

Projections of Housing Demand in Australia, 2008-2038

Housing Needs of Older Australians Narrative Report

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Prepared for the National Housing Supply Council

BACKGROUND

In addition to the underlying demographic process of fertility, mortality and migration, cohort effects ripple across time, influencing the propensity to marry, divorce and family formation more generally. This combination, in turn, influences living arrangements in the later life course. Until recently, projections of spatial variations in elderly living arrangements and households in Australia have been limited due to modelling complexity and data limitations (Rowland, 1997). The results herein, present projections of older persons households and demand for dwellings across 15 separate geographies using the net transition probability method.

This report provides a narrative description of results of the projection of future housing demand in the capital cities and balances of state for the eight States and Territories of Australia for the period, 2008-38. This report focuses on the projection results for three groups of older Australians: (1.) aged 65-74, (2.) aged 75-84 and (3.) aged 85 years and over. The baseline housing data for the projections is obtained from the 2006 Census of Population and Housing and the baseline Estimated Resident Population data is from 30 June 2008.

PROJECTION METHODOLOGY

The overview of the detailed projections methodology is given elsewhere (Temple and McDonald, 2009; McDonald, Kippen and Temple, 2007). **However, in interpreting the following results regarding older persons demand for dwellings, several key points require reiteration:**

- The projections are demand-side projections, with no account given to availability of land, the number of vacant dwellings, construction of new dwellings and affordability.
- The projections utilize the dwelling and tenure 'preferences' by age as estimated from the 2006 Australian Census of Population and Housing. Future cohorts, of course, may have very different preferences for types of dwellings, as well as facing very different pricing constraints etc.
- The usual caveat with demographic projections applies: results present a possible future based upon a restricted set of assumptions. There are exogenous policy shocks that may affect

the utility of belonging to different living arrangements in the later life course. For example, American studies have shown that increases in income and social security payments as well as reforms to nursing home subsidies have given rise to a higher demand for independent living (McGarry and Schoeni, 2000; Costa, 1997; Hoerger, Picone and Sloan, 1996). Engelhardt, Gruber and Perry (2002) estimate that a 10% cut in social security in America would create a movement of 600,000 lone persons moving into shared living arrangements. Likewise, changes in Australian social and economic policy could hasten the transition probabilities toward living independently. But as data extracted from HaPPE shows, the proportion living in non private dwellings is relatively small in Australia, until advanced old age. This is consistent with the Australian government's policy of ageing in place, promoting independent living through community care services (Bishop, 1999). Although community care partially offsets government funded residential services, many carers and their employers bear a heavy financial and social cost given foregone time spent in the labour market, leisure and other activities (Rubin, 2002). Transition probabilities for independent living may be effected by the availability and public support for carers. Another factor that may effect the transition probabilities, particularly in the earlier life cycle, is housing prices (McDonald and Temple, 2004). However, in old age there is little evidence to suggest that living arrangement decisions are made on the basis of house prices, with the major determinants being demographic (Börsch-Supan, 1989).

Given these limitations, how should the results be interpreted and considered:

- Our approach is to project housing demand on the basis of current and recent trends in demand inputs. These demand projections should then be assessed in supply terms, that is, the results from the projections of demand for housing can be compared with existing and planned supply of housing and assessments made of what corrections for demand-supply discrepancies need to be made. Where meeting demand would create supply difficulties, consideration would need to be given to how this demand is re-directed. Do the projected households maintain their dwelling preference but change their location or do they change their dwelling preference within the location. The fact that supply cannot meet housing preferences could also conceivably lead to the household not being formed at all.

• Our method of projecting living arrangements and households has a number of advantages, particularly with reference to older persons. Firstly, this model has captured regional level heterogeneity in the compositional aspects of populations through using region specific estimates and projections of fertility, mortality, migration and living arrangement transitions. Second, providing strong support for this model, the net transition probabilities estimated from the 1991, 1996 and 2001 Australian Census of Population and Housing are highly comparable. Moreover, re-estimating the model using historical data shows the projections produced from the model to be highly reliable (McDonald and Temple, 2003). Additional comparisons show that in the majority of cases, the tempo of the age specific transition probabilities is highly consistent, although the quantum, as one would expect, differs considerably across the regions. Finally, by building upon the usual headship or propensity type models, the net transition approach specifically tracks cohort differences in living arrangement transitions.

HOUSEHOLD GROWTH

Tables 1 – 3 display the projected growth in households between 2008-2023 and 2023-38 for age groups 65-74, 75-84 and 85 years and over respectively. The projection results are for the medium scenario (Scenario number 9 in HaPPE). The two main household types in older age (couples with no children and lone persons) are shown in addition to other living arrangement types. The number of households is shown in addition to the household growth for two time periods, 2008-2023 and 2023-2028. The household growth measures are ratios expressing the differing speeds of growth across the time periods. For example, between 2008 and 2023, the number of couple only households in Sydney (NSWCC), grew by 1.58 times compared to 1.42 times in the second period.

Table 1. Growth in households by type, household reference person aged 65-74, Medium Scenario.

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Couples, no children	67491	1.60	1.17
	Lone person	46478	1.88	1.34
	Other	26922	1.50	1.20
NSWB	Couples, no children	65400	1.39	1.05
	Lone person	42474	2.28	1.31
	Other	13892	1.62	1.16
VICCC	Couples, no children	65706	1.54	1.18
	Lone person	42614	2.07	1.54
	Other	24364	1.64	1.31
VICB	Couples, no children	33841	1.65	1.02
	Lone person	23032	2.35	1.33
	Other	6843	1.65	1.16
QLDCC	Couples, no children	29176	1.82	1.25
	Lone person	18773	2.28	1.44
	Other	8327	1.80	1.34
QLDB	Couples, no children	49552	1.92	1.31
	Lone person	31963	2.53	1.56
	Other	10763	1.88	1.37
SACC	Couples, no children	24327	1.46	1.03
	Lone person	16357	2.00	1.31
	Other	6041	1.34	1.22
SAB	Couples, no children	11232	1.60	1.03
	Lone person	6447	2.51	1.43
	Other	1720	1.60	1.20
WACC	Couples, no children	28055	1.87	1.22
	Lone person	18698	2.52	1.47

	Other	6352	1.88	1.35
WAB	Couples, no children	11848	1.94	1.23
	Lone person	7434	3.04	1.58
	Other	1946	1.94	1.41
TASCC	Couples, no children	4132	1.69	1.05
	Lone person	3272	2.16	1.16
	Other	941	1.61	1.08
TASB	Couples, no children	6972	1.62	0.99
	Lone person	4990	2.19	1.28
	Other	1323	1.55	1.17
NT	Couples, no children	1249	3.02	1.27
	Lone person	1720	2.94	1.56
	Other	823	2.13	1.30
ACT	Couples, no children	5195	1.77	1.06
	Lone person	3309	2.34	1.23
	Other	1360	1.84	1.13
SEQ	Couples, no children	53436	1.88	1.30
	Lone person	33639	2.41	1.47
	Other	13212	1.86	1.37

Table 2. Growth in households by type, household reference person aged 75-84

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Couples, no children	31518	1.58	1.42
	Lone person	61060	1.35	1.64
	Other	16687	1.36	1.42
NSWB	Couples, no children	28115	1.65	1.42
	Lone person	52687	1.52	1.92
	Other	10124	1.40	1.52
VICCC	Couples, no children	29593	1.63	1.34
	Lone person	58039	1.39	1.77
	Other	14487	1.57	1.55
VICB	Couples, no children	14574	1.64	1.40
	Lone person	29802	1.44	1.93
	Other	5033	1.43	1.46
QLDCC	Couples, no children	12130	1.76	1.42
	Lone person	23401	1.55	1.63
	Other	5704	1.53	1.48
QLDB	Couples, no children	18910	2.07	1.64
	Lone person	34655	1.93	2.03
	Other	6915	1.78	1.61
SACC	Couples, no children	2852	1.13	1.31
	Lone person	11927	1.39	1.27
	Other	25452	1.29	1.62
SAB	Couples, no children	4397	1.74	1.40
	Lone person	8749	1.60	1.90
	Other	1142	1.49	1.44
WACC	Couples, no children	11751	1.77	1.48
	Lone person	22584	1.66	1.78
	Other	3965	1.61	1.56

WAB	Couples, no children	4169	2.16	1.69
	Lone person	7732	2.10	2.36
	Other	1214	1.82	1.70
TASCC	Couples, no children	1875	1.69	1.44
	Lone person	4070	1.48	1.68
	Other	719	1.25	1.49
TASB	Couples, no children	2619	1.86	1.37
	Lone person	5526	1.55	1.84
	Other	841	1.46	1.46
NT	Couples, no children	255	3.69	1.93
	Lone person	751	3.12	2.34
	Other	312	2.27	1.86
ACT	Couples, no children	2150	2.13	1.34
	Lone person	3653	1.78	1.61
	Other	754	1.47	1.58
SEQ	Couples, no children	22311	1.84	1.48
	Lone person	40475	1.70	1.74
	Other	9024	1.61	1.52

Table 3. Growth in households by type, household reference person aged 85+

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Couples, no children	4512	1.67	1.87
	Lone person	27242	1.30	2.00
	Other	6405	1.55	1.49
NSWB	Couples, no children	3271	2.03	1.79
	Lone person	19384	1.59	2.17
	Other	3911	1.93	1.51
VICCC	Couples, no children	3800	1.86	1.78
	Lone person	23225	1.46	2.02
	Other	5272	1.87	1.63
VICB	Couples, no children	1711	1.73	1.92
	Lone person	11105	1.48	2.23
	Other	1939	1.93	1.57
QLDCC	Couples, no children	1698	1.59	2.06
	Lone person	9886	1.28	2.32
	Other	2391	1.53	1.74
QLDB	Couples, no children	2356	2.05	2.21
	Lone person	12601	1.75	2.60
	Other	2865	1.98	1.84
SACC	Couples, no children	1323	1.56	1.25
	Lone person	1643	1.59	1.70
	Other	10619	1.23	1.97
SAB	Couples, no children	504	1.99	1.91
	Lone person	3253	1.62	2.31
	Other	418	2.09	1.61
WACC	Couples, no children	1519	1.82	1.99
	Lone person	9199	1.50	2.36
	Other	1698	1.73	1.72

WAB	Couples, no children	421	2.64	2.28
	Lone person	2565	2.20	2.84
	Other	462	2.75	1.90
TASCC	Couples, no children	260	2.35	1.88
	Lone person	1606	1.50	2.17
	Other	289	1.59	1.52
TASB	Couples, no children	297	2.08	1.92
	Lone person	2204	1.37	2.22
	Other	339	1.83	1.52
NT	Couples, no children	23	2.61	4.38
	Lone person	125	2.53	3.80
	Other	86	2.76	2.78
ACT	Couples, no children	287	2.39	2.22
	Lone person	1476	1.58	2.60
	Other	324	1.82	2.00
SEQ	Couples, no children	3057	1.72	2.10
	Lone person	16566	1.45	2.42
	Other	3786	1.69	1.79

This simple example underscores a key result across this, and other tables; that is, the differential speed of 'ageing of the aged'. Across the tables for the youngest age group, the growth in households is much greater between 2008 and 2028, when compared to the later time period. However, for the second age group (75-84), this difference is reduced and for the oldest age group, household growth is considerably greater in the second time period when compared to the first for many regions. This result, undoubtedly, is driven primarily by increases in longevity, but also by cohort flow and migration.

For the first time period, growth is quite strong for lone person households in WAB

and NT, all growing by about between 3 and 4 times during this time period. For couple only households, the fastest growers were in the Northern Territory (3.02), QLDB (1.92) and WAB (1.94). The list of top growth rates for this first time period is dominated predominately by lone person households. For the second time period, the strongest growing group is lone person households in WA, NT, QLDB and VICCC growing by at least 1.5 times in the period 2023-2038.

Again, the NT, WAB and QLDB populations figure strongly in the fastest growing household types in the two older age groups. The number of couple only households is projected to increase by 3.69 times in the NT between 2008-23 and by 1.93 times for the period 2023-2038 for 75-84 year olds.

As noted above, cohort flow has a significant effect on the projected growth rates. An excellent example is the projected number of lone persons aged 85 and over in QLDCC. In the first time period, this population grows by just 1.23 times (the second lowest growth rate). However, in the second time period, the number of lone persons grows by about 2.3 times (ranked within the top quarter of growth rates). This result underscores the importance of considering (1.) cohort flow, (2.) differential migration, and (3.) the importance of adopting regional level household classification type propensities and living arrangement transition probabilities.

DWELLING DEMAND GROWTH

With the underlying population and household projection complete, the demand for dwellings and tenure are projected based upon the preferences of the current cohort of aged persons (from the Census). A very detailed table which cross-references a household reference persons' household type X age X dwelling type X tenure is used to estimate the underlying region specific propensities. This same cross sectional table is applied forward to the projections from 2008 to 2038.

Table 4. Growth in dwellings by type, household reference person aged 65-74

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	96164	1.64	1.22
	Semi-detached	16103	1.70	1.26
	Flat	27406	1.74	1.28
NSWB	Separate house	100047	1.77	1.16
	Semi-detached	8701	1.92	1.21
	Flat	9224	2.06	1.26
VICCC	Separate house	101514	1.69	1.31
	Semi-detached	13940	1.81	1.39
	Flat	16484	1.89	1.45
VICB	Separate house	55765	1.87	1.16
	Semi-detached	2356	2.09	1.25
	Flat	4543	2.16	1.27
QLDCC	Separate house	44391	1.94	1.32
	Semi-detached	4283	2.06	1.37
	Flat	6598	2.14	1.40
QLDB	Separate house	70157	2.08	1.40
	Semi-detached	8573	2.20	1.45
	Flat	10501	2.29	1.48
SACC	Separate house	35572	1.68	1.14
	Semi-detached	6231	1.84	1.21
	Flat	4735	1.94	1.25
SAB	Separate house	16849	1.87	1.20
	Semi-detached	1308	2.08	1.30
	Flat	932	2.25	1.35
WACC	Separate house	40053	2.05	1.32
	Semi-detached	7288	2.24	1.39

	Flat	5129	2.32	1.41
WAB	Separate house	17398	2.33	1.38
	Semi-detached	1739	2.58	1.46
	Flat	1240	2.73	1.50
TASCC	Separate house	7346	1.85	1.10
	Semi-detached	281	1.97	1.13
	Flat	598	1.97	1.13
TASB	Separate house	11713	1.83	1.12
	Semi-detached	444	1.98	1.18
	Flat	942	1.97	1.19
NT	Separate house	2326	2.72	1.37
	Semi-detached	557	2.89	1.48
	Flat	659	2.88	1.49
ACT	Separate house	7718	1.94	1.13
	Semi-detached	1426	2.09	1.18
	Flat	691	2.14	1.19
SEQ	Separate house	77693	2.03	1.36
	Semi-detached	9801	2.11	1.39
	Flat	11288	2.18	1.41

Table 5. Growth in dwellings by type, household reference person aged 75-84

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	77177	1.42	1.53
	Semi-detached	11845	1.42	1.54
	Flat	19378	1.41	1.55
NSWB	Separate house	75191	1.55	1.71
	Semi-detached	6489	1.57	1.68
	Flat	6926	1.55	1.77
VICCC	Separate house	77620	1.49	1.59
	Semi-detached	11686	1.49	1.59
	Flat	12409	1.46	1.63
VICB	Separate house	43481	1.52	1.72
	Semi-detached	1810	1.52	1.73
	Flat	3476	1.52	1.76
QLDCC	Separate house	32976	1.70	1.60
	Semi-detached	3209	1.72	1.60
	Flat	4487	1.69	1.63
QLDB	Separate house	45846	1.95	1.85
	Semi-detached	5943	1.97	1.84
	Flat	6961	1.96	1.89
SACC	Separate house	30229	1.37	1.54
	Semi-detached	5499	1.38	1.54
	Flat	4142	1.37	1.57
SAB	Separate house	12226	1.66	1.71
	Semi-detached	1147	1.65	1.76
	Flat	799	1.66	1.76
WACC	Separate house	28054	1.83	1.75
	Semi-detached	6001	1.83	1.76
	Flat	3976	1.83	1.78

WAB	Separate house	10692	2.14	2.12
	Semi-detached	1147	2.16	2.12
	Flat	900	2.16	2.14
TASCC	Separate house	5649	1.55	1.62
	Semi-detached	303	1.56	1.64
	Flat	687	1.55	1.65
TASB	Separate house	7611	1.65	1.66
	Semi-detached	410	1.65	1.70
	Flat	932	1.63	1.73
NT	Separate house	856	3.06	2.18
	Semi-detached	185	3.23	2.27
	Flat	202	3.22	2.25
ACT	Separate house	5238	1.89	1.53
	Semi-detached	965	1.91	1.53
	Flat	354	1.88	1.56
SEQ	Separate house	53765	1.81	1.68
	Semi-detached	8301	1.83	1.68
	Flat	8848	1.82	1.71

Table 6. Growth in dwellings by type, household reference person aged 85+

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	26378	1.39	1.88
	Semi-detached	4268	1.39	1.89
	Flat	7329	1.39	1.91
NSWB	Separate house	21722	1.69	2.00
	Semi-detached	2112	1.71	2.01
	Flat	2295	1.68	2.04
VICCC	Separate house	23900	1.58	1.91
	Semi-detached	4078	1.59	1.92
	Flat	4242	1.57	1.93
VICB	Separate house	12741	1.59	2.09
	Semi-detached	736	1.56	2.14
	Flat	1176	1.56	2.14
QLDCC	Separate house	11275	1.44	2.25
	Semi-detached	1285	1.45	2.30
	Flat	1332	1.43	2.29
QLDB	Separate house	13392	1.82	2.40
	Semi-detached	1849	1.85	2.41
	Flat	2271	1.82	2.46
SACC	Separate house	10023	1.38	1.91
	Semi-detached	1948	1.39	1.93
	Flat	1480	1.38	1.94
SAB	Separate house	3559	1.74	2.19
	Semi-detached	267	1.75	2.18
	Flat	326	1.72	2.24
WACC	Separate house	8876	1.70	2.32
	Semi-detached	2118	1.71	2.35
	Flat	1383	1.69	2.38

WAB	Separate house	2881	2.39	2.66
	Semi-detached	275	2.40	2.64
	Flat	208	2.39	2.67
TASCC	Separate house	1797	1.65	2.07
	Semi-detached	102	1.74	2.10
	Flat	250	1.66	2.13
TASB	Separate house	2366	1.52	2.09
	Semi-detached	134	1.56	2.14
	Flat	332	1.50	2.16
NT	Separate house	176	2.70	3.50
	Semi-detached	28	2.68	3.58
	Flat	28	2.73	3.58
ACT	Separate house	1512	1.75	2.46
	Semi-detached	314	1.78	2.49
	Flat	261	1.76	2.51
SEQ	Separate house	17218	1.60	2.31
	Semi-detached	2917	1.60	2.35
	Flat	3059	1.59	2.38

Tables 4 – 6 display the projected growth in dwelling demand between 2008-2023 and 2023-38 for age groups 65-74, 75-84 and 85 years and over respectively. As with the household growth data, QLDB, NT and WAB feature strongly among the fastest growers in the first period. For example, in WAB, the demand for flats among 65-74 year olds is projected to rise by 2.73 times in 2008-23 and a further 1.5 times in the second time period.

In interpreting the data from HaPPE, in addition to interpreting the growth rates and timing effects, it is also important to consider the quantum or raw numerical effects. A good example is comparing QLDB with NT. The demand for separate houses in NT headed by 75-84 year olds is projected to grow by 3.23 times in the first time period,

being the fastest growing dwelling type across all regions. QLDB grows only by about 1.95 times over the same period. However, in terms of the real demand for additional dwellings built on the ground, the effect is obviously much stronger for QLDB. In 2008, there was just 856 households headed by persons 75-84 living in separate house dwellings compared to 45,846 such households in QLDB. This notion is again supported looking at some of the lowest growth areas. For example, demand for separate houses in NSWCC is projected to grow by 1.42 times over the first time period, however this is based on a baseline figure of 77,177 households headed by a person 75-84.

TENURE DEMAND GROWTH

Tables 7 – 9 display the projected growth in dwellings by tenure between 2008-2023 and 2023-38 for age groups 65-74, 75-84 and 85 years and over respectively.

Of interesting note, are the regions with high demand for public housing. For 65-74 year olds, the top 5 areas of demand between 2008-2023 are NT (2.8), WAB (2.68), QLDB (2.32), WACC (2.32) and SEQ (2.2). For the oldest age group, the top five comparative regions are NT (2.55), WAB (2.34), QLDB (1.79), WACC (1.67). For this older age group, demand is much higher for public housing (as detailed previously) in the second period, but again it is important to note that some of these populations are relatively small in size.

Table 7. Growth in dwellings by tenure, household reference person aged 65-74

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Owner/purchaser	113521	1.66	1.23
	Public rental	11318	1.75	1.29
	Private rental	14411	1.70	1.26
	Other	1641	1.71	1.26
NSWB	Owner/purchaser	102556	1.78	1.16
	Public rental	5530	2.02	1.25
	Private rental	11617	1.98	1.24
	Other	2063	1.94	1.22
VICCC	Owner/purchaser	113602	1.71	1.32
	Public rental	5625	1.92	1.47
	Private rental	12002	1.84	1.42
	Other	1456	1.81	1.40
VICB	Owner/purchaser	54551	1.87	1.16
	Public rental	2545	2.16	1.28
	Private rental	5593	2.06	1.24
	Other	1027	2.02	1.22
QLDCC	Owner/purchaser	45415	1.95	1.32
	Public rental	3412	2.13	1.40
	Private rental	6816	2.05	1.37
	Other	633	2.06	1.37
QLDB	Owner/purchaser	74634	2.10	1.40
	Public rental	3553	2.32	1.50
	Private rental	12205	2.22	1.46
	Other	1885	2.22	1.46
SACC	Owner/purchaser	37757	1.69	1.14
	Public rental	4745	1.90	1.25
	Private rental	3720	1.85	1.22

	Other	502	1.81	1.20
SAB	Owner/purchaser	15954	1.86	1.19
	Public rental	1443	2.18	1.34
	Private rental	1595	2.05	1.29
	Other	406	2.02	1.27
WACC	Owner/purchaser	43155	2.07	1.32
	Public rental	3594	2.32	1.42
	Private rental	5709	2.22	1.39
	Other	647	2.21	1.38
WAB	Owner/purchaser	16888	2.33	1.38
	Public rental	1462	2.68	1.50
	Private rental	2313	2.53	1.46
	Other	566	2.54	1.45
TASCC	Owner/purchaser	6815	1.83	1.10
	Public rental	533	2.04	1.14
	Private rental	930	2.00	1.13
	Other	68	1.95	1.12
TASB	Owner/purchaser	10902	1.81	1.11
	Public rental	824	2.06	1.23
	Private rental	1450	2.02	1.21
	Other	109	1.96	1.16
NT	Owner/purchaser	2153	2.84	1.39
	Public rental	811	2.80	1.50
	Private rental	705	2.59	1.39
	Other	123	2.85	1.41
ACT	Owner/purchaser	8124	1.95	1.13
	Public rental	1118	2.16	1.20
	Private rental	539	1.99	1.15
	Other	83	2.20	1.21

SEQ	Owner/purchaser	79478	2.02	1.36
	Public rental	3965	2.20	1.42
	Private rental	15711	2.19	1.42
	Other	1133	2.11	1.39

Table 8. Growth in dwellings by tenure, household reference person aged 75-84

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Owner/purchaser	91315	1.42	1.53
	Public rental	7406	1.38	1.57
	Private rental	8962	1.40	1.56
	Other	1581	1.43	1.54
NSWB	Owner/purchaser	77229	1.55	1.70
	Public rental	3982	1.52	1.80
	Private rental	7888	1.53	1.78
	Other	1828	1.56	1.73
VICCC	Owner/purchaser	89453	1.49	1.59
	Public rental	3962	1.44	1.68
	Private rental	7529	1.46	1.64
	Other	1175	1.48	1.61
VICB	Owner/purchaser	42958	1.52	1.72
	Public rental	1594	1.48	1.83
	Private rental	3813	1.50	1.79
	Other	1043	1.51	1.77
QLDCC	Owner/purchaser	33904	1.71	1.60
	Public rental	1987	1.66	1.65
	Private rental	4710	1.68	1.63
	Other	634	1.71	1.61
QLDB	Owner/purchaser	48923	1.96	1.84
	Public rental	2548	1.92	1.95
	Private rental	7786	1.94	1.90
	Other	1223	1.97	1.86
SACC	Owner/purchaser	32817	1.37	1.53
	Public rental	3907	1.35	1.60
	Private rental	2742	1.37	1.57

	Other	618	1.37	1.56
SAB	Owner/purchaser	11699	1.66	1.71
	Public rental	1060	1.63	1.81
	Private rental	1249	1.65	1.77
	Other	281	1.68	1.68
WACC	Owner/purchaser	31306	1.83	1.74
	Public rental	2271	1.81	1.81
	Private rental	4120	1.82	1.79
	Other	602	1.84	1.76
WAB	Owner/purchaser	10484	2.15	2.11
	Public rental	943	2.12	2.23
	Private rental	1406	2.14	2.19
	Other	282	2.17	2.02
TASCC	Owner/purchaser	5486	1.56	1.61
	Public rental	463	1.50	1.69
	Private rental	654	1.53	1.65
	Other	62	1.58	1.61
TASB	Owner/purchaser	7400	1.66	1.66
	Public rental	622	1.57	1.80
	Private rental	881	1.62	1.73
	Other	83	1.69	1.65
NT	Owner/purchaser	771	3.14	2.19
	Public rental	230	3.11	2.27
	Private rental	240	3.03	2.18
	Other	77	3.11	2.28
ACT	Owner/purchaser	5399	1.90	1.52
	Public rental	838	1.82	1.59
	Private rental	224	1.95	1.49
	Other	97	1.96	1.49

SEQ	Owner/purchaser	58884	1.82	1.67
	Public rental	3590	1.78	1.75
	Private rental	8339	1.80	1.71
	Other	997	1.85	1.66

Table 9. Growth in dwellings by tenure, household reference person aged 85+

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Owner/purchaser	32932	1.39	1.88
	Public rental	2252	1.37	1.88
	Private rental	2238	1.40	1.89
	Other	737	1.39	1.93
NSWB	Owner/purchaser	23070	1.69	2.00
	Public rental	947	1.66	2.02
	Private rental	2093	1.69	2.02
	Other	458	1.67	2.06
VICCC	Owner/purchaser	28311	1.58	1.91
	Public rental	872	1.57	1.91
	Private rental	2524	1.57	1.92
	Other	589	1.55	1.94
VICB	Owner/purchaser	12965	1.59	2.10
	Public rental	411	1.56	2.13
	Private rental	1072	1.58	2.12
	Other	307	1.56	2.15
QLDCC	Owner/purchaser	11944	1.44	2.25
	Public rental	432	1.42	2.29
	Private rental	1278	1.44	2.28
	Other	321	1.43	2.31
QLDB	Owner/purchaser	14689	1.83	2.40
	Public rental	602	1.79	2.46
	Private rental	2043	1.82	2.42
	Other	488	1.83	2.46
SACC	Owner/purchaser	11276	1.38	1.91
	Public rental	1047	1.36	1.93
	Private rental	915	1.38	1.93

	Other	282	1.37	1.94
SAB	Owner/purchaser	3350	1.74	2.18
	Public rental	293	1.71	2.22
	Private rental	339	1.72	2.22
	Other	193	1.72	2.23
WACC	Owner/purchaser	10603	1.70	2.33
	Public rental	582	1.67	2.38
	Private rental	1058	1.70	2.34
	Other	173	1.70	2.38
WAB	Owner/purchaser	2757	2.39	2.66
	Public rental	161	2.34	2.73
	Private rental	314	2.40	2.64
	Other	216	2.37	2.68
TASCC	Owner/purchaser	1897	1.65	2.08
	Public rental	85	1.65	2.10
	Private rental	154	1.64	2.10
	Other	19	1.77	2.08
TASB	Owner/purchaser	2499	1.52	2.10
	Public rental	112	1.51	2.12
	Private rental	204	1.50	2.13
	Other	25	1.59	2.11
NT	Owner/purchaser	143	2.72	3.45
	Public rental	34	2.55	3.88
	Private rental	51	2.74	3.40
	Other	7	2.84	3.81
ACT	Owner/purchaser	1655	1.77	2.46
	Public rental	305	1.65	2.53
	Private rental	81	1.98	2.38
	Other	46	1.82	2.48

SEQ	Owner/purchaser	19854	1.60	2.32
	Public rental	799	1.56	2.39
	Private rental	2321	1.60	2.34
	Other	436	1.62	2.35

TENURE DEMAND GROWTH, SELECTED HOUSEHOLD TYPES

Finally, using HaPPE, it is possible to extract data on household demand by household type by composition (dwelling type or tenure type). Appendix Tables 1-3 display projected dwelling demand for couples without children and Appendix Tables 4-6 provide the estimates for persons living alone. These tables simply provide an example of the detail that can be extracted using HaPPE to enable users to look at the important interaction effects that occur between living arrangements, dwelling structure and tenure. In interpreting the tenure interaction tables, it is also important to keep in mind that the underlying propensities are kept constant. This is why the within household tenure specific growth rates are the same between tenure types.

CONCLUDING COMMENT

From the council's perspective, projections of older persons households provide an important insight into the levels and composition of housing demand, and the importance of these dynamics within the context of population ageing. However, the data provided in this report and included in far greater detail in HaPPE (Household and Population Projection Evaluation) Resource, are important for a range of policy considerations beyond housing. For example, understanding indicative futures of elderly living arrangements is important as living arrangements are key indicators of need and wellbeing in retirement (Rowland, 1982; Rowland, 1986). Where there are shortfalls of familial support, particularly within the household, aged persons require additional, mostly economic resources to fulfil this unmet need (Rowland, 2003). The substitution of economic for familial support often occurs at the public level, placing greater strain on government resources.

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Appendix Table 1. Growth in dwellings by type, household reference person aged 65-74, Couple with no Children

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	51815	1.60	1.17
	Semi-detached	6616	1.60	1.17
	Flat	8726	1.60	1.17
	Other	334	1.60	1.17
NSWB	Separate house	57863	1.55	1.05
	Semi-detached	3830	1.55	1.05
	Flat	2346	1.55	1.05
	Other	1360	1.55	1.05
VICCC	Separate house	55178	1.54	1.18
	Semi-detached	5701	1.54	1.18
	Flat	4632	1.54	1.18
	Other	195	1.54	1.18
VICB	Separate house	31788	1.65	1.02
	Semi-detached	740	1.65	1.02
	Flat	1047	1.65	1.02
	Other	266	1.65	1.02
QLDCC	Separate house	25470	1.82	1.25
	Semi-detached	1715	1.82	1.25
	Flat	1746	1.82	1.25
	Other	246	1.82	1.25
QLDB	Separate house	41187	1.92	1.31
	Semi-detached	3928	1.92	1.31
	Flat	3401	1.92	1.31
	Other	1036	1.92	1.31
SACC	Separate house	20674	1.54	1.03
	Semi-detached	2429	1.54	1.03
	Flat	1147	1.54	1.03

	Other	77	1.54	1.03
SAB	Separate house	10344	1.60	1.03
	Semi-detached	508	1.60	1.03
	Flat	256	1.60	1.03
	Other	124	1.60	1.03
WACC	Separate house	23656	1.87	1.22
	Semi-detached	2754	1.87	1.22
	Flat	1393	1.87	1.22
	Other	252	1.87	1.22
WAB	Separate house	10430	1.99	1.23
	Semi-detached	707	1.99	1.23
	Flat	371	1.99	1.23
	Other	340	1.99	1.23
TASCC	Separate house	3808	1.69	1.05
	Semi-detached	101	1.69	1.05
	Flat	205	1.69	1.05
	Other	19	1.69	1.05
TASB	Separate house	6424	1.64	0.99
	Semi-detached	170	1.64	0.99
	Flat	345	1.64	0.99
	Other	33	1.64	0.99
NT	Separate house	907	3.02	1.27
	Semi-detached	126	3.02	1.27
	Flat	134	3.02	1.27
	Other	83	3.02	1.27
ACT	Separate house	4434	1.77	1.06
	Semi-detached	544	1.77	1.06
	Flat	208	1.77	1.06
	Other	8	1.77	1.06

SEQ	Separate house	43872	1.88	1.30
	Semi-detached	4721	1.88	1.30
	Flat	4243	1.88	1.30
	Other	600	1.88	1.30

Appendix Table 2. Growth in dwellings by type, household reference person aged 75-84, Couple with no Children

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	22252	1.58	1.42
	Semi-detached	3809	1.58	1.42
	Flat	5320	1.58	1.42
	Other	137	1.58	1.42
NSWB	Separate house	23183	1.65	1.42
	Semi-detached	2713	1.65	1.42
	Flat	1752	1.65	1.42
	Other	467	1.65	1.42
VICCC	Separate house	22517	1.63	1.34
	Semi-detached	3995	1.63	1.34
	Flat	3006	1.63	1.34
	Other	74	1.63	1.34
VICB	Separate house	12910	1.66	1.42
	Semi-detached	582	1.66	1.42
	Flat	991	1.66	1.42
	Other	91	1.66	1.42
QLDCC	Separate house	9806	1.86	1.48
	Semi-detached	1203	1.86	1.48
	Flat	1030	1.86	1.48
	Other	92	1.86	1.48
QLDB	Separate house	14309	2.07	1.64
	Semi-detached	2387	2.07	1.64
	Flat	1954	2.07	1.64
	Other	260	2.07	1.64
SACC	Separate house	8974	1.47	1.33
	Semi-detached	1838	1.47	1.33
	Flat	1095	1.47	1.33

	Other	20	1.47	1.33
SAB	Separate house	3865	1.76	1.41
	Semi-detached	284	1.76	1.41
	Flat	222	1.76	1.41
	Other	26	1.76	1.41
WACC	Separate house	8595	1.92	1.56
	Semi-detached	1948	1.92	1.56
	Flat	1131	1.92	1.56
	Other	76	1.92	1.56
WAB	Separate house	3353	2.22	1.72
	Semi-detached	403	2.22	1.72
	Flat	306	2.22	1.72
	Other	107	2.22	1.72
TASCC	Separate house	1642	1.73	1.47
	Semi-detached	80	1.73	1.47
	Flat	145	1.73	1.47
	Other	8	1.73	1.47
TASB	Separate house	2293	1.88	1.39
	Semi-detached	112	1.88	1.39
	Flat	203	1.88	1.39
	Other	11	1.88	1.39
NT	Separate house	171	3.80	1.98
	Semi-detached	36	3.80	1.98
	Flat	41	3.80	1.98
	Other	6	3.80	1.98
ACT	Separate house	1729	2.17	1.36
	Semi-detached	343	2.17	1.36
	Flat	79	2.17	1.36
	Other	0	n.a.	n.a.

SEQ	Separate house	16601	1.93	1.53
	Semi-detached	3040	1.93	1.53
	Flat	2463	1.93	1.53
	Other	206	1.93	1.53

Appendix Table 3. Growth in dwellings by type, household reference person aged 85+, Couple with no Children

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	2934	1.67	1.87
	Semi-detached	567	1.67	1.87
	Flat	999	1.67	1.87
	Other	12	1.67	1.87
NSWB	Separate house	2496	2.03	1.79
	Semi-detached	409	2.03	1.79
	Flat	315	2.03	1.79
	Other	51	2.03	1.79
VICCC	Separate house	2560	1.86	1.78
	Semi-detached	690	1.86	1.78
	Flat	539	1.86	1.78
	Other	12	1.86	1.78
VICB	Separate house	1447	1.75	1.94
	Semi-detached	107	1.75	1.94
	Flat	152	1.75	1.94
	Other	5	1.75	1.94
QLDCC	Separate house	1295	1.69	2.15
	Semi-detached	244	1.69	2.15
	Flat	147	1.69	2.15
	Other	13	1.69	2.15
QLDB	Separate house	1613	2.05	2.21
	Semi-detached	405	2.05	2.21
	Flat	306	2.05	2.21
	Other	33	2.05	2.21
SACC	Separate house	1121	1.69	1.78
	Semi-detached	294	1.69	1.78
	Flat	228	1.69	1.78

	Other	0	n.a.	n.a.
SAB	Separate house	409	2.02	1.93
	Semi-detached	42	2.02	1.93
	Flat	53	2.02	1.93
	Other	0	n.a.	n.a.
WACC	Separate house	949	1.97	2.10
	Semi-detached	361	1.97	2.10
	Flat	199	1.97	2.10
	Other	9	1.97	2.10
WAB	Separate house	342	2.71	2.32
	Semi-detached	40	2.71	2.32
	Flat	34	2.71	2.32
	Other	5	2.71	2.32
TASCC	Separate house	212	2.41	1.92
	Semi-detached	19	2.41	1.92
	Flat	29	2.41	1.92
	Other	0	n.a.	n.a.
TASB	Separate house	242	2.11	1.94
	Semi-detached	22	2.11	1.94
	Flat	33	2.11	1.94
	Other	0	n.a.	n.a.
NT	Separate house	19	2.69	4.49
	Semi-detached	2	2.69	4.49
	Flat	3	2.69	4.49
	Other	0	n.a.	n.a.
ACT	Separate house	198	2.44	2.25
	Semi-detached	52	2.44	2.25
	Flat	38	2.44	2.25
	Other	0	n.a.	n.a.

SEQ	Separate house	2117	1.80	2.17
	Semi-detached	548	1.80	2.17
	Flat	367	1.80	2.17
	Other	25	1.80	2.17

Appendix Table 4. Growth in dwellings by type, household reference person aged 65-74, Lone Persons

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	23253	1.88	1.34
	Semi-detached	6967	1.88	1.34
	Flat	15488	1.88	1.34
	Other	770	1.88	1.34
NSWB	Separate house	29564	2.28	1.31
	Semi-detached	4279	2.28	1.31
	Flat	6387	2.28	1.31
	Other	2243	2.28	1.31
VICCC	Separate house	25235	2.07	1.54
	Semi-detached	6557	2.07	1.54
	Flat	10335	2.07	1.54
	Other	488	2.07	1.54
VICB	Separate house	17531	2.35	1.33
	Semi-detached	1484	2.35	1.33
	Flat	3294	2.35	1.33
	Other	723	2.35	1.33
QLDCC	Separate house	11395	2.29	1.44
	Semi-detached	2215	2.29	1.44
	Flat	4459	2.29	1.44
	Other	704	2.29	1.44
QLDB	Separate house	19661	2.53	1.56
	Semi-detached	4009	2.53	1.56
	Flat	6431	2.53	1.56
	Other	1862	2.53	1.56
SACC	Separate house	9588	2.12	1.31
	Semi-detached	3333	2.12	1.31
	Flat	3333	2.12	1.31

	Other	102	2.12	1.31
SAB	Separate house	4913	2.51	1.43
	Semi-detached	706	2.51	1.43
	Flat	649	2.51	1.43
	Other	179	2.51	1.43
WACC	Separate house	10724	2.52	1.47
	Semi-detached	4086	2.52	1.47
	Flat	3525	2.52	1.47
	Other	364	2.52	1.47
WAB	Separate house	5232	3.12	1.58
	Semi-detached	919	3.12	1.58
	Flat	811	3.12	1.58
	Other	473	3.12	1.58
TASCC	Separate house	2662	2.16	1.16
	Semi-detached	167	2.16	1.16
	Flat	361	2.16	1.16
	Other	82	2.16	1.16
TASB	Separate house	4060	2.22	1.28
	Semi-detached	255	2.22	1.28
	Flat	551	2.22	1.28
	Other	124	2.22	1.28
NT	Separate house	683	2.94	1.56
	Semi-detached	396	2.94	1.56
	Flat	477	2.94	1.56
	Other	165	2.94	1.56
ACT	Separate house	2078	2.34	1.24
	Semi-detached	773	2.34	1.24
	Flat	439	2.34	1.24
	Other	19	2.34	1.24

SEQ	Separate house	22707	2.41	1.47
	Semi-detached	4294	2.41	1.47
	Flat	6003	2.41	1.47
	Other	635	2.41	1.47

Appendix Table 5. Growth in dwellings by type, household reference person aged 75-84, Lone Persons

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	41820	1.35	1.64
	Semi-detached	6521	1.35	1.64
	Flat	12076	1.35	1.64
	Other	643	1.35	1.64
NSWB	Separate house	42885	1.52	1.92
	Semi-detached	3302	1.52	1.92
	Flat	4769	1.52	1.92
	Other	1730	1.52	1.92
VICCC	Separate house	42938	1.39	1.77
	Semi-detached	6474	1.39	1.77
	Flat	8333	1.39	1.77
	Other	295	1.39	1.77
VICB	Separate house	25846	1.46	1.94
	Semi-detached	1111	1.46	1.94
	Flat	2339	1.46	1.94
	Other	506	1.46	1.94
QLDCC	Separate house	18022	1.64	1.69
	Semi-detached	1765	1.64	1.69
	Flat	3172	1.64	1.69
	Other	442	1.64	1.69
QLDB	Separate house	25652	1.93	2.03
	Semi-detached	3086	1.93	2.03
	Flat	4541	1.93	2.03
	Other	1376	1.93	2.03
SACC	Separate house	17763	1.34	1.68
	Semi-detached	3292	1.34	1.68
	Flat	2849	1.34	1.68

	Other	178	1.34	1.68
SAB	Separate house	7326	1.62	1.92
	Semi-detached	793	1.62	1.92
	Flat	542	1.62	1.92
	Other	88	1.62	1.92
WACC	Separate house	16118	1.80	1.88
	Semi-detached	3615	1.80	1.88
	Flat	2671	1.80	1.88
	Other	181	1.80	1.88
WAB	Separate house	6263	2.15	2.40
	Semi-detached	663	2.15	2.40
	Flat	548	2.15	2.40
	Other	259	2.15	2.40
TASCC	Separate house	3350	1.52	1.72
	Semi-detached	202	1.52	1.72
	Flat	505	1.52	1.72
	Other	13	1.52	1.72
TASB	Separate house	4549	1.57	1.86
	Semi-detached	274	1.57	1.86
	Flat	686	1.57	1.86
	Other	18	1.57	1.86
NT	Separate house	429	3.21	2.40
	Semi-detached	131	3.21	2.40
	Flat	129	3.21	2.40
	Other	62	3.21	2.40
ACT	Separate house	2849	1.81	1.63
	Semi-detached	548	1.81	1.63
	Flat	257	1.81	1.63
	Other	0	n.a.	n.a.

SEQ	Separate house	29697	1.78	1.80
	Semi-detached	4683	1.78	1.80
	Flat	5572	1.78	1.80
	Other	523	1.78	1.80

Appendix Table 6. Growth in dwellings by type, household reference person aged 85+, Lone Persons

Region	Household type	Number in 2008	Increase, 2008-23	Increase, 2023-38
NSWCC	Separate house	18697	1.30	2.00
	Semi-detached	3059	1.30	2.00
	Flat	5345	1.30	2.00
	Other	141	1.30	2.00
NSWB	Separate house	15821	1.59	2.17
	Semi-detached	1475	1.59	2.17
	Flat	1757	1.59	2.17
	Other	331	1.59	2.17
VICCC	Separate house	17158	1.46	2.02
	Semi-detached	2850	1.46	2.02
	Flat	3166	1.46	2.02
	Other	51	1.46	2.02
VICB	Separate house	9512	1.50	2.25
	Semi-detached	579	1.50	2.25
	Flat	938	1.50	2.25
	Other	77	1.50	2.25
QLDCC	Separate house	7917	1.36	2.41
	Semi-detached	906	1.36	2.41
	Flat	1008	1.36	2.41
	Other	55	1.36	2.41
QLDB	Separate house	9425	1.75	2.60
	Semi-detached	1220	1.75	2.60
	Flat	1716	1.75	2.60
	Other	241	1.75	2.60
SACC	Separate house	7629	1.28	2.05
	Semi-detached	1464	1.28	2.05
	Flat	1142	1.28	2.05

	Other	68	1.28	2.05
SAB	Separate house	2770	1.64	2.33
	Semi-detached	196	1.64	2.33
	Flat	266	1.64	2.33
	Other	20	1.64	2.33
WACC	Separate house	6537	1.63	2.49
	Semi-detached	1553	1.63	2.49
	Flat	1085	1.63	2.49
	Other	24	1.63	2.49
WAB	Separate house	2150	2.26	2.89
	Semi-detached	200	2.26	2.89
	Flat	154	2.26	2.89
	Other	61	2.26	2.89
TASCC	Separate house	1324	1.54	2.22
	Semi-detached	76	1.54	2.22
	Flat	204	1.54	2.22
	Other	3	1.54	2.22
TASB	Separate house	1817	1.39	2.25
	Semi-detached	104	1.39	2.25
	Flat	280	1.39	2.25
	Other	4	1.39	2.25
NT	Separate house	91	2.61	3.89
	Semi-detached	18	2.61	3.89
	Flat	16	2.61	3.89
	Other	0	n.a.	n.a.
ACT	Separate house	1046	1.61	2.64
	Semi-detached	230	1.61	2.64
	Flat	200	1.61	2.64
	Other	0	n.a.	n.a.

SEQ	Separate house	12067	1.52	2.49
	Semi-detached	2068	1.52	2.49
	Flat	2287	1.52	2.49
	Other	144	1.52	2.49