City of Armadale

# Harrisdale

City of Armadale 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 5/11/2012.

# Contents:

**Date created: 5/11/2012**

# Summary & key results

## Key drivers of change

**Historical migration flows, City of Armadale, 2001 to 2006**
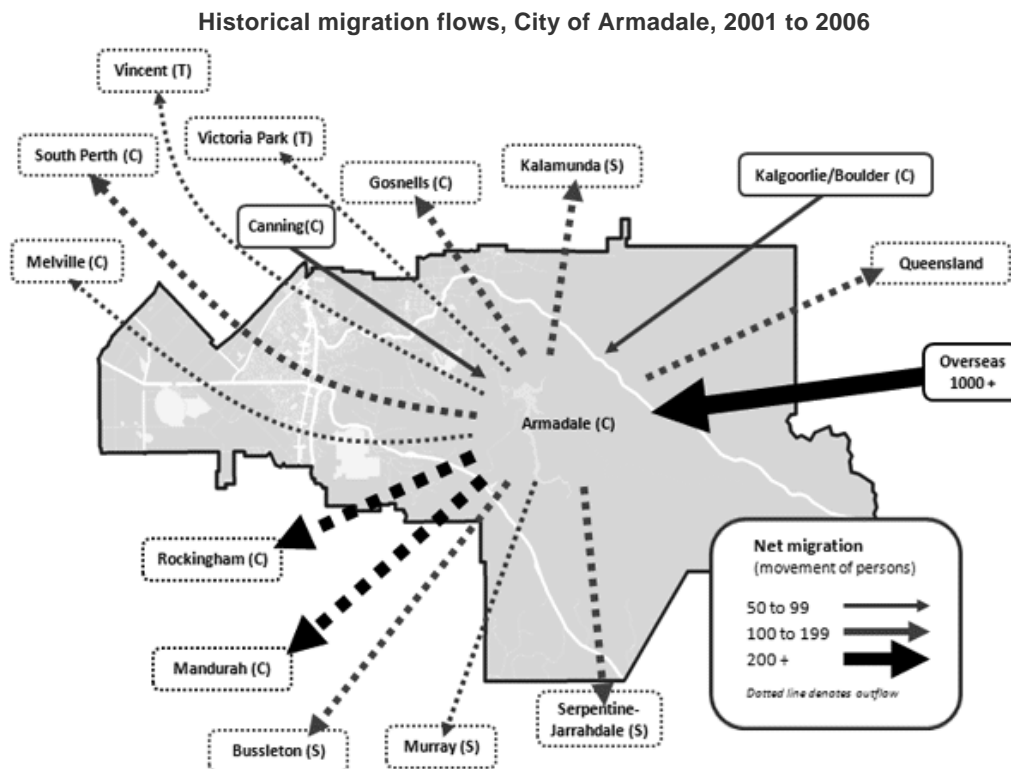


Note: The migration flows depicted above do not represent future or forecast migration flows. The arrows represent migration flows to the LGA/SLA as a whole and do not indicate an origin or destination for any specific localities within the LGA/SLA.

The City of Armadale is located on the fringe of the Perth metropolitan area, about 20 kilometres south east of the Perth GPO. The City's land use is predominantly divided into three areas. There are the older established parts of the City along the Albany Highway-Railway corridor, based around the historical townships of Armadale and Kelmscott. Areas to the east are more undulating, with horticultural activities and rural residential development more prominent, as well as predominantly State Forest and water catchment areas in the most eastern parts of the City. The western areas of the City are sparsely populated and include large areas of wetlands and lakes, although there is substantial greenfield development planned for much of this area.

The City of Armadale's population grew substantially in recent decades, with the population growing at more than 2.5% per annum during the 1980s. However, population growth slowed during the early 1990s and over the last ten years, the total population has been relatively stagnant at just over 52,000. This has been a result of a number of factors. These include: greater residential development rates in the south-west corridor of Perth; more development in the City of Gosnells and; a maturing of the Armadale age structure leading to more young people leaving the family home and establishing households elsewhere.

However, it is likely that a number of these patterns will change in the next five years. The availability of large tracts of greenfield land in neighbouring areas to the City is decreasing rapidly, most notably Gosnells and Canning. Hence, the large number of net losses to neighbouring Local Government Areas such as Gosnells, Kalamunda and Rockingham experienced in the 2001-2006 period are likely to slow and, in some cases reverse, as more development opportunities in a broader range of housing product are available in the City of Armadale. The migration flows within the City of Armadale are also expected to reflect where the supply of residential land is located (destination) and where young people have grown up and left home (source).

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With the progressive residential development of the City over many decades, the availability of land for development and the broad range of land uses, areas have developed different roles within the housing market. The small area of Armadale South is likely to attract a large number of persons in their late teens and early twenties, which is a reflection on the increasing amount of diverse housing and rental accommodation and being close to the services in central Armadale. Some of these areas, such as Roleystone - Karragullen, Kelmscott East, Mount Nasura-Mount Richon and Bedfordale are attractive to established and mature families looking to upgrade to their second and third home. Areas such as Camillo have had significant residential development in recent decades and are losing a large number of established families seeking new housing opportunities elsewhere, a process likely to affect Seville Grove in the longer term. New development areas in the North Forrestdale Area (Harrisdale and Haynes), Champion Lakes and Brookdale (Haynes, Hilbert) are likely to provide a broader range of housing choices from first home buyers through to 'upgrader' markets. This variety of function and role of the small areas in Armadale means that population outcomes differ significantly across the City.
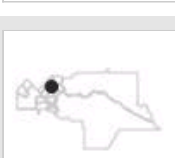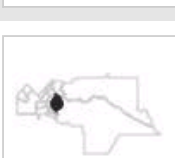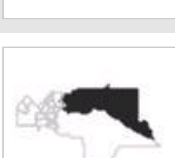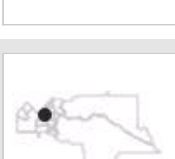
There are also significant differences in the supply of residential property within the City which will also have a major influence in structuring different population and household futures over the next five to twenty years. Large new 'greenfield' opportunities have been identified in the growth areas of Piara Waters, Harrisdale, Forrestdale, Haynes and Hilbert. There is also significant further potential through smaller developments in Seville Grove, Champion Lakes and through rural residential development in the hills areas. Substantial interest in group dwelling development in the more urban parts of the city (Armadale North and South and Kelmscott East and West) is also likely to occur. There are likely to be other greenfield, rural residential and most notably infill development opportunities throughout the City, albeit at lower levels than the major growth areas identified above. Areas such as Camillo and Mount Nasura-Mount Richon are likely to have very low levels of residential development by comparison with recent decades due to scarcity of greenfield land and redevelopment sites for development.

# Summary & key results

## Population summary

In 2031, the population of the City of Armadale will be 138,126, an increase of 85,392 persons (161.93%) from 2006. This represents an average annual growth rate of 3.93%.

| City of Armadale's areas | | Forecast year | | | | | | Change between 2006 and 2031 | |
|---|---|---|---|---|---|---|---|---|---|
| Location | Area name | 2006 | 2011 | 2016 | 2021 | 2026 | 2031 | number | Avg. annual % change |
|  | **City of Armadale** | 52,734 | 65,281 | 82,615 | 102,271 | 121,079 | 138,126 | 85,392 | 3.93 |
|  | **Armadale North** | 5,200 | 5,898 | 6,824 | 7,164 | 7,599 | 8,027 | 2,827 | 1.75 |
|  | **Armadale South** | 7,315 | 7,696 | 8,340 | 8,988 | 9,720 | 10,563 | 3,248 | 1.48 |
|  | **Bedfordale - Ashendon - Illawarra** | 1,867 | 2,345 | 2,884 | 3,097 | 3,207 | 3,264 | 1,397 | 2.26 |
|  | **Brookdale - Wungong** | 2,579 | 2,983 | 3,395 | 4,072 | 5,143 | 6,563 | 3,984 | 3.81 |
|  | **Camillo** | 4,747 | 4,715 | 5,028 | 5,086 | 5,150 | 5,230 | 483 | 0.39 |
|  | **Champion Lakes** | 541 | 715 | 1,452 | 1,961 | 2,163 | 2,274 | 1,733 | 5.91 |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Forrestdale** | 1,143 | 1,110 | 1,192 | 1,253 | 1,301 | 1,670 | 527 | 1.53 |
| **Harrisdale** | 84 | 3,950 | 6,552 | 9,034 | 11,339 | 12,049 | 11,965 | 21.97 |
| **Haynes** | 150 | 134 | 531 | 2,944 | 5,651 | 8,347 | 8,197 | 17.44 |
| **Hilbert** | 362 | 589 | 2,563 | 8,005 | 15,786 | 23,681 | 23,319 | 18.20 |
| **Kelmscott East** | 5,320 | 5,396 | 6,105 | 6,391 | 6,753 | 7,203 | 1,883 | 1.22 |
| **Kelmscott West** | 4,523 | 5,164 | 5,553 | 6,005 | 6,447 | 6,873 | 2,350 | 1.69 |
| **Mount Nasura - Mount Richon** | 5,041 | 5,184 | 5,317 | 5,459 | 5,561 | 5,698 | 657 | 0.49 |
| **Piara Waters** | 95 | 2,693 | 8,286 | 13,066 | 15,338 | 16,706 | 16,611 | 22.97 |
| **Roleystone - Karragullen - Lesley** | 6,524 | 7,018 | 7,420 | 7,574 | 7,730 | 7,829 | 1,305 | 0.73 |
| **Seville Grove** | 7,243 | 9,691 | 11,173 | 12,172 | 12,191 | 12,149 | 4,906 | 2.09 |

⚠ Population numbers in forecast.id for the 2006 base year are derived on Estimated Resident Population from the Australian Bureau of Statistics. These differ from (and are usually higher than) Census counts as they factor in population missed by the Census, and population overseas on Census night. They are generally considered a more accurate measure of population size than Census counts

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# Summary & key results

## Harrisdale



Harrisdale is bounded in the north and east by the municipal boundary of the City of Gosnells; in the south by Hale Road; and in the west by Nicholson Road.

## How many will live here in future? - Harrisdale

| Harrisdale | Forecast year | | | | | |
|---|---|---|---|---|---|---|
| | **2006** | **2011** | **2016** | **2021** | **2026** | **2031** |
| Population | 84 | 3,950 | 6,552 | 9,034 | 11,339 | 12,049 |
| Change in Population (5yrs) | | 3,866 | 2,602 | 2,482 | 2,305 | 710 |
| Average Annual Change (%) | | 116 | 10.65 | 6.64 | 4.65 | 1.22 |
| Households | 41 | 1,369 | 2,147 | 2,892 | 3,640 | 3,949 |
| Average Household Size (persons) | 2.05 | 2.89 | 3.03 | 3.1 | 3.08 | 3.01 |
| Population in non private dwellings | 0 | 0 | 40 | 80 | 120 | 160 |
| Dwellings | 43 | 1,430 | 2,233 | 2,992 | 3,727 | 4,001 |
| Dwelling occupancy rate | 95.35 | 95.73 | 96.15 | 96.66 | 97.67 | 98.7 |

This summary analyses data for the period 2006 to 2021, as the short to medium term is likely to be the most accurate and useful forecast information for immediate planning purposes. Please note that this data is available for all years between 2006 and 2031.

In 2006, the total population of Harrisdale was estimated at 84 people. It is expected to experience an increase of over 8,900 people to 9,034 by 2021, at an average annual growth rate of 36.60% per annum over 15 years. This is based on an increase of over 2,800 households during the period, with the average number of persons per household rising from 2.05 to 3.10 by 2021.

**Forecast population, households and average household size, Harrisdale**
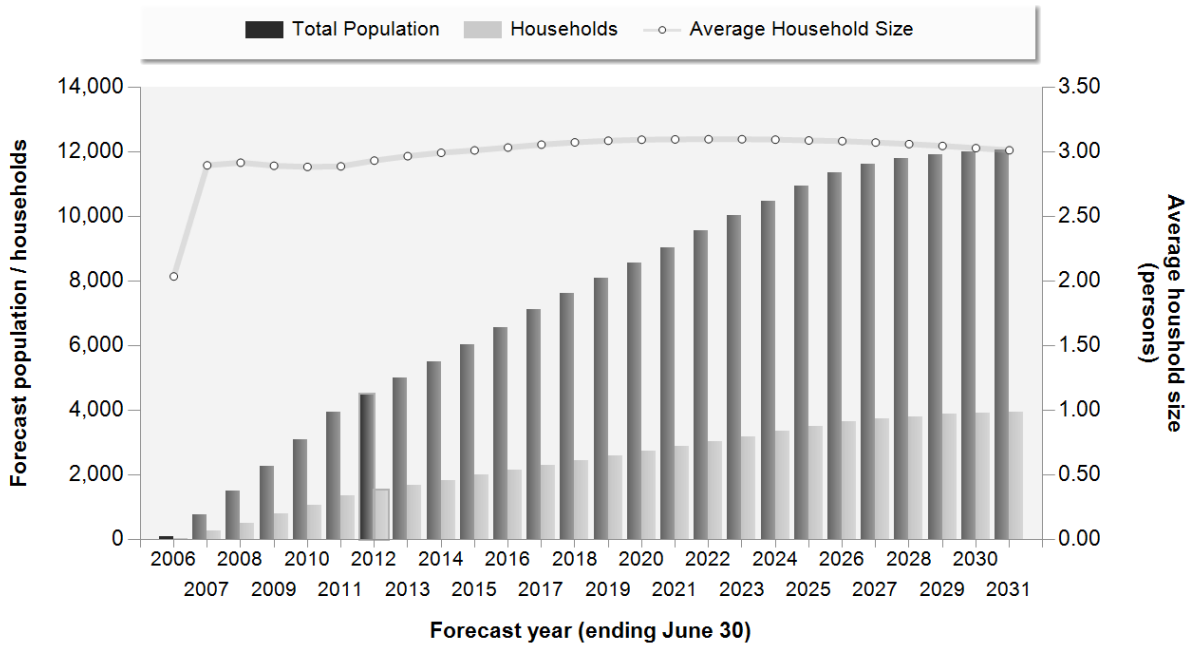
# Summary & key results

## How old will we be?

In 2006, the most populous age group in Harrisdale was 65-69 year olds, with 11 persons. In 2021 the most populous forecast age group will be 5-9 year olds, with 934 persons.

The number of people aged under 15 is forecast to increase by 2,623 (21858.3%), representing a rise in the proportion of the population to 29.2%. The number of people aged over 65 is expected to increase by 420 (2100.0%), and represent 4.9% 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 0-4 year olds, who are forecast to increase by 45350.0% to 909 persons.

**Forecast age structure, Harrisdale (Persons)**
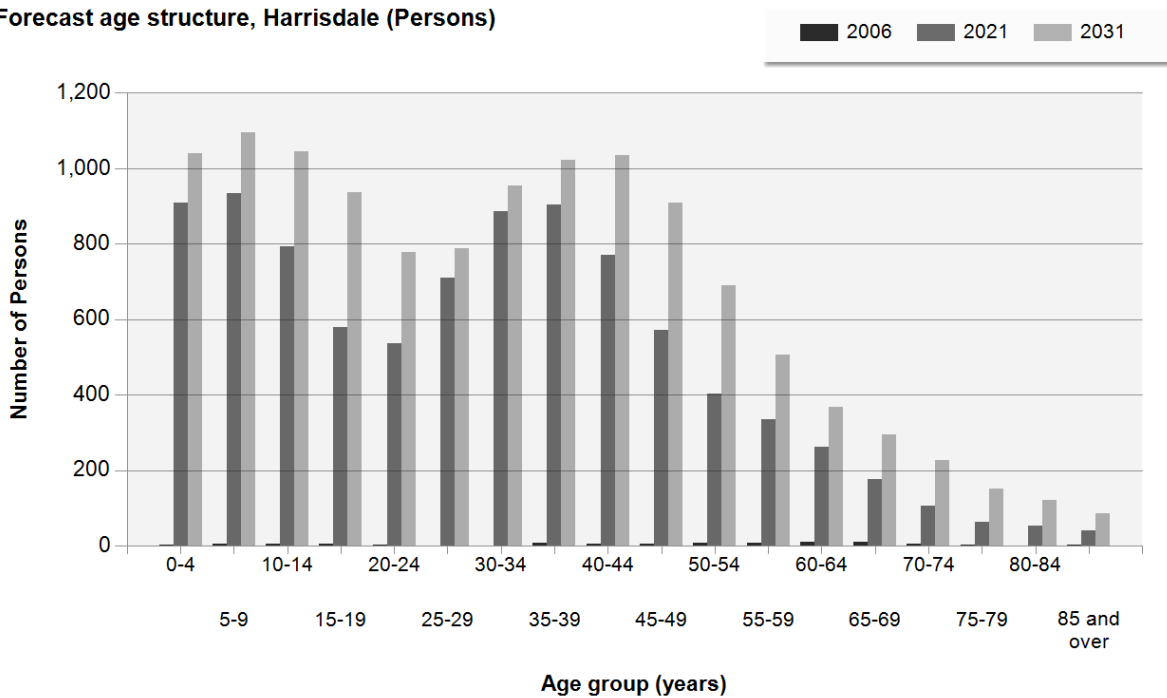
# Summary & key results

## What type of households will we live in?

In 2006, the dominant household type in Harrisdale was Lone person households, which accounted for 41.5% 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 Couple families with dependents, which will increase by 1,383 households, comprising 48.1% of all households, compared to 22.0% in 2006.

In contrast Other families is forecast to increase by 51 households, to comprise 1.8% of all households in 2021, compared to 0.0% in 2006.

**Forecast Households, Harrisdale**
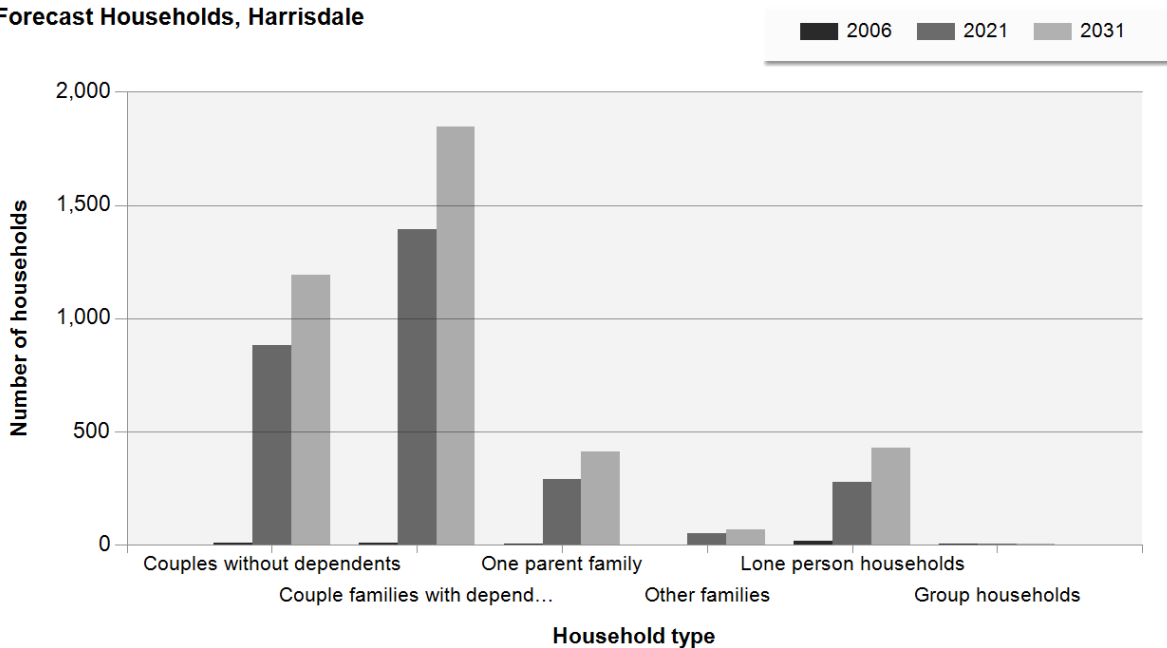
# Assumptions

## Residential development

List of forecast land developments and infill assumptions:

Principal forecast land assumptions for the period 2007-2011 are based on 2011 Census dwelling counts.

Assumptions concerning development over the post-census forecast period include:

- Heron Park - 49 dwellings (2012-2013)
- Arion Estate - 29 dwellings (2012-2014)
- Vertu Private Estate - 84 dwellings (2012-2015)
- Harrisdale Green - 500 dwellings (2012-2018)
- Heron Park, phase 2 - 1,190 dwellings (2014-2028)
- North Forrestdale future greenfield development - 719 dwellings (2017-2031)
- No infill development assumed

**Forecast residential development, Harrisdale**
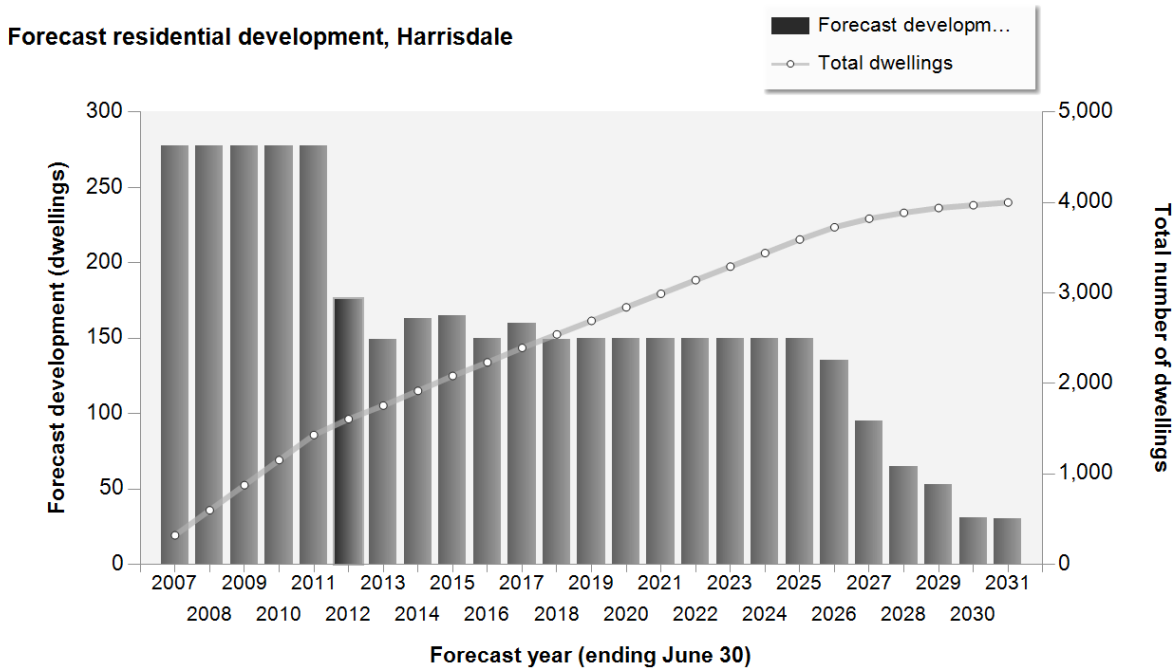
# Assumptions

## Births and deaths

**Fertility (birth) rates:**

The fertility rate in Harrisdale 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 Armadale, 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 overall number of persons in non-private dwellings is assumed to increase from 0 in 2006 to 160 in 2031.

# Assumptions

## Migration

Migration profile from 2006-2011 based on modelling to match 2011 Census based Estimated Resident Population (ERP) by age. From 2011 onwards:

- Major increase in migration throughout the period to 2021 in all age groups owing to continued greenfield development, resulting in a gain to most age groups
- Significant gain of young couples, young and mature families (0-54 years)
- Gain of empty-nesters (aged 50-59 years)
- Little change through migration in older age groups (60+ years)

**Forecast net migration by age group, Harrisdale**
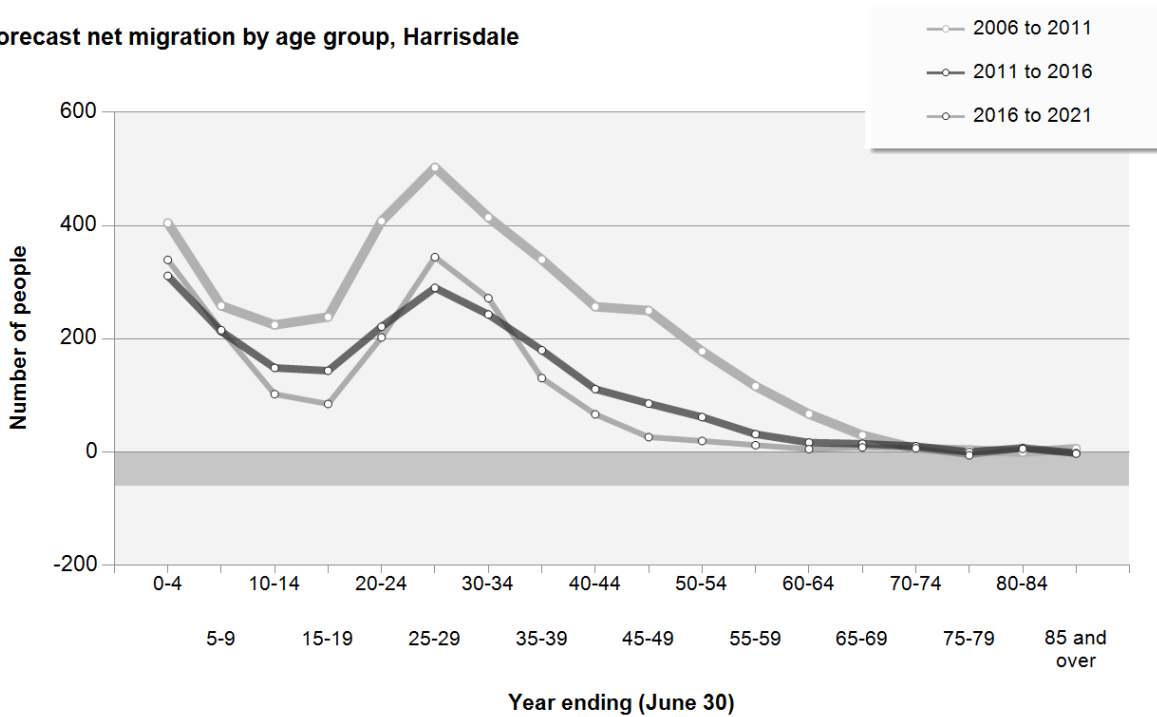
# Detailed data

## Age structure

| Forecast age structure, Harrisdale (Persons) | 2006 | | 2021 | | 2031 | | Change |
|---|---|---|---|---|---|---|---|
| Age group | number | % | number | % | number | % | 2006 to 2031 |
| 0-4 years | 2 | 2.4 | 909 | 10.1 | 1,039 | 8.6 | 1,037 |
| 5-9 years | 5 | 6.0 | 934 | 10.3 | 1,096 | 9.1 | 1,091 |
| 10-14 years | 5 | 6.0 | 792 | 8.8 | 1,046 | 8.7 | 1,041 |
| 15-19 years | 5 | 6.0 | 580 | 6.4 | 936 | 7.8 | 931 |
| 20-24 years | 3 | 3.6 | 536 | 5.9 | 779 | 6.5 | 776 |
| 25-29 years | 0 | 0.0 | 709 | 7.8 | 787 | 6.5 | 787 |
| 30-34 years | 0 | 0.0 | 887 | 9.8 | 954 | 7.9 | 954 |
| 35-39 years | 8 | 9.5 | 904 | 10.0 | 1,023 | 8.5 | 1,015 |
| 40-44 years | 5 | 6.0 | 770 | 8.5 | 1,036 | 8.6 | 1,031 |
| 45-49 years | 5 | 6.0 | 571 | 6.3 | 910 | 7.6 | 905 |
| 50-54 years | 8 | 9.5 | 403 | 4.5 | 691 | 5.7 | 683 |
| 55-59 years | 8 | 9.5 | 335 | 3.7 | 506 | 4.2 | 498 |
| 60-64 years | 9 | 10.7 | 262 | 2.9 | 367 | 3.0 | 358 |
| 65-69 years | 11 | 13.1 | 176 | 1.9 | 294 | 2.4 | 283 |
| 70-74 years | 5 | 6.0 | 106 | 1.2 | 227 | 1.9 | 222 |
| 75-79 years | 2 | 2.4 | 63 | 0.7 | 150 | 1.2 | 148 |
| 80-84 years | 0 | 0.0 | 54 | 0.6 | 122 | 1.0 | 122 |
| 85 years and over | 2 | 2.4 | 41 | 0.5 | 85 | 0.7 | 83 |
| **Total Persons** | **83** | **98.8** | **9,032** | **100.0** | **12,048** | **100.0** | **11,965** |

**Forecast age structure, Harrisdale (Persons)**
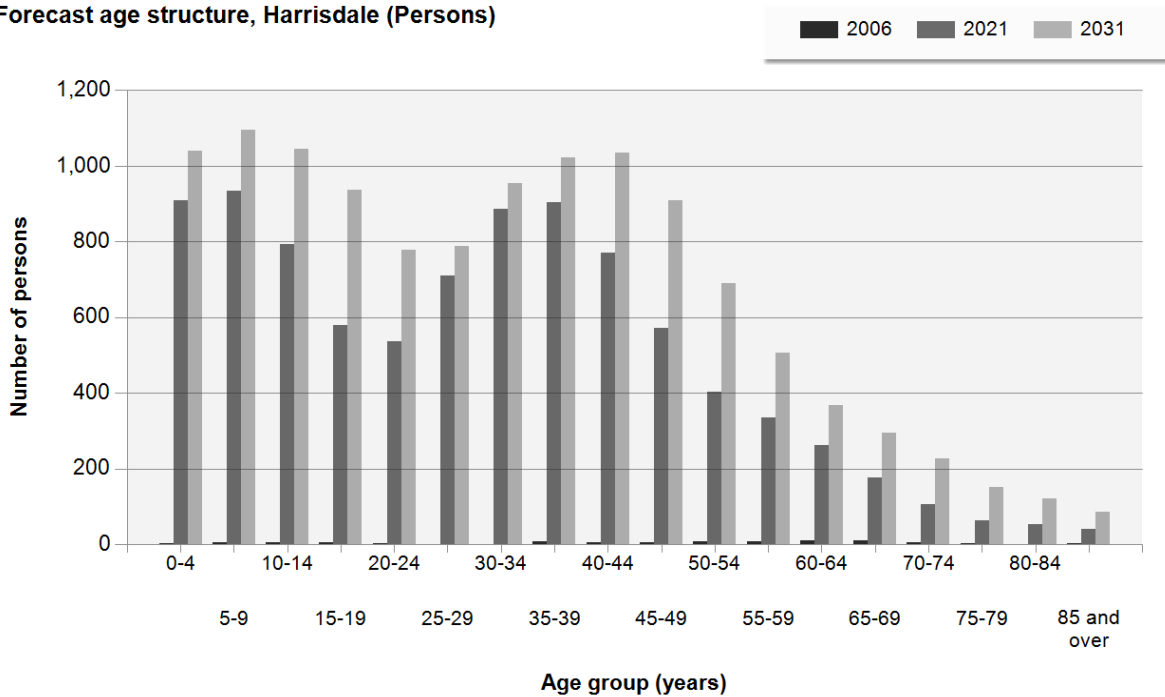
## Forecast change in age structure, Harrisdale (Persons)

**Legend:** ■ 2006 to 2021   ■ 2021 to 2031

Number of persons (y-axis, 0 to 1,000)

Age group (years) (x-axis): 0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85 and over
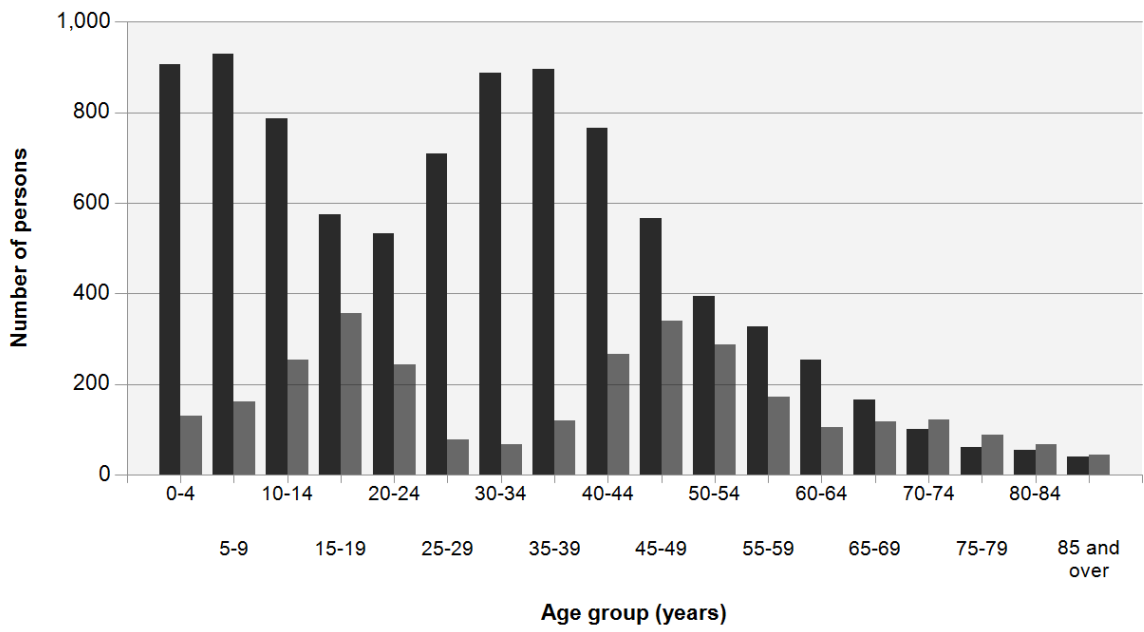
# Detailed data

## Households

| Forecast households, Harrisdale | 2006 | | 2021 | | 2031 | | Change |
|---|---|---|---|---|---|---|---|
| Type | number | % | number | % | number | % | 2006 to 2031 |
| Couples without dependents | 9 | 22.0 | 880 | 30.4 | 1,193 | 30.2 | 1,184 |
| Couple families with dependents | 9 | 22.0 | 1,392 | 48.1 | 1,846 | 46.8 | 1,837 |
| One parent family | 4 | 9.8 | 289 | 10.0 | 412 | 10.4 | 408 |
| Other families | 0 | 0.0 | 51 | 1.8 | 66 | 1.7 | 66 |
| Lone person households | 17 | 41.5 | 278 | 9.6 | 429 | 10.9 | 412 |
| Group households | 2 | 4.9 | 2 | 0.1 | 3 | 0.1 | 1 |
| **Total households** | **41** | **100.0** | **2,892** | **100.0** | **3,949** | **100.0** | **3,908** |

**Forecast household types, Harrisdale**
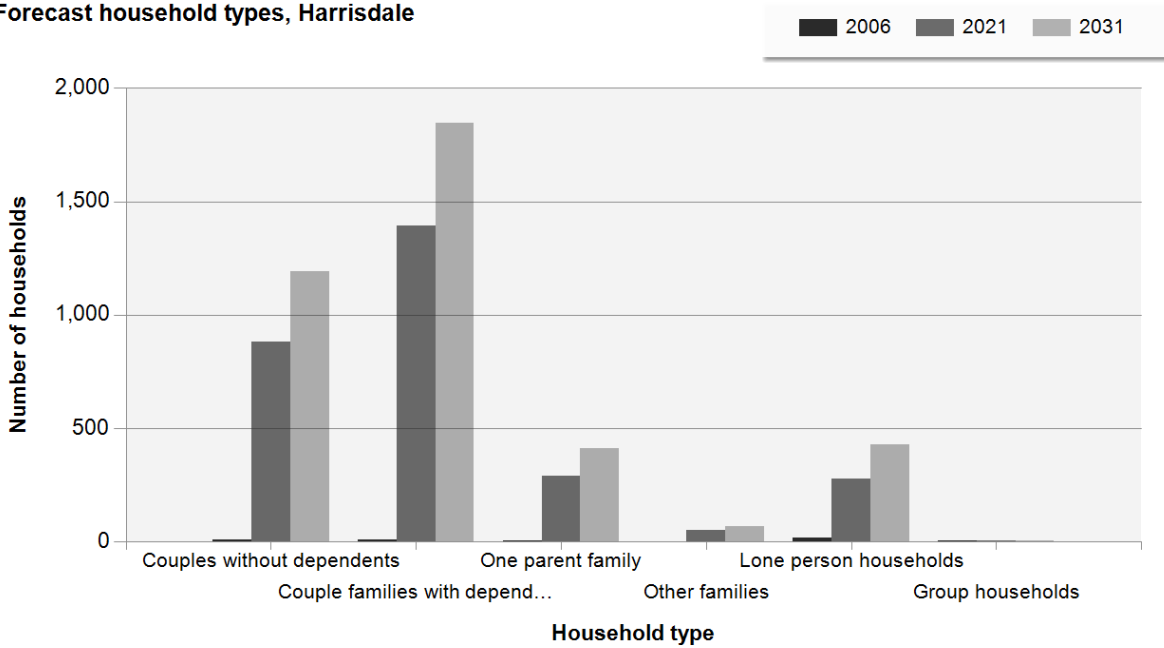
## Forecast change in household types, Harrisdale
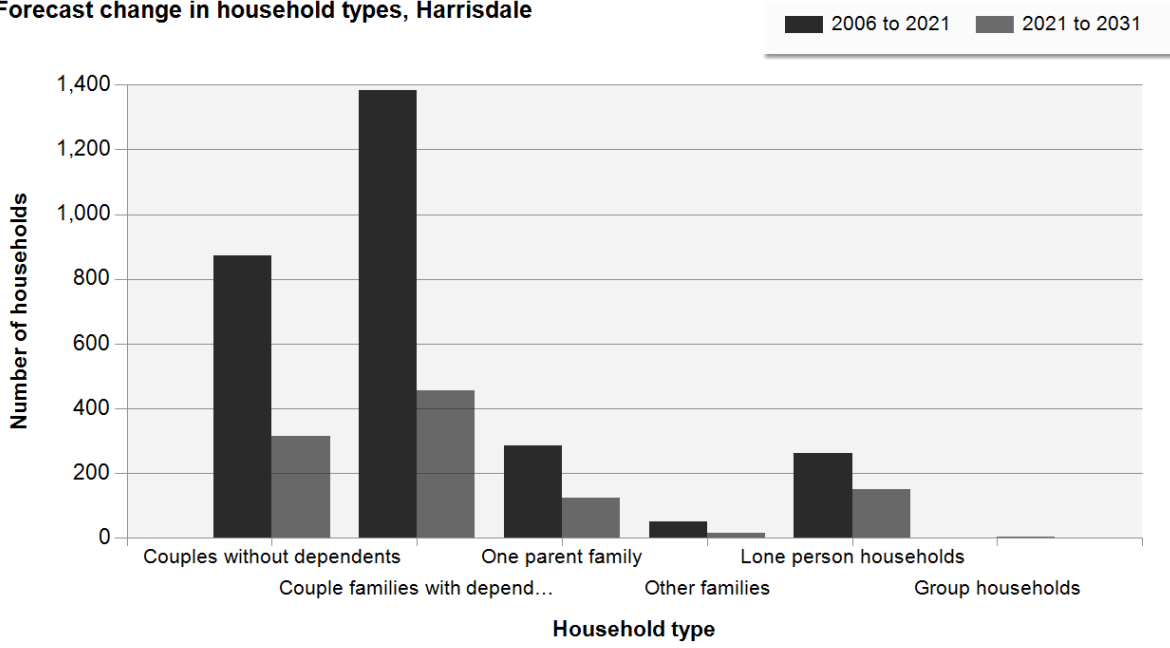
# Detailed data

## Residential development

| Residential development and structural private dwellings, Harrisdale | | | |
|---|---|---|---|
| Year | Dwelling commencements | Structural private dwellings (inc. commencements) | % change from previous year |
| 2007 | 277 | 320 | 645.1 |
| 2008 | 277 | 598 | 86.6 |
| 2009 | 277 | 875 | 46.4 |
| 2010 | 277 | 1,153 | 31.7 |
| 2011 | 277 | 1,430 | 24.1 |
| 2012 | 176 | 1,606 | 12.3 |
| 2013 | 149 | 1,755 | 9.3 |
| 2014 | 163 | 1,918 | 9.3 |
| 2015 | 165 | 2,083 | 8.6 |
| 2016 | 150 | 2,233 | 7.2 |
| 2017 | 160 | 2,393 | 7.2 |
| 2018 | 149 | 2,542 | 6.2 |
| 2019 | 150 | 2,692 | 5.9 |

| Residential development and structural private dwellings, Harrisdale | | | |
|---|---|---|---|
| Year | Dwelling commencements | Structural private dwellings (inc. commencements) | % change from previous year |
| 2020 | 150 | 2,842 | 5.6 |
| 2021 | 150 | 2,992 | 5.3 |
| 2022 | 150 | 3,142 | 5.0 |
| 2023 | 150 | 3,292 | 4.8 |
| 2024 | 150 | 3,442 | 4.6 |
| 2025 | 150 | 3,592 | 4.4 |
| 2026 | 135 | 3,727 | 3.8 |
| 2027 | 95 | 3,822 | 2.5 |
| 2028 | 65 | 3,887 | 1.7 |
| 2029 | 53 | 3,940 | 1.4 |
| 2030 | 31 | 3,971 | 0.8 |
| 2031 | 30 | 4,001 | 0.8 |



Forecast residential development, Harrisdale
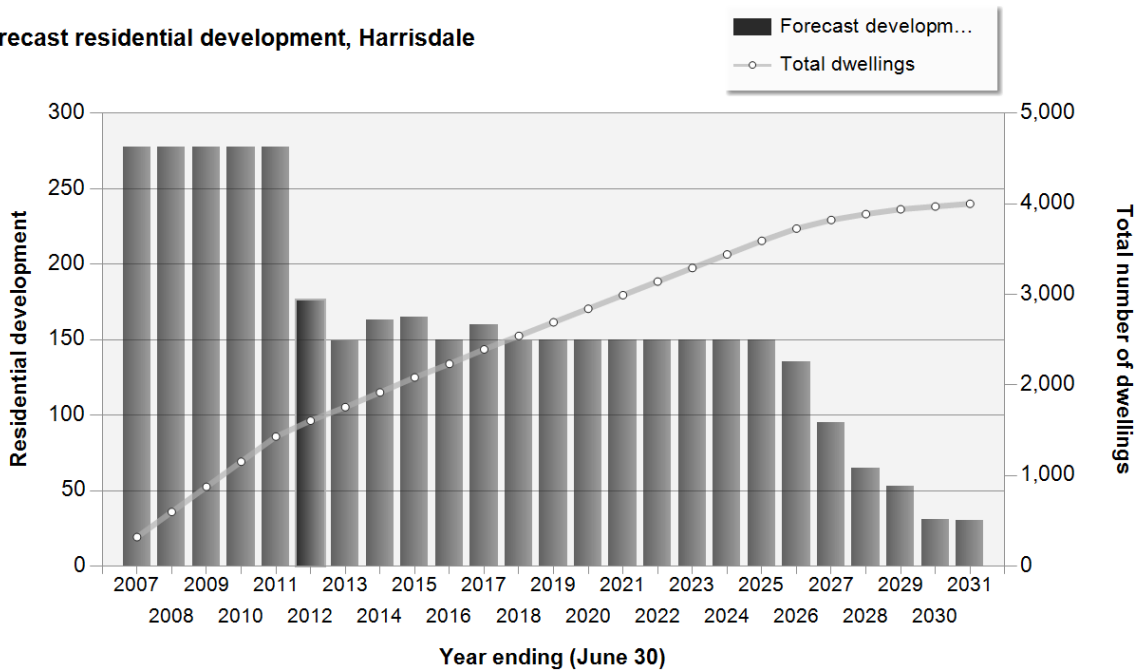
# Detailed data

## Components of population change

| Components of population change, Harrisdale | Forecast period | | | | |
|---|---|---|---|---|---|
| | 2007 to 2011 | 2012 to 2016 | 2017 to 2021 | 2022 to 2026 | 2027 to 2031 |
| Births | 178 | 514 | 670 | 818 | 911 |
| Deaths | 13 | 35 | 57 | 80 | 105 |
| Net Migration | 3,701 | 2,084 | 1,829 | 1,528 | -136 |
| Net Population Change | 3,866 | 2,602 | 2,481 | 2,306 | 710 |

**Forecast population change, Harrisdale**
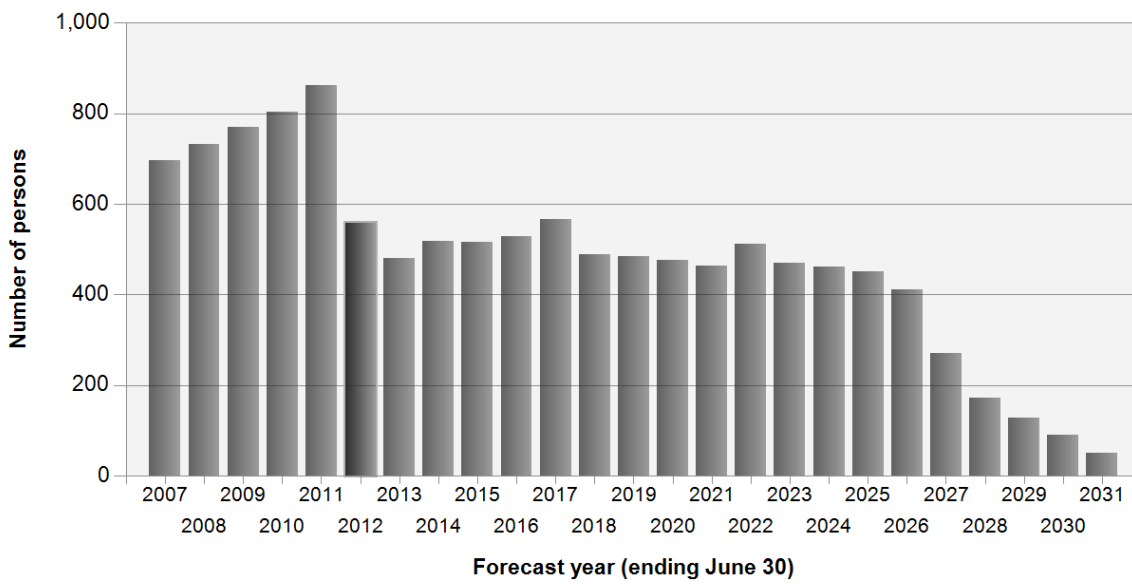
## Forecast birth, deaths and natural increase, Harrisdale

Legend:
- ···○··· Natural increase
- ─○─ Total Births
- ─○─ Total Deaths

**Number of persons** (y-axis: -50 to 200)

**Forecast year (ending June 30)** (x-axis: 2007 to 2031)
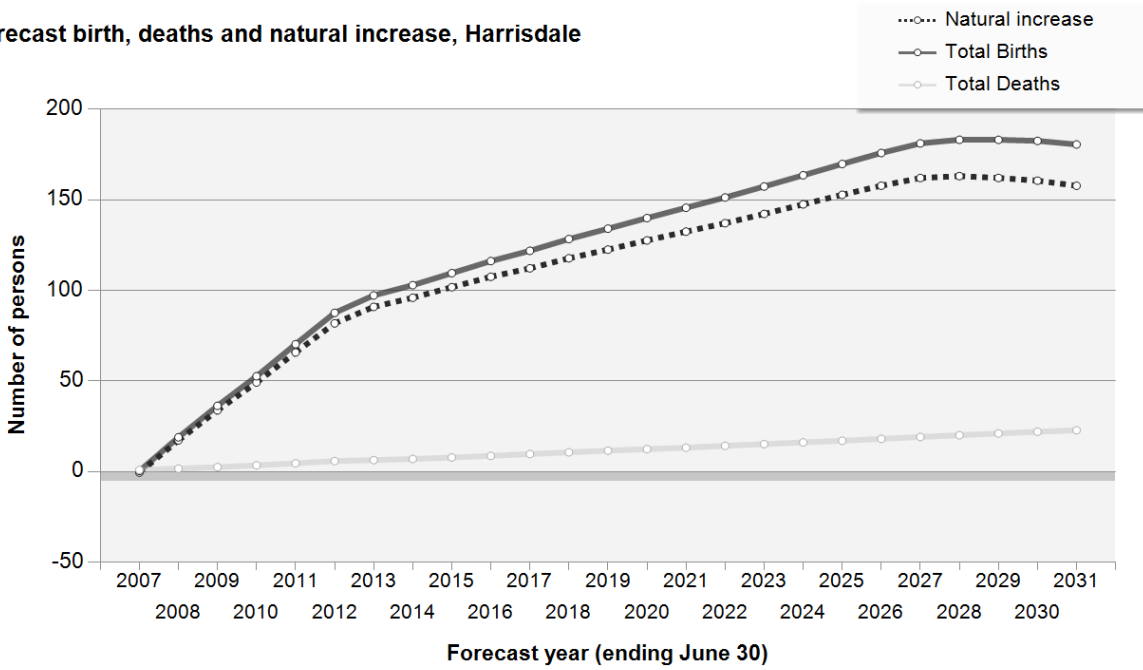
## Forecast in, out and net migration, Harrisdale

Legend:
- ─○─ Total In Migration
- ─○─ Total Net Migration
- ─○─ Total Out Migration

**Number of persons** (y-axis: -200 to 1,400)

**Forecast year (ending June 30)** (x-axis: 2007 to 2031)

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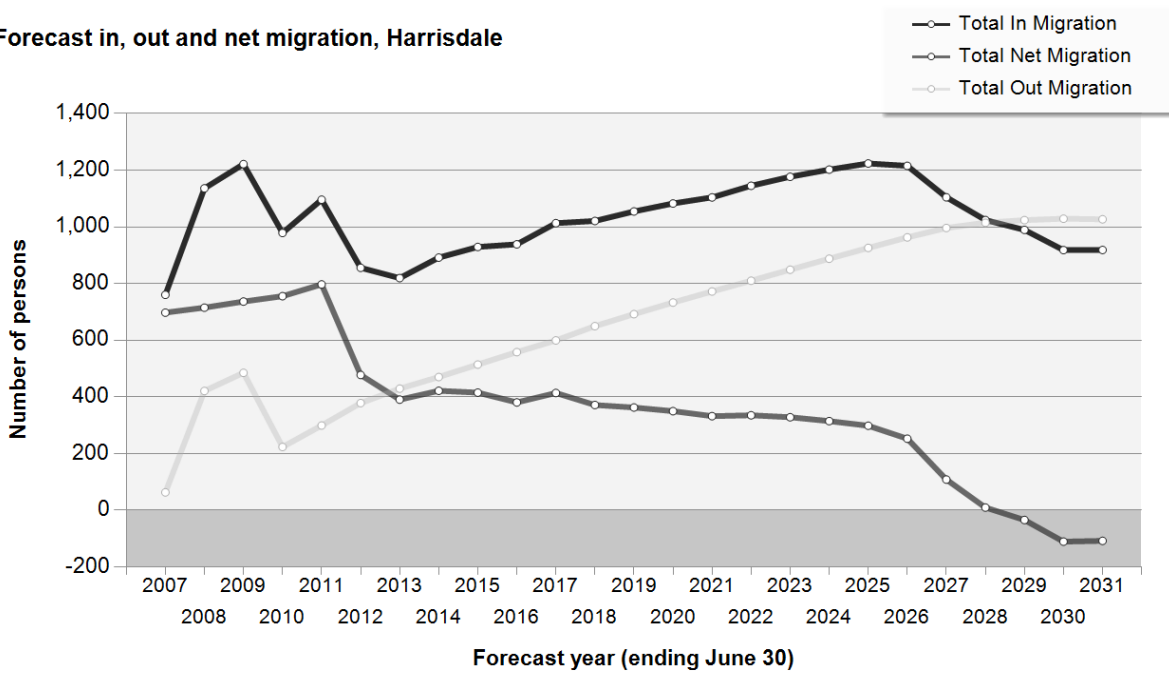
# Supporting info

## 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.

**Base Population (2006)**
- age, and gender
- household types
- households
- dwellings

**Drivers**
- dwellings additions
- current age structure
- birth and death rates
- household structure
- migration profile
- household markets

**Projected Population**
- age and gender
- household types
- households
- dwellings
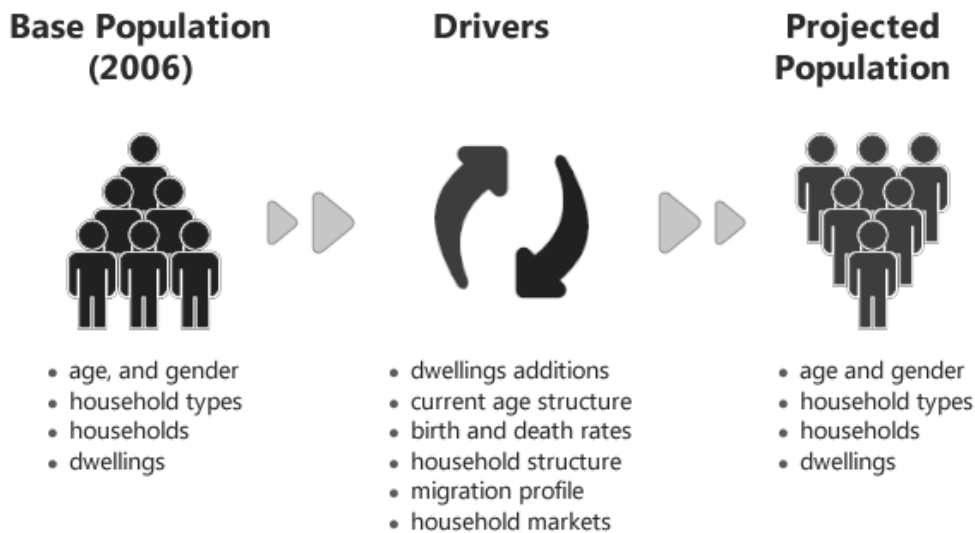
**Dwelling additions**

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 Armadale'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.
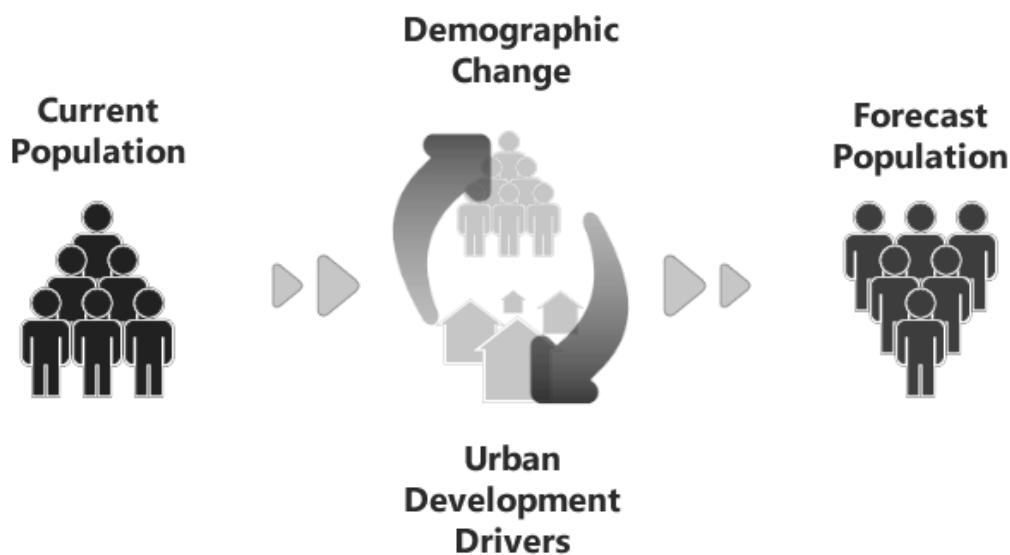


**Modelling process**

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.

- Base year population by age
- Base year population by gender
- Fertility rates
- Death rates
- Migration rates

- Household relationship by five year age group and sex
- Household type by size
- Average number of children per one and two parent family

- Base year dwellings & households
- Residential building activity & demolitions
- Base year population in non-private & private dwellings

Inputs

Inputs

Inputs

## Cohort component model

## Household propensity model

## Housing unit model

## Outputs
## Forecast population and households

- Population by single year of age and sex
- Births, deaths and age specific migration
- Total dwellings and households
- Households by type and average household size

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 cyles**

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.
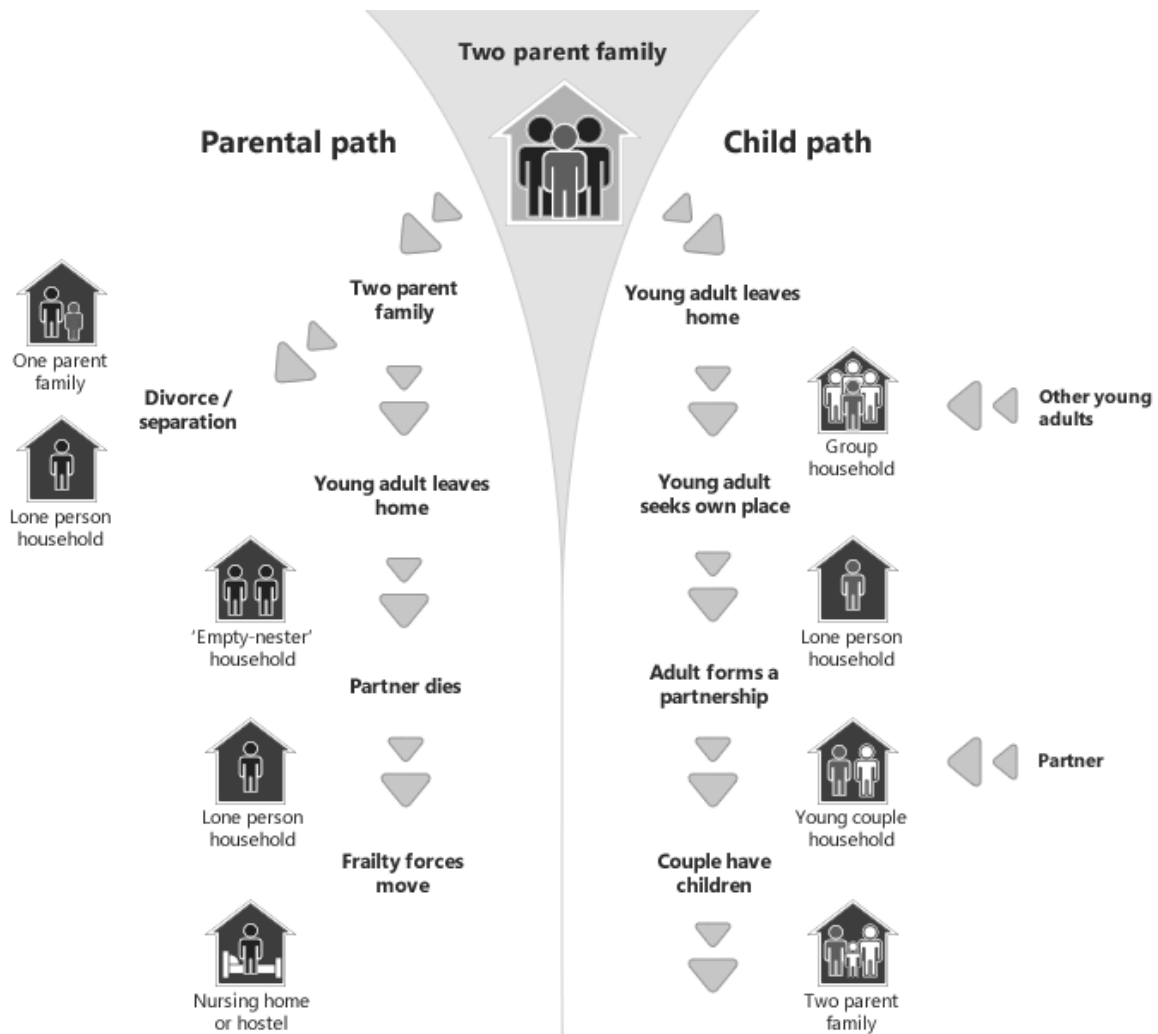


**Suburb life cycles**

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.
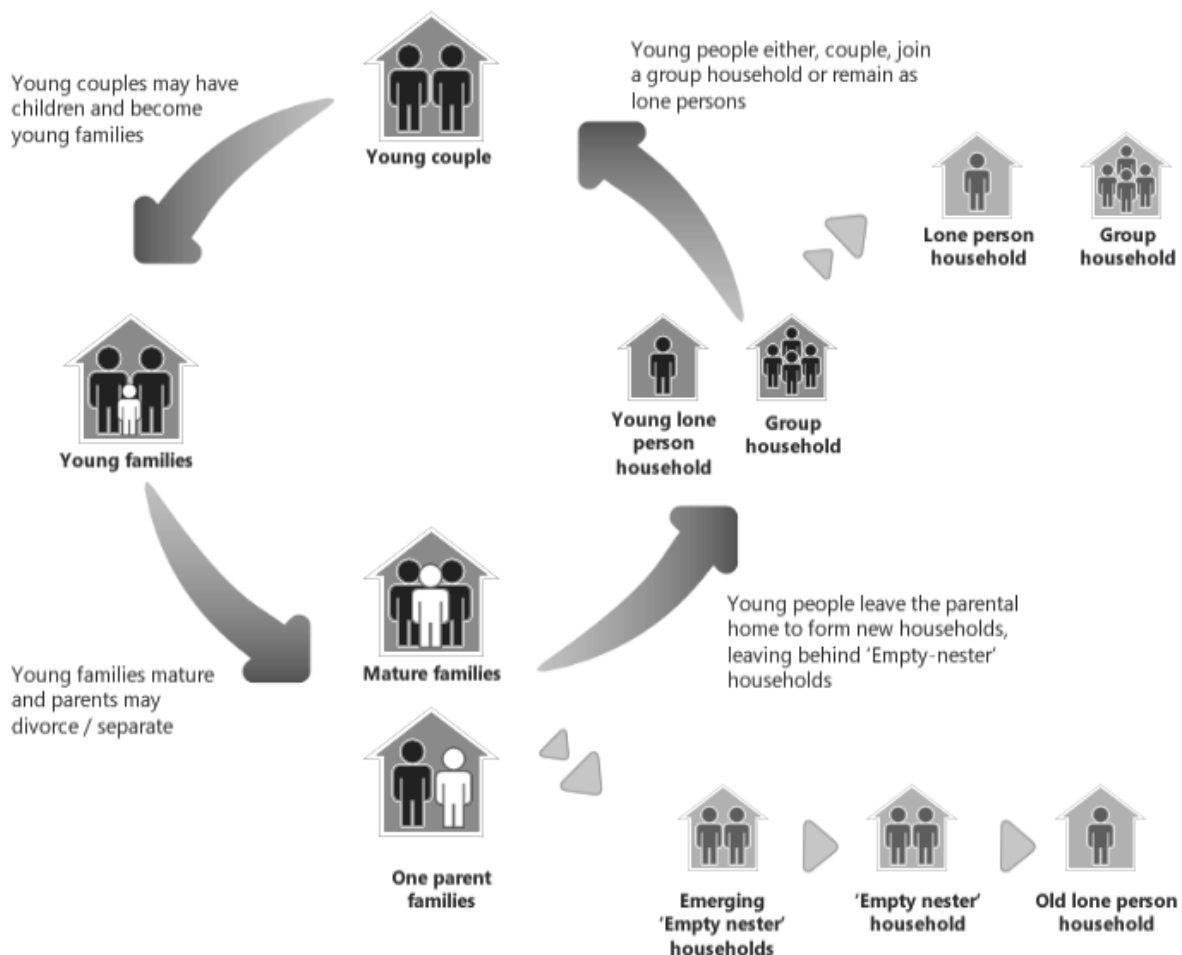
# Supporting info

## Data notes

**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).

**.id** is currently in the process of updating forecasts to reflect results from the 2011 Census. The first step involves an update of the existing 2006 based forecasts. Net change in dwellings from the 2011 Census is added to the 2006-11 period and Estimated Resident Population by age and sex is matched at 2011 for each small area. The text at the top right hand corner of the home page will indicate whether this process has been undertaken for these forecasts.

**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.

# 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.

# Supporting info

## References

- Australian Bureau of Statistics, 2006 and 2011 Censuses of Population and Housing.
- Australian Bureau of Statistics, 2006 Estimated Resident Population, June 30 2006, Cat. No: 3235.0.
- Australian Bureau of Statistics, 2011 Estimated Resident Population (preliminary), June 30 2011, Cat. No: 3235.0.