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City of Newcastle

POPULATION AND HOUSEHOLD FORECASTS

## Fletcher - Minmi

City of Newcastle 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, 2011 to 2036.

The data in this report was last reviewed and updated on 26/03/2013.

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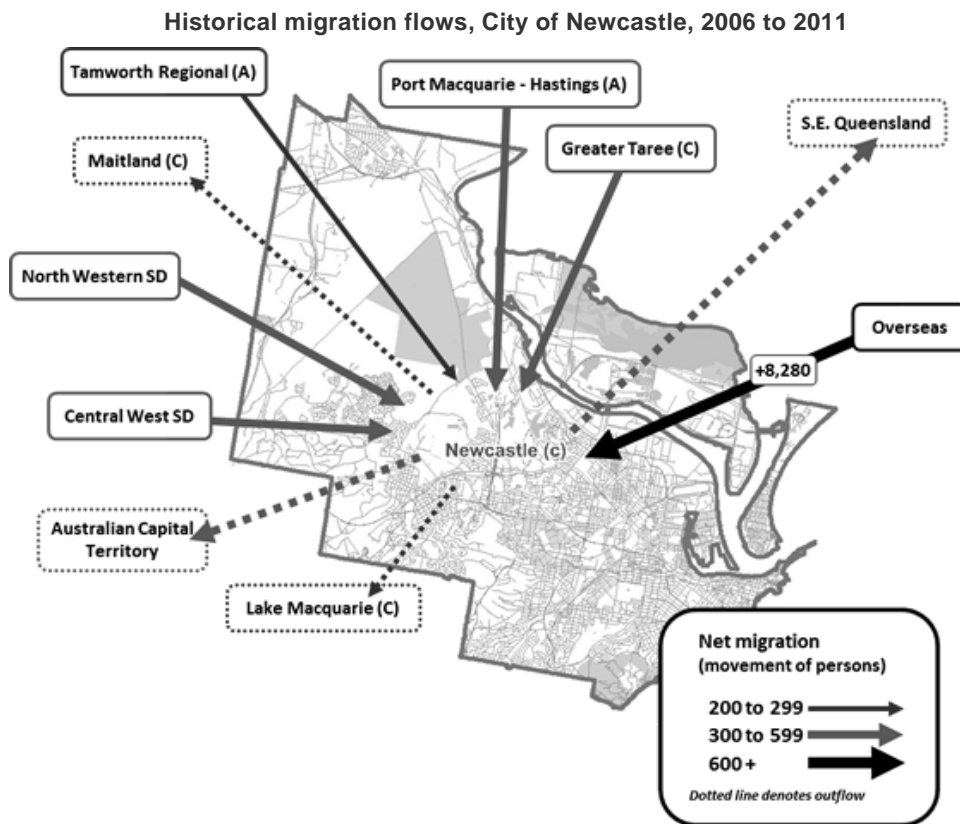
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**Date created: 26/03/2013**

## Summary & key results

### Key drivers of change



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 Newcastle is located in the Hunter Region of New South Wales, around 160 kilometres north of Sydney. The City is predominantly urban, with a population of around 155,000 at 2011. The City is the major centre of the Lower Hunter. The greater Newcastle area (including Maitland, Raymond Terrace, northern Lake Macquarie) is the seventh largest city in Australia with a population over 400,000.

The Newcastle local government area is crossed by the boundaries of three Local Area Land Councils (LALC's):

- Awabakal LALC covers the majority of the Newcastle LGA.
- Worimi LALC covers the Stockton peninsula and areas north of the Hunter River.
- Mindaribba LALC includes the northwest area of the LGA - Beresfield, Tarro, Black Hill and part of Hexham Swamp

The City of Newcastle acknowledges that the Awabakal and Worimi people were the first peoples of this country. In 1977 the City of Newcastle was the first Australian local government to fly the Aboriginal flag on City Hall. Council adopted a Commitment to Aboriginal and Torres Strait Islanders in 1993, with reaffirmation by Council in 1998.

The City contains large areas of industrial and employment use, focussed along the lower reaches of the Hunter River and the port. The City is one of Australia's largest ports and is the largest coal exporting port in the world, servicing the coal rich Hunter Valley. The port area and surrounding industrial areas is a significant employment node, with the City containing over 88,000 jobs in 2011. Other important industries in the City include Health and Education. The City contains the University of Newcastle as well as the John Hunter Hospital, the major trauma hospital servicing northern New South Wales.

European history in the City dates from 1797, when abundant resources of coal were discovered. Lime and cedar were also of importance to the fledgling colony of New South Wales. A convict settlement was established in 1804 and lasted for 20 years. In the period from 1815-1818 the first streets were laid out. From the 1820s, the penal settlement ended and large numbers of free settlers began to move into the area. Newcastle developed as a significant coal mining area, with numerous collieries opening up from the 1830s. Most of these had closed by the 1960s as coal mining operations moved further inland into the Hunter Valley. Other major industries included soap manufacturing and the BHP Steelworks, which operated from 1911 to 1999. By 1921, what is now the City of Newcastle had grown to around 85,000 residents. In this period, the City still functioned as a series of sometimes isolated townships, often separated by scrub and poor quality roads. By 1938, when 11 councils merged to form the City of Greater Newcastle, the population of the new City was 112,000. The City experienced continued population growth in the post war period, driven by industrial employment servicing Australia's economic growth.

The City is expected to continue to grow in population over the forecast period, catering for demand from new households being created within the Lower Hunter, as well as the movement of young adults for tertiary education and employment opportunities. The City plays the role of attracting young adults from both the Lower Hunter and northern New South Wales. Much of this demand is expected to be met in the inner city, as well as areas closest to the University. Fringe growth areas in Fletcher and Minmi are expected to cater for young couples and families.








With the variety of residential and rural locations, different areas within the City of Newcastle have developed different roles within the housing market. Areas on the outskirts of Newcastle such as Fletcher, Minmi and Maryland are attractive to young families. The inner city areas including central Newcastle, Maryville, Wickham, Broadmeadow, Carrington, Cooks Hill, Mayfield and Islington attract young adults and lose young families in net terms. Further out, Adamstown Heights, Kotara are expected to attract older families. The areas closest to the University such as Birmingham Gardens, Lambton and Jesmond attract large numbers of students. The variety of function and role of the small areas in the City of Newcastle means that population outcomes differ across the LGA.











There are also significant differences in the supply of future residential land within the LGA which will also have a major influence in structuring different population and household futures within the City over the next five to ten years. Significant new 'greenfield' opportunities have been identified in Fletcher, Minmi, Elernmore Vale and Wallsend. Inner city areas such as Newcastle, Newcastle West, Mayfield, Adamstown, New Lambton, Broadmeadow, Wickham and Islington are also expected to provide new dwelling opportunities through the forecast period.











## Summary & key results




### Population summary


In 2036, the population of the City of Newcastle is forecast to be 180,643, an increase of 25,760 persons (16.63%) from 2011. This represents an average annual growth rate of 0.62%.

City of Newcastle's areas		Forecast year						Change between 2011 and 2036	
Location	Area name	2011	2016	2021	2026	2031	2036	number	Avg. annual % change
	City of Newcastle	154,883	159,731	164,277	169,205	174,605	180,643	25,760	0.62
	Adamstown	5,899	6,160	6,401	6,671	6,974	7,266	1,367	0.84
	Adamstown Heights	4,338	4,362	4,327	4,325	4,325	4,322	-16	-0.01
	Bar Beach - The Junction	2,304	2,320	2,313	2,323	2,341	2,363	59	0.10
	Beresfield - Tarro - Northern Environmental Region	5,414	5,444	5,537	5,656	5,775	5,868	454	0.32
	Birmingham Gardens - Callaghan	2,963	3,707	3,714	3,732	3,741	3,755	792	0.95
	Broadmeadow - Hamilton North	2,722	2,844	2,986	3,159	3,321	3,486	764	0.99

	<b>Carrington</b>	1,996	1,960	1,949	1,945	1,936	1,939	-57	-0.12
	<b>Cooks Hill</b>	3,670	3,751	3,946	3,920	3,915	3,914	244	0.26
	<b>Elernmore Vale - Rankin Park</b>	7,001	7,174	7,403	7,706	8,404	9,436	2,435	1.20
	<b>Fletcher - Minmi</b>	3,516	5,283	7,007	8,688	9,716	10,962	7,446	4.65
	<b>Georgetown - Waratah</b>	6,868	7,144	7,259	7,338	7,428	7,549	681	0.38
	<b>Hamilton</b>	4,225	4,343	4,428	4,560	4,679	4,819	594	0.53
	<b>Hamilton South - Hamilton East</b>	5,301	5,243	5,241	5,292	5,342	5,366	65	0.05
	<b>Islington - Tighes Hill</b>	3,630	3,675	3,662	3,745	3,838	3,865	235	0.25
	<b>Jesmond</b>	2,827	3,004	3,037	3,077	3,112	3,151	324	0.43
	<b>Kotara</b>	4,146	4,212	4,312	4,377	4,490	4,522	376	0.35

	<b>Lambton</b>	5,165	5,198	5,210	5,219	5,247	5,291	126	0.10
	<b>Maryland</b>	7,958	7,646	7,457	7,352	7,305	7,312	-646	-0.34
	<b>Maryville - Wickham</b>	2,477	2,503	2,577	2,721	2,961	3,207	730	1.04
	<b>Mayfield - Mayfield East</b>	11,359	11,439	11,706	12,168	12,730	13,318	1,959	0.64
	<b>Mayfield West - Warabrook</b>	4,034	4,091	4,115	4,131	4,145	4,173	139	0.14
	<b>Merewether - Merewether Heights</b>	12,564	12,918	13,068	13,136	13,218	13,315	751	0.23
	<b>New Lambton - New Lambton Heights</b>	11,118	11,148	11,190	11,272	11,408	11,582	464	0.16
	<b>Newcastle - Newcastle East - Newcastle West</b>	3,975	4,138	5,041	5,786	6,476	7,164	3,189	2.38
	<b>North Lambton</b>	3,442	3,477	3,529	3,555	3,613	3,682	240	0.27
	<b>Shortland - Sandgate</b>	4,159	4,186	4,238	4,280	4,313	4,370	211	0.20

	<b>Stockton</b>	4,364	4,347	4,351	4,396	4,436	4,475	111	0.10
	<b>The Hill</b>	2,227	2,237	2,248	2,250	2,254	2,268	41	0.07
	<b>Wallsend</b>	12,409	12,965	13,185	13,518	14,252	14,988	2,579	0.76
	<b>Waratah West</b>	2,812	2,812	2,840	2,907	2,910	2,915	103	0.14

 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



## Summary & key results

### Fletcher - Minmi



Fletcher - Minmi is bounded by the localities of Lenaghan and Hexham in the north, the locality of Maryland and Minmi Road in the east, the northern boundary of Summerhill Waste Management Centre, Minmi Road, Blue Gum Hills Regional Park and Lake Macquarie City in the south, and Cessnock City in the west.

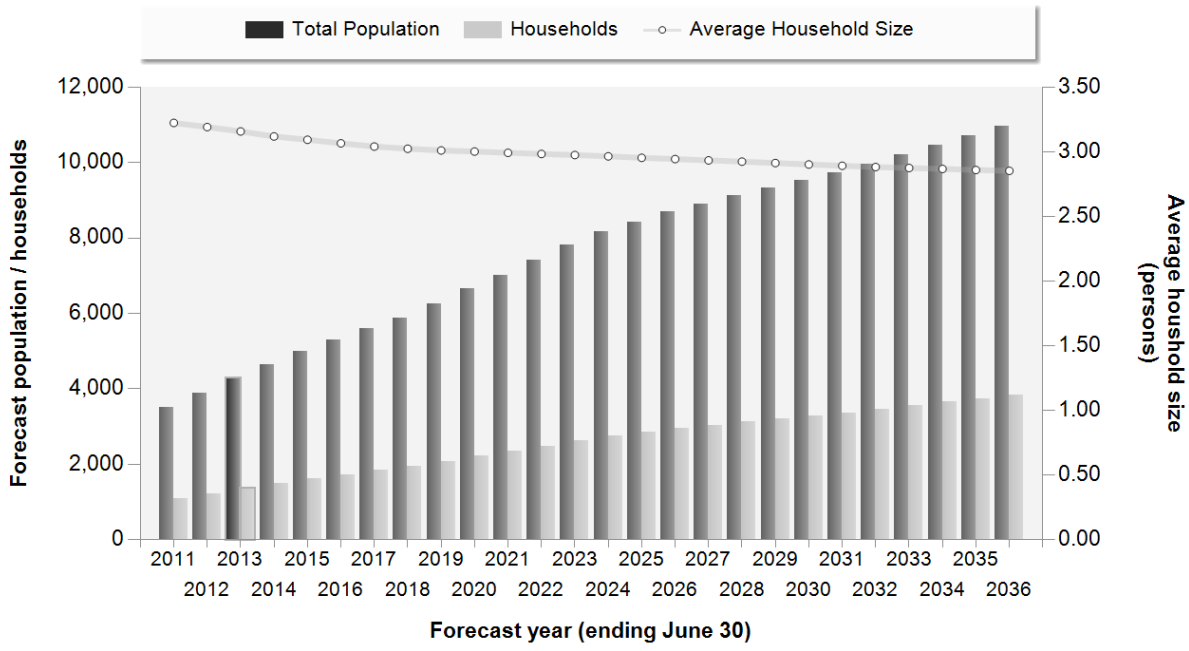
### How many will live here in future? - Fletcher - Minmi

Fletcher - Minmi	Forecast year					
	2011	2016	2021	2026	2031	2036
Population	3,516	5,283	7,007	8,688	9,716	10,962
Change in Population (5yrs)		1,767	1,724	1,681	1,028	1,246
Average Annual Change (%)		8.48	5.81	4.39	2.26	2.44
Households	1,092	1,723	2,342	2,952	3,360	3,842
Average Household Size (persons)	3.22	3.07	2.99	2.94	2.89	2.85
Population in non private dwellings	0	0	0	0	0	0
Dwellings	1,096	1,745	2,386	3,013	3,430	3,923
Dwelling occupancy rate	99.64	98.74	98.16	97.98	97.96	97.94

This summary analyses data for the period 2011 to 2026, 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 2011 and 2036.

In 2011, the total population of Fletcher - Minmi was estimated at 3,516 people. It is expected to experience an increase of over 5,100 people to 8,688 by 2026, at an average annual growth rate of 6.22% per annum. This is based on an increase of over 1,800 households during the period, with the average number of persons per household falling from 3.22 to 2.94 by 2026.

**Forecast population, households and average household size, Fletcher - Minmi**



## Summary & key results

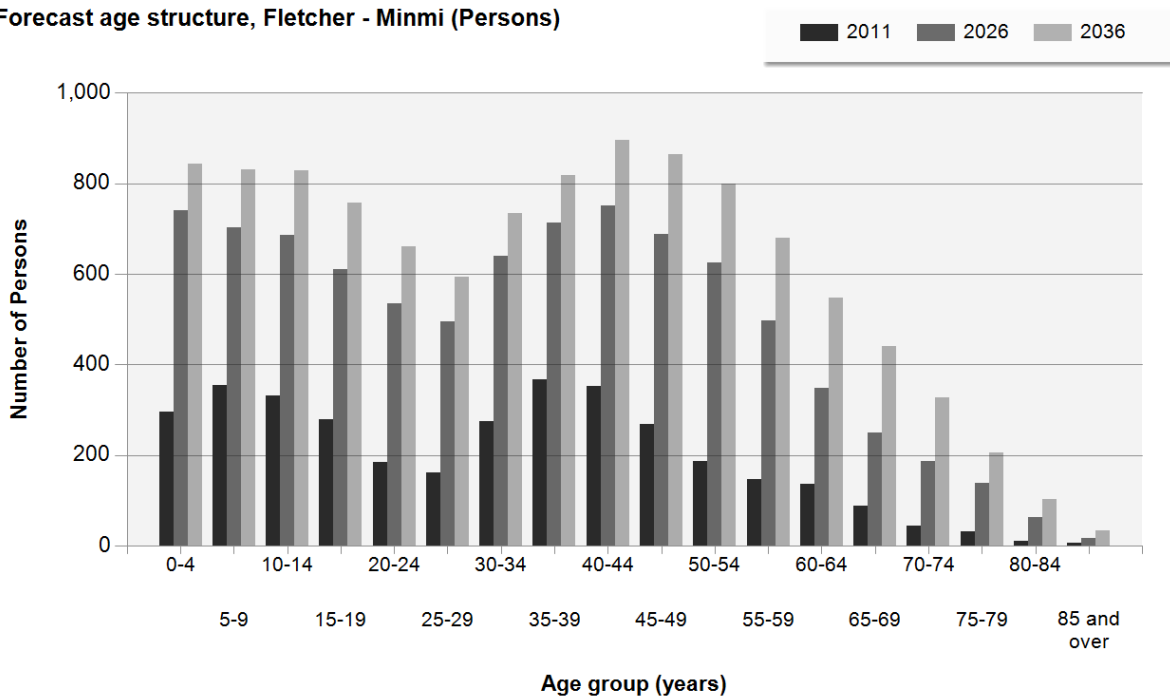
### How old will we be?

In 2011, the most populous age group in Fletcher - Minmi was 35-39 year olds, with 367 persons. In 2026 the most populous forecast age group will be 40-44 year olds, with 752 persons.

The number of people aged under 15 is forecast to increase by 1,148 (117.0%), representing a rise in the proportion of the population to 24.5%. The number of people aged over 65 is expected to increase by 474 (263.3%), and represent 7.5% of the population by 2026.

The age group which is forecast to have the largest proportional increase (relative to its population size) by 2026 is 80-84 year olds, who are forecast to increase by 520.0% to 62 persons.

Forecast age structure, Fletcher - Minmi (Persons)



## Summary & key results

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

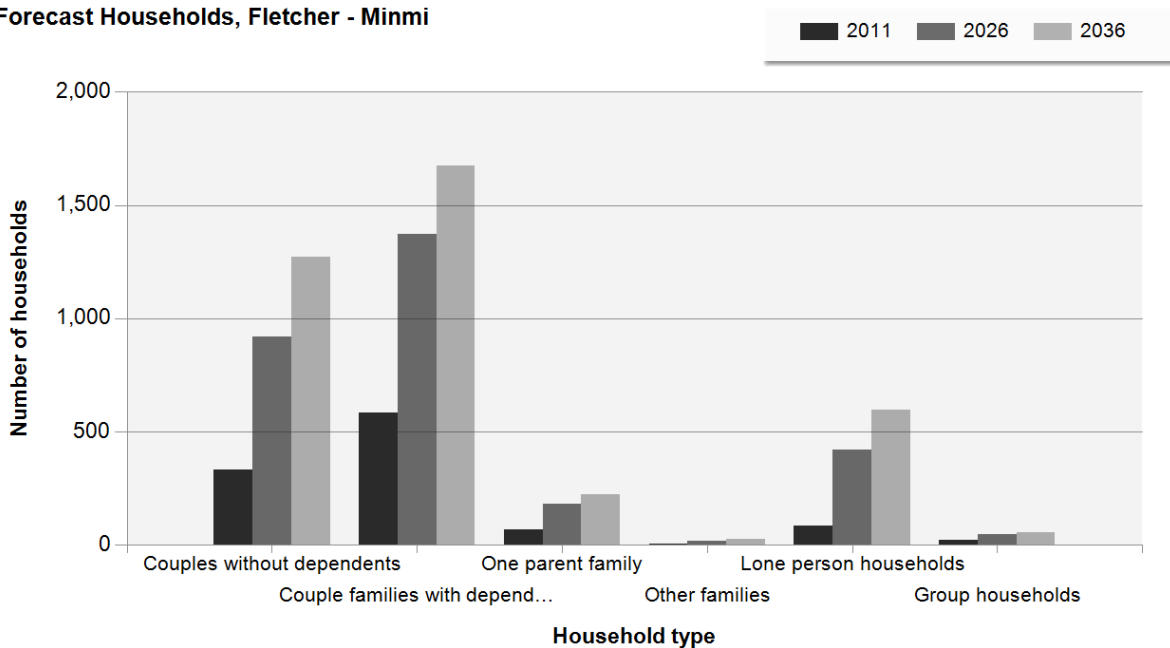
In 2011, the dominant household type in Fletcher - Minmi was Couple families with dependents, which accounted for 53.4% of all households.

The main changes in household type between 2011 and 2026 are forecast to be:

The largest increase is forecast to be in Lone person households, which will increase by 334 households, comprising 14.2% of all households, compared to 7.8% in 2011.

In contrast Couple families with dependents is forecast to increase by 789 households, to comprise 46.5% of all households in 2021, compared to 53.4% in 2011.

Forecast Households, Fletcher - Minmi



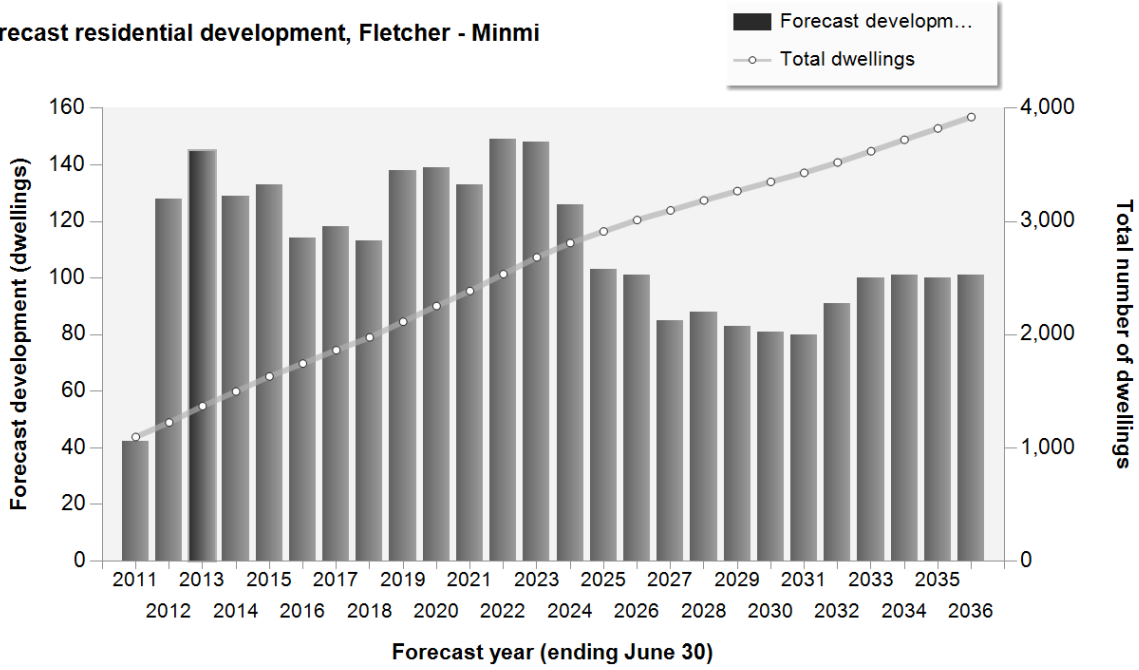
# Assumptions

## Residential development

Residential development assumptions between 2011 and 2036 include:

- an assessment of the capacity and take up of current and mooted residential sites and estates
- an assessment of likely rates of take up of infill and activity centre development.

**Forecast residential development, Fletcher - Minmi**



# Assumptions

## Births and deaths

### Fertility (birth) rates:

The fertility rate in Fletcher - Minmi 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 Newcastle, 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 decrease from 1 in 2011 to 0 in 2036.

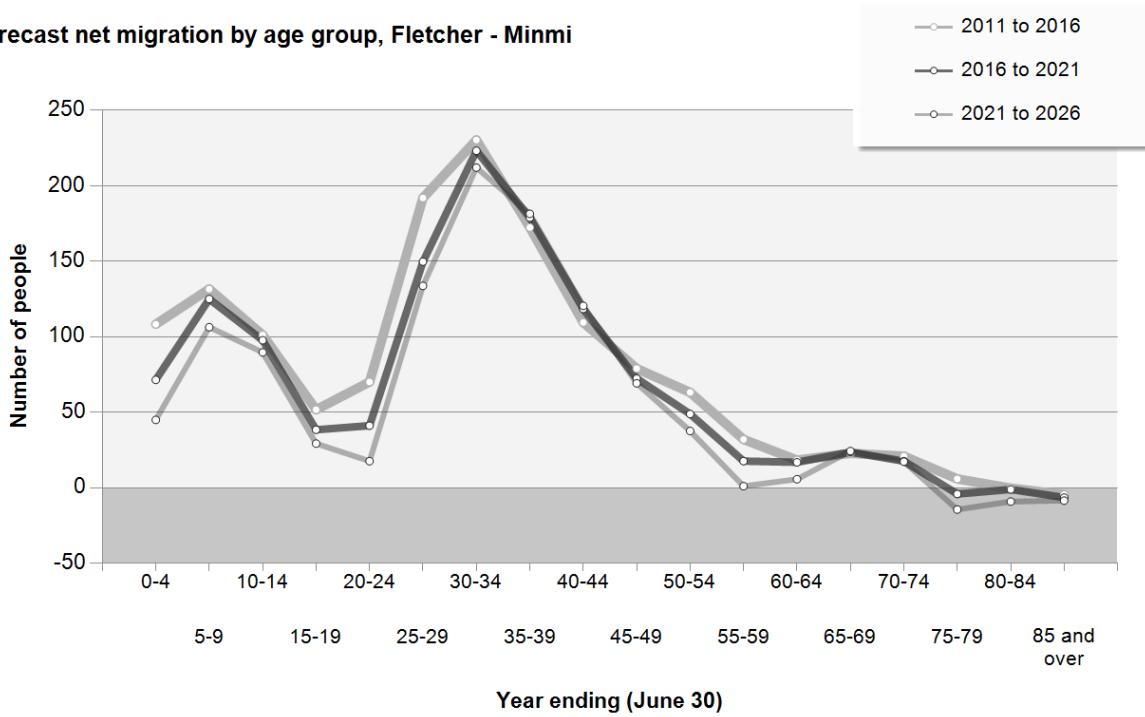
# Assumptions

## Migration

Major migration assumptions:

- Relatively stable migration profile expected across the 2011-2026 period
- Substantial gain in young and mature families (0-14 and 25-39 years) attracted to new residential opportunities
- Some gain of retirees (60-74 year olds)

Forecast net migration by age group, Fletcher - Minmi



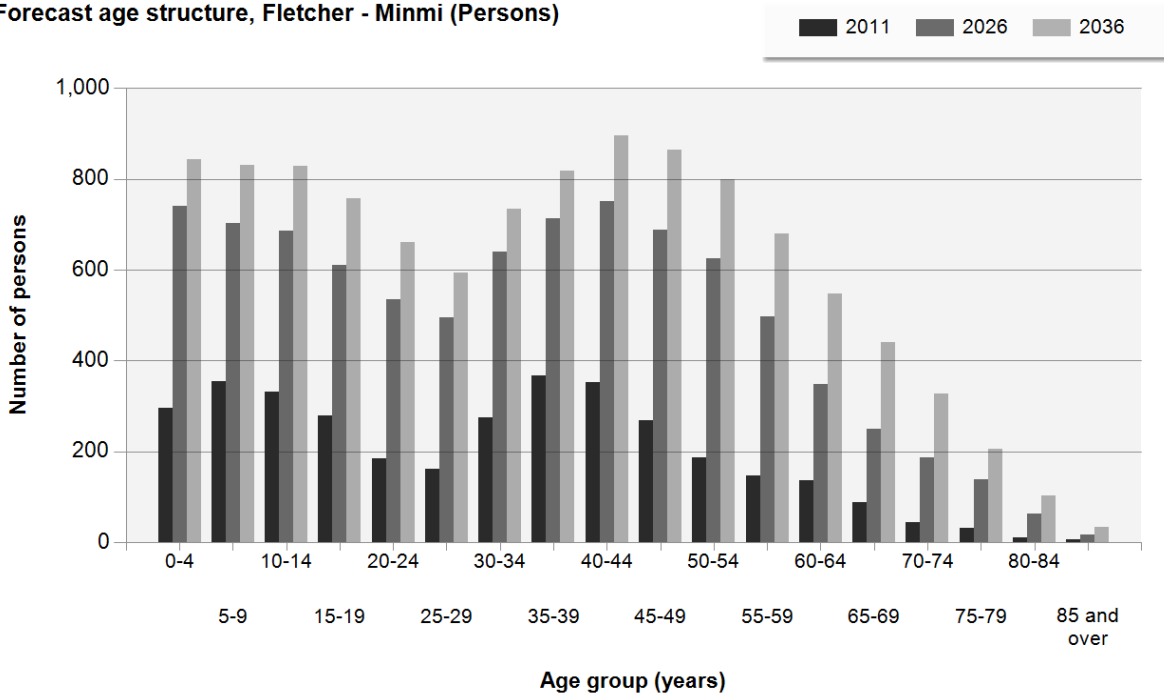


# Detailed data

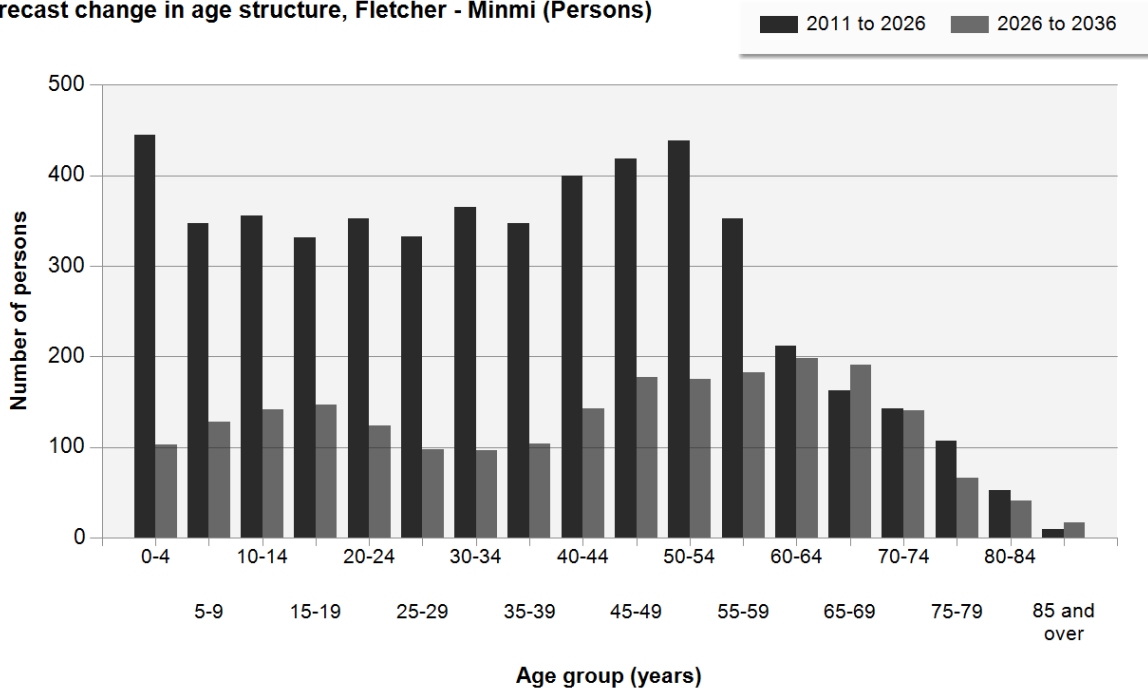
## Age structure

Forecast age structure, Fletcher - Minmi (Persons)							Change
Age group	2011		2026		2036		2011 to 2036
	number	%	number	%	number	%	
0-4 years	295	8.4	740	8.5	843	7.7	548
5-9 years	355	10.1	702	8.1	830	7.6	475
10-14 years	331	9.4	687	7.9	829	7.6	498
15-19 years	279	7.9	610	7.0	757	6.9	478
20-24 years	184	5.2	536	6.2	660	6.0	476
25-29 years	162	4.6	495	5.7	593	5.4	431
30-34 years	274	7.8	639	7.4	735	6.7	461
35-39 years	367	10.4	714	8.2	818	7.5	451
40-44 years	352	10.0	752	8.7	895	8.2	543
45-49 years	269	7.7	688	7.9	865	7.9	596
50-54 years	187	5.3	625	7.2	800	7.3	613
55-59 years	146	4.2	498	5.7	680	6.2	534
60-64 years	137	3.9	349	4.0	547	5.0	410
65-69 years	87	2.5	250	2.9	441	4.0	354
70-74 years	44	1.3	187	2.2	328	3.0	284
75-79 years	32	0.9	139	1.6	205	1.9	173
80-84 years	10	0.3	62	0.7	103	0.9	93
85 years and over	7	0.2	16	0.2	33	0.3	26
<b>Total Persons</b>	<b>3,518</b>	<b>100.1</b>	<b>8,689</b>	<b>100.0</b>	<b>10,962</b>	<b>100.0</b>	<b>7,444</b>

Forecast age structure, Fletcher - Minmi (Persons)



**Forecast change in age structure, Fletcher - Minmi (Persons)**

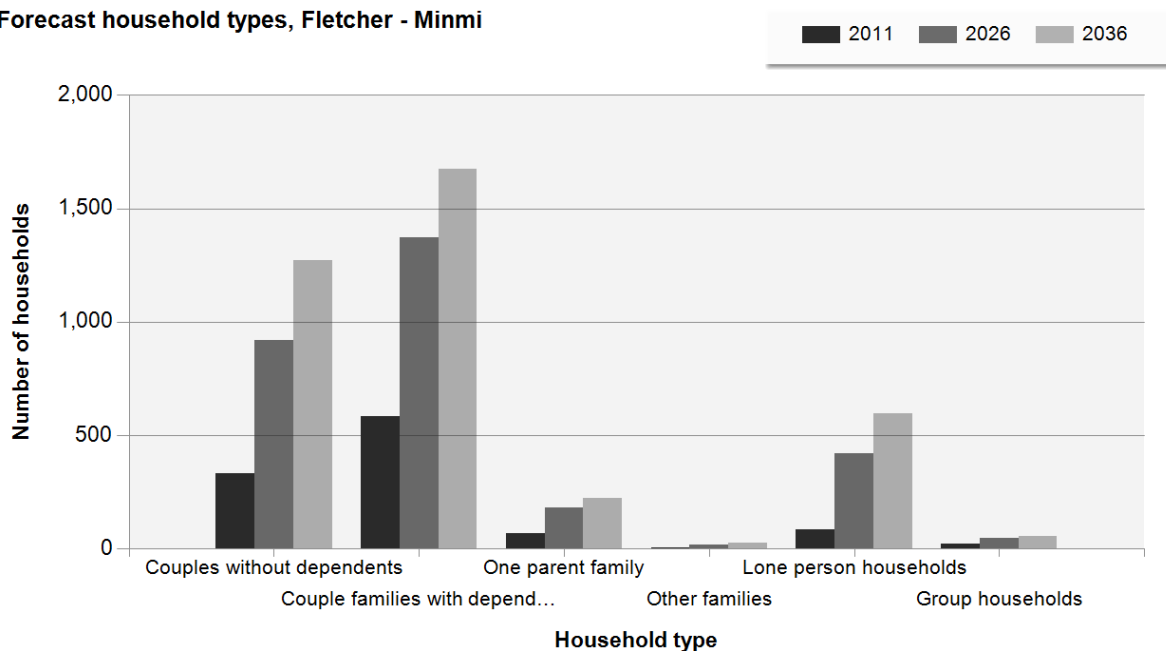


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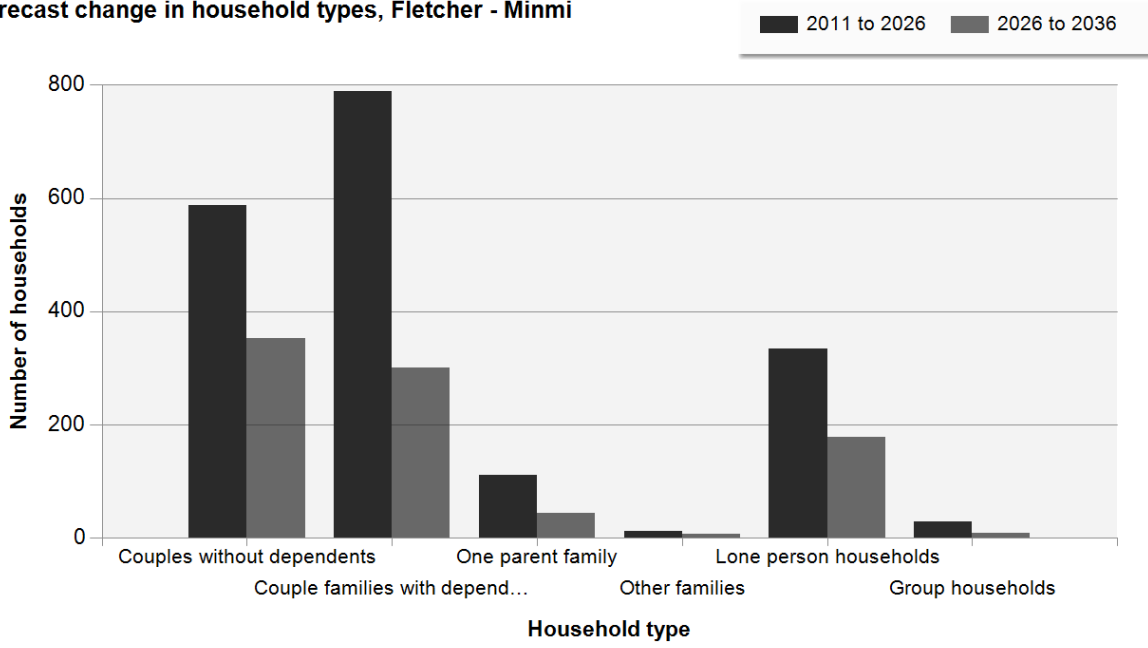
## Households

Forecast households, Fletcher - Minmi							Change
Type	2011		2026		2036		2011 to 2036
	number	%	number	%	number	%	
Couples without dependents	330	30.2	917	31.1	1,270	33.0	940
Couple families with dependents	583	53.4	1,372	46.5	1,673	43.5	1,090
One parent family	69	6.3	179	6.1	222	5.8	153
Other families	6	0.5	18	0.6	24	0.6	18
Lone person households	85	7.8	419	14.2	597	15.5	512
Group households	19	1.7	47	1.6	56	1.5	37
<b>Total households</b>	<b>1,092</b>	<b>100.1</b>	<b>2,952</b>	<b>100.0</b>	<b>3,842</b>	<b>100.0</b>	<b>2,750</b>

Forecast household types, Fletcher - Minmi



### Forecast change in household types, Fletcher - Minmi



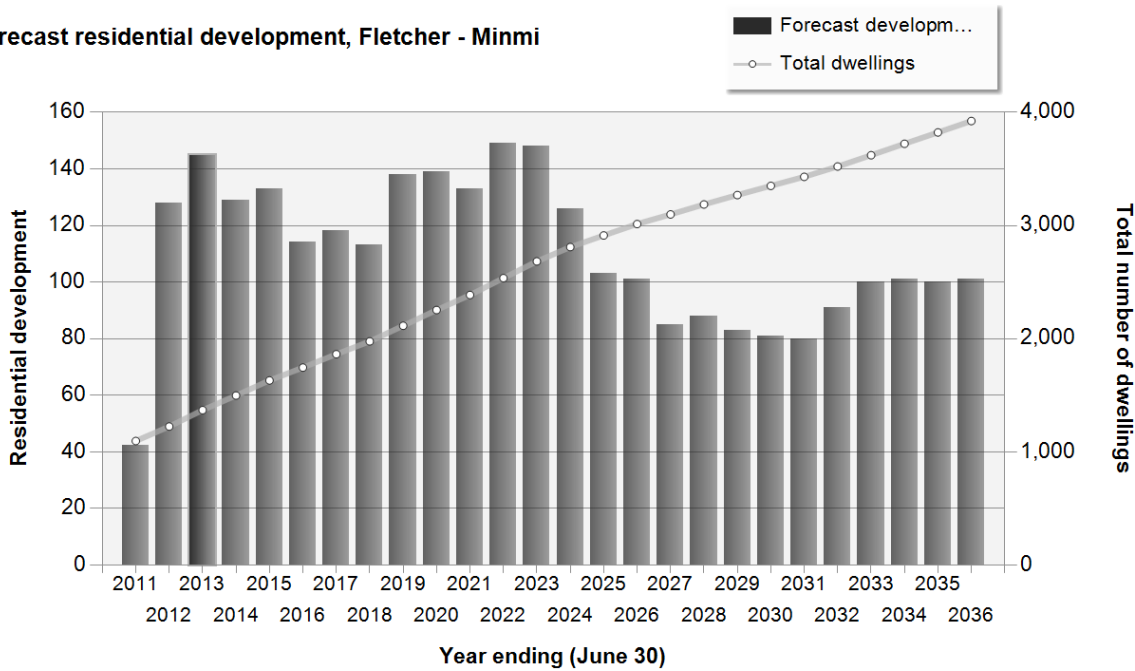
# Detailed data

## Residential development

Residential development and structural private dwellings, Fletcher - Minmi			
Year	Dwelling commencements	Structural private dwellings (inc. commencements)	% change from previous year
2011	42	1,096	4.0
2012	128	1,224	11.7
2013	145	1,369	11.8
2014	129	1,498	9.4
2015	133	1,631	8.9
2016	114	1,745	7.0
2017	118	1,863	6.8
2018	113	1,976	6.1
2019	138	2,114	7.0

Residential development and structural private dwellings, Fletcher - Minmi			
Year	Dwelling commencements	Structural private dwellings (inc. commencements)	% change from previous year
2020	139	2,253	6.6
2021	133	2,386	5.9
2022	149	2,535	6.2
2023	148	2,683	5.8
2024	126	2,809	4.7
2025	103	2,912	3.7
2026	101	3,013	3.5
2027	85	3,098	2.8
2028	88	3,186	2.8
2029	83	3,269	2.6
2030	81	3,350	2.5
2031	80	3,430	2.4
2032	91	3,521	2.7
2033	100	3,621	2.8
2034	101	3,722	2.8
2035	100	3,822	2.7
2036	101	3,923	2.6

Forecast residential development, Fletcher - Minmi

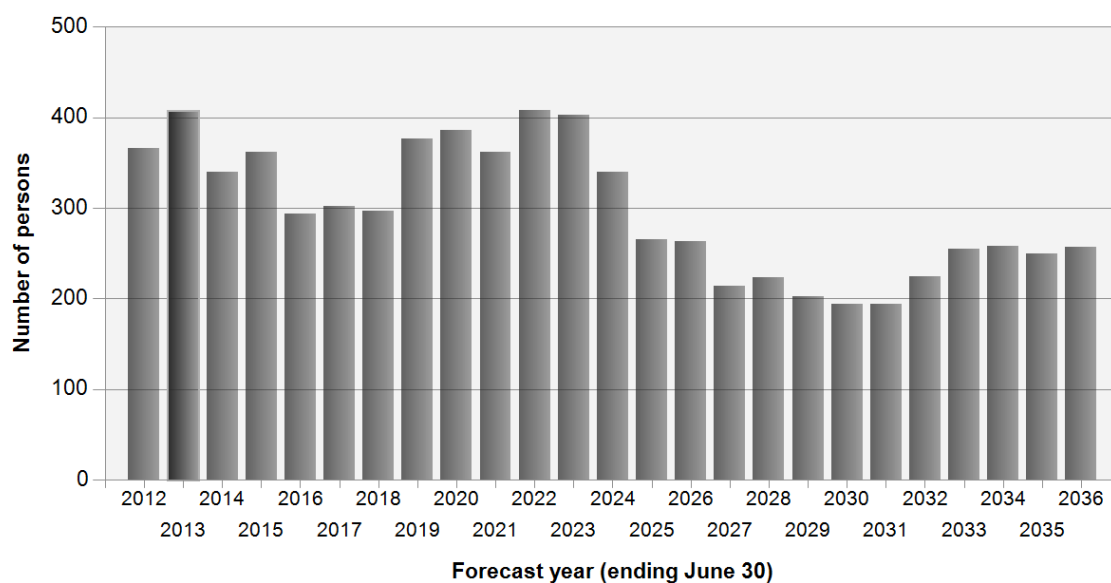


## Detailed data

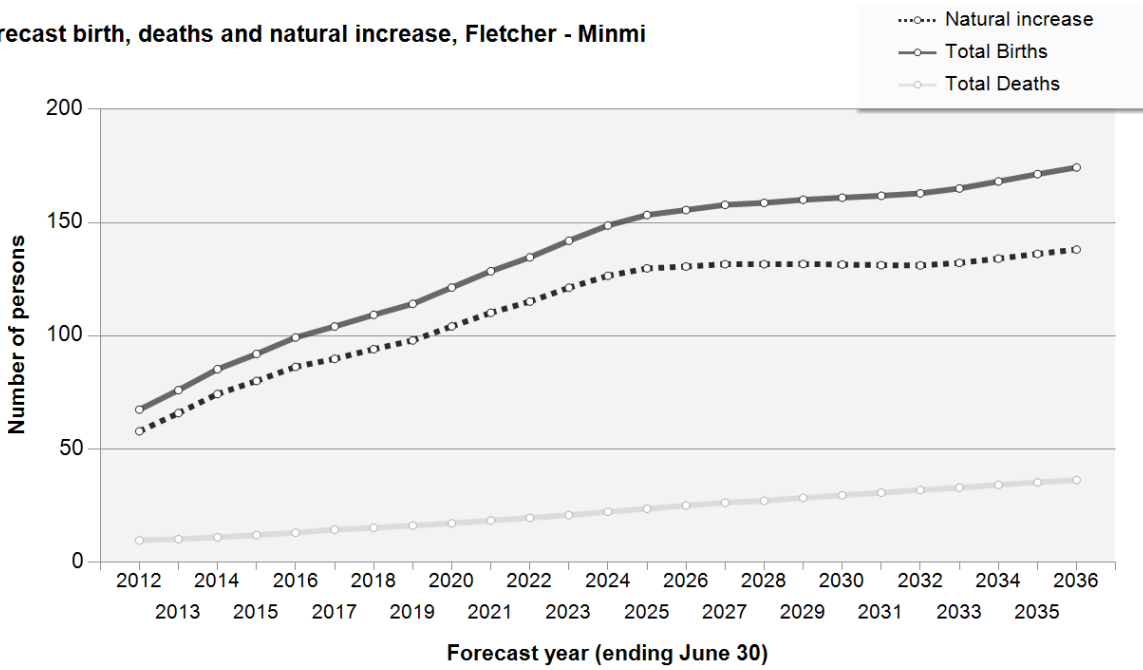
### Components of population change

Components of population change, Fletcher - Minmi	Forecast period				
	2007 to 2011	2012 to 2016	2017 to 2021	2022 to 2026	2027 to 2031
Births	319	420	577	734	799
Deaths	40	56	81	111	142
Net Migration	416	1,403	1,228	1,057	371
Net Population Change	694	1,767	1,724	1,681	1,029

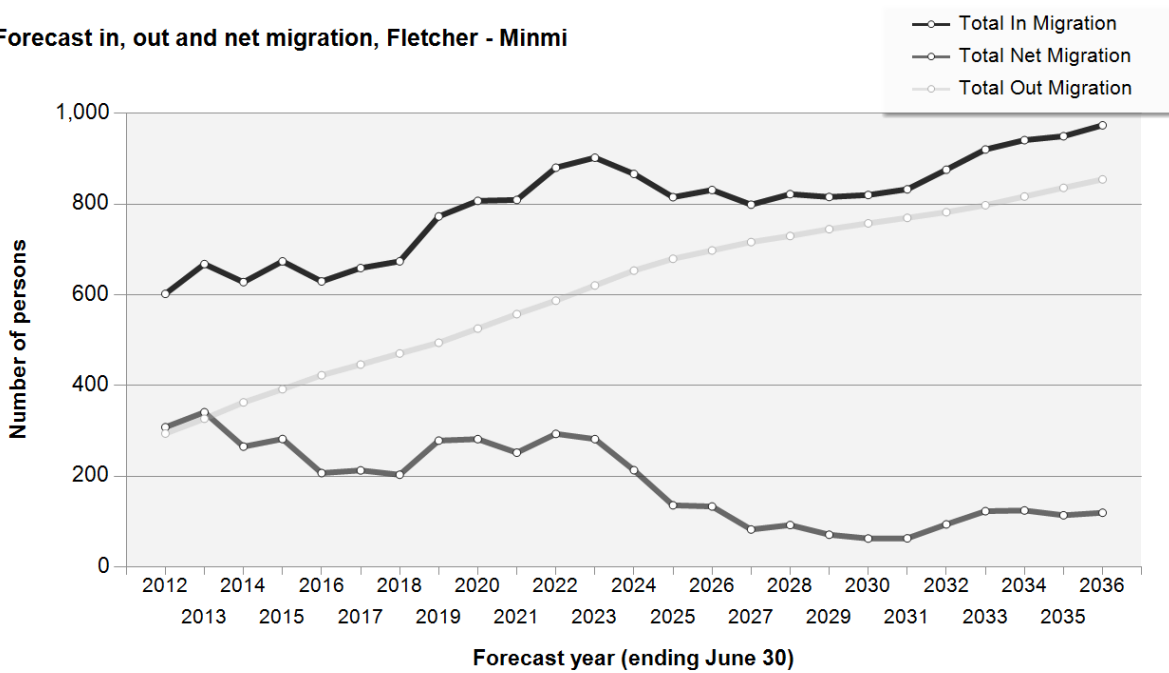
#### Forecast population change, Fletcher - Minmi



Forecast birth, deaths and natural increase, Fletcher - Minmi



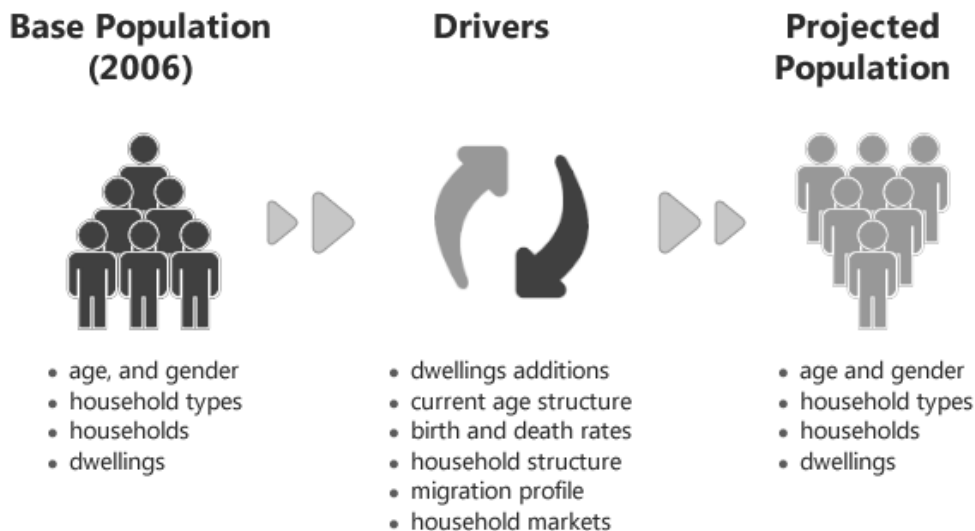
Forecast in, out and net migration, Fletcher - Minmi



## 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 Newcastle'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.

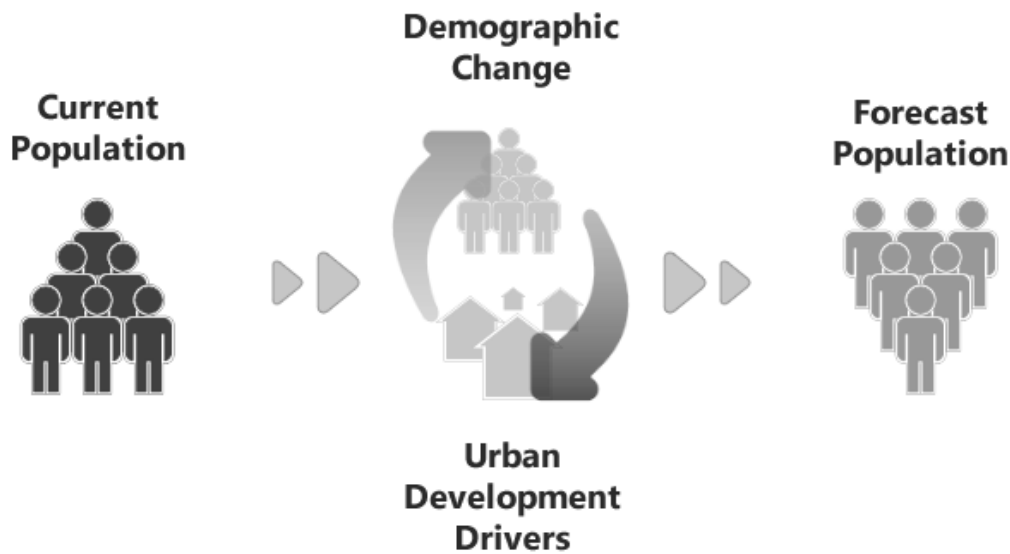
## Supporting info

### How did we do the forecasts?

#### Approach

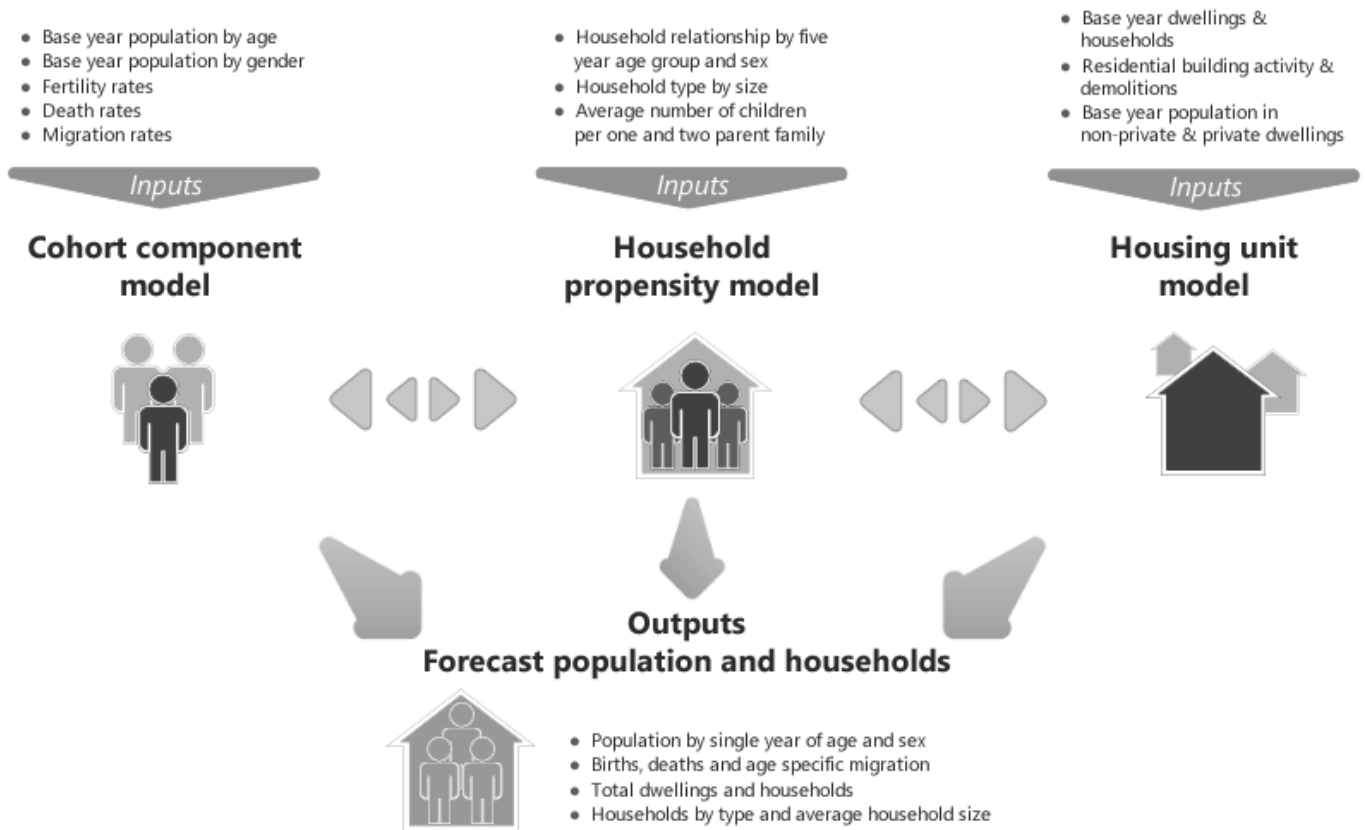
The diagram below describes the general approach used by .id in its population and household forecasts. An analysis of the current population and household structure often reveals the role and function of an area and the degree to which an area may be going through some form of demographic transition.

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.

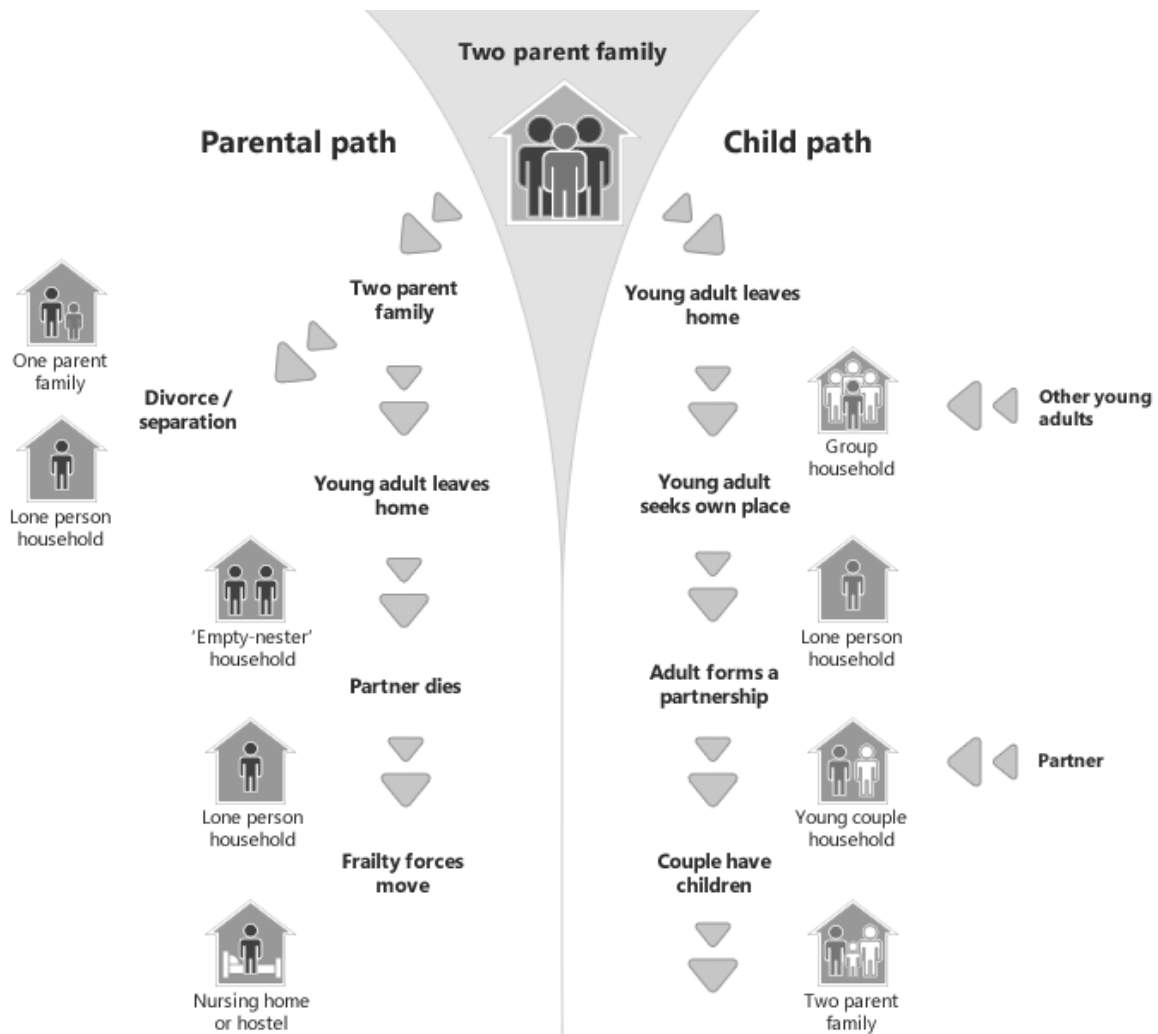
# Supporting info

## 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".

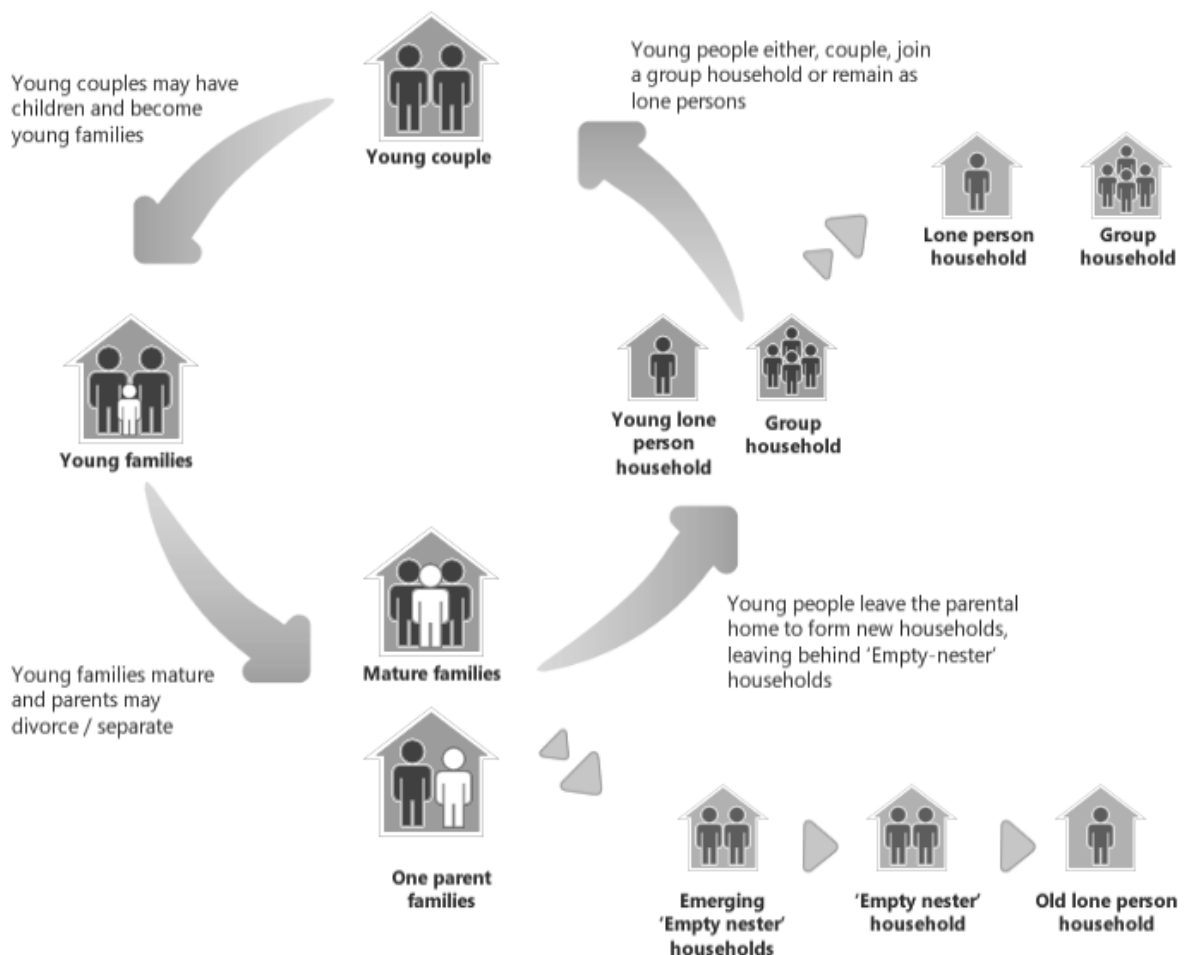
New areas are typically settled by young households (young couples and young families, perhaps some mature families). As the families grow and mature, household size increases. After initial rapid development, most households

"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

#### 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 2011 to 2036. Most data on the website has focused on the period from 2011 to 2026.
- ▶ **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.