



NSW GOVERNMENT
Department of Planning

New South Wales Household and Dwelling Projections, 2006–2036

2008 release

New South Wales Household and Dwelling Projections, 2006–2036

2008 Release

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Executive Summary

This report presents the 2008 release household and dwelling projections for New South Wales and a four-region breakdown of the State: Sydney, Newcastle, Wollongong and the Balance of New South Wales. These projections take into account 2006 Census data and the latest Department of Planning population projections.

Households and dwellings

Households refer to private households. They exclude persons in non-private dwellings such as nursing homes, hotels, military establishments and prisons.

Dwellings refer to structural dwellings. They exclude non-structural dwellings such as tents and caravans. Dwelling projections are slightly higher than household projections because they include:

- dwellings that are unoccupied at the time of the census (such as holiday homes and newly completed dwellings not yet occupied), and
- non-private dwellings.

USER WARNING

These household and dwelling projections are *not* targets. They do not necessarily reflect policy positions and may well differ from policy targets expressed in the Department's Metropolitan and Regional Strategies. It is important to recognise that these projections reflect the outcome of certain assumptions about the future of population and household living arrangements – assumptions which may or may not eventuate. The projections should not be interpreted as precise predictions of the demographic future.

State household and dwelling projections

The number of households in New South Wales is projected to increase to 3.72 million by 2036, a rise of 1.08 million, or 41%, on the 2006 total of 2.65 million households.

This percentage increase is greater than the projected population increase of 33%¹ over the 2006–36 period because average household size is projected to fall from 2.53 persons per household in 2006 to 2.38 by 2036.

The lone person household is the type of household expected to undergo the greatest percentage growth over the 2006–36 period. These households are projected to increase in number from 646,500 in 2006 to 1.06 million by 2036 (an increase of 64%). The chance of someone being in a lone person household is highest in the elderly ages, so in large part this growth will be driven by the increase in the State's elderly population.

Household and dwelling projections for the Sydney region

The number of households in the Sydney region is projected to increase to 2.35 million by 2036, a rise of 738,900, or 46%, on the 2006 total of 1.62 million households.

Average household size is projected to decline from 2.61 persons per household in 2006 to 2.49 by 2036. Hence the projected percentage growth of households (46%) is greater than the percentage growth of the population (40%).

Annual growth in the number of households is projected to vary between 23,400 and 25,500. The annual net dwelling need is projected to vary between 24,400 and 26,600.

¹ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008

The number of lone person households is projected to increase from 377,900 in 2006 to 637,500 by 2036 (a 69% increase). This is the largest percentage increase of all household types, and is driven largely by the growth of the elderly population.

Comparison with the 2005 Metropolitan Strategy² dwelling projections

Between 2006 and 2031 (the final year of the Government's 2005 Metropolitan Strategy) the projected increase in households is 611,400 and the accompanying net dwelling demand is 636,100. This is close to the 640,000 dwellings projected for 2004–2031 in the Metropolitan Strategy.

Although population projections¹ for the Sydney region are higher than previously projected, dwelling requirements have changed little because average household sizes are not expected to decline by as much as previously anticipated. Whereas the Metropolitan Strategy projections expected average household size to fall to 2.36 persons per household by 2031, the new projected average household size for 2031 is 2.51.

Other regions

The number of households in the Newcastle region is projected to increase to 293,100 by 2036, a rise of 85,300 (or 41%) on the 2006 total of 207,900 households.

The number of households in the Wollongong region is projected to increase to 143,000 by 2036, a rise of 34,000 (or 31%) on the 2006 total of 109,000 households.

The number of households in the Balance of New South Wales is projected to increase to 932,000 by 2036, a rise of 219,000 (or 31%) on the 2006 total of 713,000 households.

A summary of household and dwelling projections is shown in the table below.

Table ES.1: Household and dwelling projections for New South Wales, 2006–36: executive summary

	2006 ^a	2036 ^a	2006–36 change		
Total households					
	'000	'000	'000	%	Growth rate ^b %
Sydney	1,615.9	2,354.8	738.9	45.7	1.3
Newcastle	207.9	293.1	85.3	41.0	1.2
Wollongong	108.7	143.2	34.5	31.7	0.9
Balance of New South Wales	713.1	932.3	219.2	30.7	0.9
New South Wales	2,645.6	3,723.5	1,077.9	40.7	1.1
Structural dwellings ^c					
Sydney	1,678.6	2,447.5	768.9	45.8	1.3
Newcastle	213.1	300.7	87.6	41.1	1.2
Wollongong	110.1	145.2	35.0	31.8	0.9
Balance of New South Wales	765.0	1,000.7	235.7	30.8	0.9
New South Wales	2,766.8	3,894.1	1,127.3	40.7	1.1

a Refers to 30th June of the year shown.

b Average annual growth rate for the period 2006–2036.

c Structural dwellings include occupied and unoccupied dwellings.

² *City of Cities – A Plan for Sydney's Future*. Metropolitan Strategy. Department of Planning, Sydney, 2005.

1. Introduction

Content of this report

This report presents household and dwelling projections for 2006 to 2036 for New South Wales as a whole and four large regions of the State: Sydney, Newcastle, Wollongong and the Balance of New South Wales. The new projections take into account findings from the 2006 Census and the latest data and expertise on fertility, mortality, migration and household living arrangements.

Households refer to private households. They exclude persons in non-private dwellings such as nursing homes, hotels, military establishments and prisons.

Dwellings refer to structural dwellings. They exclude non-structural dwellings such as tents and caravans. Dwelling projections are slightly higher than household projections because they include:

- dwellings that are unoccupied at the time of the census (such as holiday homes and newly completed dwellings not yet occupied), and
- non-private dwellings.

It is stressed that the dwelling projections presented in this report describe the net dwelling *requirements* based on the household projections. They are not projections of future dwelling *construction*.

Chapters 2 to 6 present household and dwelling projections for:

- New South Wales (Chapter 2),
- Sydney (Chapter 3),
- Newcastle (Chapter 4),
- Wollongong (Chapter 5), and
- the Balance of New South Wales (Chapter 6).

The regions used are Sydney statistical division, Newcastle statistical subdivision and Wollongong statistical subdivision as defined in the 2006 Australian Standard Geographical Classification³.

Balance of New South Wales is the State excluding these three regions. Projections are available for every census year (years ending 1 and 6) out to 2036.

Chapter 2 also includes household and dwelling projections out to 2031 to enable comparison with the projections prepared for the Government's Metropolitan Strategy⁴.

Chapter 7 provides an overview of the methods used to calculate the projections. It includes information on the household propensity model; the 2006 'jump-off' populations; the assumptions used for future living arrangement propensities and some information on the limitations of the base data.

A glossary of terms is provided after chapter 7.

The appendix looks at the differences between the household projections released in this publication and the most recent household projections produced by the Australian Bureau of Statistics.

USER WARNING: LIMITATIONS OF PROJECTIONS

Users are advised that household and dwelling projections are *not precise predictions*. They reflect the outcome of certain assumptions being made about future trends in population and household living arrangements. Whilst the assumptions reflect the current outlook regarding these trends, it is quite possible that they will not eventuate. They are influenced by a wide variety of social, economic and political factors, many of which cannot be foreseen with any degree of precision.

³ *Statistical Geography Volume 1 - Australian Standard Geographical Classification (ASGC)*. Catalogue no. 1216.0. ABS, Canberra, 2006.

⁴ *City of Cities – A Plan for Sydney's Future*. Metropolitan Strategy. Department of Planning, Sydney, 2005.

Furthermore, it is stressed that these projections do *not* necessarily reflect policy positions and may well differ from policy targets expressed in the Department of Planning's Metropolitan Strategy and Regional Strategies.

Rounding

Numbers in this report are rounded to the nearest hundred or thousand. They should not be taken to be accurate to that level of detail.

Years

The following conventions regarding dates are used in this report.

- "The number of households in 2011" refers to 30th June 2011.
- "Household change in 2006–36" refers to change over the financial years starting 1st July 2006 and ending 30th June 2036.

Abbreviations

The following abbreviations are used in this report.

'000	thousands
%	percent
ABS	Australian Bureau of Statistics
Census	the ABS Census of Population and Housing
ERP	Estimated Resident Population

Online projections data

Household and dwelling projections data are available in Microsoft Excel format on the Department of Planning's website at <http://www.planning.nsw.gov.au/>.

2008 release population projections

2008 release population projections for New South Wales and 13 regions of the State are available in the report *New South Wales State and Regional Population Projections, 2006–2036: 2008 Release*. Accompanying tables of data are available on the Department of Planning's website at: <http://www.planning.nsw.gov.au/>

Future sets of projections

It is anticipated that a revised set of projections will be prepared for publication in 2010, with a subsequent set scheduled for publication following the release of 2011 Census results.

Contact us

Comments on the content and format of this publication, and questions on the projections, may be addressed to: Demography Unit, Department of Planning, GPO Box 39, Sydney, NSW 2001

or by email to: population@planning.nsw.gov.au

2. New South Wales

Key results

- The number of households in New South Wales is projected to increase to 3.72 million by 2036, a rise of 1.08 million on the 2006 total of 2.65 million.
- Annual household growth is expected to be between 33,700 and 38,300.
- The resulting annual net dwelling need is projected to be between 35,200 and 40,000.
- Average household size is projected to decline from 2.53 in 2006 to 2.38 by 2036.
- The lone person household is the type of household expected to undergo the greatest percentage growth over the 2006–36 period. These households are projected to increase in number from 646,500 in 2006 to 1.06 million by 2036 (an increase of 64%). In large part this growth will be driven by the significant increase in the State's elderly population.
- Ageing will also generate significant growth in the number of households containing couples without children. The projected rise is from 654,900 in 2006 to 1.00 million by 2036.
- This will result in couple households without children being almost as numerous as those containing couples with children, which are projected to reach a total of 1.05 million by 2036.

Total growth in households and dwellings

The **total number of households** in New South Wales is projected to increase from 2.65 million in 2006 to 3.72 million by 2036. This is an increase of 1.08 million, or 41%, over the 2006–36 period. Annual growth in the number of households is projected to vary between 33,700 and 38,300.

Average household size is projected to decline from 2.53 persons per household in 2006 to 2.38 by 2036. The percentage increase in the number of households between 2006 and 2036 is higher than the projected population increase of 33% over the period.⁵

The **number of structural dwellings** required is expected to increase from a total of 2.77 million in 2006 to 3.89 million by 2036, a net growth of 1.13 million, or 41%. Annual net dwelling demand is projected to vary between 35,200 and 40,000. Further statistics are given in Table 2.1 on page 5.

Growth by household type

Households can be divided into three broad types: family households, lone person households, and group households. Projected changes in the numbers of these households between 2006 and 2036 in New South Wales are shown in Figure 2.1.

The number of **family households** is projected to increase from 1.91 million in 2006 to 2.56 million by 2036, a rise of 649,000 households, or 34%. In 2006 family households comprised 72% of all households. By 2036 their share is projected to have fallen slightly to 69%.

The number of **lone person households** is projected to increase from 646,500 in 2006 to 1.06 million by 2036, a rise of 415,700 households, or 64%. The chance of someone being in a lone person household is highest in the elderly ages. Growth in the number of lone person households is therefore in large part associated with the projected growth of the elderly population. The share of all households which are lone person households is projected to rise from 24% in 2006 to 29% by 2036.

The number of **group households** is projected to increase from 92,500 in 2006 to 105,600 by 2036, a rise of 13,100 or 14%. Group households are expected to comprise about 3% of all households throughout the 2006–36 period.

⁵ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008.

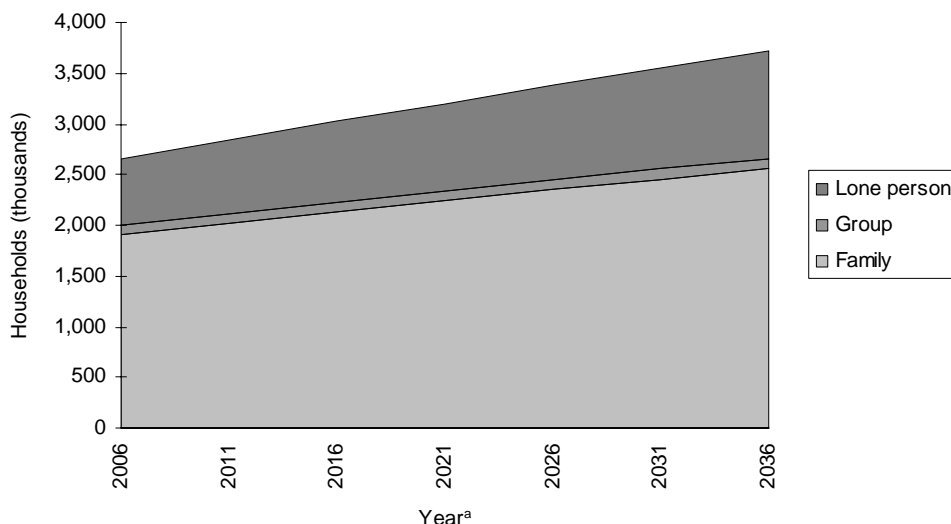


Figure 2.1: Projected number of households in New South Wales, 2006–36

a 'Year' refers to 30th June of the year shown.

Growth of family households by type

Figure 2.2 shows projections of three types of one family household: single parent households, households containing couples without children, and those containing couples with children.

The number of **single parent households** is projected to increase from 295,200 in 2006 to 411,400 by 2036, a rise of 116,100, or 39%.

Households containing **couples without children** are expected to increase in number from 654,900 in 2006 to 1.00 million by 2036, a rise of 348,400 or 53%. The chance of being in a couple household without children is highest in the elderly ages. The significant growth of this type of household is driven to a large extent by the projected growth of the elderly population.

The number of households containing **couples with children** is projected to increase from 889,100 in 2006 to 1.05 million by 2036, a rise of 156,900 or 18%. By 2036 households containing couples with children and those without children are projected to be approximately equal in number.

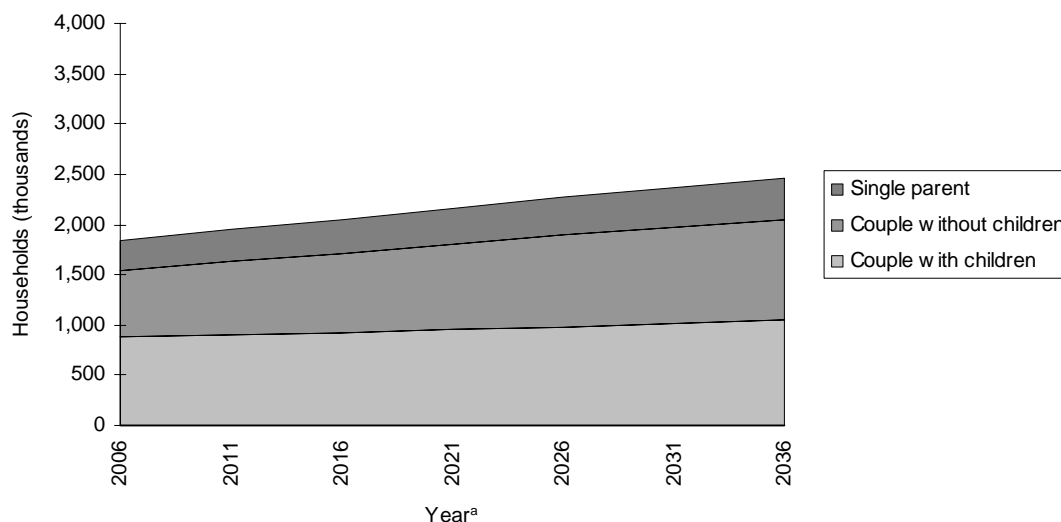


Figure 2.2: Projected number of one family households in New South Wales, 2006–36

a 'Year' refers to 30th June of the year shown.

Table 2.1: Household and dwelling projections for New South Wales, 2006–36: summary statistics

	2006 ^a	2016 ^a	2026 ^a	2036 ^a	2006–36 change		
Households							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
One family households:							
Couple family with children	889.1	916.9	983.1	1,046.0	156.9	17.6	0.5
Couple family without children	654.9	791.4	905.4	1,003.3	348.4	53.2	1.4
Single parent family	295.2	341.2	375.1	411.4	116.1	39.3	1.1
Other family	34.6	39.0	42.9	47.0	12.3	35.6	1.0
Total one family household	1,873.9	2,088.5	2,306.5	2,507.6	633.7	33.8	1.0
Multiple family household	32.8	38.6	43.6	48.1	15.3	46.7	1.3
Total family household	1,906.6	2,127.1	2,350.1	2,555.7	649.0	34.0	1.0
Group household	92.5	91.3	98.1	105.6	13.1	14.2	0.4
Lone person household	646.5	805.8	932.7	1,062.2	415.7	64.3	1.7
Total households	2,645.6	3,024.2	3,380.9	3,723.5	1,077.9	40.7	1.1
Persons in Households							
One family households:							
Couple family with children	3,472.1	3,624.1	3,879.0	4,125.6	653.6	18.8	0.6
Couple family without children	1,321.1	1,595.2	1,824.6	2,024.0	702.8	53.2	1.4
Single parent family	785.7	893.2	970.1	1,045.5	259.7	33.1	1.0
Other family	74.3	83.7	91.9	100.7	26.4	35.5	1.0
Total one family household	5,653.3	6,196.2	6,765.5	7,295.8	1,642.5	29.1	0.9
Multiple family household	182.7	210.5	234.8	256.7	74.0	40.5	1.1
Total family household	5,835.9	6,406.7	7,000.4	7,552.5	1,716.5	29.4	0.9
Group household	214.1	211.4	227.1	244.5	30.4	14.2	0.4
Lone person household	646.5	805.8	932.7	1,062.2	415.7	64.3	1.7
Total persons in private dwellings	6,696.5	7,423.9	8,160.2	8,859.2	2,162.7	32.3	0.9
Total persons in non-private dwellings	119.6	135.7	162.7	206.9	87.3	73.0	1.8
Total persons	6,816.1	7,559.6	8,322.8	9,066.1	2,250.0	33.0	1.0
Average household size (persons per household)							
One family households:							
Couple family with children	3.90	3.95	3.95	3.94	0.04	–	–
Couple family without children	2.02	2.02	2.02	2.02	0.00	–	–
Single parent family	2.66	2.62	2.59	2.54	-0.12	–	–
Other family	2.15	2.15	2.15	2.14	0.00	–	–
Total one family household	3.02	2.97	2.93	2.91	-0.11	–	–
Multiple family household	5.58	5.45	5.38	5.34	-0.23	–	–
Total family household	3.06	3.01	2.98	2.96	-0.11	–	–
Group household	2.32	2.32	2.32	2.32	0.00	–	–
Lone person household	1.00	1.00	1.00	1.00	0.00	–	–
Total households	2.53	2.45	2.41	2.38	-0.15	–	–
Dwellings							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
Structural dwellings ^c	2,766.8	3,162.7	3,535.8	3,894.1	1,127.3	40.7	1.1
Annual average dwelling growth ^d	–	40.0	37.2	35.2	–	–	–

a Refers to 30th June of the year shown.

b Average annual growth rate for the period 2006–2036.

c Structural dwellings include occupied and unoccupied dwellings.

d Annual average growth in the numbers of dwellings for the five year period ending 30 June of the year shown.

3. Sydney

'Sydney' refers to Sydney
Statistical Division

Key results

- The number of households in the Sydney region is projected to increase to 2.35 million by 2036, a rise of 738,900 (or 46%) on the 2006 total of 1.62 million households.
- Annual household growth is expected to be between 23,400 and 25,500.
- The resulting annual net dwelling need is projected to be between 24,400 and 26,600.
- Average household size is projected to decline from 2.61 in 2006 to 2.49 by 2036.
- The lone person household is the type of household expected to experience the greatest percentage increase between 2006 and 2036. These households are expected to increase in number from 377,900 in 2006 to 637,500 by 2036 (a 69% increase). The growth of the elderly population will drive much of this growth.
- All other types of household are projected to experience growth in numbers.

Total growth in households and dwellings

The **total number of households** in the Sydney region is projected to increase from 1.62 million in 2006 to 2.35 million by 2036. This is an increase of 738,900, or 46%, over the 2006–36 period. Annual growth in the number of households is projected to vary between 23,400 and 25,500.

Average household size is projected to decline from 2.61 persons per household in 2006 to 2.49 by 2036. The percentage increase in the number of households between 2006 and 2036 is higher than the projected population increase of 40% over the period⁶.

The **number of structural dwellings** required is expected to increase from a total of 1.68 million in 2006 to 2.45 million by 2036, a net growth of 768,900 or 46%. Annual net dwelling demand is projected to vary between 24,400 and 26,600. Further statistics are given in Table 3.2 on page 10.

Growth by household type

Households can be divided into three broad types: family households, lone person households, and group households. Projected changes in the numbers of these households between 2006 and 2036 in the Sydney region are shown in Figure 3.1.

The number of **family households** is projected to increase from 1.17 million in 2006 to 1.64 million by 2036, a rise of 467,500 households, or 40%. In 2006 family households comprised 73% of all households. By 2036 their share is projected to have fallen slightly to just under 70%.

The number of **lone person households** is projected to increase from 377,900 in 2006 to 637,500 by 2036, a rise of 259,700 households, or 69%. The chance of someone being in a lone person household is greatest in the elderly ages; the growth of this household type is in large part associated with the projected growth of the elderly population. The share of all households which are lone person households is projected to rise from 23% in 2006 to 27% by 2036.

The number of **group households** is projected to increase from 63,200 in 2006 to 74,900 by 2036, a rise of 11,700 or 19%. Group households are expected to decline slightly as a proportion of all households in the Sydney region, falling from about 4% in 2006 to just over 3% in 2036.

⁶ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008.

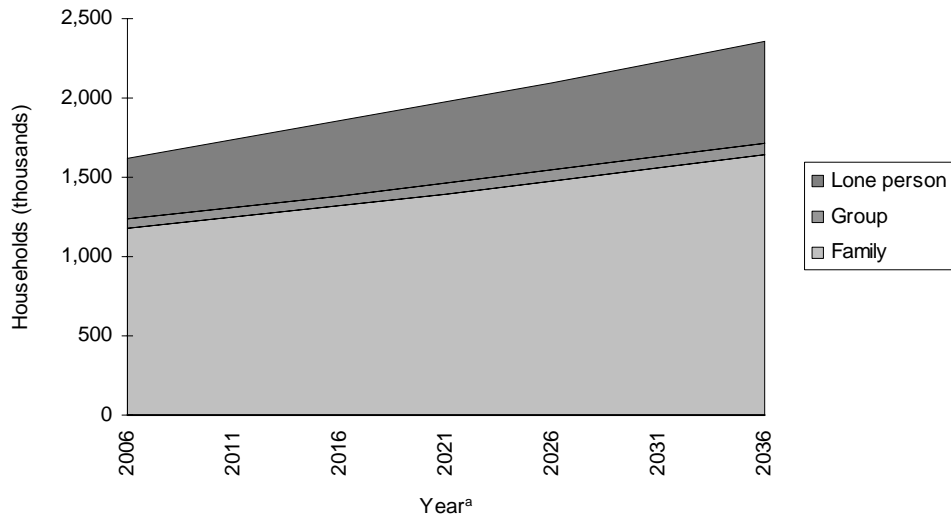


Figure 3.1: Projected number of households in the Sydney region, 2006–36
 a 'Year' refers to 30th June in the year shown

Growth of family households by type

Figure 3.2 shows projections of three types of one family household: single parent households, households containing couples without children, and those containing couples with children.

The number of **single parent households** is projected to increase from 176,400 in 2006 to 261,500 by 2036, a rise of 85,100, or 48%.

Households containing **couples without children** are expected to increase in number from 364,100 in 2006 to 567,500 by 2036, a rise of 203,400 or 56%. The chance of being in a couple household without children is highest in the elderly ages. The significant growth of this type of household is driven to a large extent by the projected growth of the elderly population.

The number of households containing **couples with children** is projected to increase from 584,500 in 2006 to 741,600 by 2036, a rise of 157,100 or 27%.

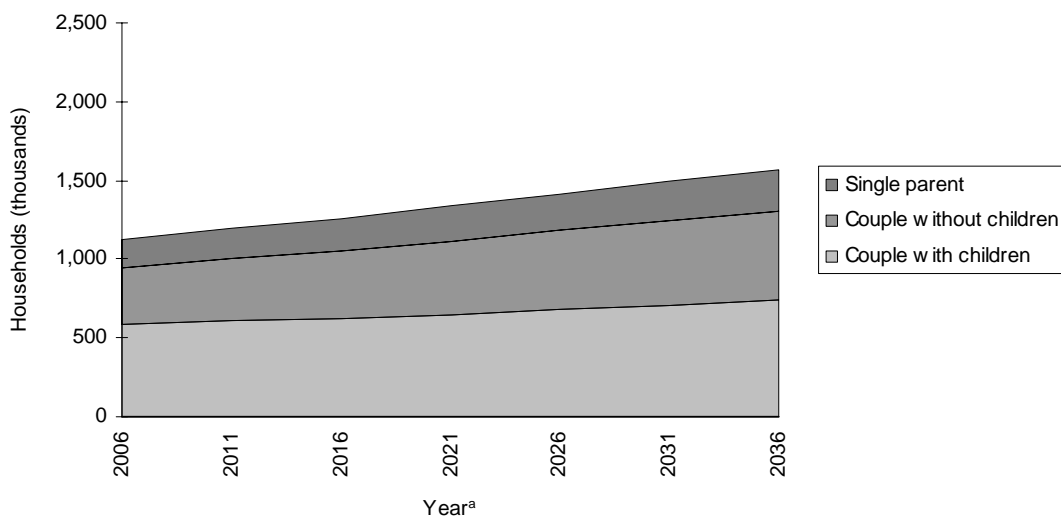


Figure 3.2: Projected number of one family households in the Sydney region, 2006–36
 a 'Year' refers to 30th June of the year shown

Projected household and dwelling growth for 2006–2031

To enable comparison with earlier projections in the Government's 2005 Metropolitan Strategy⁷, this section presents household and dwelling projections for the Sydney region covering the period between 2006 and 2031 (not 2036). As Table 3.1 shows, the number of households in the Sydney region is projected to increase from 1.62 million in 2006 to 2.23 million by 2031, a rise of 611,400 or 38%. The number of dwellings required to house these households is projected to increase from 1.68 million in 2006 to 2.31 million by 2031, a rise of 636,100 or 38%.

Projections for the Metropolitan Strategy put the population growth of the Sydney region at 1.1 million over the 2004–31 period, whilst the requirement for new dwellings was projected to be 640,000. Even allowing for the 2 year difference between 2004–31 and 2006–31, the two dwelling requirement projections are similar.

The new 2008 release population projection for the Sydney region, however, is markedly higher than before due to higher fertility and higher net overseas migration. Over the 2006–31 period the population of the Sydney region is now expected to increase by 1.41 million⁸. Despite this higher population projection, the projected dwelling requirement out to 2031 has changed little because average household sizes are not projected to decline by as much as previously anticipated. Whereas the Metropolitan Strategy projections expected the average household size to fall to 2.36 persons per household by 2031, the new projected average household size for 2031 is 2.51 (Table 3.1). As the third panel of Table 3.1 shows:

- the average household size for family households is projected to decline only marginally, falling from 3.14 in 2006 to 3.09 by 2031;
- for group households there is barely any change; and
- lone person households maintain an average household size of 1.0 (because, by definition, they contain just one person).

⁷ *City of Cities – A Plan for Sydney's Future*. Metropolitan Strategy. Department of Planning, Sydney, 2005.

⁸ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008.

Table 3.1: Household projections for the Sydney region, 2006–31: summary statistics

	2006 ^a	2031 ^a	2006–31 change		
Households					
	'000	'000	'000	%	Growth rate ^b %
One family households:					
Couple family with children	584.5	711.3	126.8	21.7	0.8
Couple family without children	364.1	534.4	170.3	46.8	1.5
Single parent family	176.4	247.0	70.6	40.0	1.4
Other family	24.6	32.4	7.9	32.1	1.1
Total one family household	1,149.6	1,525.2	375.6	32.7	1.1
Multiple family household	25.3	35.7	10.4	41.2	1.4
Total family household	1,174.9	1,560.9	386.0	32.9	1.1
Group household	63.2	71.6	8.4	13.3	0.5
Lone person household	377.9	594.9	217.0	57.4	1.8
Total households	1,615.9	2,227.3	611.4	37.8	1.3
Persons in Households					
One family households:					
Couple family with children	2,284.6	2,827.7	543.1	23.8	0.9
Couple family without children	738.1	1,082.9	344.8	46.7	1.5
Single parent family	469.8	647.5	177.7	37.8	1.3
Other family	52.9	69.9	16.9	32.0	1.1
Total one family household	3,545.4	4,628.0	1,082.5	30.5	1.1
Multiple family household	141.1	193.3	52.2	37.0	1.3
Total family household	3,686.6	4,821.3	1,134.8	30.8	1.1
Group household	148.8	168.4	19.6	13.1	0.5
Lone person household	377.9	594.9	217.0	57.4	1.8
Total persons in private dwellings	4,213.3	5,584.6	1,371.3	32.5	1.1
Total persons in non-private dwellings	68.7	104.0	35.3	51.4	1.7
Total persons	4,282.0	5,688.6	1,406.6	32.9	1.1
Average household size (persons per household)					
One family households:					
Couple family with children	3.91	3.98	0.07	–	–
Couple family without children	2.03	2.03	0.00	–	–
Single parent family	2.66	2.62	-0.04	–	–
Other family	2.15	2.15	0.00	–	–
Total one family household	3.08	3.03	-0.05	–	–
Multiple family household	5.58	5.41	-0.17	–	–
Total family household	3.14	3.09	-0.05	–	–
Group household	2.36	2.35	0.00	–	–
Lone person household	1.00	1.00	0.00	–	–
Total households	2.61	2.51	-0.10	–	–
Dwellings					
Structural dwellings ^c	1,678.6	2,314.6	636.1	37.9	1.3

a Refers to 30th June of the year shown.

b Annual average growth rate for the period 2006–2031.

c Structural dwellings include occupied and unoccupied dwellings.

Table 3.2: Household and dwelling projections for the Sydney region, 2006–36: summary statistics

	2006 ^a	2016 ^a	2026 ^a	2036 ^a	2006–36 change		
Households							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
One family households:							
Couple family with children	584.5	621.0	681.1	741.6	157.1	26.9	0.8
Couple family without children	364.1	434.8	501.3	567.5	203.4	55.9	1.5
Single parent family	176.4	206.1	232.6	261.5	85.1	48.2	1.3
Other family	24.6	27.7	30.8	34.1	9.5	38.9	1.1
Total one family household	1,149.6	1,289.6	1,445.9	1,604.7	455.1	39.6	1.1
Multiple family household	25.3	29.6	33.7	37.7	12.4	48.9	1.3
Total family household	1,174.9	1,319.2	1,479.6	1,642.4	467.5	39.8	1.1
Group household	63.2	62.2	68.3	74.9	11.7	18.6	0.6
Lone person household	377.9	474.5	552.5	637.5	259.7	68.7	1.8
Total households	1,615.9	1,856.0	2,100.4	2,354.8	738.9	45.7	1.3
Persons in Households							
One family households:							
Couple family with children	2,284.6	2,470.5	2,708.4	2,944.3	659.7	28.9	0.8
Couple family without children	738.1	881.0	1,015.6	1,150.4	412.2	55.8	1.5
Single parent family	469.8	550.1	615.2	679.6	209.8	44.7	1.2
Other family	52.9	59.8	66.3	73.4	20.5	38.8	1.1
Total one family household	3,545.4	3,961.3	4,405.5	4,847.7	1,302.2	36.7	1.0
Multiple family household	141.1	162.9	183.4	203.1	61.9	43.9	1.2
Total family household	3,686.6	4,124.2	4,588.9	5,050.7	1,364.2	37.0	1.1
Group household	148.8	146.7	160.8	176.2	27.3	18.4	0.6
Lone person household	377.9	474.5	552.5	637.5	259.7	68.7	1.8
Total persons in private dwellings	4,213.3	4,745.4	5,302.2	5,864.4	1,651.2	39.2	1.1
Total persons in non-private dwellings	68.7	76.6	92.4	117.6	48.9	71.2	1.8
Total persons	4,282.0	4,822.0	5,394.5	5,982.1	1,700.1	39.7	1.1
Average household size (persons per household)							
One family households:							
Couple family with children	3.91	3.98	3.98	3.97	0.06	–	–
Couple family without children	2.03	2.03	2.03	2.03	0.00	–	–
Single parent family	2.66	2.67	2.64	2.60	-0.06	–	–
Other family	2.15	2.15	2.15	2.15	0.00	–	–
Total one family household	3.08	3.07	3.05	3.02	-0.06	–	–
Multiple family household	5.58	5.49	5.44	5.39	-0.19	–	–
Total family household	3.14	3.13	3.10	3.08	-0.06	–	–
Group household	2.36	2.36	2.35	2.35	0.00	–	–
Lone person household	1.00	1.00	1.00	1.00	0.00	–	–
Total households	2.61	2.56	2.52	2.49	-0.12	–	–
Dwellings							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
Structural dwellings ^c	1,678.6	1,928.1	2,182.5	2,447.5	768.9	45.8	1.3
Annual average dwelling growth ^d	–	25.5	25.9	26.6	–	–	–

a Refers to 30th June of the year shown.

b Annual average growth rate for the period 2006–2036.

c Structural dwellings include occupied and unoccupied dwellings.

d Annual average growth in the numbers of dwellings for the five year period ending 30 June of the year shown.

4. Newcastle

'Newcastle' refers to Newcastle Statistical Subdivision.

Key results

- The number of households in the Newcastle region is projected to increase to 293,100 by 2036, a rise of 85,300 (or 41%) on the 2006 total of 207,900 households.
- Annual household growth is expected to be between 2,400 and 3,100.
- The resulting annual net dwelling need is projected to be between 2,500 and 3,200.
- Average household size is projected to decline from 2.45 in 2006 to 2.25 by 2036.
- The lone person household is the type of household projected to experience the greatest percentage increase between 2006 and 2036. These households are expected to increase in number from 52,400 in 2006 to 84,700 by 2036 (a 62% increase). The growth of the elderly population will drive much of this growth.
- All other types of household are projected to experience growth in numbers.

Total growth in households and dwellings

The **total number of households** in the Newcastle region is projected to increase from 207,900 in 2006 to 293,100 by 2036. This is an increase of 85,300, or 41%, over the 2006–36 period. Annual growth in the number of households is projected to fall from about 3,100 in the initial years of the projection to around 2,400 towards the end.

Average household size is projected to decline from 2.45 persons per household in 2006 to 2.25 by 2036. The percentage increase in the number of households between 2006 and 2036 is higher than the projected population increase of 31% over the period⁹.

The **number of structural dwellings** required is expected to increase from 213,100 in 2006 to 300,700 by 2036, a net growth of 87,600. Annual net dwelling demand is projected to decline from about 3,200 in the initial years of the projections to about 2,500 towards the end. Further statistics are given in Table 4.1 on page 13.

Growth by household type

Households can be divided into three broad types: family households, lone person households, and group households. Projected changes in the numbers of these households between 2006 and 2036 in the Newcastle region are shown in Figure 4.1.

The number of **family households** is projected to increase from 148,800 in 2006 to 201,200 by 2036, a rise of 52,400 households, or 35%. In 2006 family households comprised 72% of all households. By 2036 their share is projected to have fallen slightly to just under 69%.

The number of **lone person households** is projected to increase from 52,400 in 2006 to 84,700 by 2036, a rise of 32,300 households over the period, or 62%. The chance of someone being in a lone person household is greatest in the elderly ages. Growth in the number of this household type is in large part associated with the projected growth of the elderly population. The share of all households which are lone person households is projected to rise from 25% in 2006 to 29% by 2036.

The number of **group households** is projected to increase from 6,600 in 2006 to 7,200 by 2036, a rise of 600 or 9%.

⁹ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008.

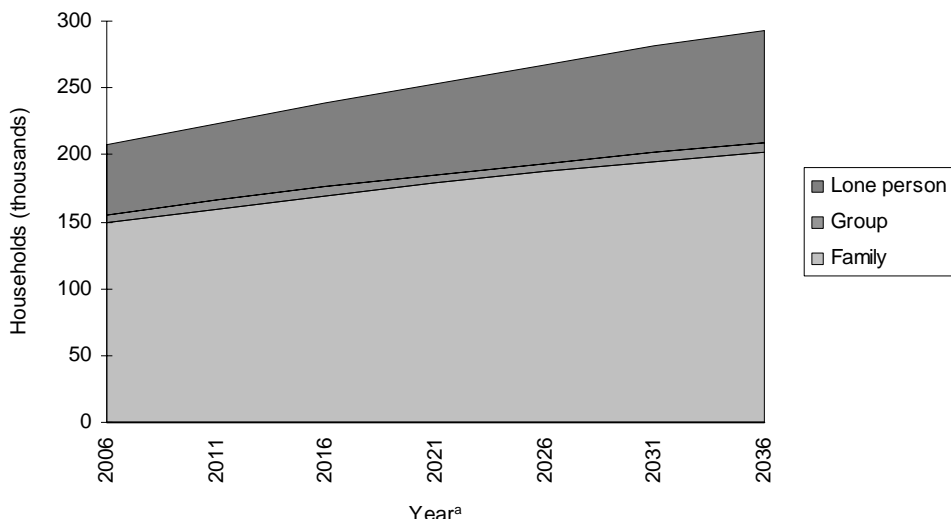


Figure 4.1: Projected number of households in the Newcastle region, 2006–36
 a 'Year' refers to 30th June of the year shown.

Growth of family households by type

Figure 4.2 shows projections of three types of one family household: single parent households, households containing couples without children, and those containing couples with children.

The number of **single parent households** is projected to increase from 25,500 in 2006 to 35,200 by 2036, a rise of 9,700, or 38%.

Households containing **couples without children** are expected to increase in number from 55,000 in 2006 to 88,600 by 2036, a rise of 33,600 or 61%. The chance of being in a couple household without children is highest in the elderly ages. The significant growth of this type of household is driven to a large extent by the projected growth of the elderly population.

The number of households containing **couples with children** is projected to increase from 64,300 in 2006 to 71,800 by 2036, a rise of 7,500 or 12%.

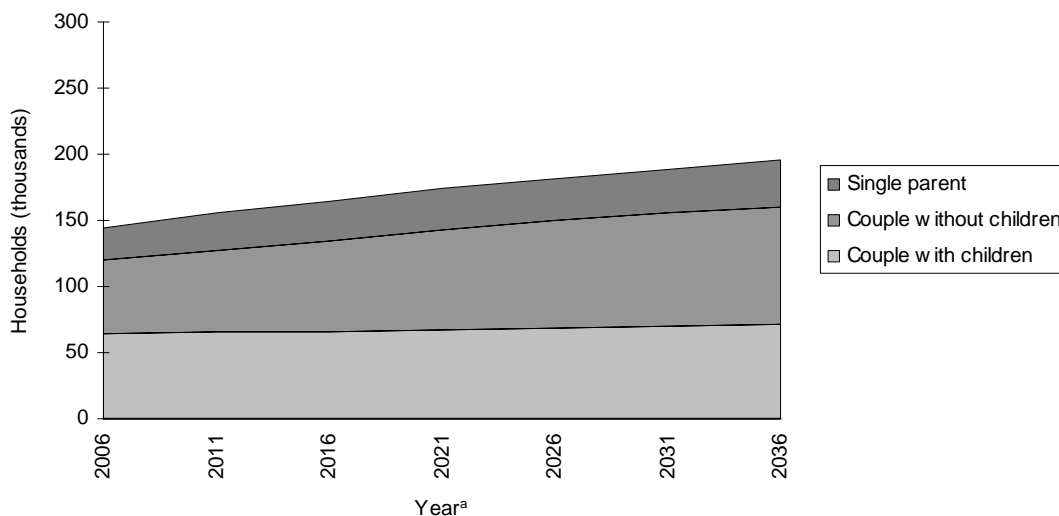


Figure 4.2: Projected number of one family households in the Newcastle region, 2006–36
 a 'Year' refers to 30th June of the year shown.

Table 4.1: Household and dwelling projections for the Newcastle region, 2006–36: summary statistics

	2006 ^a	2016 ^a	2026 ^a	2036 ^a	2006–36 change		
Households							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
One family households:							
Couple family with children	64.3	65.5	69.3	71.8	7.5	11.6	0.4
Couple family without children	55.0	69.2	80.0	88.6	33.6	61.0	1.6
Single parent family	25.5	29.9	32.6	35.2	9.7	38.1	1.1
Other family	2.2	2.5	2.7	3.0	0.7	32.7	0.9
Total one family household	147.1	167.2	184.6	198.6	51.5	35.0	1.0
Multiple family household	1.7	2.1	2.4	2.6	0.9	49.6	1.4
Total family household	148.8	169.3	187.0	201.2	52.4	35.2	1.0
Group household	6.6	6.5	6.8	7.2	0.6	9.0	0.3
Lone person household	52.4	63.1	73.9	84.7	32.3	61.7	1.6
Total households	207.9	238.9	267.8	293.1	85.3	41.0	1.2
Persons in Households							
One family households:							
Couple family with children	248.4	252.9	265.0	274.8	26.5	10.7	0.3
Couple family without children	110.7	139.1	160.7	178.1	67.4	60.8	1.6
Single parent family	67.0	75.8	81.0	85.8	18.8	28.1	0.8
Other family	4.7	5.3	5.7	6.2	1.5	32.4	0.9
Total one family household	430.7	473.0	512.4	544.9	114.1	26.5	0.8
Multiple family household	10.3	12.1	13.3	14.2	3.9	37.6	1.1
Total family household	441.1	485.1	525.7	559.1	118.0	26.8	0.8
Group household	15.1	14.9	15.6	16.5	1.3	8.8	0.3
Lone person household	52.4	63.1	73.9	84.7	32.3	61.7	1.6
Total persons in private dwellings	508.6	563.1	615.2	660.3	151.7	29.8	0.9
Total persons in non-private dwellings	8.9	10.1	12.1	15.7	6.7	75.7	1.9
Total persons	517.5	573.1	627.3	675.9	158.4	30.6	0.9
Average household size (persons per household)							
One family households:							
Couple family with children	3.86	3.86	3.83	3.83	-0.03	–	–
Couple family without children	2.01	2.01	2.01	2.01	0.00	–	–
Single parent family	2.63	2.53	2.48	2.44	-0.19	–	–
Other family	2.09	2.09	2.09	2.09	0.00	–	–
Total one family household	2.93	2.83	2.78	2.74	-0.18	–	–
Multiple family household	5.93	5.63	5.51	5.45	-0.48	–	–
Total family household	2.96	2.86	2.81	2.78	-0.18	–	–
Group household	2.28	2.28	2.28	2.28	0.00	–	–
Lone person household	1.00	1.00	1.00	1.00	0.00	–	–
Total households	2.45	2.36	2.30	2.25	-0.19	–	–
Dwellings							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
Structural dwellings ^c	213.1	245.0	274.6	300.7	87.6	41.1	1.2
Annual average dwelling growth ^d	–	3.2	2.9	2.5	–	–	–

a Refers to 30th June of the year shown.

b Annual average growth rate for the period 2006–2036.

c Structural dwellings include occupied and unoccupied dwellings.

d Annual average growth in the numbers of dwellings for the five year period ending 30 June of the year shown.

5. Wollongong

'Wollongong' refers to Wollongong Statistical Subdivision.

Key results

- The number of households in the Wollongong region is projected to increase to 143,200 by 2036, a rise of 34,500 (or 32%) on the 2006 total of 108,700 households.
- Annual household growth is expected to be between 900 and 1,400.
- The resulting annual net dwelling need is also projected to be between 900 and 1,400.
- Average household size is projected to decline from 2.52 in 2006 to 2.32 by 2036.
- The lone person household is the type of household projected to experience the greatest percentage increase between 2006 and 2036. These households are expected to increase in number from 26,300 in 2006 to 41,300 by 2036 (a 57% increase). The growth of the elderly population will drive much of this growth.
- Households containing couple families with children are expected to experience only very marginal growth in numbers.

Total growth in households and dwellings

The **total number of households** in the Wollongong region is projected to increase from 108,700 in 2006 to 143,200 by 2036. This is an increase of 34,500 over the 2006–36 period, or 32%. Annual growth in the number of households is projected to fall from about 1,400 in the initial years of the projection to around 900 towards the end.

Average household size is projected to decline from 2.52 persons per household in 2006 to 2.32 by 2036. The percentage increase in the number of households between 2006 and 2036 is higher than the projected population increase of 22% over the period.¹⁰

The **number of structural dwellings** required is expected to increase from 110,100 in 2006 to 145,200 by 2036, a net growth of 35,000. Annual net dwelling demand is projected to fall from about 1,400 in the initial years of the projections to about 900 towards the end. Further statistics are given in Table 5.1 on page 16.

Growth by household type

Households can be divided into three broad types: family households, lone person households, and group households. Projected changes in the numbers of these households between 2006 and 2036 in the Wollongong region are shown in Figure 5.1.

The number of **family households** is projected to increase from 79,200 in 2006 to 98,100 by 2036, a rise of 19,000 households, or 24%. In 2006 family households comprised 73% of all households. By 2036 their share is projected to have fallen to just under 69%.

The number of **lone person households** is projected to increase from 26,300 in 2006 to 41,300 by 2036, a rise of 15,000 households over the period, or 57%. The chance of someone being in a lone person household is greatest in the elderly ages. Growth in the number of this household type is in large part associated with the projected growth of the elderly population. Faster projected growth than total households increases lone person households' share of all household types from 24% in 2006 to 29% by 2036.

The number of **group households** is projected to increase from 3,300 in 2006 to 3,800 by 2036, a rise of 500 or 16%.

¹⁰ *New South Wales State and Regional Population Projections: 2008 Release.* Department of Planning, Sydney, 2008.

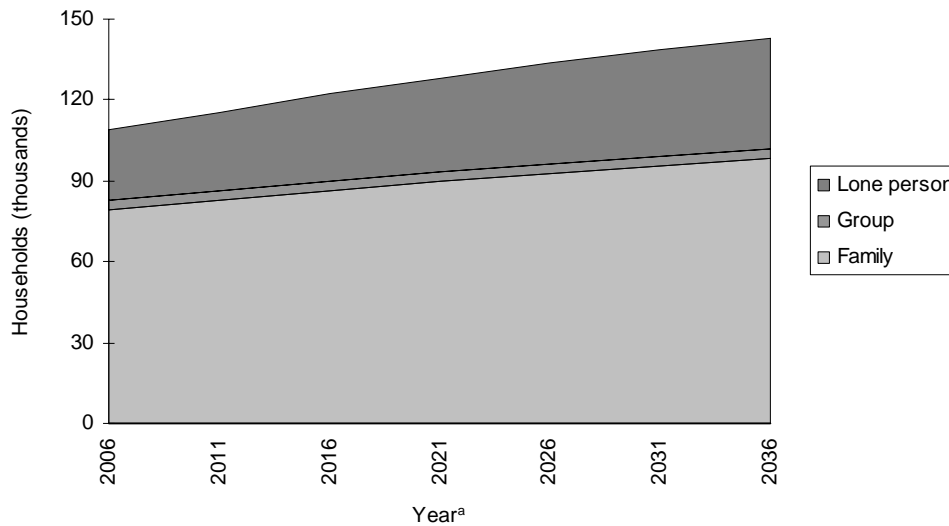


Figure 5.1: Projected number of households in the Wollongong region, 2006–36
 a 'Year' refers to 30th June of the year shown.

Growth of family households by type

Figure 5.2 shows projections of three types of one family household: single parent households, households containing couples without children, and those containing couples with children.

The number of **single parent households** is projected to increase from 13,000 in 2006 to 16,800 by 2036, a rise of 3,900, or 30%.

Households containing **couples without children** are expected to increase in number from 27,200 in 2006 to 40,000 by 2036, a rise of 12,800 or 47%. The chance of being in a couple household without children is highest in the elderly ages. The significant growth of this type of household is driven to a large extent by the projected growth of the elderly population.

The number of households containing **couples with children** is projected to increase only slightly, rising from 36,800 in 2006 to 38,400 by 2036, a rise of 1,500 or 4%.

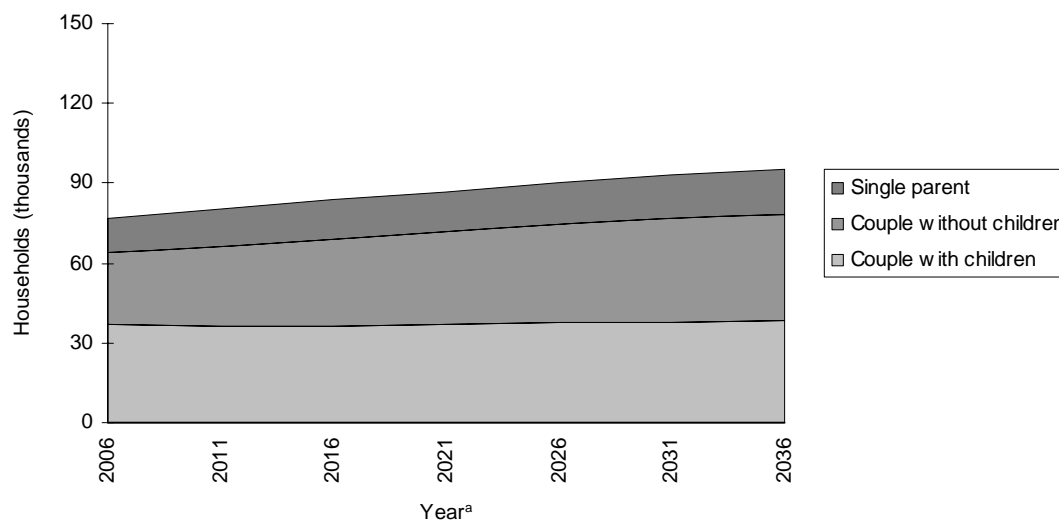


Figure 5.2: Projected number of one family households in the Wollongong region, 2006–36
 a 'Year' refers to 30th June of the year shown.

Table 5.1: Household and dwelling projections for the Wollongong region, 2006–36: summary statistics

	2006 ^a	2016 ^a	2026 ^a	2036 ^a	2006–36 change		
Households							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
One family households:							
Couple family with children	36.8	36.2	37.5	38.4	1.5	4.2	0.1
Couple family without children	27.2	32.6	36.8	40.0	12.8	47.2	1.3
Single parent family	13.0	14.7	15.8	16.8	3.9	29.9	0.9
Other family	1.1	1.2	1.3	1.4	0.3	26.3	0.8
Total one family household	78.1	84.8	91.4	96.6	18.5	23.7	0.7
Multiple family household	1.1	1.3	1.5	1.6	0.4	40.0	1.1
Total family household	79.2	86.1	92.9	98.1	19.0	24.0	0.7
Group household	3.3	3.6	3.7	3.8	0.5	15.8	0.5
Lone person household	26.3	32.5	37.0	41.3	15.0	57.2	1.5
Total households	108.7	122.3	133.5	143.2	34.5	31.7	0.9
Persons in Households							
One family households:							
Couple family with children	143.0	141.4	145.7	149.3	6.3	4.4	0.1
Couple family without children	54.6	65.6	74.0	80.5	25.9	47.4	1.3
Single parent family	34.3	37.8	39.8	41.6	7.4	21.6	0.7
Other family	2.3	2.6	2.7	2.9	0.6	26.2	0.8
Total one family household	234.2	247.4	262.2	274.4	40.2	17.2	0.5
Multiple family household	6.2	7.1	7.7	8.1	1.9	30.7	0.9
Total family household	240.5	254.4	269.9	282.6	42.1	17.5	0.5
Group household	7.7	8.4	8.5	8.9	1.2	15.5	0.5
Lone person household	26.3	32.5	37.0	41.3	15.0	57.2	1.5
Total persons in private dwellings	274.4	295.4	315.4	332.7	58.3	21.2	0.6
Total persons in non-private dwellings	3.6	4.2	5.0	6.4	2.8	76.6	1.9
Total persons	278.0	299.6	320.5	339.0	61.1	22.0	0.7
Average household size (persons per household)							
One family households:							
Couple family with children	3.88	3.91	3.88	3.89	0.01	–	–
Couple family without children	2.01	2.01	2.01	2.01	0.00	–	–
Single parent family	2.64	2.57	2.52	2.47	-0.17	–	–
Other family	2.10	2.10	2.09	2.09	0.00	–	–
Total one family household	3.00	2.92	2.87	2.84	-0.16	–	–
Multiple family household	5.57	5.35	5.25	5.20	-0.37	–	–
Total family household	3.04	2.95	2.91	2.88	-0.16	–	–
Group household	2.33	2.33	2.33	2.33	0.00	–	–
Lone person household	1.00	1.00	1.00	1.00	0.00	–	–
Total households	2.52	2.42	2.36	2.32	-0.20	–	–
Dwellings							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
Structural dwellings ^c	110.1	123.9	135.3	145.2	35.0	31.8	0.9
Annual average dwelling growth ^d	–	1.4	1.1	0.9	–	–	–

a Refers to 30th June of the year shown.

b Annual average growth rate for the period 2006–2036

c Structural dwellings include occupied and unoccupied dwellings.

d Annual average growth in the numbers of dwellings for the five year period ending 30 June of the year shown.

6. Balance of New South Wales

'Balance of New South Wales' refers to the State minus Sydney Statistical Division, Newcastle Statistical Subdivision and Wollongong Statistical Subdivision

Key results

- The number of households in the Balance of New South Wales is projected to increase to 932,300 by 2036, a rise of 219,200 (or 31%) on the 2006 total of 713,100 households.
- Annual household growth is expected to be between 4,800 and 9,500.
- The resulting annual net dwelling need is projected to be between 5,200 and 10,200.
- Average household size is projected to decline from 2.38 in 2006 to 2.15 by 2036.
- The lone person household is the type of household projected to experience the greatest percentage increase between 2006 and 2036. These households are expected to increase in number from 190,000 in 2006 to 298,700 by 2036 (a 57% increase). The growth of the elderly population will drive much of this growth.
- The second highest percentage increase will be in couple households without children (47%) which are projected to increase from 208,600 in 2006 to 307,200 in 2036.
- The number of households containing couples with children is expected to fall slightly.

The Balance of New South Wales contains a number of quite distinct population sub-regions. These include the coastal zone where there is significant retirement migration, regional cities which are destinations for young people participating in education and seeking employment, and the rural remainder which has had a well documented out-migration of young people. As a result of an ageing population combined with net gains of retirees and net losses of younger people, the composition of family households in this region differs substantially from those in the metropolitan regions.

Total growth in household and dwelling

The **total number of households** in the Balance of New South Wales is projected to increase from 713,100 in 2006 to 932,300 by 2036. This is an increase of 219,200, or 31%, over the 2006–36 period. Annual growth in the number of households is projected to fall from about 9,500 in the initial years of the projection to around 4,800 towards the end.

Average household size is projected to decline from 2.38 persons per household in 2006 to 2.15 by 2036. The percentage increase in the number of households between 2006 and 2036 is higher than the projected population increase of 19% over the period¹¹.

The **number of structural dwellings** required is expected to increase from 765,000 in 2006 to 1.00 million by 2036, a net growth of 235,700. Annual net dwelling demand is projected to be about 10,200 in the initial years of the projections, falling gradually to about 5,200 towards the end. Further statistics are given in Table 6.2 on page 20.

Growth by household type

Households can be divided into three broad types: family households, lone person households, and group households. Projected changes in the numbers of these households between 2006 and 2036 are shown in Figure 6.1.

The number of **family households** is projected to increase from 503,800 in 2006 to 613,900 by 2036, a rise of 110,200 households, or 22%. In 2006 family households comprised 71% of all households in the Balance of New South Wales. By 2036 their share is projected to have fallen to 66%.

¹¹ *New South Wales State and Regional Population Projections: 2008 Release*. Department of Planning, Sydney, 2008.

The number of **lone person households** is projected to increase from 190,000 in 2006 to 298,700 by 2036, a rise of 108,800 households, or 57%. The chance of someone being in a lone person household is greatest in the elderly ages. Growth in the number of this household type is in large part associated with the projected growth of the elderly population. Faster projected growth than households as a whole increases lone person households' share of all household types from 27% in 2006 to 32% by 2036.

The number of **group households** is projected to increase from 19,400 in 2006 to 19,700 by 2036, a rise of around 300 or just over 1%.

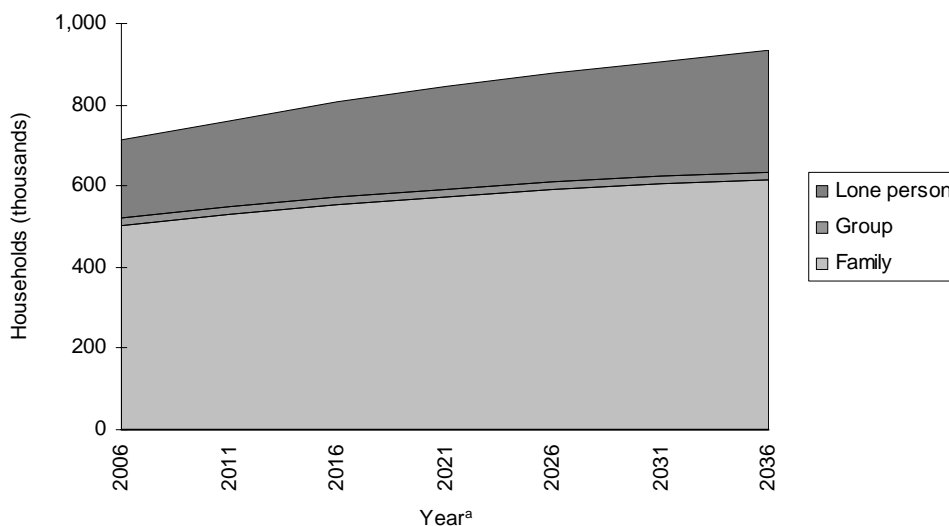


Figure 6.1: Projected number of households in the Balance of New South Wales, 2006–36

a 'Year' refers to 30th June of the year shown.

Growth of family households by type

Figure 6.2 shows projections of three types of one family household: single parent households, households containing couples without children, and those containing couples with children.

The number of **single parent households** is projected to increase from 80,400 in 2006 to 97,800 by 2036, a rise of 17,500, or 22%.

Households containing **couples without children** are expected to increase in number from 208,600 in 2006 to 307,200 by 2036, a rise of 98,600 or 47%. The chance of being in a couple household without children is highest in the elderly ages. The significant growth of this type of household is driven to a large extent by the projected growth of the elderly population.

The number of households containing **couples with children** is projected to decline, falling from 203,500 in 2006 to 194,200 by 2036, a decrease of 9,300 or just under 5%.

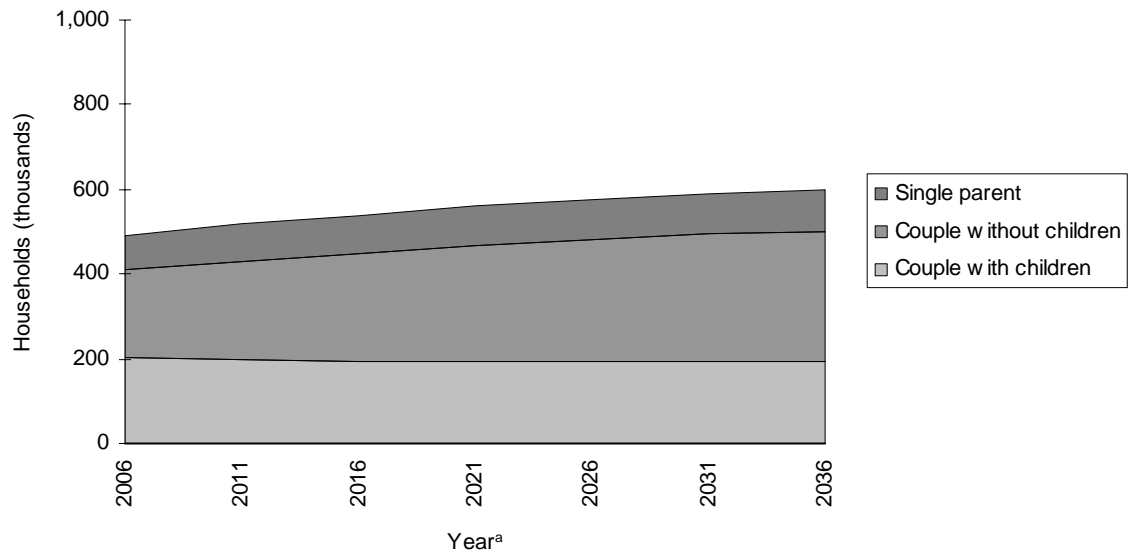


Figure 6.2: Projected number of one family households in the Balance of New South Wales, 2006–36
a 'Year' refers to 30th June of the year shown.

Table 6.1: Household and dwelling projections for the Balance of New South Wales, 2006–36: summary statistics

	2006 ^a	2016 ^a	2026 ^a	2036 ^a	2006–36 change		
Households							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
One family households:							
Couple family with children	203.5	194.2	195.2	194.2	-9.3	-4.6	-0.2
Couple family without children	208.6	254.8	287.3	307.2	98.6	47.3	1.3
Single parent family	80.4	90.5	94.1	97.8	17.5	21.7	0.7
Other family	6.7	7.5	8.0	8.5	1.8	26.3	0.8
Total one family household	499.2	547.0	584.6	607.7	108.6	21.7	0.7
Multiple family household	4.6	5.5	6.0	6.2	1.6	35.0	1.0
Total family household	503.8	552.5	590.6	613.9	110.2	21.9	0.7
Group household	19.4	18.9	19.3	19.7	0.3	1.4	0.0
Lone person household	190.0	235.6	269.3	298.7	108.8	57.3	1.5
Total households	713.1	807.0	879.2	932.3	219.2	30.7	0.9
Persons in Households							
One family households:							
Couple family with children	796.1	759.4	759.9	757.2	-38.9	-4.9	-0.2
Couple family without children	417.6	509.6	574.2	615.0	197.3	47.3	1.3
Single parent family	214.7	229.5	234.2	238.5	23.8	11.1	0.4
Other family	14.4	16.1	17.2	18.1	3.7	26.0	0.8
Total one family household	1,442.8	1,514.5	1,585.5	1,628.8	186.0	12.9	0.4
Multiple family household	25.0	28.4	30.4	31.3	6.3	25.1	0.7
Total family household	1,467.8	1,543.0	1,615.9	1,660.1	192.3	13.1	0.4
Group household	42.5	41.4	42.2	43.0	0.5	1.3	0.0
Lone person household	190.0	235.6	269.3	298.7	108.8	57.3	1.5
Total persons in private dwellings	1,700.3	1,820.0	1,927.3	2,001.8	301.5	17.7	0.5
Total persons in non-private dwellings	38.3	44.9	53.2	67.2	28.9	75.4	1.9
Total persons	1,738.6	1,864.9	1,980.5	2,069.0	330.4	19.0	0.6
Average household size (persons per household)							
One family households:							
Couple family with children	3.91	3.91	3.89	3.90	-0.01	–	–
Couple family without children	2.00	2.00	2.00	2.00	0.00	–	–
Single parent family	2.67	2.54	2.49	2.44	-0.23	–	–
Other family	2.14	2.14	2.14	2.14	0.00	–	–
Total one family household	2.89	2.77	2.71	2.68	-0.21	–	–
Multiple family household	5.43	5.17	5.07	5.03	-0.40	–	–
Total family household	2.91	2.79	2.74	2.70	-0.21	–	–
Group household	2.19	2.19	2.19	2.18	0.00	–	–
Lone person household	1.00	1.00	1.00	1.00	0.00	–	–
Total households	2.38	2.26	2.19	2.15	-0.24	–	–
Dwellings							
	'000	'000	'000	'000	'000	%	Growth rate ^b %
Structural dwellings ^c	765.0	865.8	943.4	1,000.7	235.7	30.8	0.9
Annual average dwelling growth ^d	–	10.0	7.2	5.2	–	–	–

a Refers to 30th June of the year shown.

b Annual average growth rate for the period 2006–2036.

c Structural dwellings include occupied and unoccupied dwellings.

d Annual average growth in the numbers of dwellings for the five year period ending 30 June of the year shown.

7. Projection methods

Jump-off populations

The projections are based on (or “jump-off” from) the 30th June 2006 Estimated Resident Populations supplied by the ABS.

“The Estimated Resident Population (ERP) is the official measure of the Australian population, and is based on the concept of usual residence. It refers to all people, regardless of nationality or citizenship, who usually live in Australia, with the exception of foreign diplomatic personnel and their families. The ERP includes usual residents who are overseas for less than 12 months and excludes overseas visitors who are in Australia for less than 12 months.”¹²

These 2006 ERPs are derived from 2006 Census counts of usual residents adjusted for (1) net underenumeration (adding in people missed and taking out any double counting), (2) residents temporarily overseas, and (3) population change which occurred over the short period between 30th June and census night (8 August)¹³.

The household propensity model

The 2008 release household projections were produced using a propensity model. This approach is similar to that employed by the Australian Bureau of Statistics for their household projections¹⁴. Put simply, propensity models take population projections by age and sex and split them up using proportions of each age and sex group in each living arrangement category. From these population by living arrangement projections, corresponding data were produced for the following household categories:

- One family households:
 - Couple family with children
 - Couple family without children
 - Single parent family
 - Other family
- Total one family household
- Multiple family household
- Total family household
- Group household
- Lone person household
- Total households.

Projections were produced for New South Wales as a whole and for Sydney, Newcastle, Wollongong and Balance of New South Wales regions for the output years 2011, 2016, 2021, 2026, 2031 and 2036. Details of the modelling process are outlined as follows:

Step 1: Calculate historic living arrangement propensities

Counts of people by 5 year age and sex groups in each living arrangement category were extracted from the 1991, 1996, 2001 and 2006 Censuses. Initial propensities were calculated by dividing the number of people in each age/sex living arrangement category by the total for that age/sex group. For example, the propensity for males aged 20–24 years living in a group household in New South Wales was calculated by dividing the number of males in that category by the total number of males aged 20–24 in New South Wales.

¹² *Census Dictionary 2006*. Catalogue no. 2901.0. ABS, Canberra. Page 185.

¹³ *Australian Demographic Statistics* March 2007 quarter. Catalogue no. 3101.0. ABS, Canberra, 2007.

¹⁴ *Household and Family Projections, Australia, 2001 to 2026*. Catalogue no. 3236.0. ABS, Canberra, 2004.

Step 2: Calculate projected living arrangement propensities

Preliminary projected propensities were prepared from the historic propensities calculated at Step 1. Assumptions were prepared for the first two or three output years only (2011, 2016 and 2021). For later years propensities were held constant.

A number of methods were used to calculate preliminary propensity trends for 2011, 2016 and 2021. These included:

- holding all projected propensities constant;
- calculating a trend based propensity based on historic propensities; and
- calculating a cohort based average propensity.

Preliminary propensities for 2026, 2031 and 2036 were held constant at the 2021 value.

The sum of propensities across all categories in each year must equal 100%. For the preliminary propensities this does not always occur due to variations in calculations and rounding. Therefore, an addition step was required to scale these data to a set of final projected propensities which summed to 100%. This ensured that the input total projected population for the state or region equalled the sum of the output projected population in all living arrangement categories.

Step 3: Produce population projections by living arrangements

The projected population by age, sex and living arrangement was then calculated by multiplying the final projected propensities (Step 2) by the corresponding projected populations for each output year. These age/sex groups were then summed to produce the total number of persons in each living arrangement category. An iterative scaling process was used to ensure that the regional projections by living arrangements summed to the New South Wales total projected population and to the regions projected population by age and sex. The projected populations used were the Department of Planning's 2008 release population projections¹⁵.

Step 4: Calculate the household ratios

Ratios to convert the total number of persons in living arrangement categories produced at Step 3 to the number of households were then calculated. These ratios were based on 2006 Census counts of family reference persons, household reference persons and single family households. These counts were divided by the Census total person count (where applicable) in each living arrangement category. For example, the conversion factor for couple families with children was calculated by dividing the count of family reference persons by the count of all persons who were a husband, wife or partner in a couple family. The 2006 ratios were held constant for all output years.

Step 5: Produce the household projections

The final step in the process was to multiply the total projected populations by living arrangements for each output year (Step 3) by the household ratios (Step 4). This produced a preliminary set of household projections for each output year. As in Step 2, scaling was required to ensure that estimates summed to state and regional totals. The scaling step converted the preliminary data to the final household projections.

Two additional sets of data were produced during this step of the process. Using the data produced at Step 3, total persons in each household category were produced. Again, a scaling step was required to ensure that the sum of all categories was equal to state and regional totals. The final data item produced was a summary indicator representing the number of persons per household.

Dwelling projections

Due to the relationship between household and dwelling numbers, dwelling projections can be produced from household projections. This requires the calculation of a household to dwelling ratio based on the number of modelled households in the base year and ABS census dwelling counts. It should be stressed here that these projections provide an estimate of the net underlying requirement

¹⁵ *New South Wales State and Regional Population Projections, 2006–2036: 2008 Release*. Sydney, Department of Planning, 2008.

for dwellings based on projected changes to population and living arrangements rather than a projection of future dwelling construction.

As the base year for these projections was 2006, Census dwelling counts were used to obtain a value for the total dwelling stock (occupied plus unoccupied dwellings). Two changes to this data were made. First, the number was reduced to total structural dwellings by excluding non-structural categories such as caravans, cabins, houseboats, improvised homes and tents. Secondly, the number was increased to account for the 87,700 dwellings estimated as missed in the census by the ABS Post-Enumeration Survey (PES)¹⁶. These two steps produced a 2006 estimate of all structural dwellings.

A dwelling to household ratio was then calculated by dividing the number of households by the number of structural dwellings. (The number of dwellings is a little higher than the number of households because it includes dwellings that are unoccupied at the time of the census, such as holiday homes and newly completed dwellings not yet occupied, and non-private dwellings). This conversion factor was then multiplied by the projected number of households in each output year to produce preliminary dwelling projections. A final projected dwelling number for each year was then produced by scaling the preliminary values to the State total.

Data quality and limitations

A number of data quality issues need to be considered when interpreting the data.

- First, the projected values rely heavily upon 1991, 1996, 2001 and 2006 Census data. As indicated earlier, the census does miss dwellings. Some categories of dwelling types can also be misclassified.
- Second, between the 1991 and 2006 Census some changes were made to living arrangement categories which reduce their comparability. Census count data also do not include all New South Wales residents. Those who were temporarily absent on census night either in another region or state were counted there while those who were temporarily overseas were not counted at all.
- Third, an estimated 259,900 New South Wales residents were not contacted on census night¹⁵.
- Finally, there are a number of category misclassification issues related to temporary absence on census night and cases where information is incorrectly provided or not provided at all. Combined, these mean that the living arrangement structures as indicated by census data are indicative only and may vary from the actual distribution.

Even if the base census data on living conditions were completely accurate, there is a need to make assumptions about the ways in which these categories will change into the future. For projection purposes, some propensities and conversion factors are held constant while others are projected to change. These assumptions on changes were based on the best estimate of what might happen. It is therefore possible for changes in propensities and conversion factors to occur which were not included in the projection model.

¹⁶ *Census of Population and Housing – Details of Undercount*, August 2006. Catalogue no. 2940.0. ABS, Canberra.

Glossary

Annual average growth rate is calculated as $\ln(P_t/P_0)/t$ where 'ln' denotes the natural logarithm and 'P_t' is the population t years after 'P₀'. It is usually expressed as a percentage.

Dwelling In this report 'dwelling' refers to structural dwellings. Excluded are non-structural dwellings such as tents and caravans. Structural dwellings may be unoccupied at the time of the census because they are, for example, holiday homes, cabins, newly built and not yet occupied, or vacated prior to demolition.

Family Household a household containing "two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering."¹⁷

Group Household a household "consisting of two or more unrelated people where all persons are aged 15 years or over. There are no reported couple relationships, parent-child relationships or other blood relationships in these households."¹⁷

Household "a group of two or more related or unrelated people who usually reside in the same dwelling, who regard themselves as a household and who make common provision for food or other essentials for living; or a person living in a dwelling who makes provision for his or her own food and other essentials for living, without combining with any other person."¹⁷

Lone Person Household a household containing one person.

Non-private dwelling a dwelling such as a hotel, religious institution, military establishment, prison, hospital or some other type of communal dwelling.

¹⁷ *Household and Family Projections, Australia, 2001 to 2026*. Catalogue no. 3236.0. ABS, Canberra, 2004.

Appendix: A comparison with the latest ABS household projections

The Australian Bureau of Statistics (ABS) also produces household projections for NSW as a whole and for the Sydney region and the Rest of New South Wales. However, at the time of release of the projections in this report, the ABS had not updated their last release which was based on the 2001 Census¹⁸. It is anticipated that the 2006-based ABS projections will be available in the second half of 2009. Therefore this appendix compares the 2008 release Department of Planning household projections with the 2001-based ABS Series II household projections. A summary of these data are presented in Table A.1.

Table A.1: Comparison of Department of Planning and ABS household projections, 2001–36

Year ^a	Dept of Planning (2008)			ABS (2004)			Difference (Planning – ABS)		
	Family	Group	Lone	Family	Group	Lone	Family	Group	Lone
	'000	'000	'000	'000	'000	'000	'000	'000	'000
New South Wales									
2001	–	–	–	1,772	96	587	–	–	–
2006	1,907	93	647	1,865	103	675	41	-10	-29
2011	2,017	92	724	1,967	108	751	51	-16	-27
2016	2,127	91	806	2,068	111	822	59	-20	-16
2021	2,240	95	869	2,164	112	887	76	-17	-19
2026	2,350	98	933	2,243	113	955	107	-14	-22
2031	2,455	102	998	–	–	–	–	–	–
2036	2,556	106	1,062	–	–	–	–	–	–
Sydney									
2001	–	–	–	1,090	66	343	–	–	–
2006	1,175	63	378	1,155	70	386	20	-6	-8
2011	1,246	63	424	1,227	72	427	19	-10	-2
2016	1,319	62	475	1,300	74	467	20	-12	8
2021	1,398	66	513	1,370	76	508	28	-11	5
2026	1,480	68	553	1,432	77	551	48	-9	1
2031	1,561	72	595	–	–	–	–	–	–
2036	1,642	75	638	–	–	–	–	–	–

a Refers to 30th June of the year shown.

Source of ABS data: *Household and Family Projections, Australia, 2001 to 2026*. Catalogue no. 3236.0. ABS, Canberra, 2004

Series II ABS projections were chosen because they are generally interpreted as the medium series. Series II assumes trends in living arrangements over the past fifteen years continue for five years and then progressively lessen. The level of difference in the application of future propensities used for each set of projections will account for some of the differences between them. Also, these differences may be exaggerated by the different base years used (2001 vs. 2006) and variations in the population projections used.

At 2006 the Department of Planning estimates 41,100 more family households in New South Wales than projected by the ABS. This difference increases each year until 2026 when the difference is 107,000 family households. The Sydney region has a similar pattern with differences of 20,000 more in 2006, 19,000 more in 2011 and 47,700 more in 2026.

In contrast, the Department of Planning projections for group and lone person households in New South Wales are mainly lower in all projected years (see also Figures A.1 and A.2). For New South Wales in 2006, the Department of Planning projects 10,300 fewer group households. This difference increases to 19,700 fewer in 2016 before declining to 14,400 fewer in 2026. For lone person

¹⁸ *Household and Family Projections, Australia, 2001 to 2026*. Catalogue no. 3236.0. ABS, Canberra, 2004.

households, the largest difference is projected as 28,500 fewer in 2006. The difference then reduces to 16,000 fewer in 2016 before increasing to 22,000 fewer in 2026.

The pattern for group households in the Sydney region is similar to that for New South Wales starting at 6,300 fewer in 2006, 12,200 fewer in 2016 and 9,000 fewer in 2026. However, the pattern for lone person households in Sydney is different to New South Wales. In 2006 the Department of Planning estimates 8,400 fewer lone person households. By 2016 the projected difference is reversed to 7,800 more before reducing to 1,300 more in 2026.

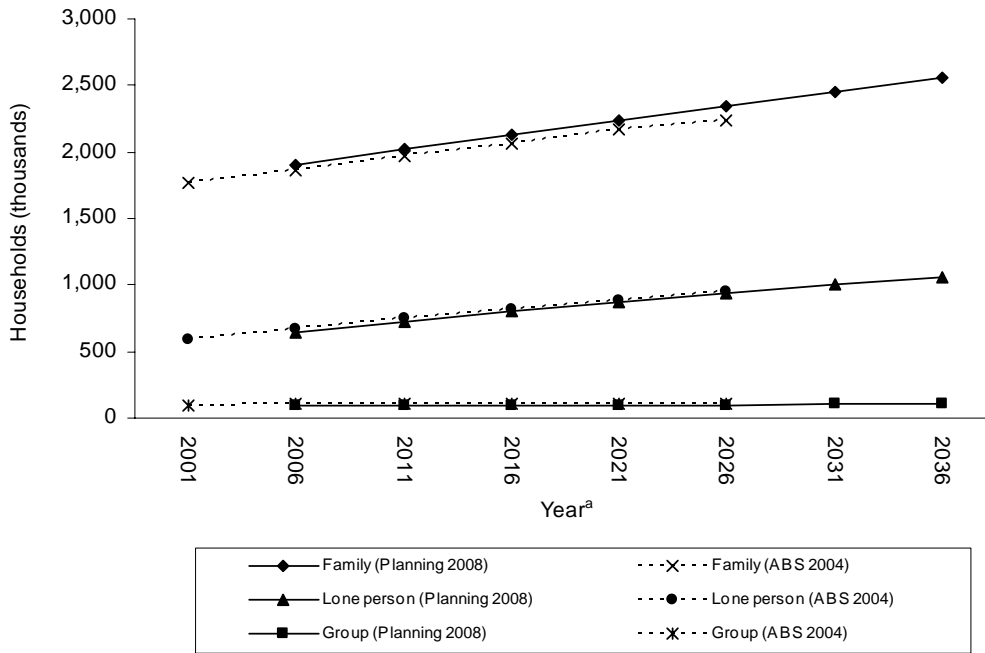


Figure A.1: Department of Planning and ABS household projections, New South Wales, 2001–36
 a Refers to 30th June of the year shown.

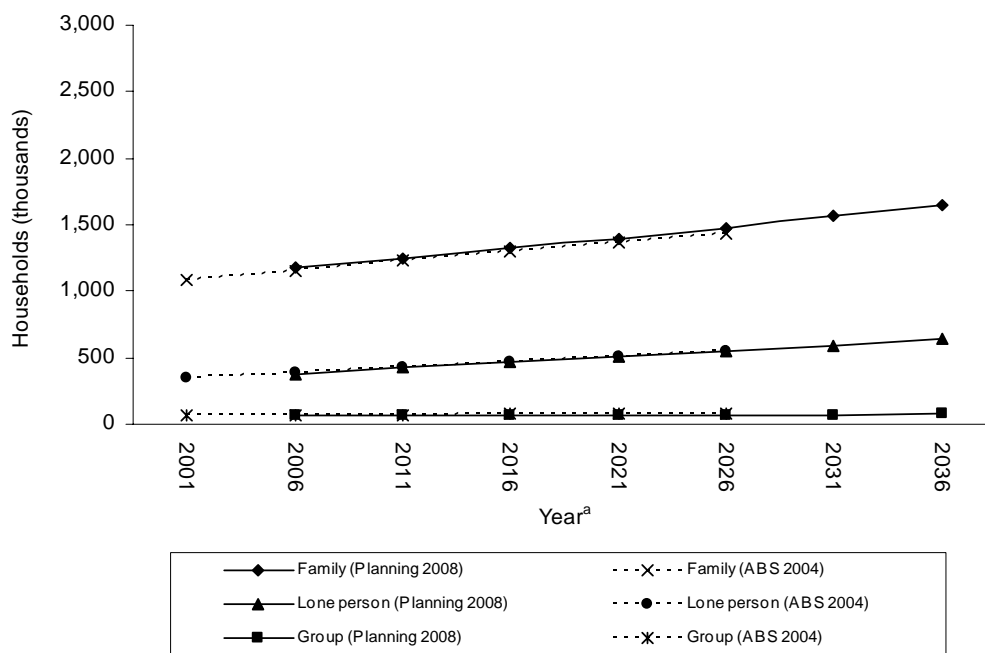


Figure A.2: Department of Planning and ABS household projections, Sydney region, 2001–36
 a Refers to 30th June of the year shown.