

City of Wanneroo  
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POPULATION AND HOUSEHOLD FORECASTS

## Mindarie - Tamala Park

City of Wanneroo population and household forecasts are designed to inform community groups, Council, investors, business, students and the general public.

Forecasts have been produced for the years, 2006 to 2031.

The data in this report was last reviewed and updated on 1/04/2010.

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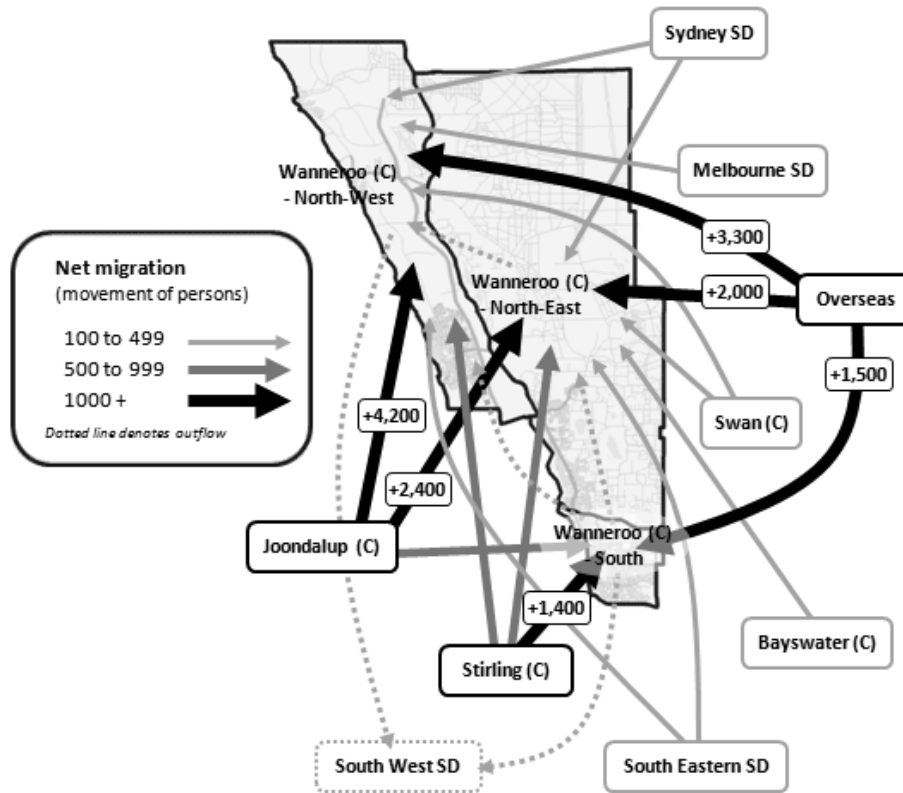
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**Date created: 18/10/2010**

# Summary & key results

## Key drivers of change

Historical migration flows, City of Wanneroo, 2001 to 2006



Note: The migration flows depicted above do not represent future or forecast migration flows. The arrows represent migration flows to the LGA/SLA as a whole and do not indicate an origin or destination for any specific localities within the LGA/SLA.

The City of Wanneroo is a relatively diverse municipality in terms of its land use and economic base. It features a mixture of residential, industrial and commercial activities in the south of the City, around the old township of Wanneroo and along the coastal strip north of Joondalup. The rural hinterland to the north and east boast significant amounts of intensive horticulture, some broadhectare agriculture, quarrying and natural heritage areas, as well as semi-rural and rural-residential living.

The development of high-value horticultural and other intensive rural industries, such as poultry farming, comprised much of the impetus for the moderate population growth experienced in the City during the first half of the twentieth century. In recent decades, however, there has been substantial population growth in the City, which is directly related to the expansion of the northern and north-western suburbs of Perth, incorporating many of the southern parts of the City into the contiguous urban area of Perth. This is a process set to continue and heighten into the future with the City of Wanneroo becoming the primary focus for residential development in the northern suburbs of Perth. This is in part related to the lack of new residential opportunities in the City of Joondalup, which has been the major development focus area in the north-west over the last twenty years.

The reason for population and household growth in the City of Wanneroo can be attributed to several sources. These include the large number of young adults leaving home with the region (notably in areas to the south, such as the Cities of Joondalup, Stirling and over time Wanneroo itself) seeking to establish new households and families. It also includes the substantial net overseas and to a lesser degree interstate migration gains to the region. The City is also likely to play a role as a lifestyle destination, with many opportunities for coastal and rural living in northern areas, especially in Two Rocks and Yanchep. This should provide for a more diverse range of housing markets in the City,








with first home buyers, families upgrading to second and third homes, as well as empty-nesters and retirees looking for a new lifestyle.


With the varied development phases, the overall size of the municipality and the different housing types, areas within the City of Wanneroo have developed different roles within the housing market. Areas such as Landsdale, Butler, Clarkson, Carramar and Banksia Grove have been developed for residential purposes in more recent years and are attractive to couples and families seeking new housing opportunities. The rural areas of the City are attractive to mature families looking to upgrade to their second and third home and in most cases seeking a rural environment and lifestyle. Two Rocks and Yanchep are areas that appeal to both families and empty-nesters/retirees. Some of the established areas of the City, such as Girrawheen and Koondoola provide more affordable housing options. Some areas have also changed their role in the housing market in recent years, with Quinns Rocks moving from a holidaying destination to an established family suburb. Changes in the housing market role of Mindarie are also expected with the construction of the marina complex, while the conversion of market gardens to housing is also affecting the characteristics of population in areas such as Darch, Madeley - Wangara - Woodvale and Hocking-Pearsall. This variety of function and role of the small areas in the City of Wanneroo means that population outcomes differ significantly across the municipality.










There are also significant differences in the supply of residential property within the City which will also have a major influence in structuring different population and household futures over the next five to twenty years. Large new 'greenfield' opportunities have been identified in many of the coastal areas such as Butler, Yanchep, Two Rocks, Eglinton - Alkimos, Clarkson, Jindalee and Ridgewood, as well as in areas east of Wanneroo Rd, such as Tapping, Ashby - Sinagra, Darch, Madeley - Wangara - Woodvale, Landsdale, Carramar, Banksia Grove, Hocking - Pearsall, Wanneroo and Gnangara - Jandabup - Mariginiup. There are likely to be other greenfield, infill and residential redevelopment opportunities throughout the City, albeit lower than the major growth areas identified above.

## Summary & key results

### Population summary

City of Wanneroo's areas		Forecast year						Change between 2006 and 2031	
Location	Area name	2006	2011	2016	2021	2026	2031	number	Avg. annual % change
	City of Wanneroo	115,892	156,329	199,148	237,851	272,216	305,380	189,488	4
	Alexander Heights	8,129	8,288	8,222	8,125	8,067	8,045	-84	0
	Ashby - Sinagra	2,479	4,373	5,887	7,399	8,200	8,804	6,325	5.2
	Banksia Grove	2,001	4,130	6,466	8,803	10,840	11,342	9,341	7.2
	Butler	5,261	9,768	12,903	12,839	12,417	12,140	6,879	3.4
	Carramar	5,029	6,681	8,647	8,882	8,589	8,393	3,364	2.1
	Clarkson	7,379	12,819	16,300	18,474	18,645	18,309	10,930	3.7

	<b>Darch</b>	3,428	6,224	7,447	7,676	7,552	7,420	3,992	3.1
	<b>Eglinton - Alkimos</b>	25	783	10,877	24,166	37,679	52,048	52,023	35.7
	<b>Girrawheen</b>	8,559	8,646	8,633	8,722	8,902	9,176	617	0.3
	<b>Gnangara - Jandabup - Mariginiup</b>	2,395	2,437	4,029	7,388	12,284	17,547	15,152	8.3
	<b>Hocking - Pearsall</b>	5,557	8,458	10,247	10,539	10,241	10,006	4,449	2.4
	<b>Jindalee</b>	103	1,274	3,607	5,909	7,997	8,566	8,463	19.3
	<b>Koondoola</b>	3,910	3,900	3,963	4,052	4,149	4,273	363	0.4
	<b>Landsdale</b>	5,827	8,001	12,017	14,935	15,607	15,161	9,334	3.9
	<b>Madeley - Wangara - Woodvale</b>	3,129	5,490	6,348	6,856	6,818	6,728	3,599	3.1

	<b>Marangaroo</b>	10,662	10,789	10,528	10,398	10,357	10,368	-294	-0.1
	<b>Merriwa</b>	5,487	5,820	5,849	5,845	5,816	5,766	279	0.2
	<b>Mindarie - Tamala Park</b>	6,655	7,647	8,649	9,586	9,782	9,588	2,933	1.5
	<b>Neerabup - Pinjar - Nowergup - Carabooda</b>	921	965	1,084	1,387	1,635	1,774	853	2.7
	<b>Quinns Rocks</b>	8,362	9,237	9,597	9,960	10,142	10,402	2,040	0.9
	<b>Ridgewood</b>	1,334	4,399	5,903	5,875	5,741	5,659	4,325	6
	<b>Tapping</b>	3,374	7,940	8,601	8,311	8,077	7,944	4,570	3.5
	<b>Two Rocks</b>	1,927	2,320	3,329	5,105	7,341	11,025	9,098	7.2
	<b>Wanneroo</b>	11,340	12,022	13,398	15,470	19,260	24,194	12,854	3.1



**Yanchep**

2,619	3,918	6,617	11,149	16,078	20,702	18,083	8.6
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This summary of population statistics for the period 2006 to 2021, as the short to medium term is most appropriate for planning purposes. Please note that these data are available for all years between 2006 and 2031.

In 2021, the population of the City of Wanneroo will be 237,851, an increase of 121,959 persons (105.24%) from 2006. This represents an average annual growth rate of 4.9%.

Eglinton - Alkimos is forecast to show the greatest percentage change in population to 2021, increasing by 100.0% from 2006, or an average annual growth rate of 35.7%.

In contrast, Marangaroo is forecast to decrease by 2.8% by 2021.

By 2031, the population of the City of Wanneroo is forecast to grow to 305,380, an increase of 189,488 persons from the 2006 population, and an increase of 67,529 persons from the 2021 population.



## Summary & key results

### Mindarie - Tamala Park



Mindarie - Tamala Park is bounded by Quinns Rd in the north, Marmion Ave, an alignment running east-west south of Neerabup Rd and the proposed Mitchell Fwy in the east, the boundary with the City of Joondalup in the south and the Indian Ocean in the west.

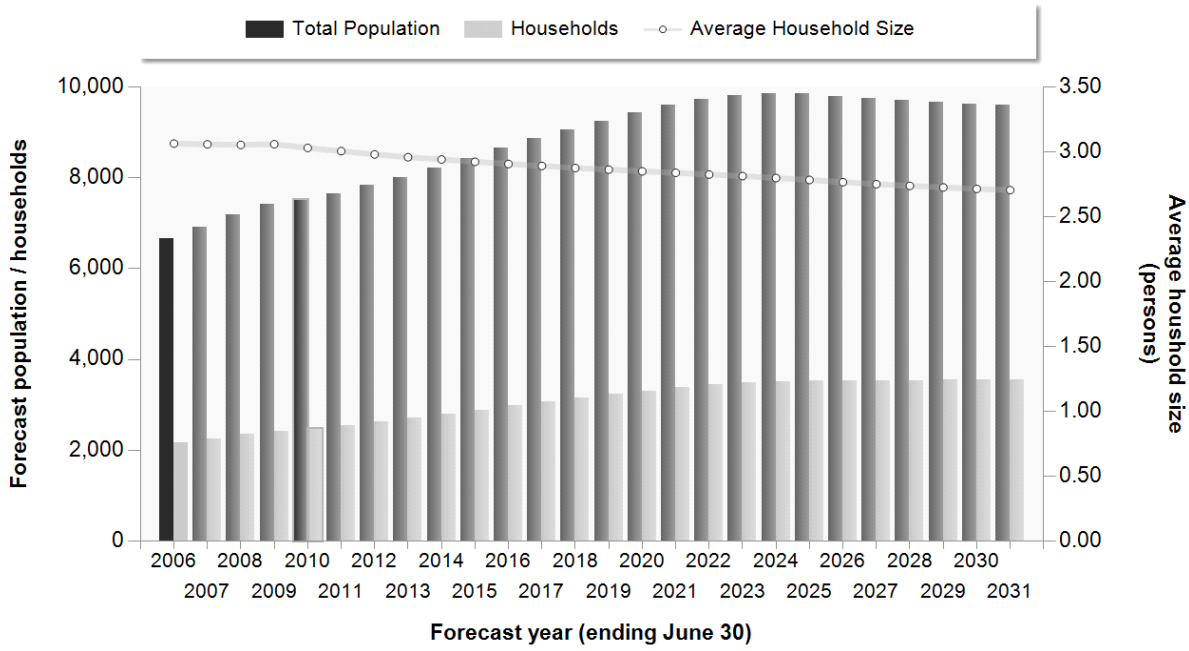
### How many will live here in future? - Mindarie - Tamala Park

Mindarie - Tamala Park	Forecast year					
	2006	2011	2016	2021	2026	2031
Population	6,655	7,647	8,649	9,586	9,782	9,588
Change in Population (5yrs)		992	1,002	937	196	-194
Average Annual Change (%)		2.82	2.49	2.08	0.41	-0.4
Households	2,173	2,546	2,976	3,378	3,536	3,544
Average Household Size (persons)	3.06	3	2.91	2.84	2.77	2.71

This summary analyses data for the period 2006 to 2021, as the short to medium term is most appropriate for planning purposes. Please note that this data is available for all years between 2006 and 2031.

In 2006, the total population of Mindarie - Tamala Park was estimated at 6,655 people. It is expected to experience an increase of over 2,900 people to 9,586 by 2021, at an average annual growth rate of 2.46% per annum over 15 years. This is based on experience an increase of over 1,200 households during the period, with the average number of persons per household falling from 3.06 to 2.84 by 2021.

**Forecast population, households and average household size, Mindarie - Tamala Park**



# Summary & key results

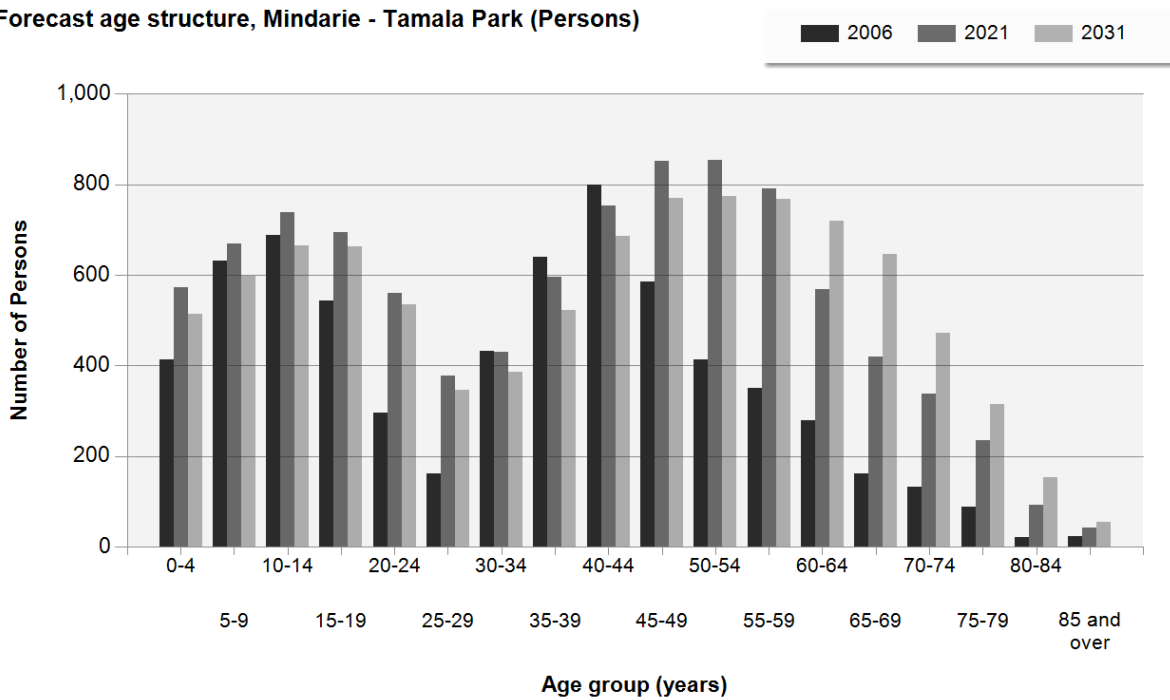
## How old will we be?

In 2006, the most populous age group in Mindarie - Tamala Park was 40-44 year olds, with 800 persons. In 2021 the most populous forecast age group will be 50-54 year olds, with 853 persons.

The number of people aged under 15 is forecast to increase by 247 (14.2%), representing a rise in the proportion of the population to 20.7%. The number of people aged over 65 is expected to increase by 702 (165.6%), and represent 11.7% of the population by 2021.

The age group which is forecast to have the largest proportional increase (relative to its population size) by 2021 is 80-84 year olds, who are forecast to increase by 338.1% to 92 persons.

**Forecast age structure, Mindarie - Tamala Park (Persons)**



## Summary & key results

### What type of households will we live in?

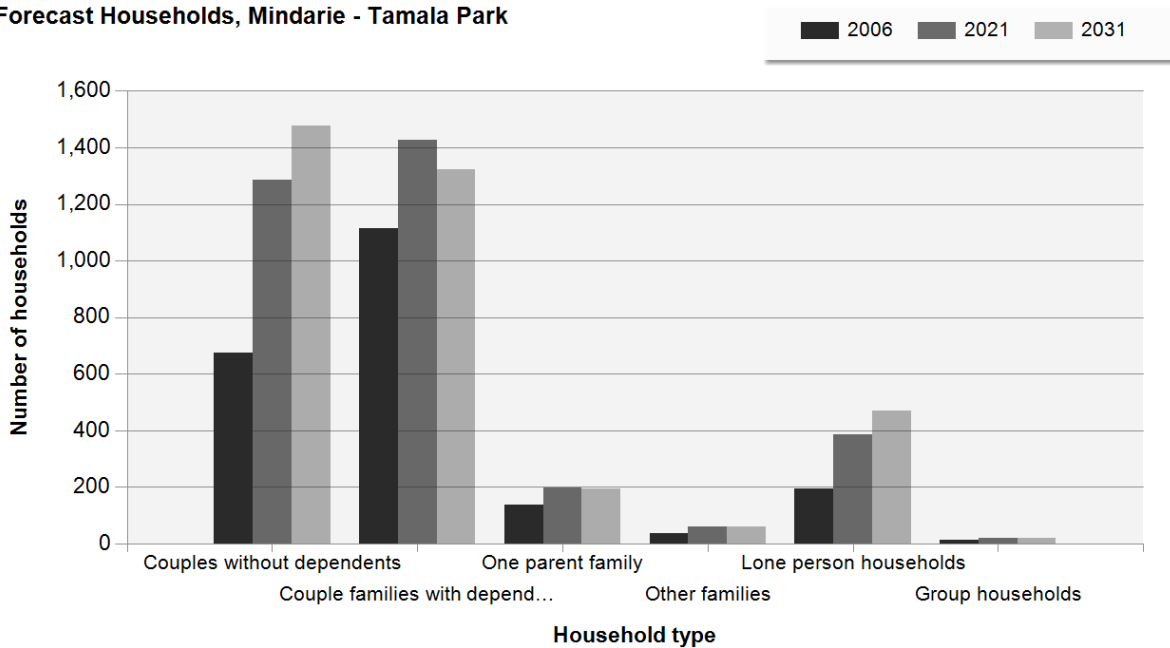
In 2006, the dominant household type in Mindarie - Tamala Park was Couple families with dependents, which accounted for 51.4% of all households.

The main changes in household type between 2006 and 2021 are forecast to be:

The largest increase is forecast to be in Lone person households, which will increase by 192 households, comprising 11.4% of all households, compared to 8.9% in 2006.

In contrast Couple families with dependents is forecast to increase by 310 households, to comprise 42.2% of all households in 2021, compared to 51.4% in 2006.

Forecast Households, Mindarie - Tamala Park



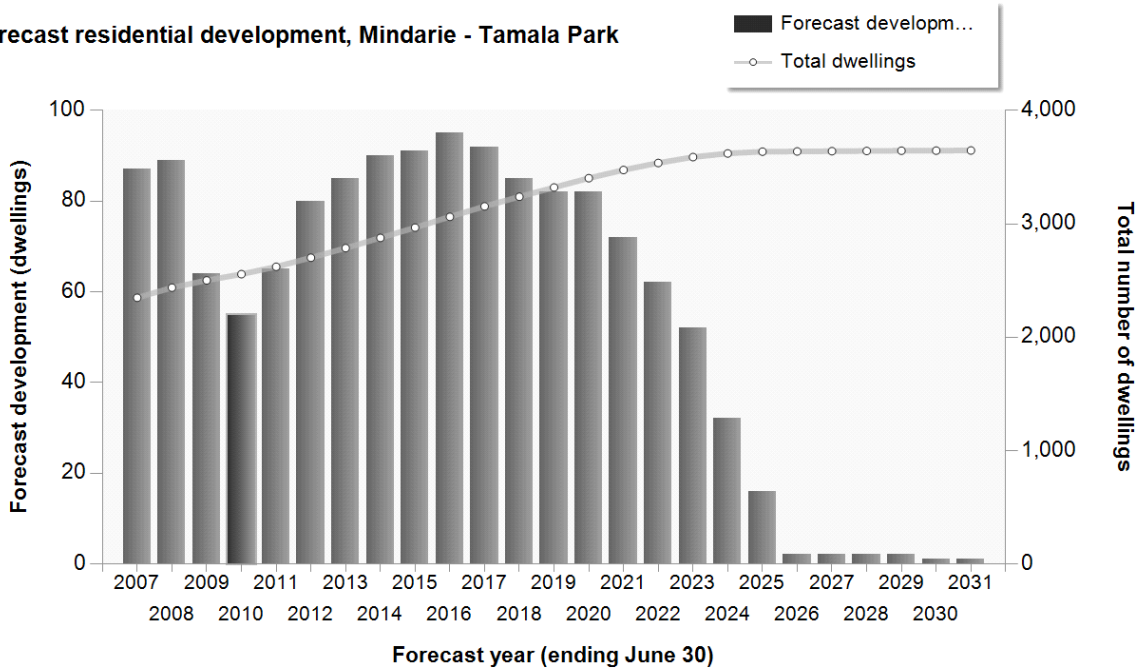
# Assumptions

## Residential development

List of forecast land developments and infill assumptions:

- 2006-9 dwelling additions are based on building approvals, lagged by 12-24 months. From 2009 onwards:
- Mindarie Keys /Mindarie Wharf - 255 dwellings (2010-2018)
- Councils - 784 dwellings (2013-2025)

**Forecast residential development, Mindarie - Tamala Park**



# Assumptions

## Births and deaths

### Fertility (birth) rates:

The fertility rate in Mindarie - Tamala Park is derived from historic age-specific birth rates in the area, modified based on the forecast age structure at each year of the forecast.

### Death rates

The death rates are based on historical estimates for the City of Wanneroo, which have been extrapolated into the future, assuming an increase in expectation of life in all age groups (except 85+). Although women are still forecast to outlive men, the increase in expectation of life over time for men is expected to be higher.

# Assumptions

## Non-private dwellings

The number of persons in non-private dwellings in 2006 was 1, this is assumed to remain the same during the forecast period.

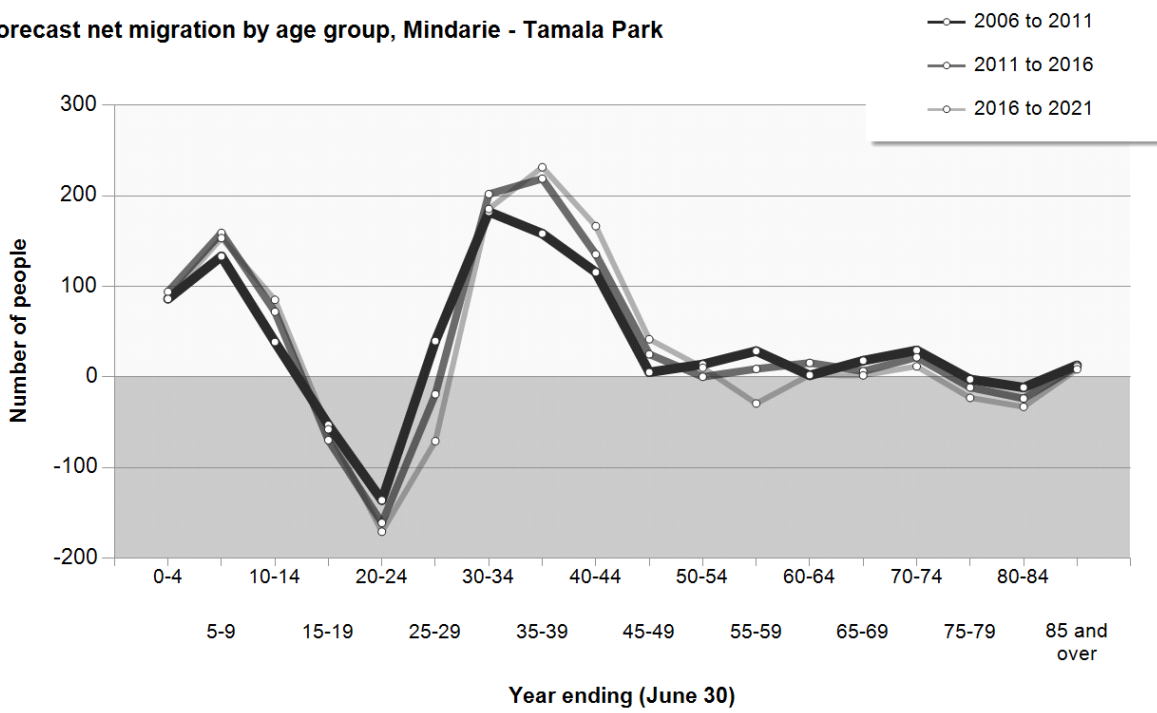
# Assumptions

## Migration

Major migration assumptions:

- Stable migration profile expected across the 2006-2021 period
- Gain of young and mature families (0-14 and 25-44 years)
- Loss of young adults and couples (18-24 years)
- Minimal gain in population aged 65+

Forecast net migration by age group, Mindarie - Tamala Park



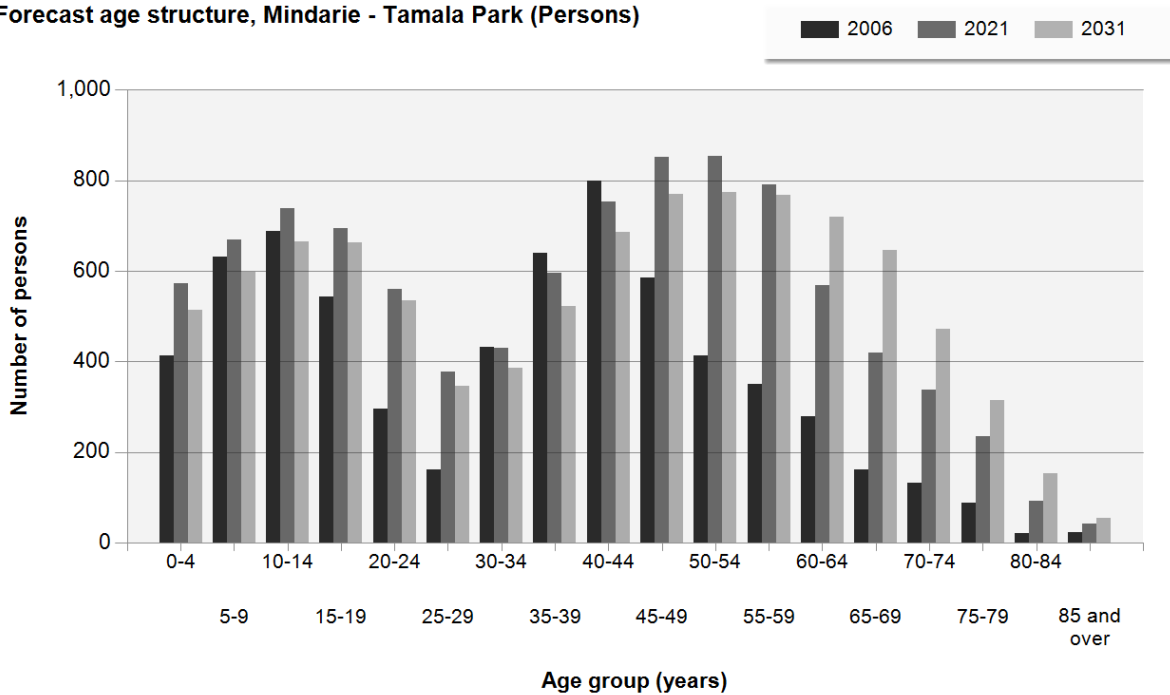


# Detailed data

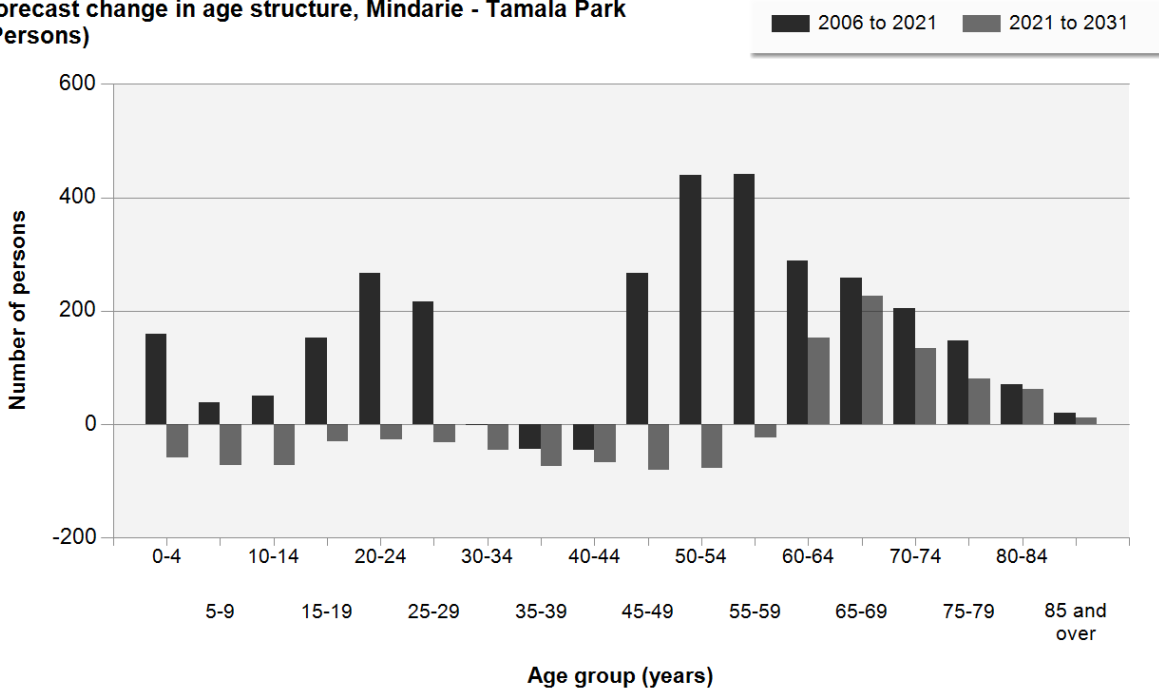
## Age structure

Forecast age structure, Mindarie - Tamala Park (Persons)		2006		2021		2031		Change
Age group	number	%	number	%	number	%	2006 to 2031	
0-4 years	414	6.2	573	6.0	514	5.4	100	
5-9 years	632	9.5	670	7.0	598	6.2	-34	
10-14 years	688	10.3	738	7.7	665	6.9	-23	
15-19 years	543	8.2	695	7.3	664	6.9	121	
20-24 years	295	4.4	561	5.9	534	5.6	239	
25-29 years	161	2.4	378	3.9	346	3.6	185	
30-34 years	432	6.5	431	4.5	386	4.0	-46	
35-39 years	640	9.6	596	6.2	522	5.4	-118	
40-44 years	800	12.0	754	7.9	686	7.2	-114	
45-49 years	586	8.8	852	8.9	771	8.0	185	
50-54 years	413	6.2	853	8.9	775	8.1	362	
55-59 years	350	5.3	791	8.3	768	8.0	418	
60-64 years	280	4.2	568	5.9	720	7.5	440	
65-69 years	161	2.4	420	4.4	646	6.7	485	
70-74 years	133	2.0	338	3.5	472	4.9	339	
75-79 years	87	1.3	234	2.4	315	3.3	228	
80-84 years	21	0.3	92	1.0	154	1.6	133	
85 years and over	22	0.3	42	0.4	54	0.6	32	
<b>Total Persons</b>	<b>6,658</b>	<b>100.0</b>	<b>9,586</b>	<b>100.0</b>	<b>9,590</b>	<b>100.0</b>	<b>2,932</b>	

Forecast age structure, Mindarie - Tamala Park (Persons)



**Forecast change in age structure, Mindarie - Tamala Park  
(Persons)**

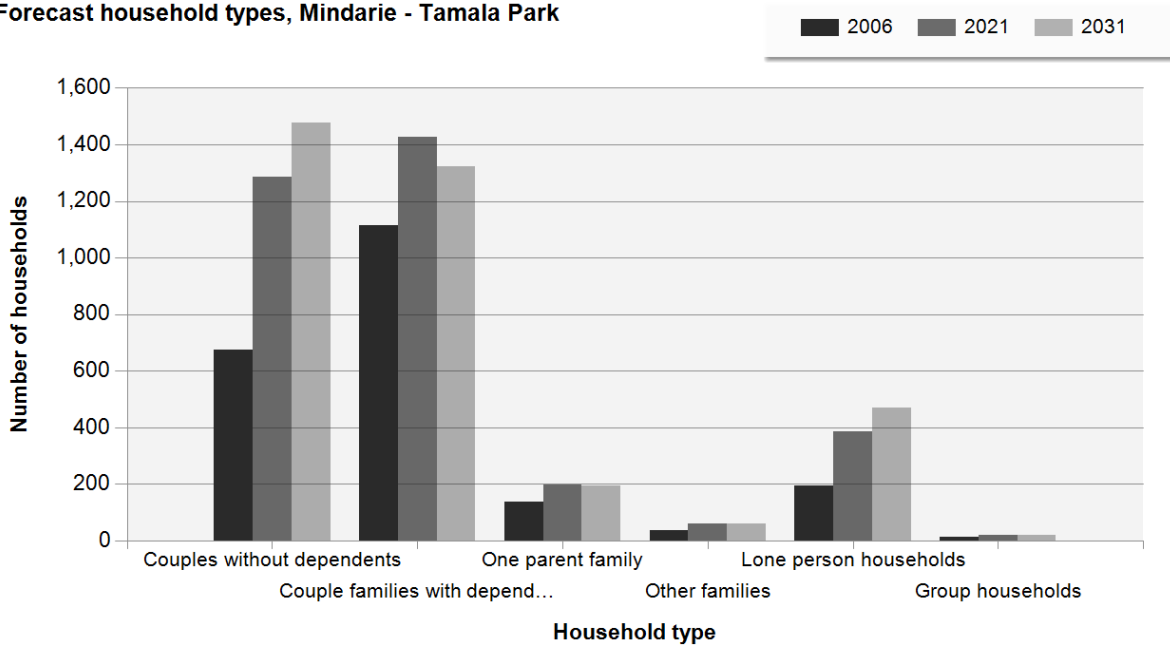


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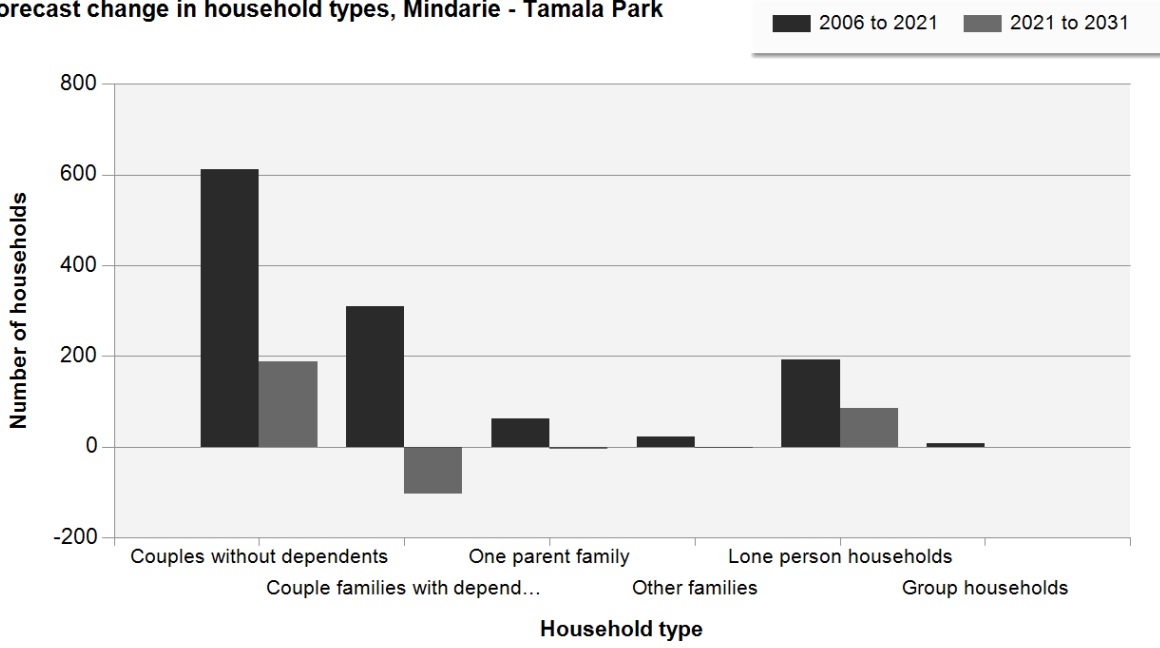
## Households

Forecast households, Mindarie - Tamala Park		2006		2021		2031		Change
Type	number	%	number	%	number	%	2006 to 2031	
Couples without dependents	676	31.1	1,287	38.1	1,476	41.6	800	
Couple families with dependents	1,116	51.4	1,426	42.2	1,323	37.3	207	
One parent family	137	6.3	199	5.9	195	5.5	58	
Other families	38	1.7	61	1.8	60	1.7	22	
Lone person households	193	8.9	385	11.4	470	13.3	277	
Group households	13	0.6	20	0.6	20	0.6	7	
<b>Total households</b>	<b>2,173</b>	<b>100.0</b>	<b>3,378</b>	<b>100.0</b>	<b>3,544</b>	<b>100.0</b>	<b>1,371</b>	

Forecast household types, Mindarie - Tamala Park



### Forecast change in household types, Mindarie - Tamala Park



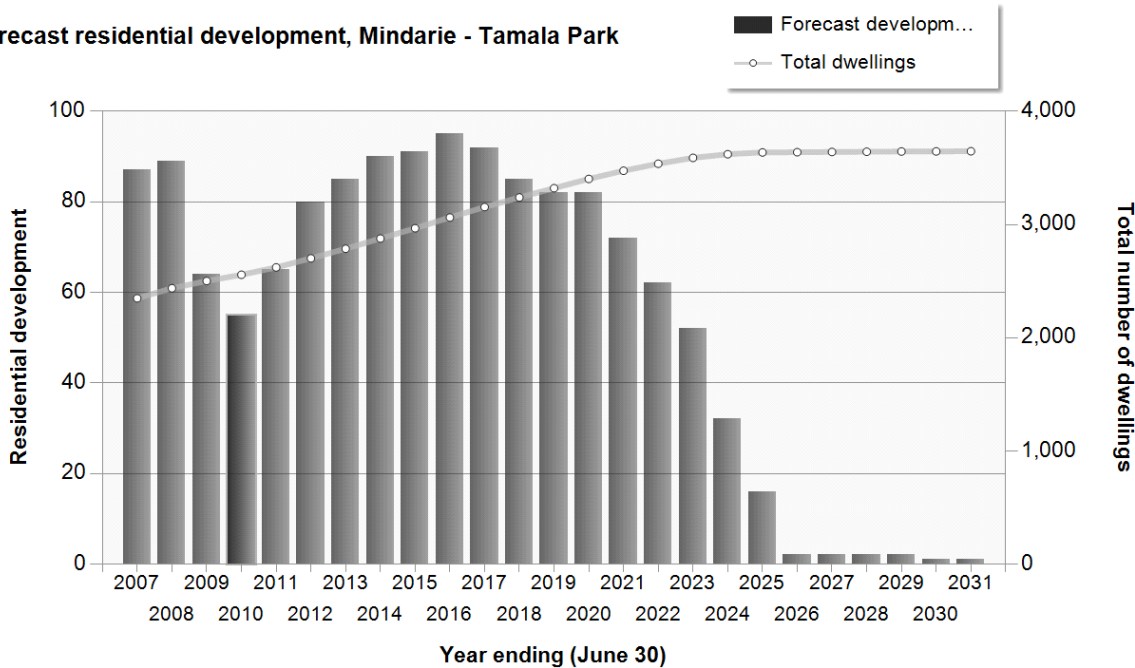
# Detailed data

## Residential development

Year	Dwelling commencements	Structural private dwellings (inc. commencements)	% change from previous year
2007	87	2,348	3.8
2008	89	2,437	3.8
2009	64	2,501	2.6
2010	55	2,556	2.2
2011	65	2,621	2.5
2012	80	2,701	3.1
2013	85	2,786	3.1
2014	90	2,876	3.2
2015	91	2,967	3.2
2016	95	3,062	3.2
2017	92	3,154	3.0
2018	85	3,239	2.7
2019	82	3,321	2.5

Year	Dwelling commencements	Structural private dwellings (inc. commencements)	% change from previous year
2020	82	3,403	2.5
2021	72	3,475	2.1
2022	62	3,537	1.8
2023	52	3,589	1.5
2024	32	3,621	0.9
2025	16	3,637	0.4
2026	2	3,639	0.1
2027	2	3,641	0.1
2028	2	3,643	0.1
2029	2	3,645	0.1
2030	1	3,646	0.0
2031	1	3,647	0.0

Forecast residential development, Mindarie - Tamala Park

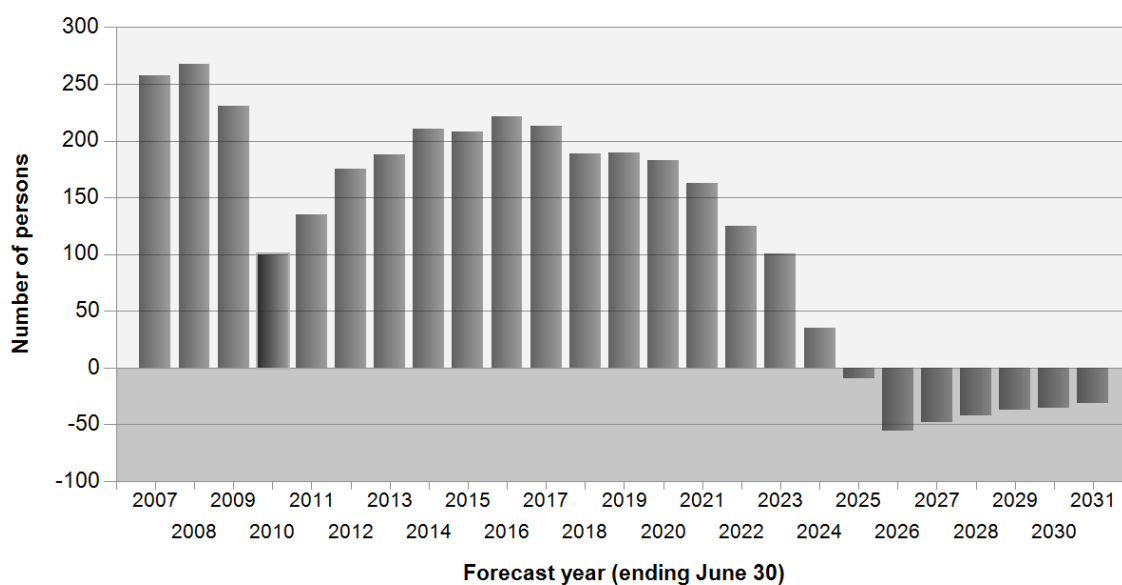


## Detailed data

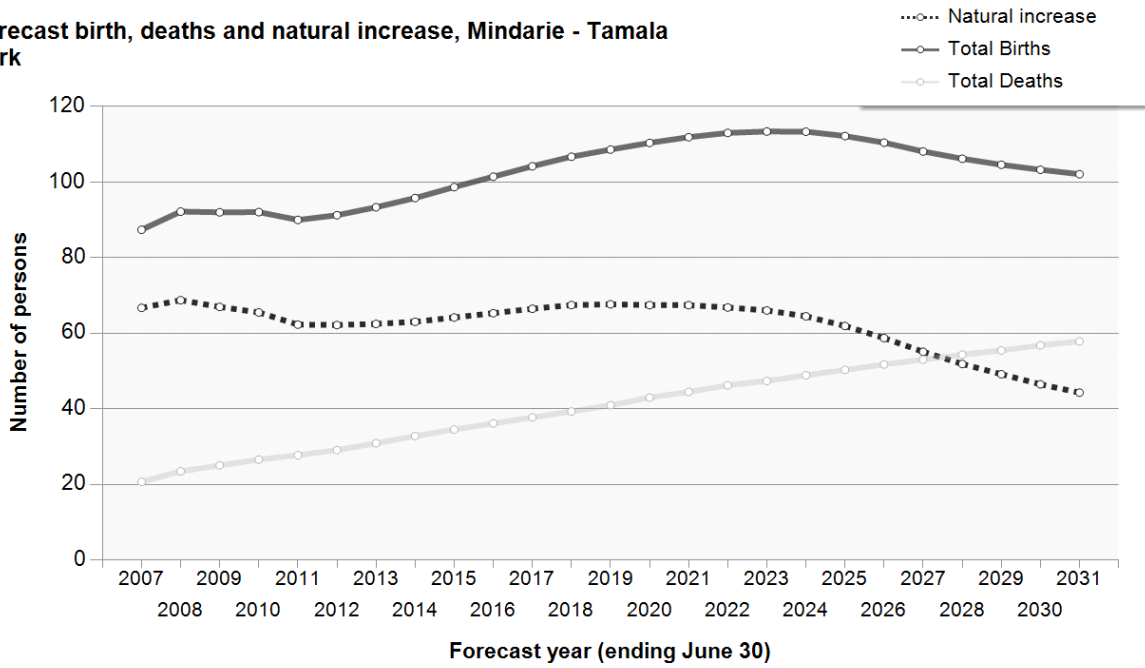
### Components of population change

Components of population change, Mindarie - Tamala Park	Forecast period				
	2007 to 2011	2012 to 2016	2017 to 2021	2022 to 2026	2027 to 2031
Births	454	480	542	562	524
Deaths	123	163	205	244	277
Net Migration	661	686	600	-121	-441
Net Population Change	991	1,003	937	196	-194

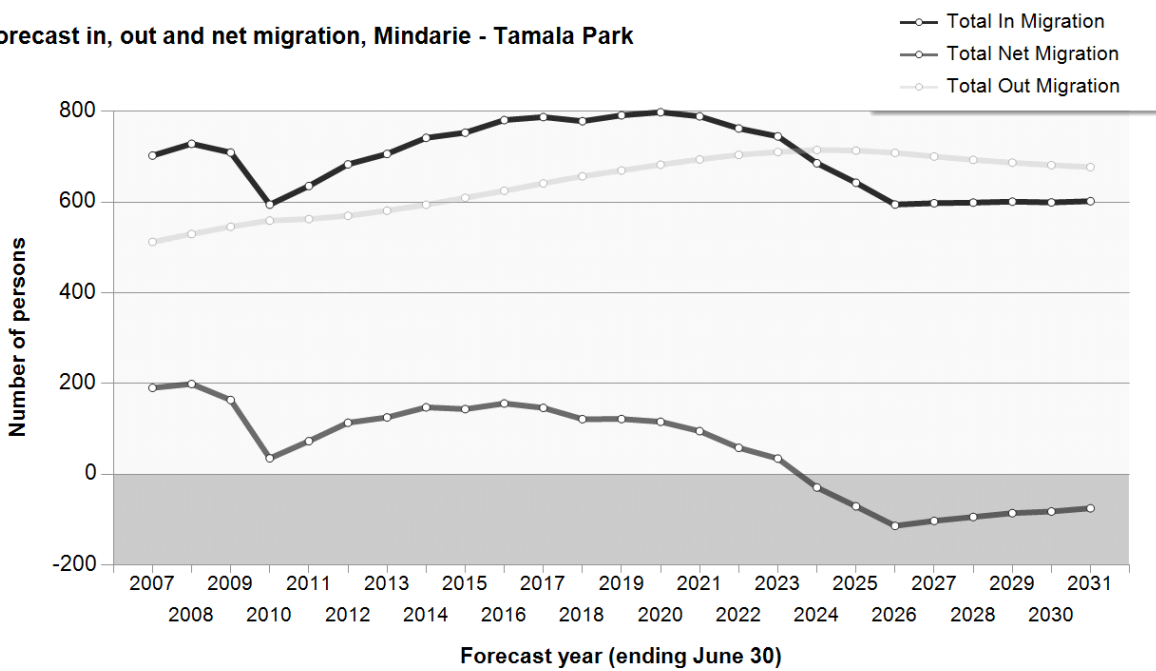
#### Forecast population change, Mindarie - Tamala Park



**Forecast birth, deaths and natural increase, Mindarie - Tamala Park**



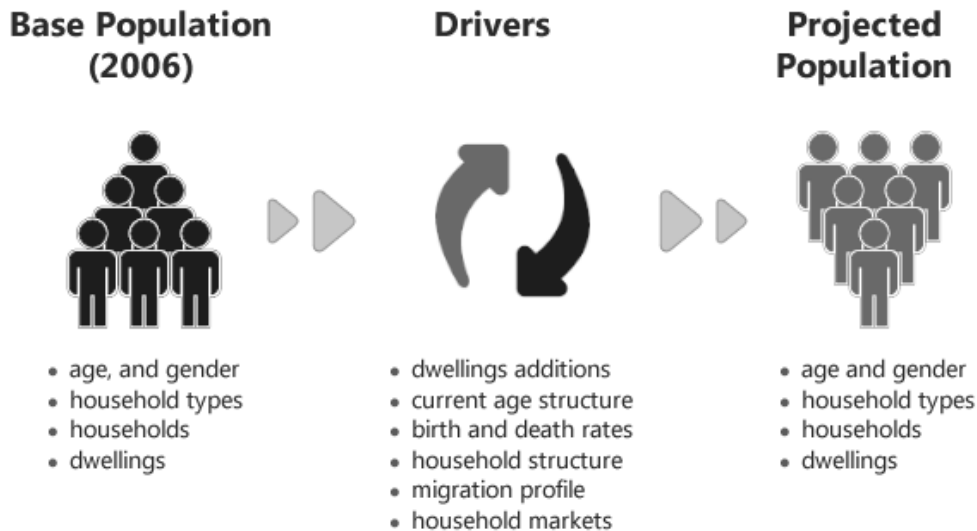
**Forecast in, out and net migration, Mindarie - Tamala Park**



## Supporting info

### What factors contribute to population change?

At the small area level, the primary drivers of population change are the age structure of the existing population, the housing markets attracted to and away from an area and their associated demographic characteristics (fertility patterns, household types etc.) and the supply of dwellings and mix of housing stock in the area.



#### Dwelling additions

The addition of dwellings is the major driver of population growth, providing opportunities for new households (such as young people leaving the family home and divorces) or households relocating from other areas.

#### Current age structure

The age structure of the local population impacts on the City of Wanneroo's household types and size, the likelihood of the local population having children and to die, as well as the propensity for people to move. Age specific propensities for a population to have children or die are applied to each small area's base population. An older population will have fewer births, more deaths, while a younger population will have vice versa.

#### Birth rates

Birth rates are especially influential in determining the number of children in an area, with most inner urban areas having very low birth rates, compared to outer suburban or rural and regional areas. Birth rates have been changing, with a greater share of women bearing children at older ages or not at all. This can have a large impact on the population profile with comparatively fewer children than in previous periods.

#### Death rates

Death rates are influential in shaping the numbers of older people in an area's population. Death rates too have been changing with higher life expectancy at most ages, with men gaining on women's greater life chances.

#### Migration

Migration is one of the most important components of population change. While births and deaths are relatively easy to predict due to reliable age specific behaviour, migration is volatile, often changing due to housing market preferences, economic opportunities and changing household circumstances. Migration patterns vary across Australia and change across time, but most moves tend to be short and incremental in nature. Regional areas have



larger moves due to the distances between towns and cities, where people often move for economic reasons, mainly the availability of employment or education and training opportunities.

The most mobile age groups in the population are the young adults. They tend to move to attend educational institutions, seek work and express a change in lifestyle. It is for this reason that young people often move the greatest distances and sometimes move against pre-established patterns. Market research has shown that empty nesters are more likely to move to smaller accommodation if appropriate and affordable alternative housing is supplied in the local area that is accessible to established social networks.

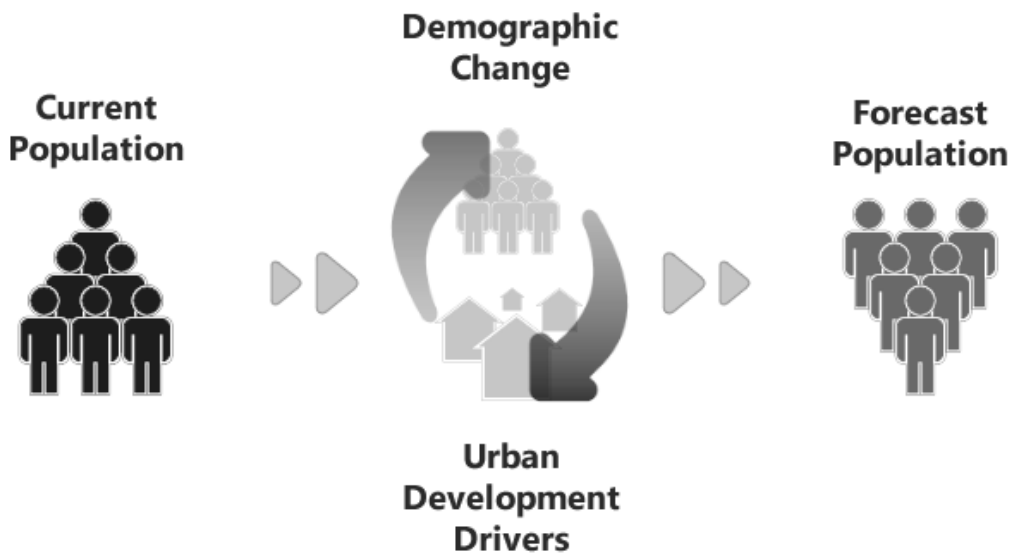
## Supporting info

### How did we do the forecasts?

#### Approach

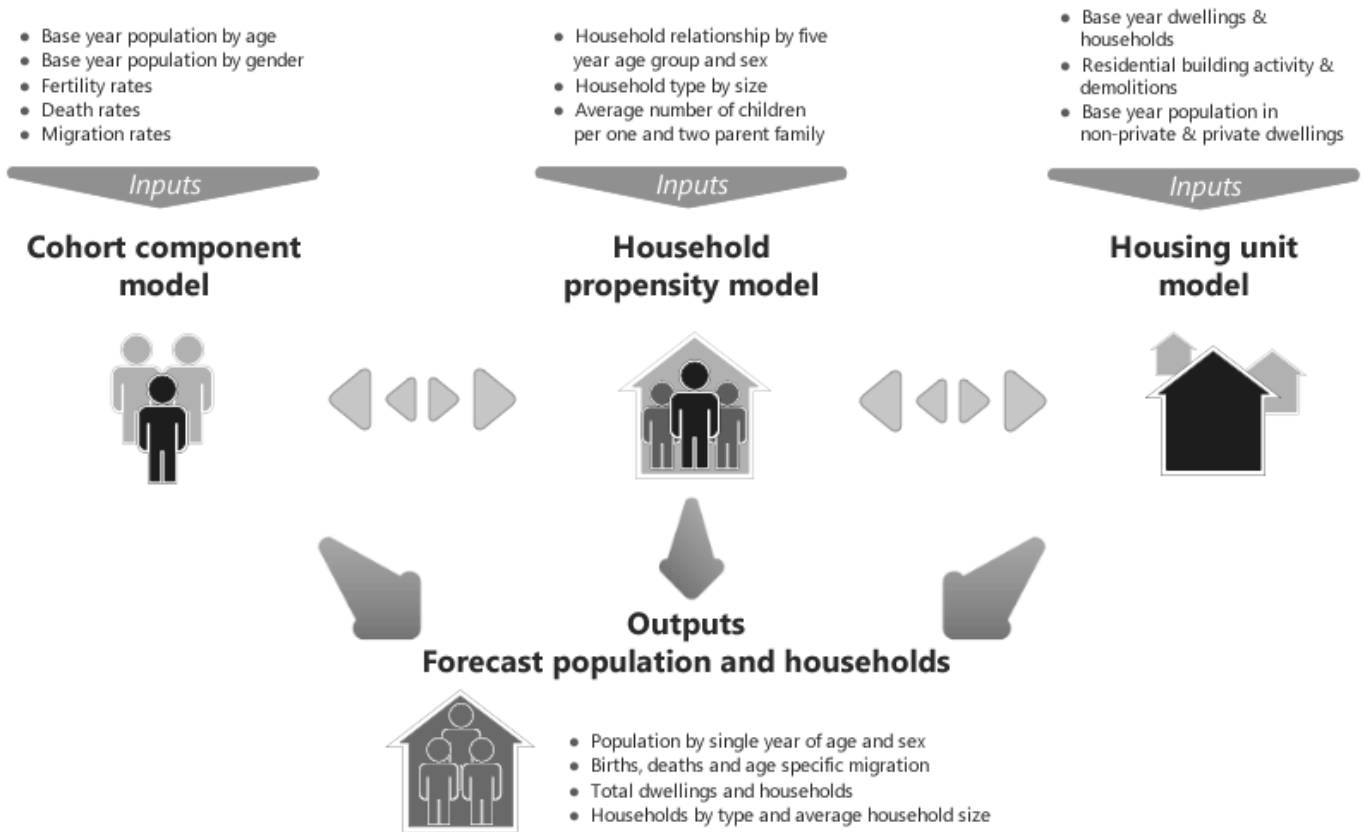
The diagram below describes the general approach used by .id in its population and household forecasts. An analysis of the current population and household structure often reveals the role and function of an area and the degree to which an area may be going through some form of demographic transition.

Demographic changes, such as birth, death and migration rates are applied to the base population. At the same time, scrutiny of urban development drivers is undertaken (residential development opportunities, vacancy rates etc.). The combination of varied assumptions about these inputs results in forecast population and households by type.



#### Modelling process

The modelling process used for producing the small-area forecasts is based on a 'bottom-up' approach, with all assumptions being derived from a local perspective. The components of the model are derived exclusively from housing and demographic assumptions. The drivers of the forecasts are predominantly based on levels of new residential development and demographic assumptions, such as in and out migration rates from the local areas. The diagram below describes the detail of the modelling process used by .id in its population and household forecasts.



The population forecasts are based on a combination of three statistical models. They include a cohort component model, a housing unit model and a household propensity model. Each of the models has a series of inputs, which when linked to the other models gives the forecast outputs. The models are further explained below.

**Cohort Component Model**

The cohort component model is a standard demographic model used for population forecasts. It takes a base population by single year of age and sex and makes assumptions about future levels of births, deaths and migration, with the result being a forecast population by age and sex.

Each year the population ages by one year, with additions to population through in-migration and births. Births are derived by multiplying age specific fertility rates of women aged 15-44 by the female population in these age groups for all years during the forecast period. The population decreases are based on out-migration and deaths. Deaths are derived by multiplying age and sex specific mortality rates for all age groups for all years during the forecast period.

In and out migration is based on multiplying the population in each age group by a migration matrix. The base year population is derived from 2006 Census counts and then adjusted to an estimated resident population by small area. Each year through the forecast period, the population is run against age-specific birth, death and migration rates to create new population figures.

**Housing Unit Model**

The housing unit model is used to forecast future levels of residential development in areas and the resulting impact on the total population and the number of households. This model is critical in giving population forecasts credibility, especially in areas where there are residential development constraints and where historical migration patterns would be expected to change.

The housing unit model is based on forecasting a number of variables. These include total population living in private and non-private dwellings, the number of households and the number of dwellings. The share of housing stock that does not contain households is known as the vacancy rate. The population living in private dwellings divided by the

number of households is known as the average household size.

These variables have changing relationships over time, as households undergo normal demographic processes, such as family formation and ageing. Levels of residential development, vacancy rates and average household size (see housing propensity model below) are used as the drivers of the model. Every year there is an assumption about the level of residential development activity, which adds to the stock of dwellings in an area. This stock of dwellings is multiplied by the vacancy rate, which gives the total number of vacant dwellings and the total number of occupied private dwellings (households). Households are multiplied by the assumed average household size for the year to derive the new number of persons living in private dwellings. The average household size is derived from the household propensity model (see below).

Population in non-private dwellings is modelled separately. A non-private dwelling is a form of housing, which is communal in nature. Examples of non-private dwellings include nursing homes, student accommodation, nursing quarters, military barracks and prisons. In forecasting the number of persons in non-private dwellings, the population is analysed according to the different types of living arrangements. Decisions about future changes may be based on local knowledge through consultation with institutions or local government if there are a large number of people living in non-private dwellings.

### **Household Propensity Model**

This model is used to integrate the cohort component and housing unit models to ensure consistency between the outputs of both models. The model works by assuming that the age structure of the population is an indicator of household size and type. These differences are assumed at the local area based on the household type and size from the 2006 Census.

The population is divided into household types based on five year age groups and sex. Each of these household types has an associated household size. From this relationship, all the household forming population (adults and any non-dependents) effectively represent a share of a household. Dependents in a household (children) represent no share of a household, although their departure frequently drives demand for housing in the region. Lone persons represent 1 or 100% of a household. Couples with dependents represent 50% of household. Couples without dependents represent almost 50% of a household (as they can include related adults). Lone parents represent 100% of a household. Group household members' and other household members' shares vary according to the region (20%-45%, 5 persons to 2.5 persons per household)

These relationships are extrapolated forward from 2006 with some adjustments, depending on the type of area. While the overall trend assumes that a greater share of the population will live in smaller households at all age groups in the future, many areas will go against this trend, depending on their place within the life cycle of suburbs. The projected decrease in the fertility rate and resulting likelihood of smaller families reinforces the assumption that a greater share of the population will live as couples and alone in the future.

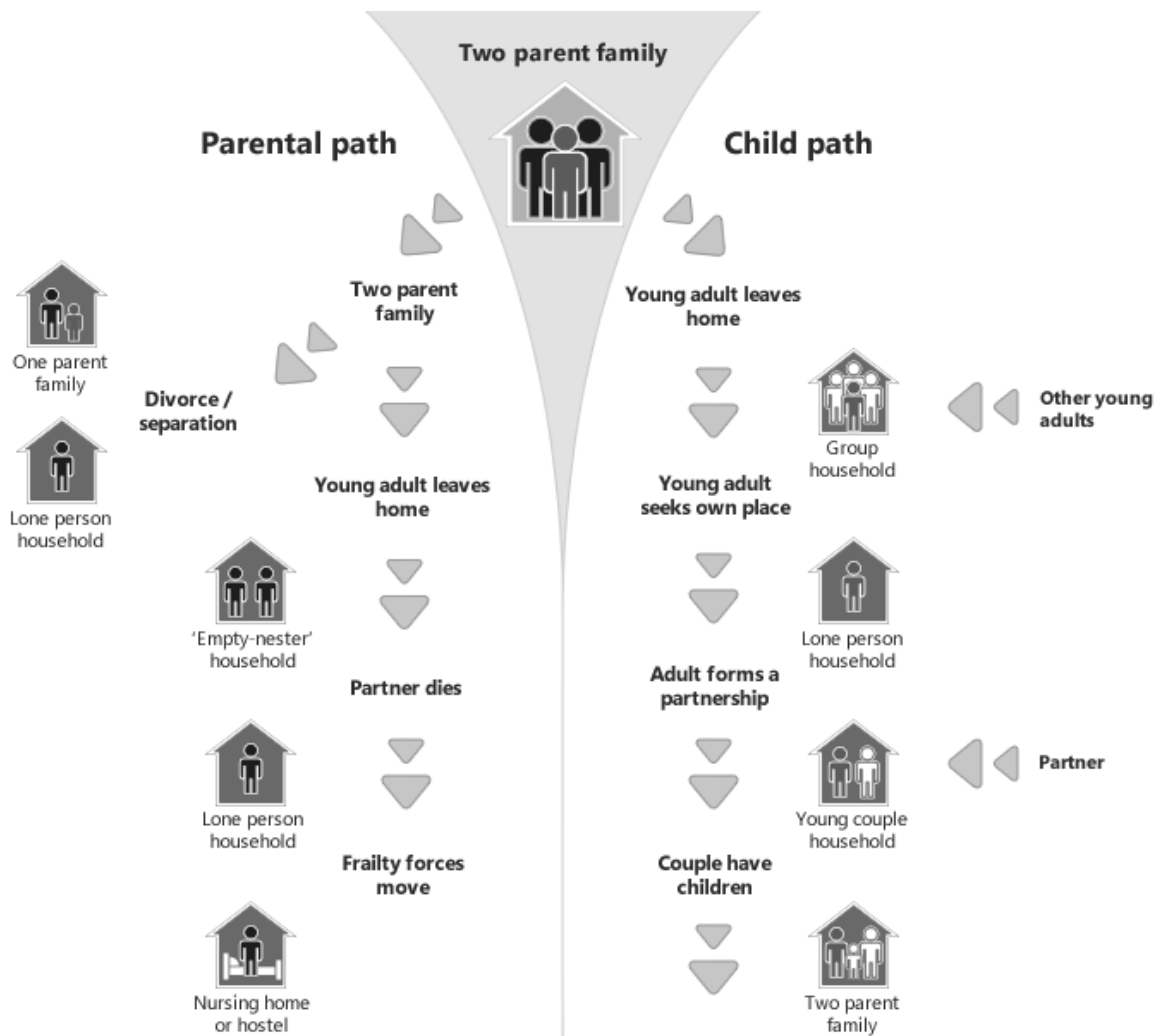
# Supporting info

## Household & suburb life cycle

### Household life cycles

The sorts of households that people live in and changing preferences over time affects the way in which a population changes. As people grow from children to adults and into old age, they change the sorts of households that they live in. The traditional path has been to start as a child in a family household, move into a group or lone person household as a youth, becoming a part of a couple relationship within 5-10 years. Rearing of children is followed by an 'empty-nester' period and ultimately being a lone person, as partners die.

Understanding the changes that people make at different ages in their life, and the different types of housing they are likely to consume at those life stages is an important factor in forecasting future population and household types. The life stage which the majority of households in an area are going through gives an insight into its location in the suburb life-cycle (see below), and the likely life-path of those households in the future.



### Suburb life cycles

The dominant household types present in a suburb or town - where the majority of the populations sit in the household life path - dictate in part the role and function of the area. This is shown by its place in the "suburb life cycle".

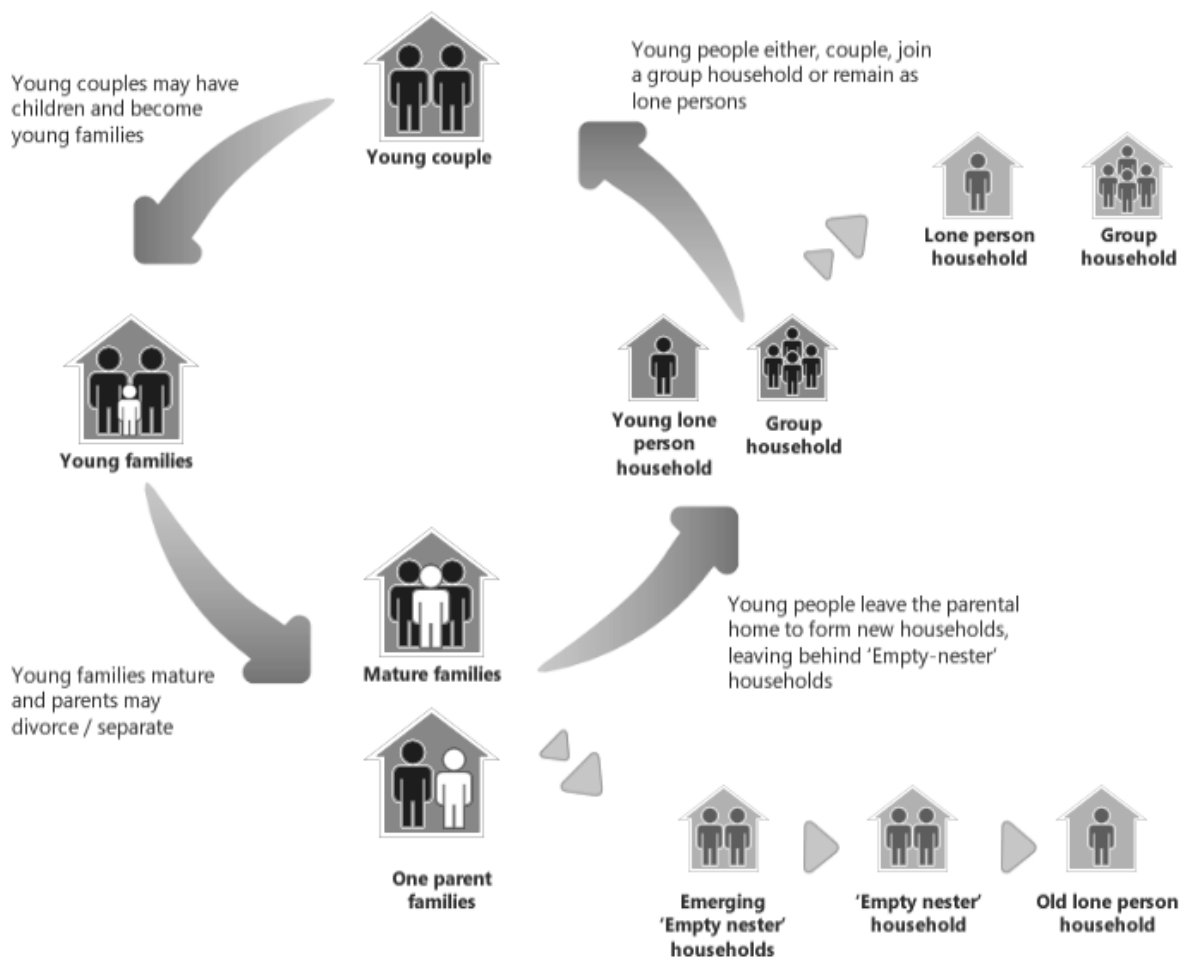
New areas are typically settled by young households (young couples and young families, perhaps some mature

families). As the families grow and mature, household size increases. After initial rapid development, most households "age in place", with slowly shifting demand for services, facilities and dwelling types.

As households age further and children begin to leave home, the average household size decreases, resulting in more empty nester (two person) households, often still living in large family homes. Family breakups can also result in single parent families and lone person households. If a suburb can't attract young families back to the area, it slowly becomes populated by older couples whose children have left home and older lone persons whose partners have died, resulting in declining population for some time.

Alternatively, if a suburb is in a location close to economic drivers of change, it may be able to attract families to move back into the older dwellings in the area, increasing household size and population again. This will generally happen sooner, with less loss of services if the area has a diversity of housing options suiting a wide variety of household types. Empty nesters are likely to downsize into lower maintenance properties, freeing up larger format housing for families to move into, and continue the cycle again. The loop in the diagram represents the process of sustainability of an LGA (or suburb), if it can attract families back into older housing in the area. Depending on the proximity of an area to work and education it may also attract young lone persons and group households. The attractiveness of an area to family groups, group and lone person households is shown in the migration assumptions section.

Generally, more diverse communities are more sustainable in the long term, as they are able to maintain a range of services and facilities useful to all age groups. Certain policy responses can influence the suburb life cycle in different directions.



## Supporting info

### Data notes & references

#### Base population estimates

The population figures used in the forecasts for 2006 are derived from estimated resident population from the Australian Bureau of Statistics. These figures are published at the Statistical Local Area level, which are extrapolated to Census Collection District (CCDs) and then aggregated to the chosen small area, sometime splitting CCDs if necessary.

These figures are subject to change or updating from time to time, most notably after census release (usually one to two years after the census is conducted).

#### Base household estimates

The household estimates used in the forecasts for 2006 were based on age and sex-specific population propensities by different household types. Usual residents' estimates by Census Collection District were extrapolated to Estimated Resident Population and then multiplied by household factors to give estimated 'Resident Households'.

The multiplying factor varies depending on the household type (and the area), such as a factor of 1 for persons living in lone person households to 0.5 for an adult in couple families with dependent households. Children and other dependents, such as elderly parents, are not assumed to 'form' households.

- Australian Bureau of Statistics, 2006 Census of Population and Housing.
- Australian Bureau of Statistics, 2006 Estimated Resident Population (preliminary), June 30 2006, Cat. No: 3235.0.

# Supporting info

## Glossary

- ▶ **Age Specific Propensities (birth and death)**

This relates to the modelling of births and deaths. At each year of age, there is a certain statistical likelihood of a person dying or giving birth. These age specific propensity rates are applied to the base and forecast population for each year of the forecast period.
- ▶ **Ageing in Place**

This refers to an existing resident population ageing in their current location, as distinct from other impacts on future population such as births, deaths and in and out migration.
- ▶ **Average annual percentage change**

A calculation of the average change in total population for each individual year.
- ▶ **Average household size**

The average number of persons resident in each occupied private dwelling. Calculated as the number of persons in occupied private dwellings divided by the number of occupied private dwellings. This excludes persons living in non-private dwellings, such as prisons, military bases, nursing homes etc.
- ▶ **'Bottom up' forecast**

Population forecast based on assumptions made at the local area level. Local drivers of change such as land stocks and local area migration form the basis.
- ▶ **Broadhectare Land or Sites**

Broadhectare land refers to undeveloped land zoned for residential development on the fringe of the established metropolitan area. These areas are generally used for rural purposes until residential subdivision takes place. This type of land is also referred to as 'greenfield'.
- ▶ **Commencement**

The construction of a new dwelling (or beginning of).
- ▶ **Dwelling**

A habitable residential building.
- ▶ **Dwelling Stock**

The supply of dwellings (either occupied or unoccupied) in a given geographic area.
- ▶ **Empty Nesters**

Parents whose children have left the family home to establish new households elsewhere.
- ▶ **Estimated Resident Occupied Private Dwellings (EROPD)**

This measure attempts to increase the scope of Occupied Private Dwellings definition to include an estimate of SPD's that were temporarily unoccupied at the time of the Census (i.e. the resident was away for an extended period of time and did not fill in a Census form). This measure is not available from the Census and is estimated through the processes described in the most recent Victorian Department of Planning & Community Development population forecasts for Victoria. This measure yields much higher estimates of occupancy rates than the usual OPD measure.
- ▶ **Estimated Resident Population (ERP)**

This is the estimate of the population based on their usual residence. The ERP at the time of the Census is calculated as the sum of the enumerated (counted) population plus persons temporarily absent less persons who are non-permanent (visitor) residents. An undercount of population by small area at Census time is also accounted for. The ERP used in these forecasts is then backdated to June 30. The ERP for forecast years are based on adding to the estimated population the components of natural increase and net migration.
- ▶ **Forecast Period**

In this report, the forecast period is from 2006 to 2031. Most data on the website has focused on the period from 2006 to 2021.
- ▶ **Household**



One or more persons living in a structural private dwelling.

▶ **In-centre development**

Residential development based on increasing dwelling densities around suburb and town centres. Usually around existing transport nodes and service infrastructure, rather than developing previously undeveloped land on the urban fringe.

▶ **'Infill' Development**

Residential development, usually of a relatively small scale, on redevelopment sites in established urban areas. This usually takes place on land previously used for another urban purpose such as industry or schools. Also referred to as 'intensification' of existing areas.

▶ **Mature families**

One and two parent families with older children, generally of secondary and tertiary school age.

▶ **Migration**

The movement of people or households from one location to another.

▶ **Natural Increase**

The increase in population based on the births minus deaths, not including the impact of migration.

▶ **Net Household Additions**

The overall increase in occupied dwellings, determined by the level of new dwelling construction that is permanently occupied, or conversion of non-permanently occupied dwellings to permanently occupied minus demolitions.

▶ **Non-private dwellings**

These dwellings include persons resident in establishments such as prisons, student or nurses' accommodation, nursing homes, military facilities, and hospitals.

▶ **Occupancy Rate**

The proportion of structural private dwellings that are occupied by a household.

▶ **Occupied Private Dwellings (OPD)**

These are all Structural Private Dwellings (SPD's) that are occupied by a household. Excluded are dwellings that were under construction, being demolished or where the house was temporarily vacant.

▶ **Private dwellings**

Self contained dwelling including houses (attached or detached), flats, townhouses etc. Retirement village units are also private dwellings as are houses or flats rented from the government.

▶ **Redevelopment Sites**

These are sites in already established areas not originally developed for residential uses, but identified for conversion to residential use. Examples include former school sites, quarries, derelict industrial land, former petrol stations and the like.

▶ **Structural Private Dwellings (SPD)**

This is the stock of houses, flats, and other dwelling types. The SPD is the usual base stock from which commencements are added and demolitions deducted.

▶ **'Top down' forecast**

Population forecast based on assumptions made at the State and National level and allocated into smaller regions e.g. Local Government Areas, suburbs.

▶ **Visitor population forecasts**

Visitor population forecasts are based on 'non-event' affected, mid-week visitor levels. The 2006 base figures are sourced from Census, with an adjustment for undercount similar to that applied to the resident population (see Estimated Resident Population). Overall forecast levels are based on long term trends in visitor population growth in the Shire, with specific reference to current proposals for the purposes of allocation in the short-term. Visitor population forecasts have been included as they are a significant component of total population and may require specific servicing arrangements pertinent to resource allocation within Council.

▶ **Young families**

One and two parent families with young children, generally of pre and primary school age.

