. An extensive car park encourages commuters to park and ride.
- High frequency buses on Davallia and Beach Roads connect to Warwick Station and beyond.
- The major bicycle/shared path to the Perth CBD runs along the western edge of the Freeway.
- Davallia Road is an attractively landscaped street with dedicated cycle lanes.
- Residents can walk to schools, shops and public transport using PAWs and paths.

Existing patterns of housing development

- Total number of residential lots = 1,482
- 22% of lots (324) are between 600 700m², 63% (932) are between 700 900 m²
- Some small lot subdivisions have occurred near Carine Glades and Warwick

Centres and services

- Warwick Regional Centre incorporating Centro Warwick, is one
 of two Regional Centres in the City providing a mix of retail,
 community, entertainment and employment activities. Warwick
 Police Station and Warwick Family Clinic are located close to the
 Centre.
- Carine Glades a bustling local centre easily accessible from surrounding residential areas and well served by public transport.
- Glengarry private hospital, associated medical facilities, a local centre and the Glengarry Tavern are located just to the north of the area.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Two local primary schools Davallia and Hawker Park are

General

This area presents excellent opportunities for more compact living and greater housing choices focussed around Warwick Station, Warwick Centre, Carine Glades and the important public transport services in the area.

Proposed changes to residential densities

- R20/R60 is recommended for properties on Beach Road.
- R20/R40 is recommended for properties close to the shopping centres and station.
- R20/R30 is recommended for the remainder of residential properties in the Housing Opportunity Area.

Other changes

 There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

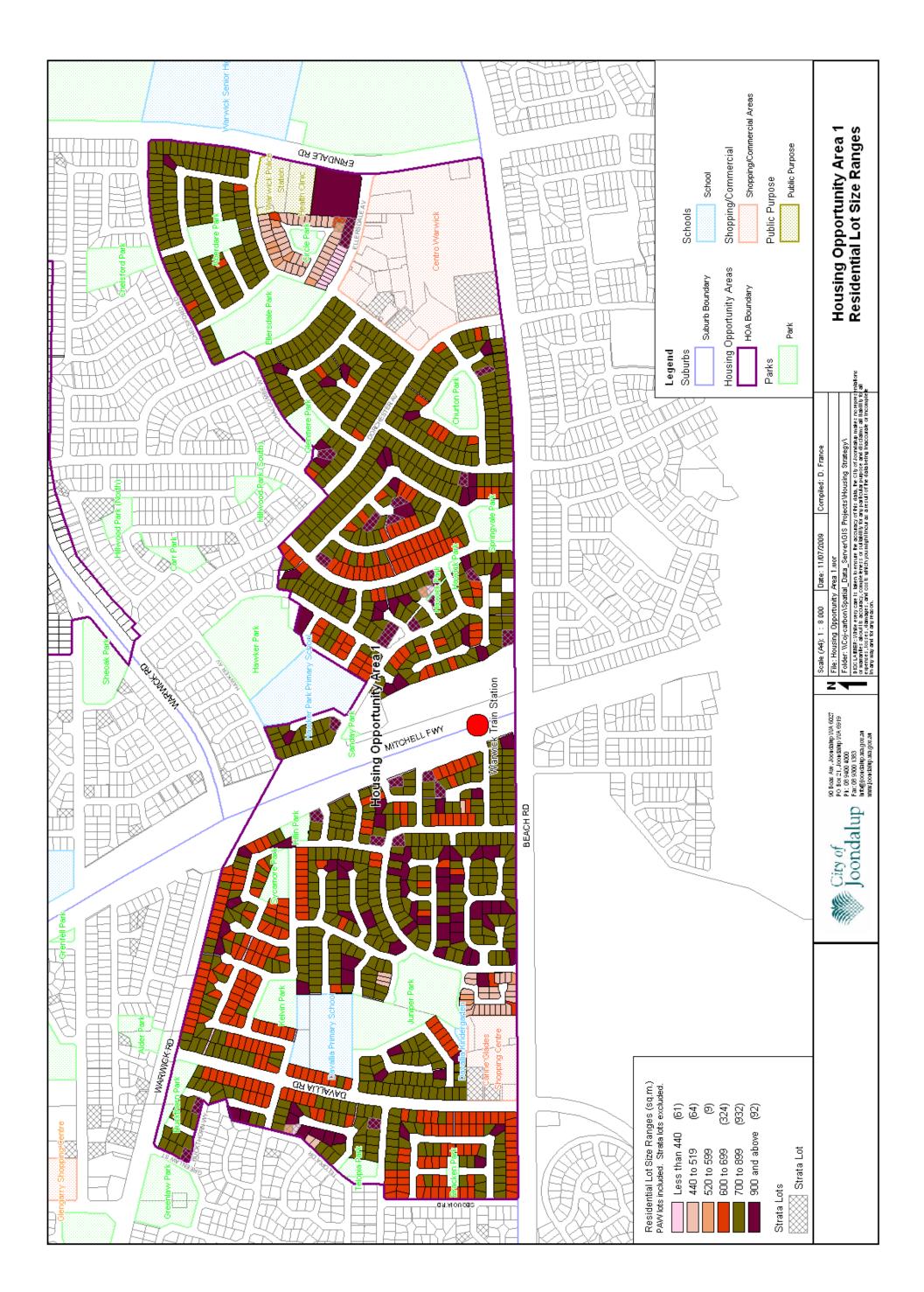
What stays the same

 Existing public infrastructure, for example, roads, verges, parks, right-of-ways, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings recommended are adopted in the new District Planning Scheme,
 - o most residential properties will gain new development potential
 - o redevelopment will occur but at a rate of landowners' choosing and will not happen overnight but will depend largely on size and age of existing housing stock
 - redevelopment at medium density will lead to greater housing choices
 - o new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - o more people will enjoy the local parks, services and facilities in the area as and when redevelopment occurs.



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HOUSING OPPORTUNITY AREA 2 - Greenwood Village - proposed R Code and zoning changes **LEGEND** Existing commercial/mixed use area Housing Opportunity Area boundary Existing public uses including schools **R20** Existing parks Proposed R20/R30 coding Railway station Proposed R20/R40 coding Proposed Mixed Use zoning Bus routes **R20** No changes to residential density Greenwood **R20 R20** Greenwood Greenwood Village Warwick Rd Warwick

Connecting people to places

- Residents can walk to schools, shops and parks using PAW and path networks.
- High frequency bus services along Coolibah Drive, Allenswood Drive and Warwick Road connect to Warwick Station and beyond.
- Coolibah Drive and Allenswood Drive cater for cyclists.

Existing patterns of housing development

- Total number of residential lots = 401
- 68% of lots (274) are between 600m² and 700m²
- Some small lot subdivisions have occurred around Oaktree Drive.
- 12 lots have infill potential at current densities.

Centres and services

- Greenwood District Centre incorporating Greenwood Village, is one of three district centres in the City serving the day to day needs of the community. Its attractive setting makes it an asset for the community.
- The Greenwood Hotel provides an opportunity for social gatherings.

Local amenity

Existing 'village' atmosphere, high amenity and high quality local parks offer good connectivity and recreational opportunities for residents.

This area presents excellent opportunities for more compact living and greater housing choices focussed around Greenwood Village and the important public transport services in the area.

Proposed changes to residential densities and zonings

- R20/R40 is recommended for properties close to the shopping centre.
- A Mixed Use zoning is recommended for a small number of properties on Coolibah Drive and Leschenaultia Streets directly facing Greenwood Centre.
- R20/R30 is recommended for the remainder of residential properties in the Housing Opportunity Area.

Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

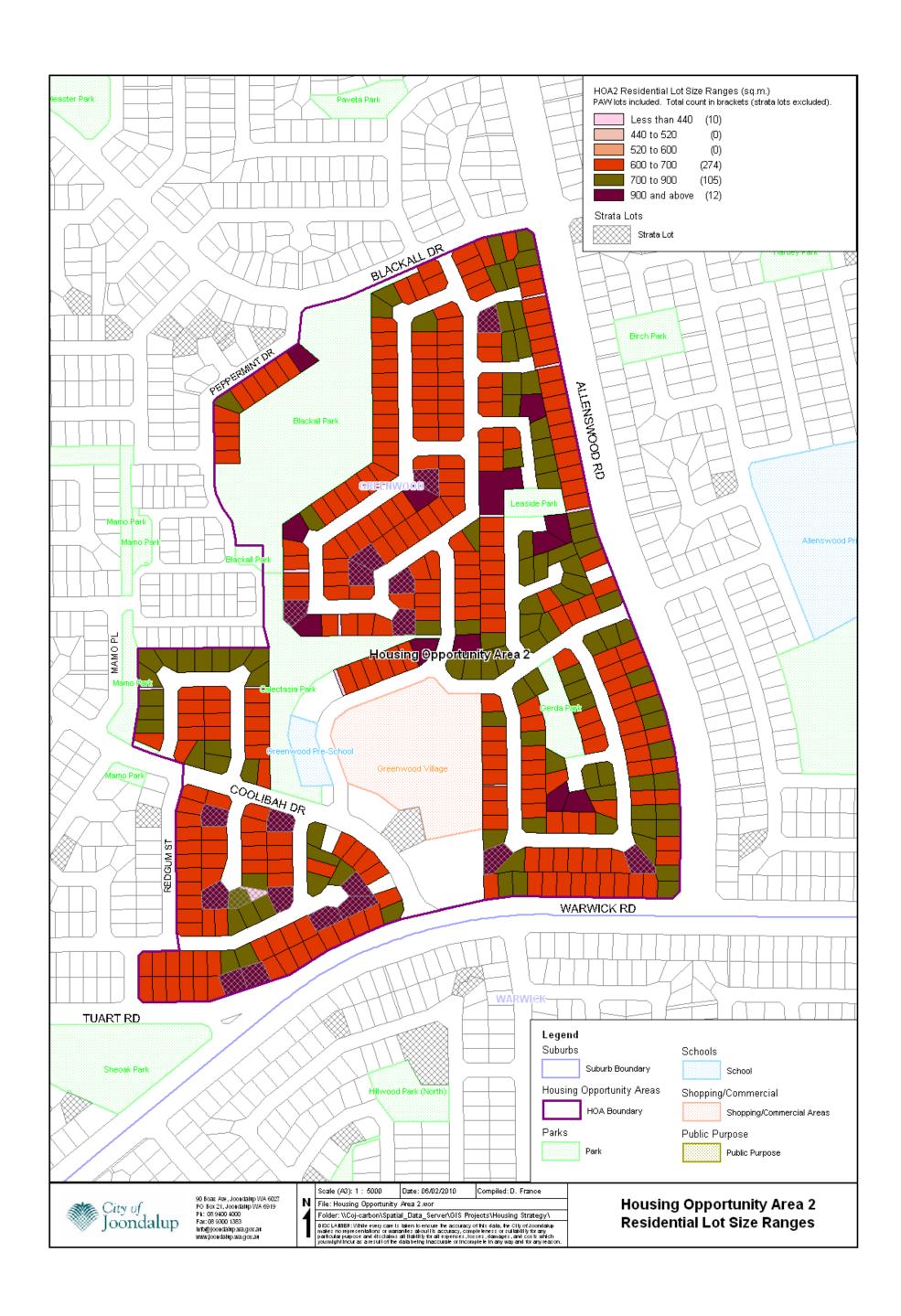
What stays the same

Existing public infrastructure, for example, roads, verges, parks, right-of-ways, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings and rezonings recommended are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
 - redevelopment will occur but at a rate of landowners' choosing and will not happen overnight 0
 - redevelopment at medium density will lead to greater housing choices 0
 - new housing development will have to meet design standards and contribute positively to the amenity of the area 0
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing 0
 - more people will enjoy the local parks, services and facilities in the area as and when redevelopment occurs.



HOUSING OPPORTUNITY AREA 3 – Sorrento laneway lots – proposed R Code changes

- The east-west linear nature of the streets ensures easy access to the beach.
- Bus services along Marine Tce and West Coast Drive connect to Hillarys Boat Harbour, Warwick Station and beyond.
- Laneways provide vehicular access to dwellings

Existing patterns of housing development

- Total number of residential lots = 471
- These laneway lots are a distinctive feature of 'old' Sorrento. Laneway lots are generally acknowledged as most suitable for infill housing.
- 93% of lots (439) are between 700 and 900m²
- 18 lots have infill opportunities at current densities.

- The beaches and high quality local parks offer excellent recreational opportunities for residents.
- Hillarys Boat Harbour, primary schools, Marmion Village and Percy Doyle Reserve are all nearby
- Undulating topography and existing streetscape gives this area a 'Cottesloe' feeling

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This area presents excellent opportunities for greater housing choices, taking advantage of the laneways and proximity to the beach

Proposed changes to residential densities

R20/25 is recommended for all the lots in the Housing Opportunity Area

Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this

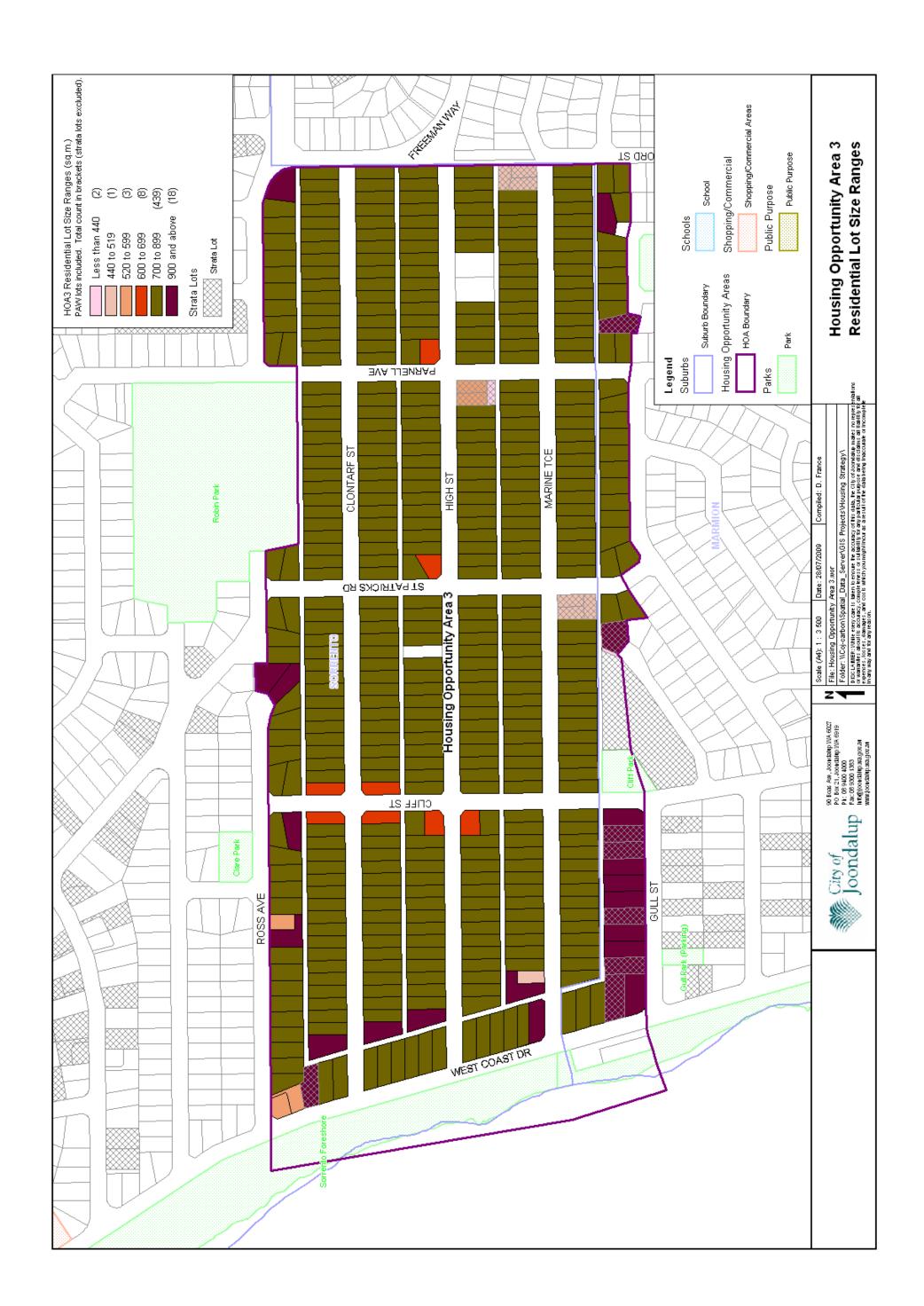
What stays the same

Existing public infrastructure, for example, roads, verges, parks, right-ofways, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- The use of the laneways will be a feature of new development thus ensuring the retention of existing streetscapes.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - o most residential properties will gain new development potential
 - redevelopment will occur but at a gradual rate and will not happen overnight
 - redevelopment at medium density will lead to greater housing choices 0
 - new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - more people will enjoy the local parks, services and facilities in the area as and when redevelopment occurs.



HOUSING OPPORTUNITY AREA 4 – Marmion Avenue to Greenwood Station – proposed R Code changes LEGEND Existing commercial/mixe



Connecting people to places

- Greenwood Station a transport hub where train and bus services are well-integrated. An extensive car park encourages commuters to 'Park and Ride'.
- The major bicycle route to the Perth CBD runs parallel to the Freeway and a network of cycle/shared paths run through the area.
- Residents can easily walk to the station, schools, shops and parks using PAW and path networks.
- High frequency bus services along Hepburn Avenue and Gibson Avenue connect to Greenwood Station and beyond.

Existing patterns of housing development

- Total number of residential lots = 1,391
- 37% of lots (518) are between 600m² and 700m², 42% (581) are between 700 and 900m²
- Extensive small lot subdivisions have occurred at Hepburn Heights
- 36 lots have infill potential at current densities.

Centres and services

- Coolibah, Padbury, Lilburne and Hepburn Heights shops meet the day to day shopping needs of the community.
- Hilarys Boat Harbour is a major activity centre for the region and is served by buses every 15 minutes along Hepburn Avenue during the summer months.

Local amenity

- Hepburn Heights is an outstanding environmental feature of the area and with Pinnaroo Valley and Craigie Open Space, provides 'green' linkages and habitat for wildlife.
- High quality local parks offer good connectivity and recreational opportunities for residents.
- Duncraig Senior High, Greenwood Senior High, St Stephens, South Padbury Primary and Padbury Catholic Primary schools are well located and accessible to residents.

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• This area presents excellent opportunities for more compact living and greater housing choices focussed around Greenwood Station, local shopping and the important public transport services in the area.

Proposed changes to residential densities

- R20/R40 is recommended for properties close to the station.
- R20/R30 is recommended for the remainder of residential properties in the Housing Opportunity Area.

Other changes

 There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

What stays the same

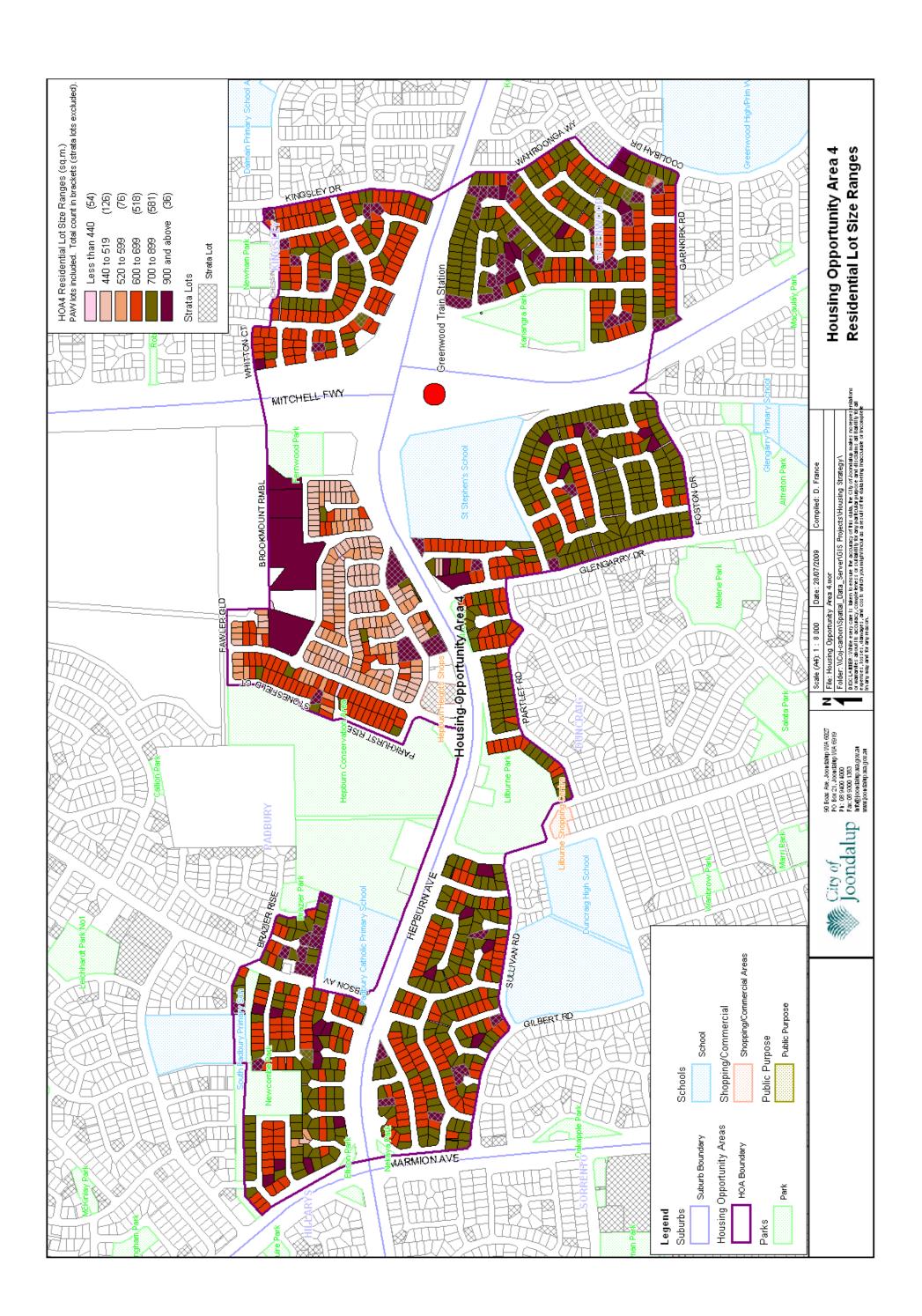
 Existing public infrastructure, for example, roads, verges, parks, right-ofways, public access ways and schools are not affected.

Urban design

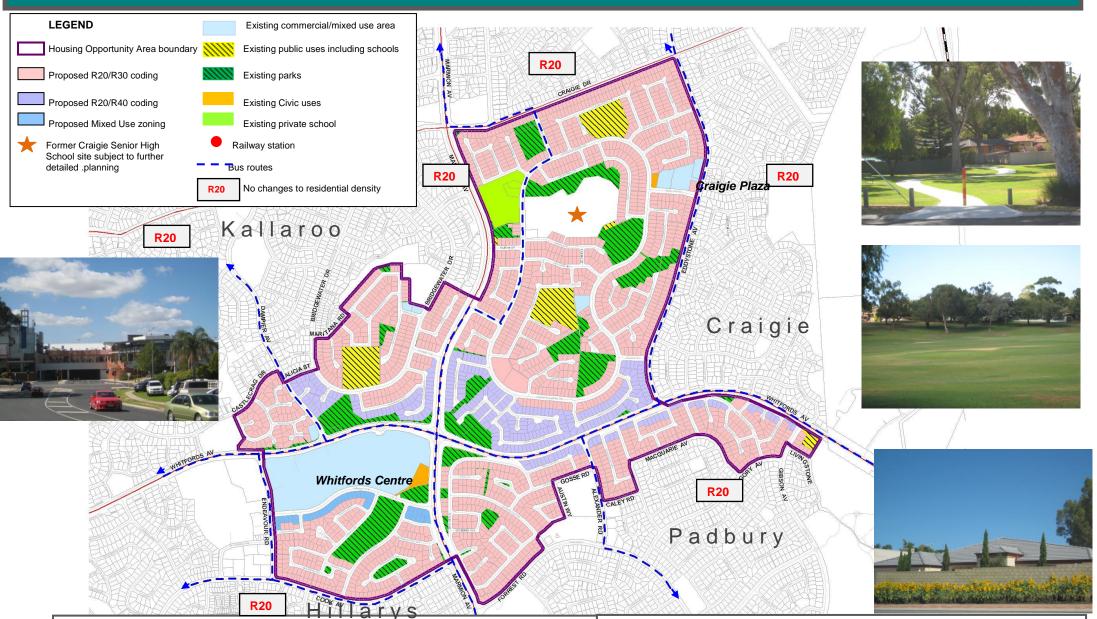
- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

What the proposed changes mean for the area

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
 - o redevelopment will occur but at a gradual rate and will not happen overnight
 - o redevelopment at medium density will lead to greater housing choices
 - o new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - o as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area



HOUSING OPPORTUNITY AREA 5 - Whitfords Centre to Whitfords Station - proposed R Code and zoning changes



Connecting people to places

- Whitfords station- a transport hub where train and bus services are well-integrated.
 A large car-park encourages commuters to 'Park and Ride'.
- High frequency bus services along Whitfords Avenue which also has a cycle path.
- Residents can easily walk to the station, schools, shops and parks using PAW, path networks and underpasses.
- Marmion Avenue and Whitfords Avenue provide excellent access for both private and public transport to facilities in the area and beyond.

Existing patterns of housing development

- Total number of residential lots = 2,382
- 52% of lots (1,241) are between 600m² and 700m², 38% (913) are between 700m² and 900m²
- Some small lot subdivisions have occurred near the Kallaroo centre and to the south west of Whitfords Centre.
- 134 lots have infill potential at current density code.

Centres and services

- Whitfords Regional Centre incorporating Westfield Whitfords, is one of two Regional Centres in the City. The Centre provides a mix of retail, community, entertainment and employment activities and includes a cinema complex. Easy connection to Whitfords Station via high frequency buses and 3 underpasses lead to surrounding residential areas.
- Whitfords local library and a community centre are adjacent to Whitfords Centre.
- Local shopping can also be done at Kallaroo and Craigie neighbourhood centres.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Craigie Leisure Centre, a major recreation facility, is nearby.
- Whitfords Catholic Primary, Craigie Primary, Bambarra Primary

General

• This area presents excellent opportunities for more compact living and greater housing choices focussed around Whitfords Regional Centre and the important public transport services on Whitfords Avenue. There is an opportunity to revitalise the older part of Craigie.

Proposed changes to residential densities and zoning

- R20/40 is recommended for residential properties close to Whitfords Centre and the public transport corridor of Whitfords Avenue.
- A Mixed Use zone is recommended for a number of properties south of the Centre.
- Elsewhere in the Housing Opportunity Area, R20/R30 is recommended for residential properties.
- The former Craigie High School site will be redeveloped for housing.

Other changes

 There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

What stays the same

• Existing public infrastructure, for example, roads, verges, parks, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

What the proposed changes mean for the area

- If the new residential density codings and rezonings suggested are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
 - o redevelopment will occur but at a gradual rate and will not happen overnight
 - o redevelopment at medium density will lead to greater housing choices
 - o new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area

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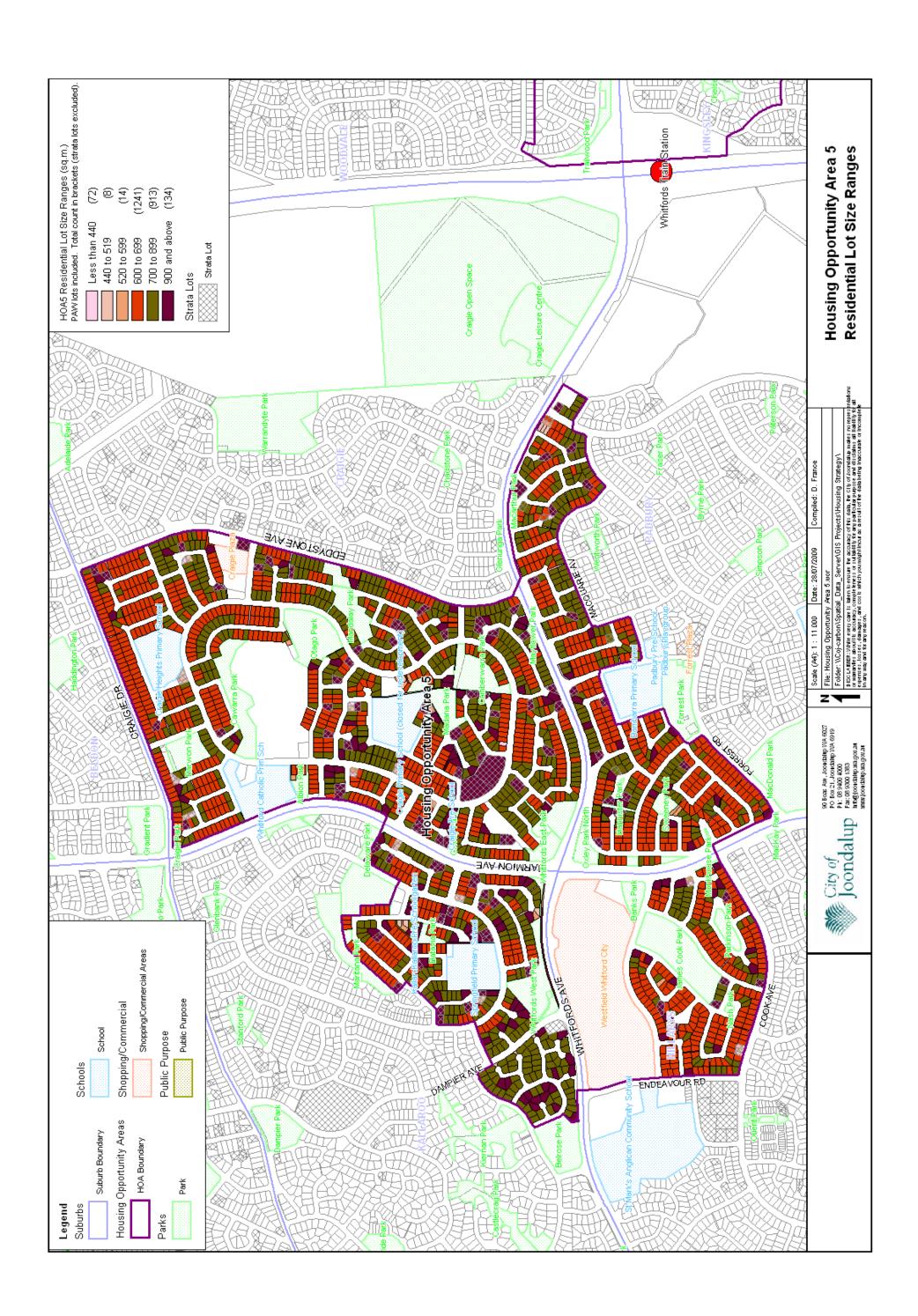
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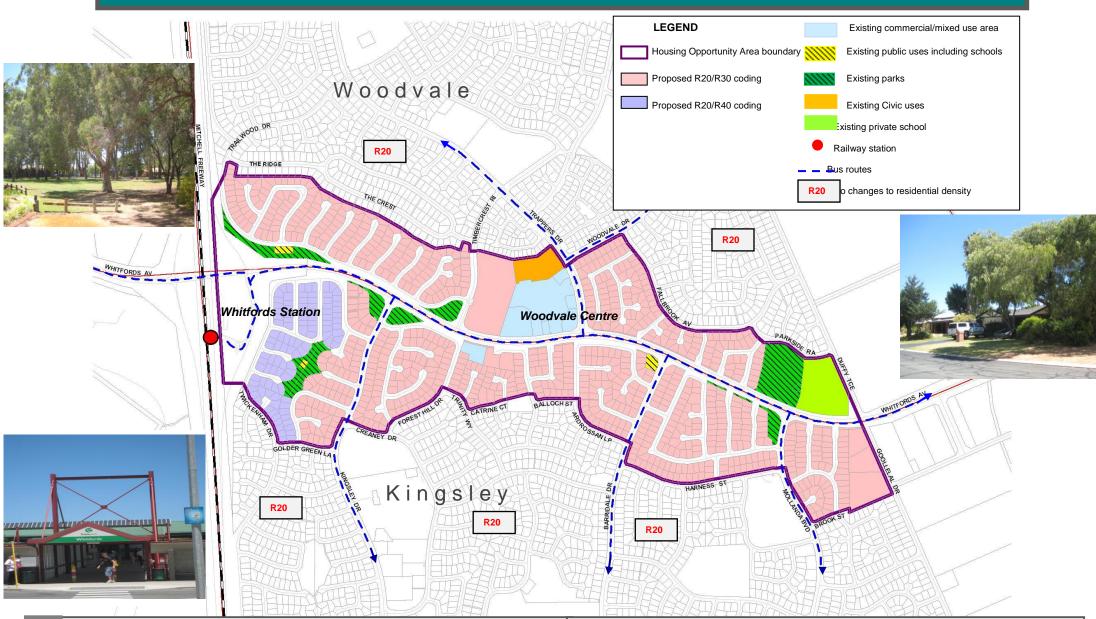
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Connecting people to places

- Whitfords station a transport hub where train and bus services are well-integrated. A large car-park encourages commuters to 'Park and Ride'.
- High frequency bus services along Whitfords Avenue.
- Residents can easily walk to the station, schools, shops and parks using PAW and path networks.
- The major bicycle route to the Perth CBD runs parallel to the Freeway and connects to a cycle network on Whitfords Avenue.

Existing patterns of housing development

- Total number of residential lots = 968
- 32% of lots (311) are between 600m² and 700m², 56% (542) are between 700m² and 900m²
- A large retirement complex is well located next to the shopping centre.
- Small lot subdivisions have occurred to the north of the shopping centre.

Centres and services

 Woodvale Centre which incorporates Woodvale Boulevarde is one of three District Centres in the City and is a vital shopping and commercial hub for the area.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Creaney and St Luke's Primary schools are located in the area.

General

This area presents excellent opportunities for more compact living and greater housing choices focussed around Whitfords Station, local shopping and the important public transport services in the area.

Proposed changes to residential densities

- R20/40 is recommended for residential properties close to Whitfords Station.
- Elsewhere in the Housing Opportunity Area, R20/R30 is recommended for residential properties

Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

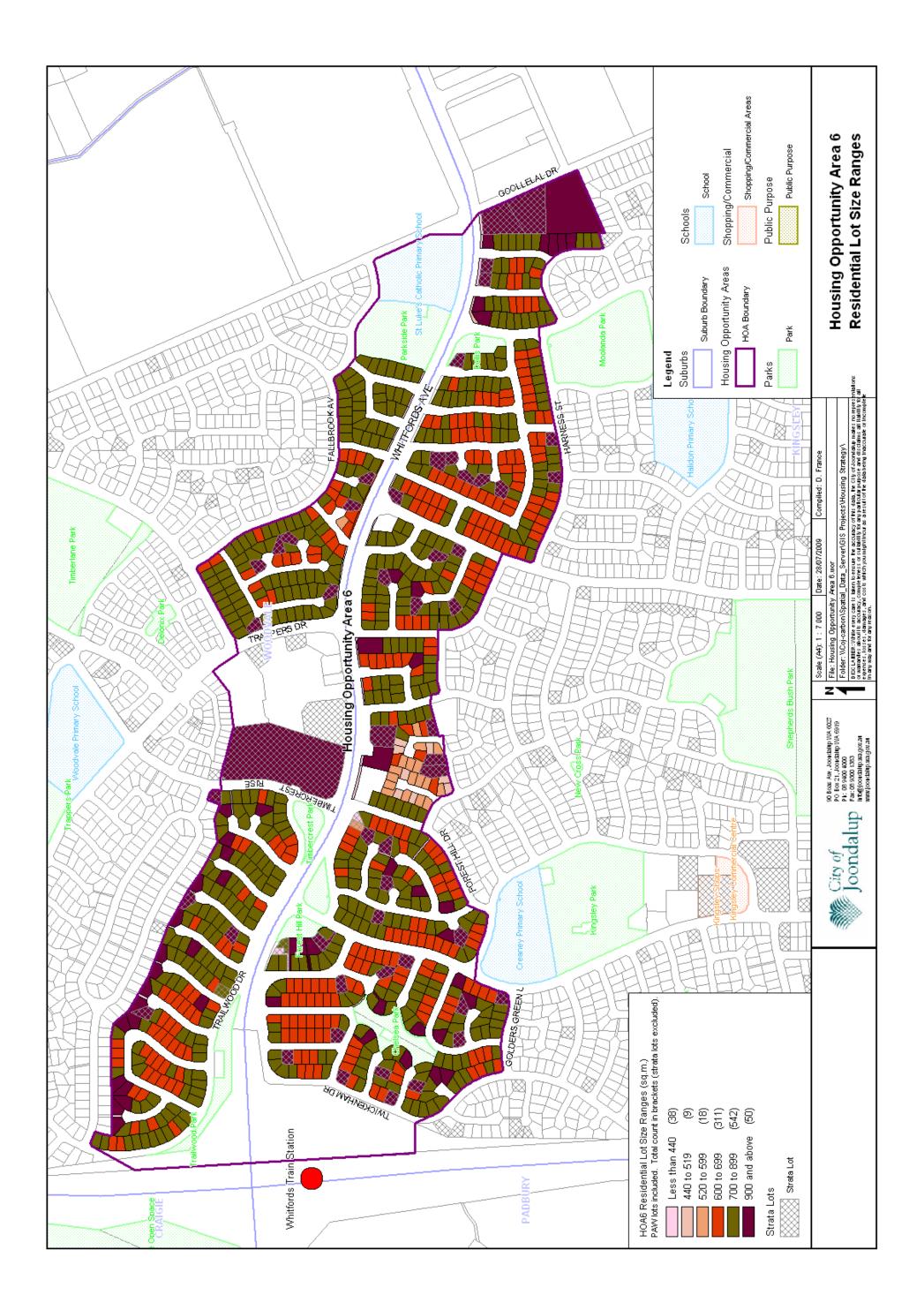
What stays the same

 Existing public infrastructure, for example, roads, verges, parks, right-of-ways, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings recommended are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
- o redevelopment will occur but at a rate of landowners' choosing and will not happen overnight
- o redevelopment at medium density will lead to greater housing choices
- o new housing development will have to meet design standards and contribute positively to the amenity of the area
- o commercial centres and mixed use zoned properties may be redeveloped to include new housing
- o more people will enjoy the local parks, services and facilities in the area as and when redevelopment occurs.





S

HOUSING OPPORTUNITY AREA 7 - Belridge Centre to Edgewater Station - proposed R Code changes



Connecting people to places

- Edgewater station- a transport hub where train and bus services are well-integrated.
 A large car-park encourages commuters to 'Park and Ride'.
- Local bus services connect residents to Joondalup City Centre
- Residents can easily walk to the station, schools, shops and parks using PAW and path networks.
- The major bicycle route to the Perth CBD runs parallel to the Freeway and a network of cycle/shared paths run through the area.

Existing patterns of housing development

- Total number of residential lots = 744
- 35% of lots (259) are between 600m² and 700m², 60% (443) are between 700m² and 900m²
- 22 lots have infill potential at current zonings.

Centres and services

 Belridge City is a busy local shopping and commercial centre providing a diverse mix of retail and commercial services.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Belridge High School and Eddystone Primary are well located

Genera

This area presents excellent opportunities for more compact living and greater housing choices focussed around Edgewater Station and Belridge shops.

Proposed changes to residential densities

- R20/R40 is recommended for residential properties close to Edgewater Station
- Elsewhere in the Housing Opportunity Area, R20/R30 is recommended for residential properties.

Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

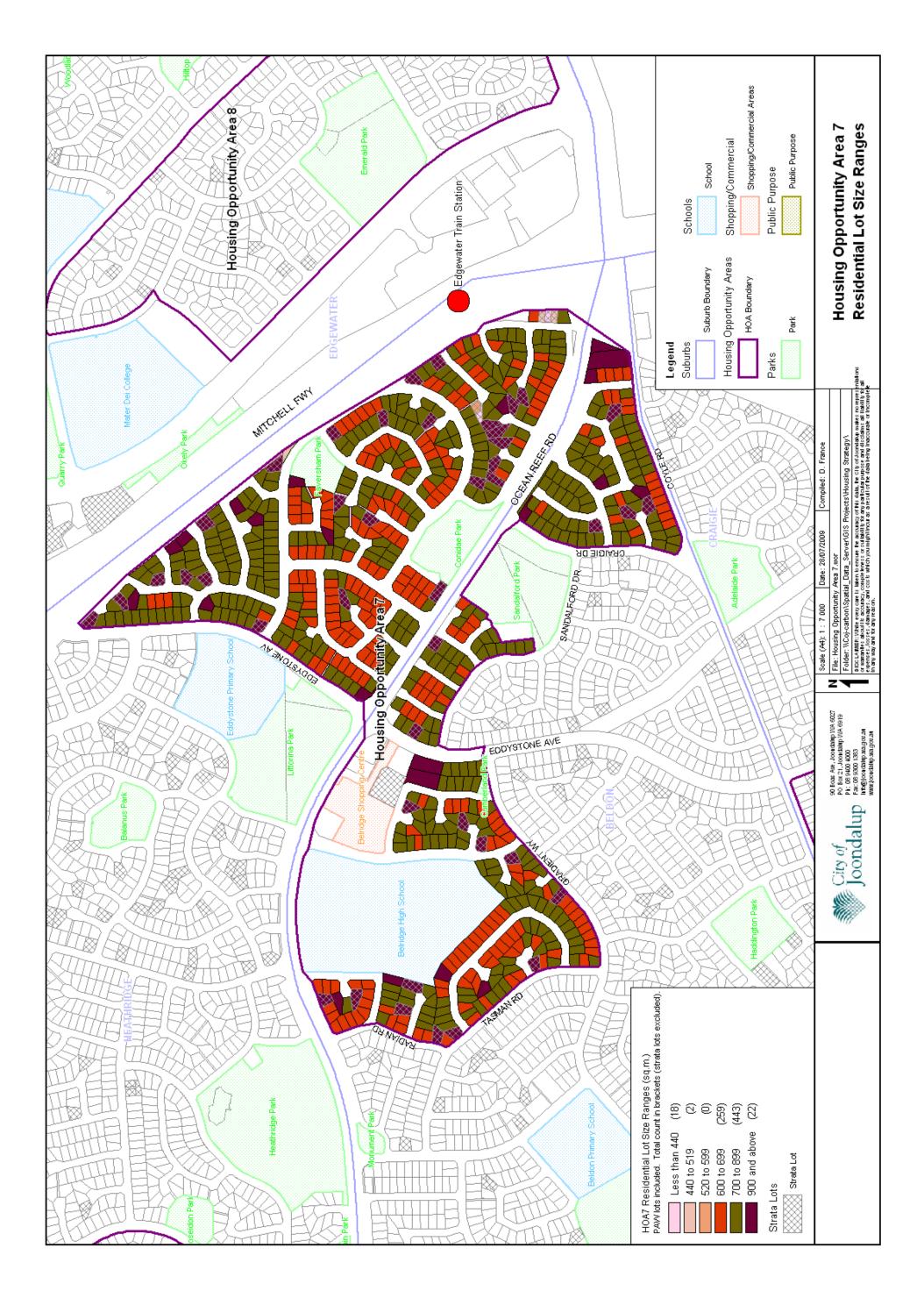
What stays the same

 Existing public infrastructure, for example, roads, verges, parks, public access ways and schools are not affected.

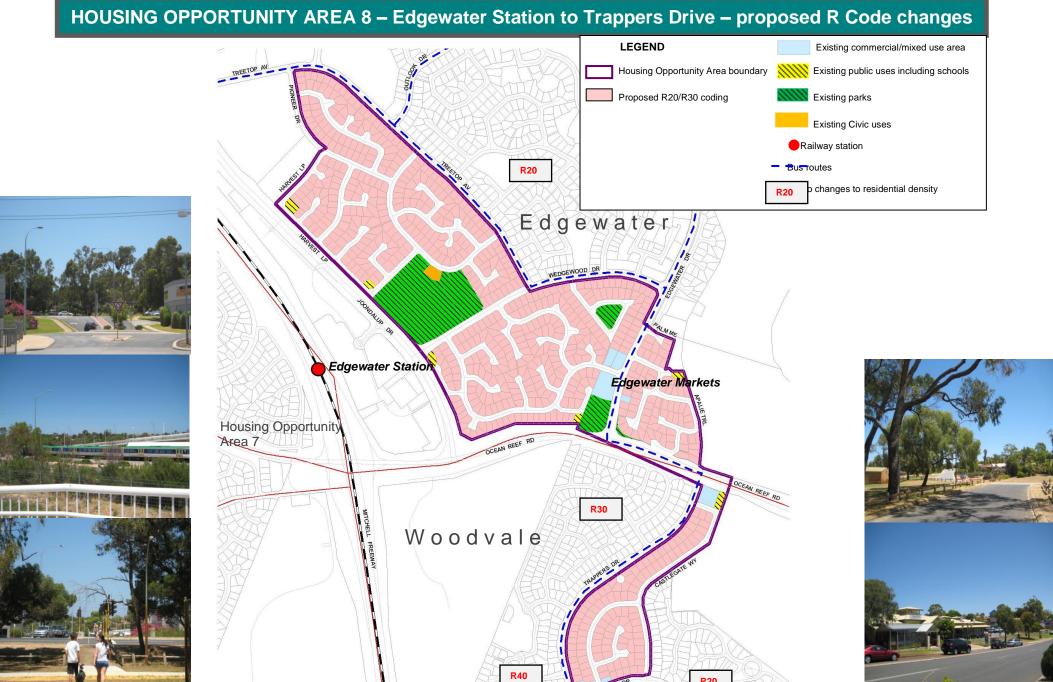
Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - o most residential properties will gain new development potential
 - o redevelopment will occur but at a gradual rate and will not happen overnight
 - o redevelopment at medium density will lead to greater housing choices
 - o new housing development will have to meet design standards and contribute positively to the amenity of the area
 - o commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area



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Connecting people to places

- Edgewater station- a transport hub where train and bus services are well-integrated. A large car-park encourages commuters to 'Park and Ride'.
- Local bus services connect residents to Joondalup City Centre
- Residents can easily walk to the station, schools, shops and parks using PAW and path networks.
- The major bicycle route to the Perth CBD runs parallel to the Freeway and a network of cycle/shared paths run through the area.

Existing patterns of housing development

- Total number of residential lots = 757
- 36% of lots (273) are between 600m² and 700m², 57% (432) are between 700m² and 900m²
- A large aged care facility exists in Edgewater adjacent to the area.
- West of Trappers Drive and adjacent to Woodvale Reserve lies an extensive area zoned R30 and R40.
- 32 lots have infill potential at current zonings.

Centres and services

Local shopping can be carried out at the local centre of Edgewater Markets and just to the south of the area at Woodvale Centre.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Mater Dei college and Edgewater Primary School are local schools serving the area.
- Yellagonga Regional Park and Woodvale Nature Reserve, located adjacent to the area, are outstanding environmental, research and recreational assets for the region and provide 'green' linkages and habitat for wildlife.

This area presents excellent opportunities for more compact living and greater housing choices focussed around Edgewater Station, local shopping and the important public transport service along Trapper's Drive.

Proposed changes to residential densities

R20/R30 is recommended for all the properties in the Housing Opportunity Area. Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

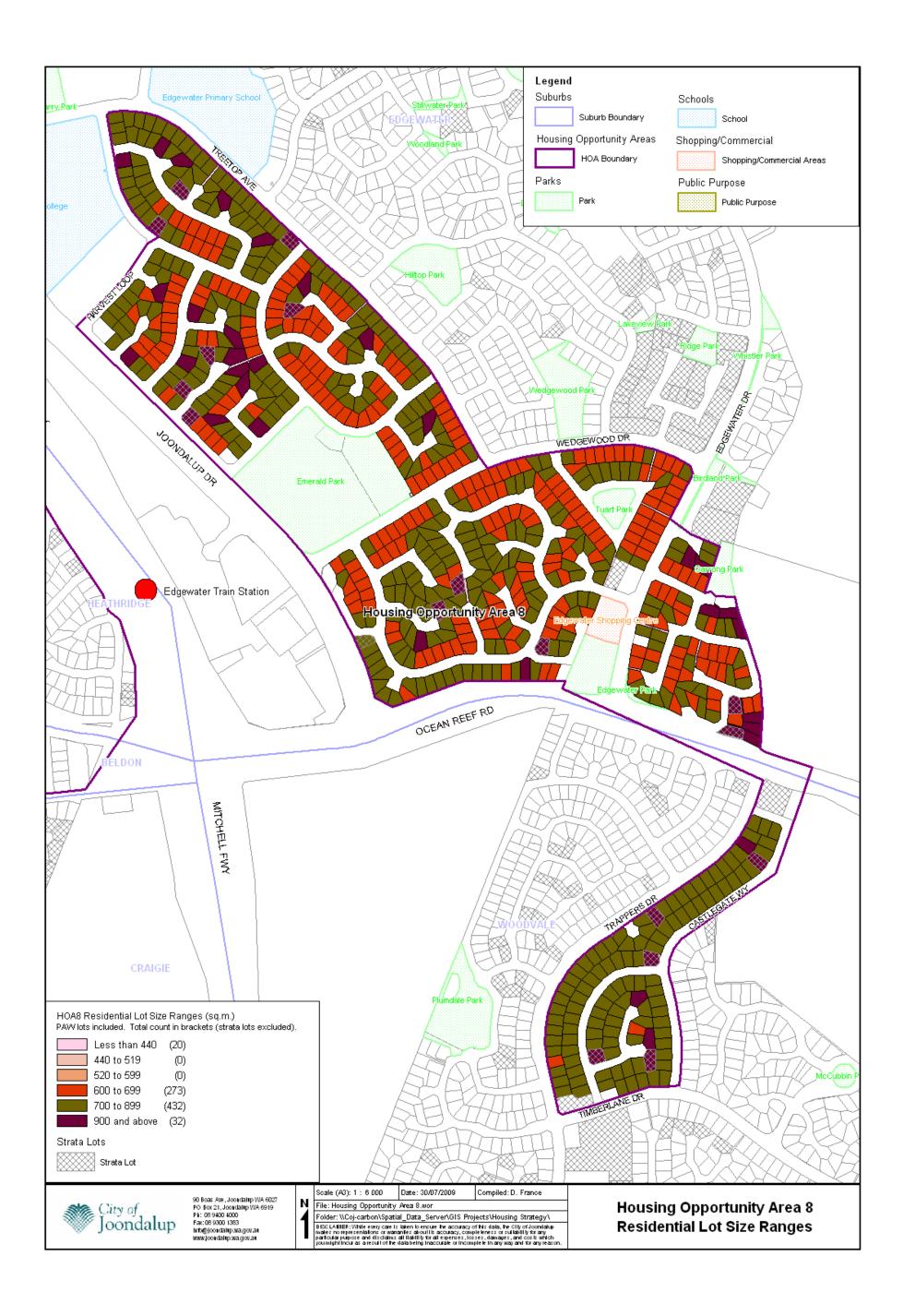
What stays the same

Existing public infrastructure, for example, roads, verges, parks, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
 - redevelopment will occur but at a gradual rate and will not happen overnight
 - redevelopment at medium density will lead to greater housing choices
 - new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area





Connecting people to places

- Marmion Avenue and Hodges Drive provide excellent access for both private and public transport to nearby Joondalup City Centre and beyond.
- Residents can easily walk to schools, shops and parks using PAW and path networks.

Existing patterns of housing development

- Total number of residential lots = 1,000
- 21% of lots (208) are between 600m² and 700m², 70% (704) are between 700m² and 900m²
- Some small lot subdivisions have occurred near Dardanus Park and Heathridge shops
- 37 lots have infill potential at current zonings.

Centres and services

Local shopping can be done at the local centre of Heathridge.

Local amenity

- High quality local parks offer good connectivity and recreational opportunities for residents.
- Heathridge Primary and Poseidon Primary are local schools serving the area.

General

• This area presents excellent opportunities for more compact living and greater housing choices focussed around the important public transport services on Marmion Avenue and Hodges Drive. There is an opportunity to regenerate this part of Heathridge.

Proposed changes to residential densities

R20/R30 is recommended for all residential properties in the Housing Opportunity Area.

Other changes

There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

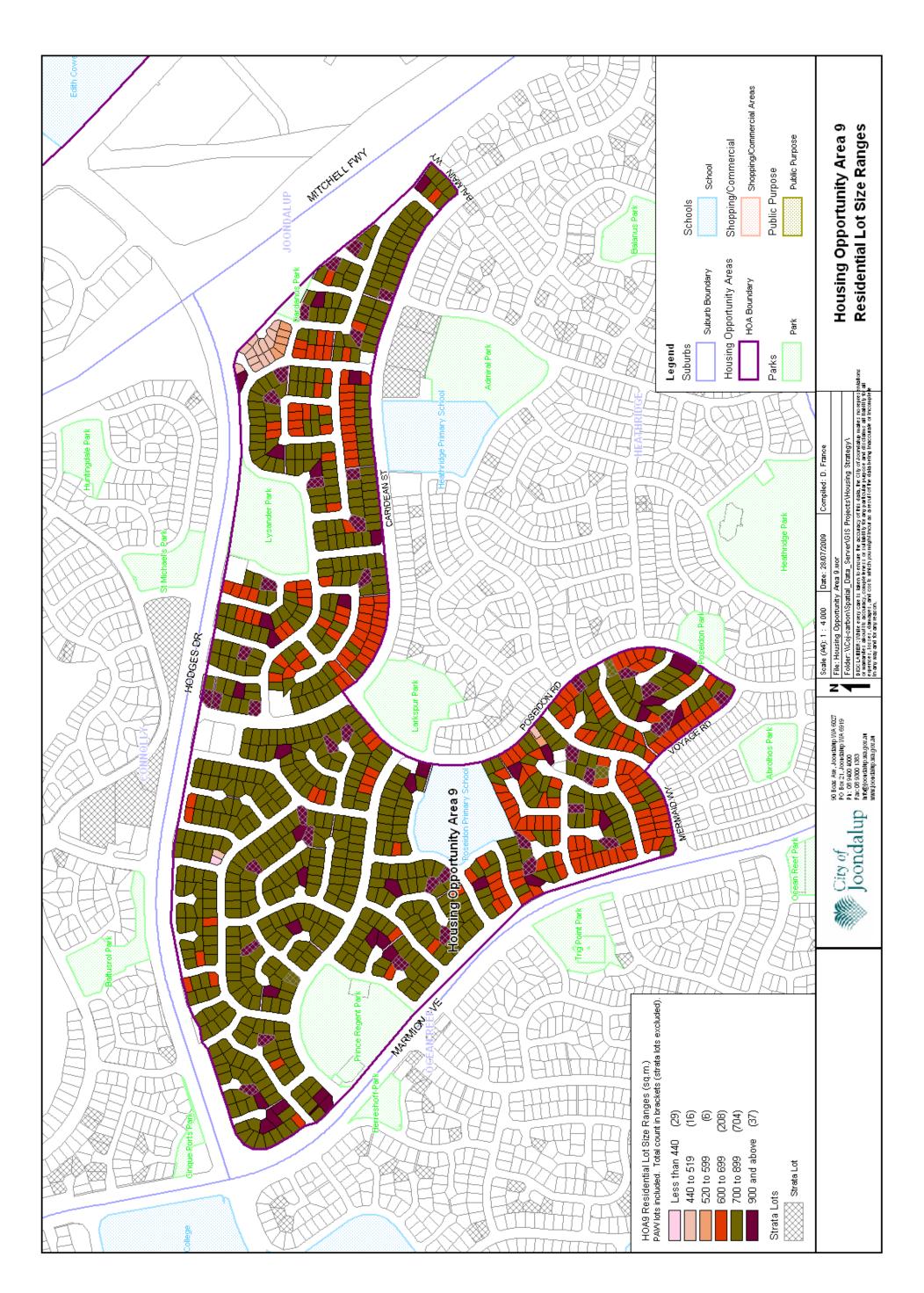
What stays the same

• Existing public infrastructure for example, roads, verges, parks, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
- o redevelopment will occur but at a gradual rate and will not happen overnight
- o redevelopment at medium density will lead to greater housing choices
- o new housing development will have to meet design standards and contribute positively to the amenity of the area
- o commercial centres and mixed use zoned properties may be redeveloped to include new housing
- o as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area

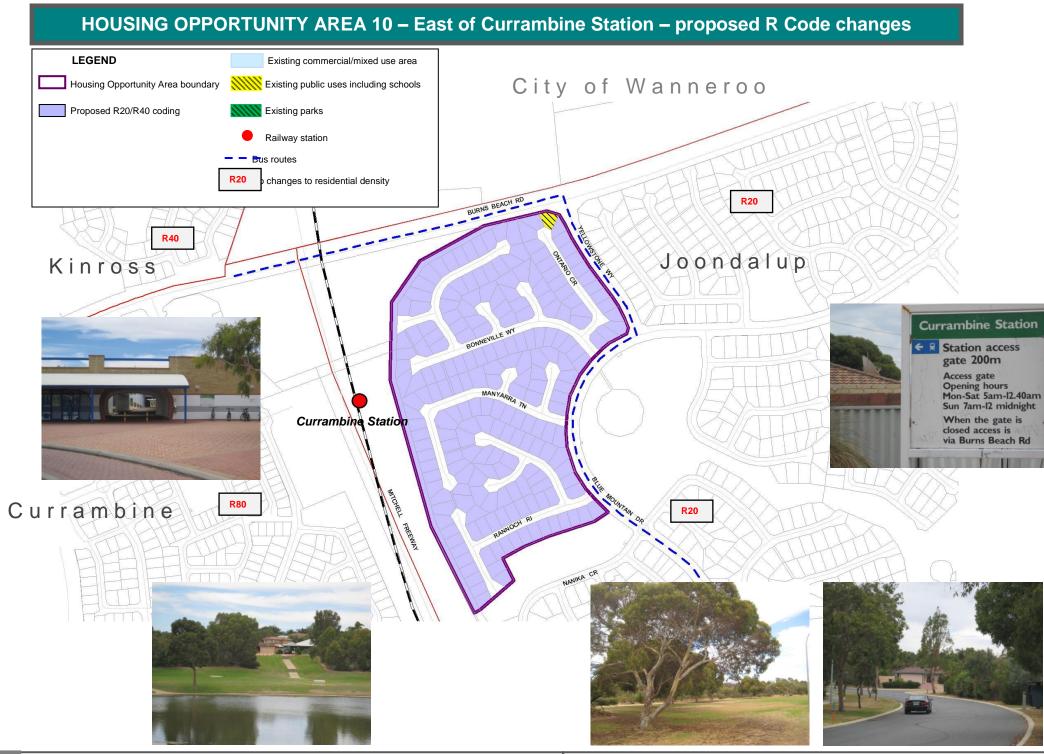




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Connecting people to places

- Currambine station a transport hub where a large car-park on its western side encourages commuters to 'Park and Ride'.
- Residents can easily walk to the station and parks using PAW and path networks.

Existing patterns of housing development

- Total number of residential lots = 216
- 38% of lots (83) are between 600m² and 700m², 51% (110) are between 700m² and 900m²
- The complementary areas surrounding the station to the west/north-west are zoned for medium and high density residential development
- 4 lots have infill potential at current zonings.

Local amenity

 High quality local parks offer good connectivity and recreational opportunities for residents.

Genera

• This area presents excellent opportunities for more compact living and greater housing choices focussed around Currambine Station. It will logically complement the existing medium and high density to the west of Currambine Station.

Proposed changes to residential densities

 R20/40 is recommended for all the residential properties in the Housing Opportunity Area.

Other changes

 There are a number of recommended policy changes listed in Section 10.3 which if adopted in the new District Planning Scheme, will also apply to this area.

What stays the same

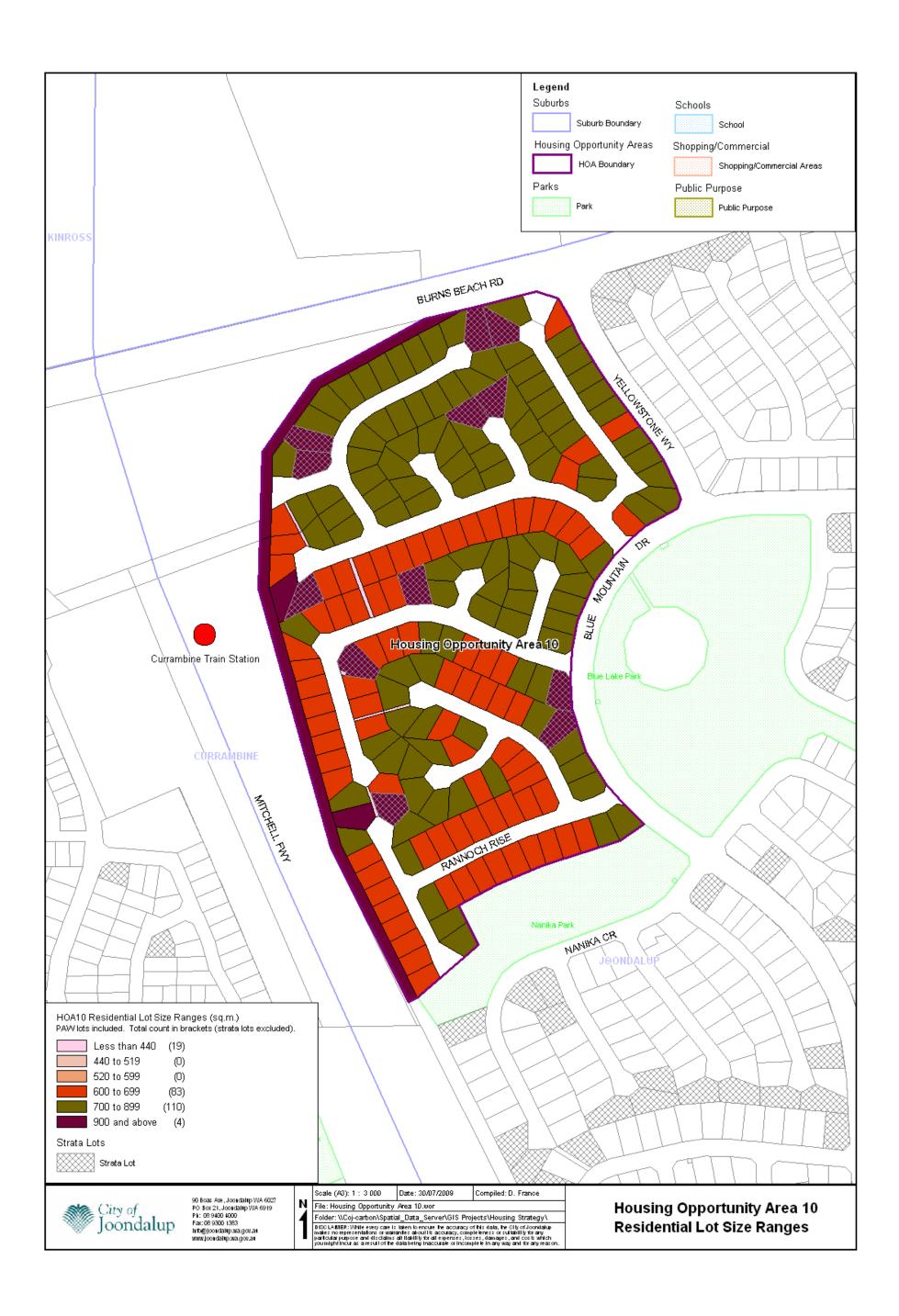
 Existing public infrastructure, for example, roads, verges, parks, public access ways and schools are not affected.

Urban design

- The focus will be on good design outcomes that will improve the area and respect the amenity of current and future residents.
- A new Dual Density Code Policy will be prepared and development at the higher densities will have to meet the requirements of the policy.
- Enhancing/maintaining streetscapes and environmentally responsible housing designs are features of the proposed new Dual Density Code Policy.
- The expected increase in housing diversity will build on existing neighbourhood character and sense of place.

What the proposed changes mean for the area

- If the new residential density codings suggested are adopted in the new District Planning Scheme,
 - most residential properties will gain new development potential
 - o redevelopment will occur but at a gradual rate and will not happen overnight
 - o redevelopment at medium density will lead to greater housing choices
 - o new housing development will have to meet design standards and contribute positively to the amenity of the area
 - commercial centres and mixed use zoned properties may be redeveloped to include new housing
 - o as redevelopment occurs, more people will enjoy the local parks, services and facilities in the area



10.6 Summary - Estimates of future additional housing in the Housing Opportunity Areas

Table 11 Estimates of future housing gains

		C	sed R20/25 oding	C	sed R20/30 oding	C	sed R20/40 oding	C	sed R20/60 oding	Proposed Mixed Use zoning	
Area	Total number of residential lots	Number of lots	Nett gain in dwellings if development potential fully realised	Number of lots	Nett gain in dwellings if development potential fully realised	of lots	Nett gain in dwellings if development potential fully realised	Number of lots	Nett gain in dwellings if development potential fully realised	Number of lots	Total potential nett gain in dwellings
HOA1	1,482	-	-	1,253	1,200	172	357	57	159	-	1,716
HOA2	401	-	-	341	343	45	90	-	-	15	448
HOA3	471	471	462	-	-	-	-	-	-	-	462
HOA4	1,391	-	-	1,160	935	231	467	-	-	-	1,402
HOA5	2,382	-	-	2,037	2,210	310	634	-	-	35	2,844
HOA6	968	-	-	869	759	99	203	-	-	-	962
HOA7	744			658	659	86	173	-	-	-	832
HOA8	757	-	-	757	769	-	-	-	-	-	769
HOA9	1,000	-	-	1,000	996	-	-	-	-	-	996
HOA10	216	-	-	-	-	216	388	-	-	-	388
TOTAL	9,812	471	462	8,075	7,871	1,159	2,312	57	159	54	10,804

Summary:

- 1. There are 9,812 residential lots in the Housing Opportunity Areas and the total potential **nett gain in dwellings** is at least 10,804 should all the lots be developed to their full potential. (See Table 11)
- 2. Outside the Housing Opportunity Areas, there would still be 2,671 lots coded R20 that could be developed further.
- 3. Therefore, should the recommendations of the draft *Local Housing Strategy* be adopted into the new District Planning Scheme, the total number of lots available for infill would be 12,483
- 4. Infill occurs gradually and development of 100% of the lots in the Housing Opportunity Areas is highly unlikely over the long term. The Department of Planning estimates that the take-up of infill across the Perth Metropolitan Area is around 35% over a 20 year span.
- 5. The following tables compare the infill 'land bank' and nett gain in new dwellings should the proposed residential density codings as recommended in the LHS be adopted in the new District Planning Scheme with a 'no change in densities' scenario.

Table 12 Comparison of the number of infill lots for future residential development

		Number of lots
	'No change in densities' scenario	As recommended in the LHS
Infill (suburban 'Mums and Dads' developments)	3,110	12,483

Table 13 Comparison of estimated nett gain in dwellings over a 20 year horizon

	Estimate	d nett gain in dwellings		
Source of new dwellings	'No change in densities'	As recommended in the LHS		
	scenario			
Burns Beach and Iluka	2,130	2,130		
City Centre	1,500	1,500		
Known development sites	300	300		
Infill (suburban 'Mums and Dads'	3,110@35% = 1,088	10,804 nett gain in dwellings in the HOAs		
developments)		@35% take-up = 3,781		
		·		
		2,671 R20 development outside the		
		HOAs @35% take-up = 935		
		4,716		
TOTAL	5,018	8,646		

¹ Source – Table 11

Should the recommendations of the draft *Local Housing Strategy* be implemented through the new District Planning Scheme, the City of Joondalup's infill 'land bank' for future residential development would significantly increase from 3,110 lots to 12,483 lots.

The number of estimated additional **dwellings** across the whole City of Joondalup would also increase from 5,018 to 8,646 which exceeds the expectations for infill development (50% increase) as outlined in the State Government's draft Strategic Framework for Perth and Peel - *Directions 2031*.

The recommended policy changes outlined in Section 10.3 will also play their part in providing additional housing.

11. IMPLEMENTATION, MONITORING AND REVIEW

The Local Housing Strategy will be used to inform the development of the new District Planning Scheme.

The Strategy recommendations will be implemented through the adoption of planning policies and changes to density codes and special provisions of the new District Planning Scheme.

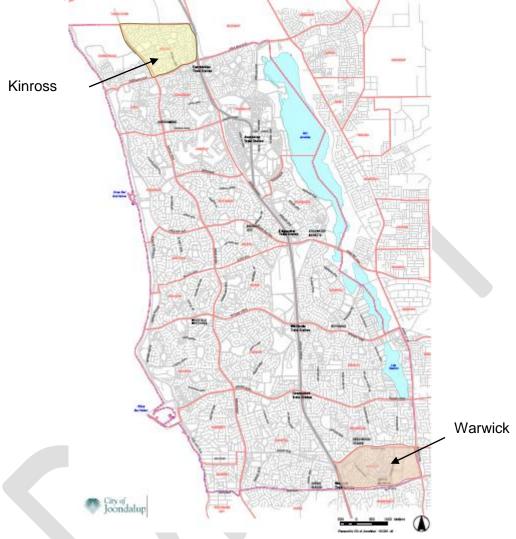
Once the new density codes come into force, it will be important to closely monitor the uptake of medium density development in the new housing opportunity areas as well as measuring the success of other policy levers such as density targets for large sites. The purpose of the monitoring is to determine whether the rate of infill development is meeting expectations in terms of reaching housing targets. The City and the Department of Planning may be able to work collaboratively in this regard through the reporting mechanisms of DP's new Urban Development Program.

The Local Housing Strategy should be reviewed at the same time as the next review of the District Planning Scheme.



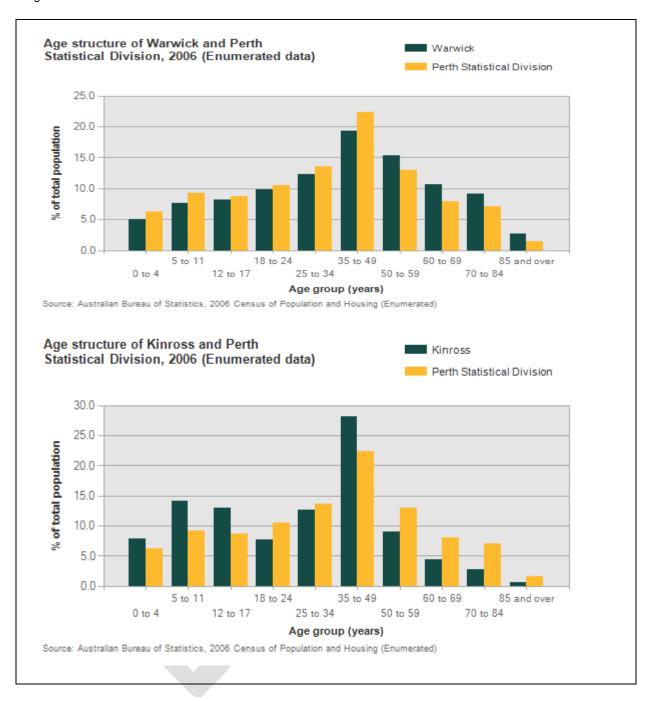
APPENDIX 1 - COMPARING WARWICK AND KINROSS

As would be expected for a Local Government area which has experienced growth since the 1970s, the City is not homogenous and it is important to consider individual suburbs.



The southern suburbs (like Warwick) were developed first and here, age profiles show a higher percentage of older people and declining percentages of younger people. Conversely, the northern suburbs (like Kinross) have been more recently developed and the age profiles here show higher percentages of young people than the metropolitan average with lower percentages of older people.

Figure 1



Having considered the age structure differences between Warwick and Kinross, it is informative to consider whether family types vary between them.

Figure 2

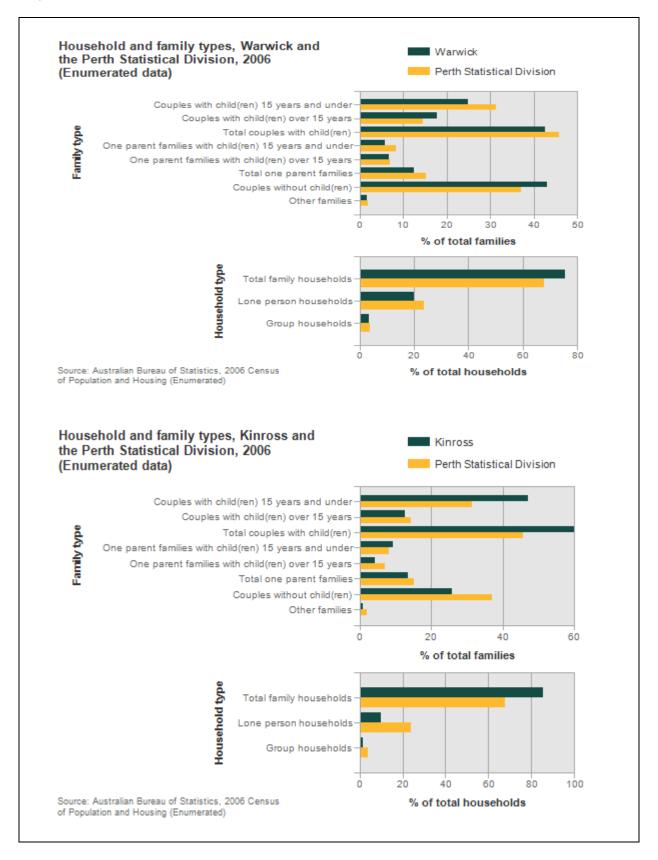


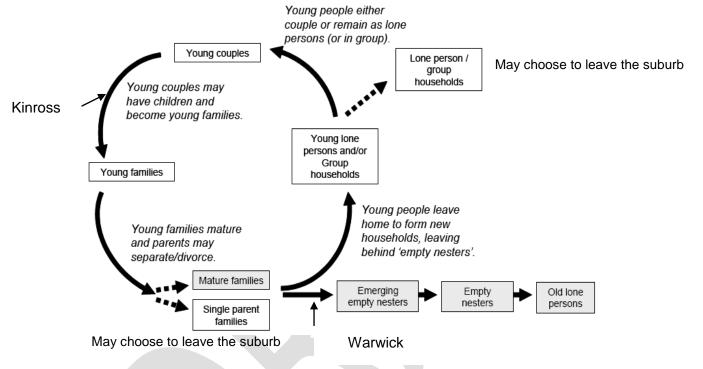
Figure 2 shows that the older suburb of Warwick has less couples with children than the City of Joondalup average while the northern suburb of Kinross has significantly higher

percentages in these categories. In terms of change between 2001 and 2006, the diagrams show Warwick is losing couples with children and gaining couples without children while Kinross is gaining in nearly all categories but particularly in couples with children and one parent families.

The differences in household types between the older suburb of Warwick and the newer suburb of Kinross clearly demonstrates different stages in the suburb lifecycle diagram.

Figure 3

Suburb Lifecycle Diagram



The diagram highlights the two growth patterns suburbs take. The circular route ensures that housing stock is recycled continually as the population ages. A mix of housing types allow empty nesters to move to smaller houses which allow young couples and young families to move into the larger family homes being vacated and thus continue the cycle. The 'emptynester' route for example in Warwick, results from an aged population occupying large family homes. This route risks a mismatch of housing stock and often results in a reduction of family-oriented services as these segments become less prevalent (i.e. schools, child care, etc). These suburbs will eventually re-inject younger families as the incumbent population dies or moves out. This raises issues of service retrofitting and sustainability as a result. Figures 4 and 5 highlight the differences in housing structure between the two suburbs - in Warwick, separate houses dominate although there was an increase of almost 80 medium density houses between 1996 and 2006. For Kinross, separate houses again dominate. Here there was significant growth in the number of separate houses during the 10 years to 2006 reflecting the subdivision and development of land within the suburb.

Figure 4

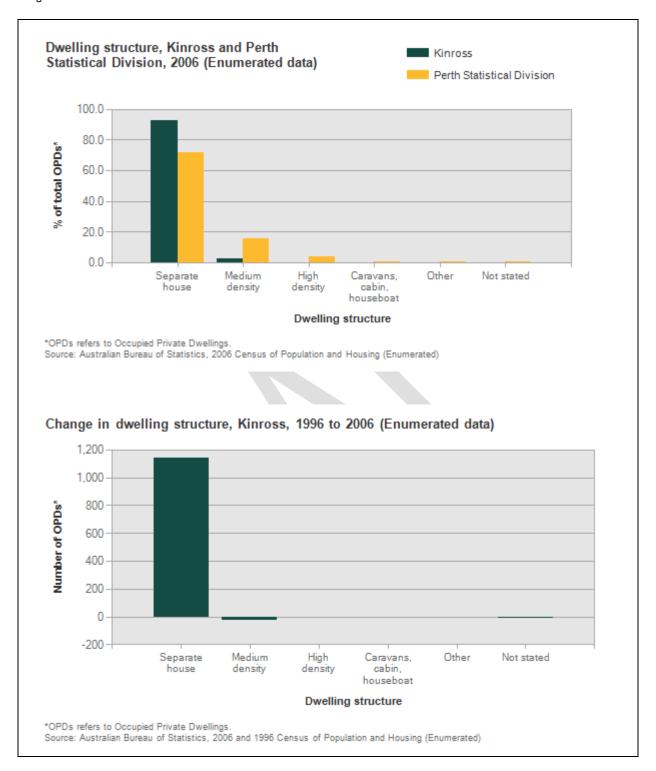
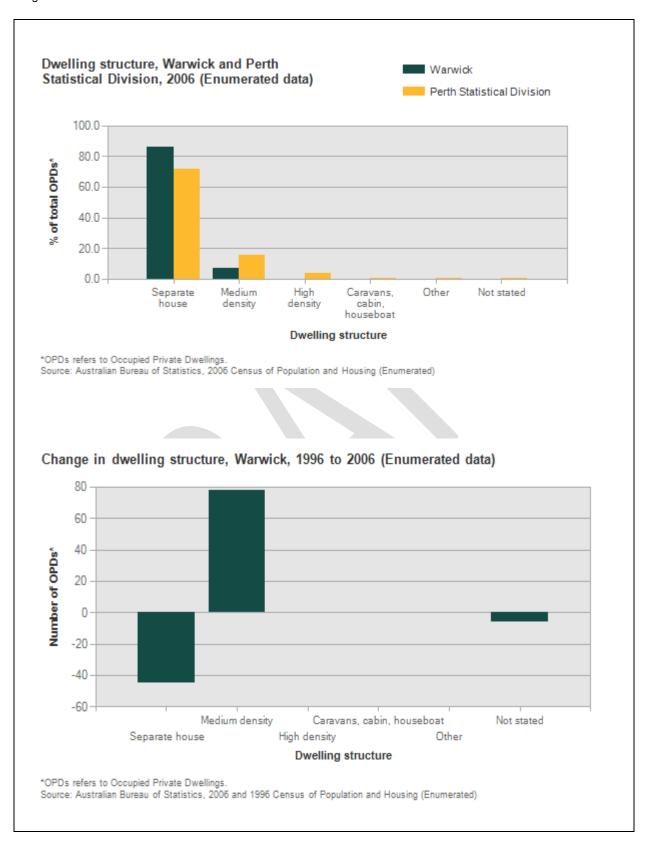


Figure 5



APPENDIX 2 – HOUSING INTENTIONS SURVEY



The purpose of this consultation is to find out what housing options Joondalup residents are likely to require in future. This information will help the City in formulating a housing strategy that takes into account the needs, aspirations and concerns of local residents and ratepayers.

This survey is divided into two parts.

Part 1 is about your present housing situation

Part 2 is about how you would like your housing situation to be in the future

	The type of dwelling I live in is:				
	(Please tick the response closest to your situation)				
	☐ Detached single storey house on a block				
	☐ Detached two storey house on a block				
	☐ A townhouse (attached to others on adjoining blocks)				
	☐ A townhouse (a group of dwellings on one block)				
	☐ A unit in an apartment block (please indicate which floor)				
	☐ A duplex/triplex on one block				
	☐ A villa (a group of villas NOT duplex or triplex on one block)				
	□ Separate dwelling in retirement village/complex				
	Other: Please specify:				
) 	My home is:				
	(Please tick)				
	☐ Rented ☐ Owner occupied				
) .	My dwelling has:				
	□ Number of bedrooms				

4.	My household consists of: (Please tiek the response elegant to your situation)					
	(Please tick the response closest to your situation) Single person (not retired)					
	Single parent with					
	☐ children below school age ☐ school aged children ☐ adult children					
	□ Couple no children					
	Couple with ☐ children below school age ☐ school aged children ☐ adult children					
	☐ Retiree couple					
	□ Single person retiree					
	Shared house (adults)					
ō.	My gender is:					
	□ Male □ Female					
3.	My age is:					
	(Please tick)					
	□ 18-23 □ 24-29 □ 30-35 □ 36-41 □ 42-47 □ 48-50					
	□ 54-59 □ 60-65 □ 66-71 □ 72-77 □ 78+					
7.	The suburb I live in is: (Please tick)					
	Beldon					
3.	What attracted you to this location?					
	(Please tick the response closest to your situation at the time)					
	☐ Close to shopping facilities					
	Schools in the area					
	Parks/open space/bushland					
	□ Close to beach □ Promixity to Joondalup City Centre					
	Close to work					
	□ Close to public transport					
	□ Community centres/libraries					
	□ Close to friends/family					
	☐ Investment potential					
	Development potential					
	Other, please specify:					

10.	Regarding lot sizes in your local area, do you think there should be: (Please tick)
	 □ More small sized lots □ More lots of a larger size □ No change
11.	What type of housing would you like to see more of where you live now? (Please tick your preference(s)) Aged/dependent dwelling
	 □ Large family housing □ Apartment blocks □ Townhouses/duplexes/villas □ Single bedroom dwellings
	□ No change
P	art 2: Future housing requirements
	Will the home you are in now meet your needs for the next five years?
	□ NO continue below
~ !	□ NO continue below □ YES go to page 5 Long Term Housing Requirements →
	NO continue below YES go to page 5 Long Term Housing Requirements Term housing requirements
	□ NO continue below □ YES go to page 5 Long Term Housing Requirements →
	NO continue below YES go to page 5 Long Term Housing Requirements Nort term housing requirements You have said that your present home will NOT meet your needs for the next five years. What wo you like to do? (Please tick your preferred option)
	NO continue below YES go to page 5 Long Term Housing Requirements Nort term housing requirements You have said that your present home will NOT meet your needs for the next five years. What we you like to do? (Please tick your preferred option) Stay in my present location – just move home Relocate in another suburb outside the City of Joondalup Renovate (owner occupiers only)
	□ NO continue below □ YES go to page 5 Long Term Housing Requirements → Nort term housing requirements You have said that your present home will NOT meet your needs for the next five years. What we you like to do? (Please tick your preferred option) □ Stay in my present location – just move home □ Relocate in another suburb outside the City of Joondalup
	□ NO continue below □ YES go to page 5 Long Term Housing Requirements → Nort term housing requirements You have said that your present home will NOT meet your needs for the next five years. What we you like to do? (Please tick your preferred option) □ Stay in my present location – just move home □ Relocate in another suburb outside the City of Joondalup □ Renovate (owner occupiers only) □ Relocate within another City of Joondalup suburb (please tick your preferred option below) □ Beldon □ Duncraig □ Iluka □ Marmion □ Warwick
	□ NO continue below □ YES go to page 5 Long Term Housing Requirements □ NOT term housing requirements You have said that your present home will NOT meet your needs for the next five years. What wo you like to do? (Please tick your preferred option) □ Stay in my present location – just move home □ Relocate in another suburb outside the City of Joondalup □ Renovate (owner occupiers only) □ Relocate within another City of Joondalup suburb (please tick your preferred option below) □ Beldon □ Duncraig □ Iluka □ Marmion □ Warwick □ Burns Beach □ Edgewater □ Joondalup □ Mullaloo □ Woodvale
	□ NO continue below □ YES go to page 5 Long Term Housing Requirements → Nort term housing requirements You have said that your present home will NOT meet your needs for the next five years. What wo you like to do? (Please tick your preferred option) □ Stay in my present location – just move home □ Relocate in another suburb outside the City of Joondalup □ Renovate (owner occupiers only) □ Relocate within another City of Joondalup suburb (please tick your preferred option below) □ Beldon □ Duncraig □ Iluka □ Marmion □ Warwick

	(Please tick the response(s) most likely to influence your decision)
	☐ Close to shopping facilities
	□ Schools in the area
	☐ Parks/open space/bushland
	□ Close to beach
	☐ Promixity to Joondalup City Centre
	☐ Close to work
	☐ Close to public transport
	□ Community centres/libraries
	☐ Close to friends/family
	□ Investment potential
	□ Development potential
	☐ Other, please specify:
	HER REPORTED BY THE PROPERTY OF THE PROPERTY O
5	Would you like to:
	그 있다면 하는 그는 그들은 이번 얼마를 가는 것을 하는 것으로 하는 것으로 가지 않게 끊겨지는 점을 쓰신다면 했다.
	(Please tick the box for your preferred option)
	□ Rent □ Build □ Buy an established property
6.	What sort of accommodation would you like to live in?
	(Please tick your preferred option)
	☐ Detached single storey house on a block
	☐ Detached two storey house on a block
	☐ A townhouse (attached to others on adjoining blocks)
	☐ A townhouse (a group of dwellings on one block)
	A unit in an apartment block (please indicate preferred floor)
	☐ A duplex/triplex on one block
	A villa (a group of villas NOT duplex or triplex on one block)
	Separate dwelling in retirement village/complex
7.	Renovation Choice (property owners only)
	What renovations would you want to carry out in your present home for it to better meet your needs?
	(Please tick your preferred option)
	□ Major renovations □ Minor renovations
	This would involve:

♦ Long term housing requirements: Moving in 5 – 10 years 18. If you think your home won't meet your requirements in the longer term, say five years from now, can you tell us why? (Please tick the response(s) most likely to apply to your situation) ☐ Too big for me to manage – house/garden ☐ Not enough room for growing family ☐ Children will have left home Other, please specify: 19. (a) Where would you like to go? (Please tick your preferred option) Duncraig Marmion Warwick Beldon Iluka Burns Beach Edgewater Joondalup Mullaloo ■ Woodvale ☐ Greenwood Connolly ☐ Kallaroo Ocean Reef Padbury Craigie Heathridge □ Kingsley Currambine ☐ Hillarys Kinross Sorrento Other (please specify) (b) What would attract you to that location? (Please tick the response(s) most likely to influence your decision) ☐ Close to shopping facilities Schools in the area ☐ Parks/open space/bushland Close to beach Promixity to Joondalup City Centre Close to work Close to public transport □ Community centres/libraries ☐ Close to friends/family ☐ Investment potential Development potential Other, please specify: 20. Would you like to: (Please tick your preferred option)

☐ Buy an established property

☐ Rent

☐ Build

21.	What sort of accommodation would you like to live in?	
	(Please tick your preferred option)	
	□ Detached single storey house on a block	
	☐ Detached two storey house on a block	
	☐ A townhouse (attached to others on adjoining blocks)	
	A townhouse (a group of dwellings on one block)	
	A unit in an apartment block (please indicate preferred floor)	
	□ A duplex/triplex on one block□ A villa (a group of villas NOT duplex or triplex on one block)	
	Separate dwelling in retirement village/complex	
	Thank you for completing this survey.	
	Closing date: 15 May 2009	

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DRAFT DUAL DENSITY CODE POLICY

DRAFT DUAL DENSITY CODE POLICY

STATUS: Council Policy - A strategic policy that sets governing principles

and guides the direction of the organisation to align with community values and aspirations. The policy has a strategic focus and aligns with the Mission, Vision and Strategic Directions.

RESPONSIBLE

DIRECTORATE: Planning and Development

OBJECTIVE: Encourage residential development which protects amenity

and ensures that growth in the City occurs in a sustainable

way.

1. BACKGROUND

The Draft Local Housing Strategy identifies ten 'Housing Opportunity Areas', each with a proposed dual density code. A Dual density code is the provision of two density codes over a lot, for example R20/R30. Unless a development can meet the criteria set out in this draft Policy, development at the higher density code will not be permitted. This draft Policy provides all the detail necessary for compliance, and ultimately, successful and innovative development.

The draft Policy has been set out in two parts. Part 1 establishes criteria for the purpose of subdivision. Part 2 establishes criteria for the purpose of development.

In respect to applications for subdivision at the higher density code, the subdivision will be required to comply with all criteria set out in Part 1 of this Policy. Should a subdivision proposal not satisfy all criteria set out in Part 1 of this policy, the City will not support the subdivision application.

In respect to an application for development at the higher density code, the development will be required to comply with all criteria set out in both Parts 1 and 2 of this Policy. Should a development application not satisfy all of the essential criteria set out in Parts 1 & 2 of this policy, the City will not approve the development application.

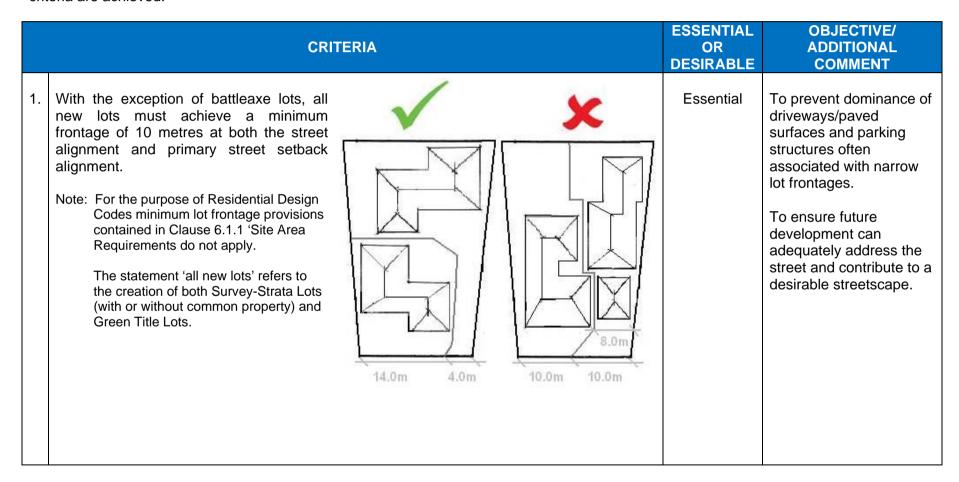
With regard to the criteria set out in Parts 1 & 2 that follow, the intent is to achieve a number of desirable outcomes including:

- Environmentally sustainable/energy efficient building design;
- Water sensitive design;
- Maintaining compatibility with surrounding lower density development; and
- General principles of good urban design.

2. STATEMENT

Part 1: Subdivision and Development of Land

Council will only support an application for subdivision of land at the higher applicable density code where all of the following essential criteria are achieved.



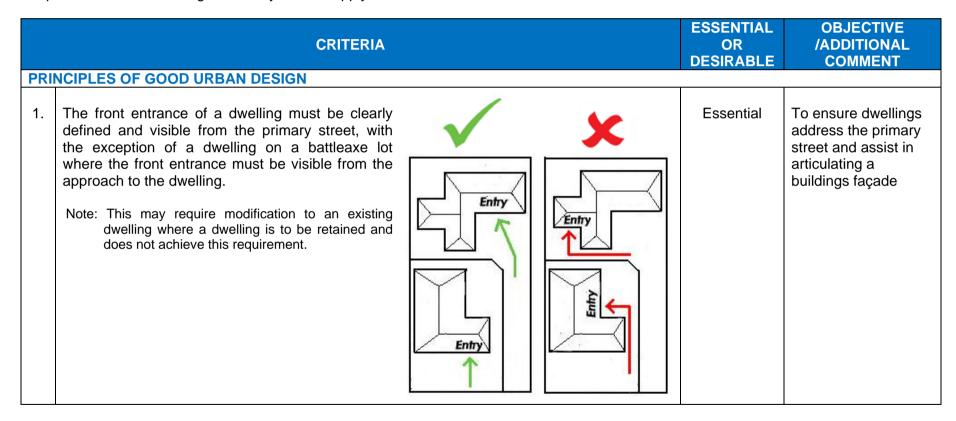
	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE/ ADDITIONAL COMMENT
2.	Any new lot must take vehicular access from a laneway where available. Note: A pedestrian access (1.2m width) will be required to gain access to the main street for the purpose of rubbish collection, unless the property is a corner block.	Essential	To ensure that in locations where rear access is available, additional lots take access from the laneway in order to preserve existing streetscapes.
3.	A battleaxe access leg must have a minimum width of 4.0m which accommodates a 3.0m wide formed driveway and 0.5m wide landscape strip on either side. Minimum 0.5m wide landscaping strip Minimum 3.0m wide formed driveway Minimum 4.0m wide Battleaxe access leg	Essential	To ensure adequate vehicle access and building spacing.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE/ ADDITIONAL COMMENT
4.	For the purpose of Clause 6.2.9 'Appearance of retained dwelling' of the Residential Design Codes any existing dwelling retained as part of a Grouped Dwelling or Single House development is to be upgraded externally to a maintenance standard to the satisfaction of the City in accordance with Appendix 1 of this Policy. Note: The City will determine the extent of required upgrading in accordance with the schedule of works contained in Appendix 1 of this Policy.	Essential	To ensure retained dwellings are of a compatible maintenance standard to new development.
5.	The verge treatment to be upgraded to the satisfaction of the City in accordance with the preferred design layouts set out in Appendix 2 of this Policy. Note: This may require existing verge treatments to be modified to comply with this requirement.	Essential	To strengthen the landscape theme of housing opportunity areas.
6.	The development site must incorporate the retention of appropriate trees on private property where the City considers the tree(s) to have all the attributes set out in Appendix 3 (Part 1) of this Policy. Where the City does not consider any existing tree to meet to the attributes set out in Appendix 3 (Part 1), the planting of one tree displaying the qualities set out in Appendix 3 (Part 2) of this Policy will be required within the property boundary. Note: The attributes of an appropriate tree can be found in Appendix 3 of this Policy.	Essential	To accommodate and protect trees which contribute significantly to biodiversity and the landscaped streetscapes due to their prominence when viewed from both neighbouring streets and dwellings.

Part 2: Development of Land

In addition to the criteria set out in Part 1, an application will only be considered for residential development at the higher applicable density code where all the essential criteria set out below are achieved.

The criteria below applies to both retained dwellings and new development, unless otherwise stated. Therefore, where an applicant proposes to retain a dwelling as part of a higher density code redevelopment, modification and upgrading to the retained dwelling may be required in order for the higher density code to apply.



	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
2.	With the exception of a retained dwelling, all buildings including garages and carports must be setback a minimum of 4.0 metres from the primary street. Averaging of the 4.0m setback distance is not permitted. Note: For the purpose of Residential Design Codes; (i) Clause 6.2.1 'Buildings setback generally', A1.1 & P1 does not apply.	Essential	To maintain compatible setback distances between higher and lower density codes and protect the open streetscapes of these localities.
3.	Carport and garage additions must be compatible with the associated dwelling. Note: For the purpose of compatibility the carport must match the main dwelling with respect to roof design, pitch and colour.	Essential	To ensure visible from additions the street are compatible with the main dwelling.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
4.	A garage door and its supporting structures must not occupy more than 50% of the primary street frontage at the setback line. This may be varied to 60% where a balcony or upper floor with major openings extends 2/3 of the width of the garage. Note: For the purpose of Residential Design Codes Clause 6.2.8 'Garage doors', the performance criterion does not apply. Garage door and its supporting structures occupy 60% of the primary street frontage	Essential	To ensure development does not unduly impact streetscape and diminish opportunities for passive surveillance.
	Balcony extends 2/3 of the width of the garage Garage door and its supporting structures occupies more than 50% of the street frontage		
Dra	ft for advertising purposes		

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
5.	For areas of open space, the sum of all hard surface treatments (regardless of permeability) must not exceed 40% of a front setback area. Note: 'Hard surface' means the use of solid ground covers such as pavers, poured concrete and other like materials the City deems similar, and includes driveways. Landscaped areas such as rockery, lawn, mulch and garden beds are deemed 'soft surface' treatments. Bitumen is not a permissible hard surface treatment in housing opportunity areas.	Essential	To reduce storm water wastage and provide opportunities for landscaped streetscapes.
6.	With the exception of retained dwellings, retaining and fill within the front setback area is to be no more than 1.0 metre above natural ground level. Note: For the purpose of the Residential Design Codes, Clause 6.6.1 'Excavation or Fill, P1 is varied. The related performance criteria still applies.	Essential	To reduce the bulky appearance of high retaining walls as seen from the street.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
7.	With the exception of retained dwellings, where a two storey dwelling is proposed, the upper floors must be differentiated through the provision of balconies, midlevel roofing and/or offsetting upper and lower floors to reduce the impact of building bulk on adjoining properties.	Essential	To assist in breaking up building bulk often associated with two storey dwellings.
8.	A minimum of one habitable room window must have an unobstructed view of the primary street and where applicable a secondary street.	Essential	To cater for passive surveillance and articulate a buildings façade.
	Note: For the purpose of Residential Design Codes Clause 6.2.4 'Surveillance of the street', the performance criterion does not apply.		

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
i. having habitable rooms with major openings facing both the primary and secondary street; and ii. reducing the length of any solid fencing (1.8 metre maximum height) to no more than 1/2 of the length of the secondary street boundary and the remaining length being unfenced or visually permeable above 1.2 metres height; or having fencing that is, as a minimum, visually permeable above 1.2 metres in height along the entire secondary street boundary. Note: Visually permeable has the same meaning as given by the Residential Design Codes.	Large windows to habitable rooms Secondary Street Bathroom window (not habitable room) is the only window to secondary street Solid fencing along entire length of secondary street Solid secondary street Primary Street Primary Street Primary Street Primary Street an existing dwelling where a dwelling is to be retained and ent.	Essential	To maximise opportunities for passive surveillance and to encourage a attractive dwelling presentation to the street.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
10.	Dwellings must be designed such that the shadow cast at midday 21 June onto any adjoining property does not exceed 25%. Note: For the purpose of Residential Design Codes Clause 6.9.1 'Solar access for adjoining sites' A1 is varied. The related performance criteria still applies.	Essential	To ensure new development does not unfairly impact the solar access of existing development.
ENE	ERGY EFFICIENT AND WATER SENSITIVE DESIGN		
11.	With the exception of retained dwellings, 'wet' or plumbed rooms in a house (kitchen, bathroom, laundry, ensuite) must be grouped and/or within close proximity to hot water systems to reduce the need for long water pipe runs. Note: This will also result in lower plumbing costs for home owners. External hot water system External hot water system Bed Bed Bed	Essential	To improve efficiency of hot water systems.
12.	With the exception of retained dwellings, a building must have roof and wall insulation at a rate 0.5 higher than that required by the Building Code of Australia.	Essential	To maximise energy efficiency.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
13.	With the exception of retained dwellings, the roof of a building must not have a solar absorbency rating in excess of 0.7 as classified by the Building Codes of Australia. Note: As a guide black, dark brown or dark grey coloured roofing materials generally have a solar absorbance rate in excess of 0.7. The City may consider alternative means of achieving this criteria where the applicant can clearly demonstrate that the roof design achieves the equivalent energy saving in an alternative way.	Essential	To minimise the need for mechanical cooling and encourage environmentally sustainable design.
14.	With the exception of retained dwellings, areas of open space must be designed such that impermeable hard surface treatments channel stormwater run off into landscaped areas. (Eg. poured concrete driveways) Alternatively the use of permeable or porus hard surface treatments may be used where water infiltration can be achieved. (Eg. block paved or porous concrete driveways); and Landscaped areas maximise stormwater infiltration Consider decking as an alternative to hard paving Channel storm water run off from poured concrete driveways into garden beds	Essential	To reduce storm water wastage and provide opportunities for landscaped streetscapes.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
15.	With the exception of retained dwellings, a minimum of one indoor and one outdoor living area with a minimum dimension of 4 metres must be orientated to the northern side of the lot to maximise northern light. Note: An outdoor living area may be located in the front setback area. An indoor living area may include a kitchen or living room but not bedrooms, bathrooms or laundries. Stephnog garage utility bedrooms internal living living living waternal living external living livin	Essential	To maximise energy efficiency/solar orientation.
16.	All retained dwellings must be retrofitted with a rainwater tank of at least 2000 litres to collect rainwater runoff from rooftops.	Essential	To maximise stormwater harvesting and reduce use of groundwater sources.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
17.	 All new dwellings require the approval and installation of either: i) A rainwater tank of at least 3000 litres that is plumbed to the toilet(s) (for flushing) and the cold water tap of the washing machine; or i) A grey-water reuse system that collects grey water from the laundry and bathroom and re-directs it to the garden irrigation/ground water recharge. 	Essential	To maximise opportunities for stormwater harvesting and greywater reuse to reduce use of groundwater sources.
18.	With the exception of retained dwellings, a dwelling must include eaves, pergolas or other external shading devices that permits winter sun and block summer sun. MIDDAY SUN ON NORTH FACING WINDOWS	Essential	To minimise the need for mechanical cooling and encourage environmentally sustainable design.

	CRITERIA	ESSENTIAL OR DESIRABLE	OBJECTIVE /ADDITIONAL COMMENT
19.	All new development must submit an 'Energy Performance Report'. The report must specify how the energy efficient design requirements of this Policy have been undertaken in addition to other energy efficient design measures used. Note: The report may include information regarding: - Solar orientation - Cross ventilation - Building design, materials, colours and thermal properties - Wall and roof insulation - Solar orientation of rooms - Rainwater harvesting For additional energy efficiency design tips please refer to Appendix 4.	Essential	To ensure applicants give consideration to energy efficiency during the design process.

APPENDIX 1: SCHEDULE OF WORKS

Schedule of Works: Necessary upgrades to retain dwellings (Single Houses and Grouped Dwellings):

- 1. the required upgrading could include any or all of the following:
 - (i) Repair rendering or/and external painting.
 - (ii) Repair of mortar joints.
 - (iii) Where the roof tiles are discoloured, replacement of all roof cladding with new tiles or metal sheeting, or the professional re-coating of the existing roof tiles subject to a 15 year guarantee against discolouration.
 - (iv) Repair or replacement of gutters and downpipes.
 - (ix) Other exterior repainting where necessary.
 - (x) Existing landscaping is to be upgraded.
 - (xi) Upgrading/replacement of driveways surfaces.
 - (xii) Upgrading/replacement of crossovers.
 - (xiii) The provision of a rainwater tank of at least of at least 2000 litres to collect rainwater runoff from rooftops

APPENDIX 2: STREETSCAPE IMPROVEMENT GUIDELINES

FURTHER DEVELOPMENT REQUIRED

APPENDIX 3: RETENTION OF AN APPROPRIATE TREE

PART 1: RETENTION OF AN APPROPRIATE TREE(S)

The term 'appropriate tree', for the purpose of retention, refers to a tree which, in the opinion of the City, having due regard to the following attributes:

- 1. Contribution to the streetscape and where applicable the landscape theme of the neighbouring area a tree located in prominent view from neighbouring streets or dwellings.
- 2. Contribution to habitat and biodiversity of the local area preferably a tree species that is both drought tolerant and endemic.
- 3. Attractiveness a tree which is visually pleasing and has not been insensitively pruned.
- 4. Size a tree at least 4 metres in height at the time the current application for planning approval is submitted.
- 5. Appropriateness of species and location a tree which will flourish to maturity without detriment to the tree or structural damage to any adjacent building, fence or paving, having regard to space available for roots and foliage canopy.
- 6. Health and life expectancy a tree in good health and which has more than 20 years to the end of its natural life expectancy.

PART 2: PLANTING OF AN APPROPRIATE TREE

The term 'appropriate tree', for the purpose of planting, refers to a tree which, in the opinion of the City, has the following attributes:

- Contribution to the streetscape and where applicable the landscape theme of the neighbouring area - a tree located in prominent view from neighbouring streets or dwellings.
- 2. Contribution to habitat and biodiversity of the local area preferably a tree species that is both drought tolerant and endemic.
- 3. Size a tree at least 2 metres in height at the time the current application for planning approval or subdivision clearance is submitted. Size at maturity should be 3 or more metres.
- 4. Appropriateness of species and location a tree which will flourish to maturity without detriment to the tree or structural damage to any adjacent building, fence or paving, having regard to space available for roots and foliage canopy. The applicant should liase with the City's Landscape Architect or Horticultural Officer when selecting an appropriate species.

APPENDIX 4: OTHER ENERGY EFFICIENCY TIPS

- 1. Try to keep ceiling heights to a maximum of 2.7 metres (9 feet). Even with older homes, it is often not architecturally necessary to maintain constant ceiling heights throughout the home. Higher ceilings result in increased heating costs and lower comfort levels.
- 2. In rooms with ceilings higher than 2.7 metres, ceiling sweep fans should be installed to circulate the warm air that collects near the ceiling.
- 3. In multi-storey renovations, avoid having the stairwell in living areas. Ideally, it should be located in a separate hallway or section which can be closed off from other rooms by doors. This will ensure heat and cooling efficiency can be maximised in these areas.
- 4. Heavyweight building materials such as concrete slab floors and internal masonry walls ('thermal mass') help stabilise internal temperatures, particularly in north-facing rooms
- 5. West-facing glass should be minimised to reduce overheating in summer. Consider having your garage on the west side of your home.
- 6. Make sure your renovation is designed to allow cross-ventilation. This is essential to allow cooling of the home in summer without requiring air-conditioning. Try to keep short, direct paths between windows. Use casement, sliding or double-hung windows. Awning windows are not as effective for ventilation
- 7. East and west facing windows should be well shaded from the morning and afternoon summer sun:
 - Awnings, external blinds and shutters that cover the entire face of the window are most suitable.
 - Landscaping and vegetation, particularly deciduous trees, shrubs and vines can provide excellent shade in summer, without obstructing the winter sun.
- 8. Consider the use of water wise landscaping with a balance of hard stand, mulched garden beds and lawn. The Water Corporation provides specific guidance for the Perth metropolitan areas at the following link:

http://www.watercorporation.com.au/w/waterwise plants perth search.cfm