

TasPOPP 2024

Tasmanian and Local Government Area
Population Projections – 2023 to 2053

Final Report and Results

May 2024



TasPOPP 2024 Tasmanian and Local Government Area Population Projections -
2023 to 2053

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Executive summary

Every five years the Department of Treasury and Finance prepares official population projections for Tasmania and each of its local government areas. The projections indicate what Tasmania's future population would look like if certain trends were to hold true. They also provide an indication of how the population might be distributed among different regions of the State, and among different age groups for males and females.

In late November 2023, Treasury released draft projections for a 30-year horizon, to 2052, and invited comment on our methods, our assumptions and our results. We received generally positive feedback but also suggestions about how the projections could be improved. We have considered, and incorporated this feedback, where appropriate, along with new data and developments that have since become available, into a revised set of projection results covering the period 2023 to 2053.

We have released our final projections as a medium, high and low series. The medium series reflects the continued evolution of past and present trends in fertility, mortality and migration, with judgement applied as to how these trends will develop in the long term. The high and low series represent the outcome of the upper (high series) and lower (low series) boundaries of assumptions that are still considered plausible.

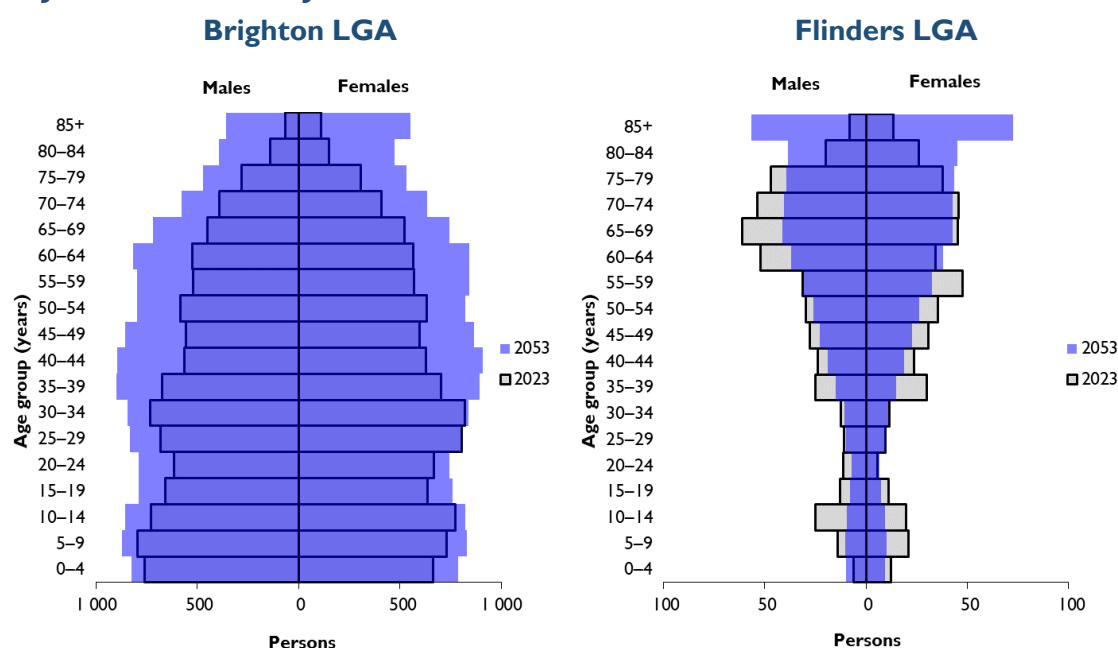
Our final medium series projections indicate that Tasmania's population will reach 641 045 people by 2053 if our assumptions hold true. Under this scenario:

- Tasmania would surpass the milestone of 600 000 people by 2032;
- our population would continue to grow for the next 30 years, but at a slowly declining rate;
- deaths would exceed births by 2032, meaning that migration would be the sole source of positive population growth from this point;
- our population would continue to age, as large cohorts grow older and people continue to live longer, with the State's median age increasing from 41.9 years in 2023 to 48.8 years by 2053;
- our workforce dependency ratio - the number of children (0 to 14 years old) and older persons (65 years or over) per hundred of the working-age population (15 to 64 years) - would increase from 61 in 2023 to 75 in 2053;
- the number of people of prime working age (15 to 64 years) to every person aged 65 and over would drop from three per older Tasmanian in 2023 to just two by 2053; and
- the number of Tasmanians aged 85 years and over would increase from one for every 41 people in 2023 to one in 15 people by 2053.

Like much of the developed world, this will mean that the number of workers and waged taxpayers in Tasmania will shrink as a share of the total population, placing additional pressure on the supply of goods and services to older and younger Tasmanians, and greater demand for some of these services (such as healthcare and aged care). Migration of people into Tasmania, and particularly migration of young and skilled people, in addition to building the skills and productivity of our locally-born workforce, will be increasingly important for ensuring that Tasmania maintains and continues to improve its living standards.

While Tasmania will continue to age overall, demographic change will impact different regions at different rates. The George Town local government area (LGA) is projected to age the most over the 30-year period, though the oldest LGA in 2053 is projected to be the Flinders LGA. In contrast, Glamorgan-Spring Bay LGA is projected to age the least over the next 30 years, but the Brighton LGA will be the youngest in 2053 (Chart 1).

Chart I - Age and sex population structure, medium series, comparing 30 June 2023 and 30 June 2053



Source: *Regional population and Regional population by age and sex, ABS; Advanced Demographic Modelling and Treasury calculations; TasPOPP projections*

The pace of growth in different local government areas is also projected to be uneven. Under the medium series, Sorell, Latrobe and Brighton LGAs are all projected to grow by an annual average rate of over one per cent for the 30-year period, well above the projected State rate of 0.4 per cent. In contrast, a small number of LGAs are projected to decline slightly over the period.

Population projections come with inevitable uncertainty and are very dependent on the assumptions made. They are also impacted by the accuracy of the data used. We have tried to convey some of this uncertainty through the introduction of uncertainty ranges for each local government area for the medium series. Despite this, population projections can be extremely useful for planning, provided the user keeps their limitations in mind.

Even where they are fully consistent with emerging trends, projection results are not inevitable. One of the important purposes of a projections exercise is to highlight the results of “what if” scenarios; if the results of those scenarios are undesirable, policy makers and planners often have the opportunity to identify ways in which these impacts can be mitigated or avoided.

Although our new projections model allows us to assess the impact of known dwelling developments in specific regions, we have not made any housing-related adjustments for this round of the projections, usually because our analysis suggested that the developments we examined would not materially impact the projections, or would not improve the projections without introducing unacceptable levels of uncertainty. We remain open to considering housing development information for future updates, but will look to collect this information in a more systematic way.

We are grateful to the many stakeholders and interested parties who provided input into the projections at various stages of our consultation. Together these people and organisations helped us shape the product we have produced, informed and improved our assumptions, and raised issues that we may have been unaware of or might have overlooked. Developing projections involves managing many competing tensions and constraints, so while we have not incorporated all feedback, we have tried to document our reasons for this in the case of major decisions taken.

Background

About population data

Australia's official population data are produced by the Australian Bureau of Statistics (ABS), and these data form the basis of these projections. Major sources of data on population and on its demographic composition (age, sex, location etc) are provided in the following ABS series:

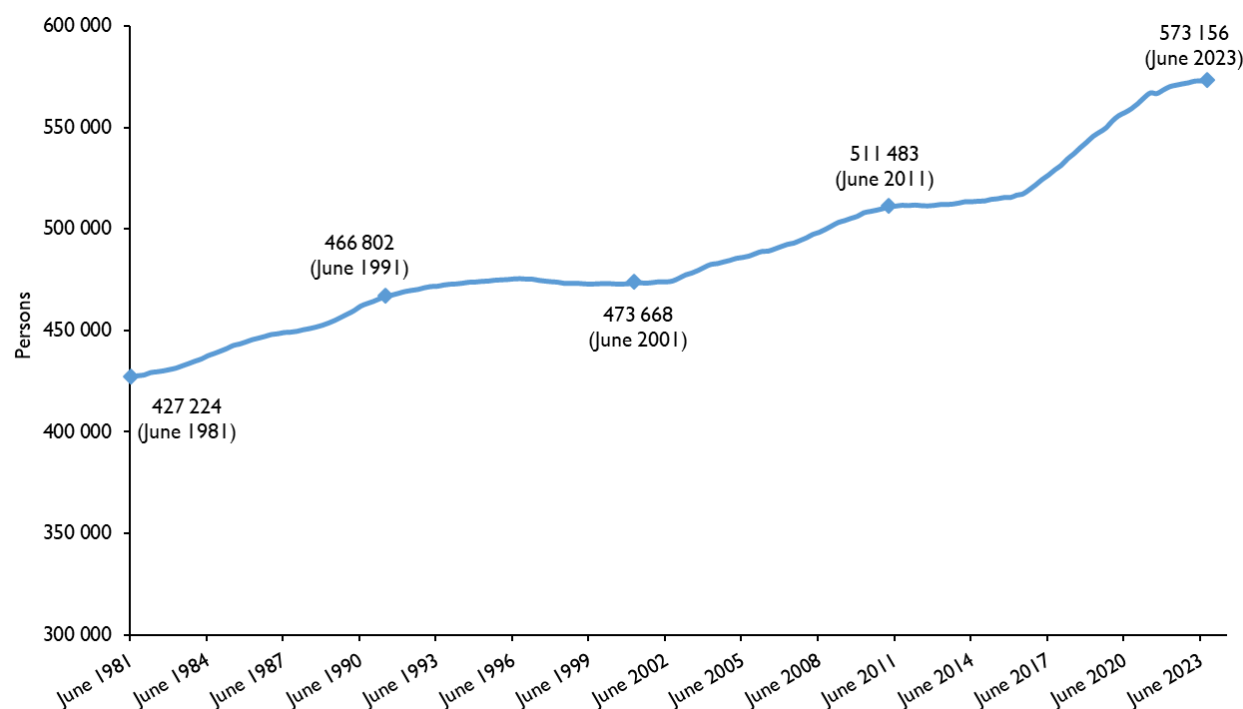
[2021 Census of Population and Housing \(the Census\)](#): a five-yearly count of the Australian population, in which the ABS also collects detailed information from Australians on their households and how and where they live, work, and come from.

[National, state and territory population](#): released on a quarterly basis, this series produces the Estimated Resident Population (ERP) figures that represent official population estimates for Australia and the states and territories. Though much less detailed than the Census, ERP figures usually provide a more accurate starting estimate of the population than raw Census counts, as they also include estimated counts of people who are not captured in the Census. ERP provides the “jump-off” point for the Treasury State-level projections.

[Regional population](#) and [Regional population by age and sex](#): this is an annual series in which ERP estimates are produced for smaller regional areas, including all LGAs in Australia. The regional population series provides the jump-off point for the Treasury LGA projections. They are generally consistent with the ERP figures produced for the National, state and territory population (for example, the sum of all LGA populations in a State will usually equal that State's total population, though there can be small differences arising due to the timing of releases and revisions).

For a definition of common population and demographic terms, refer to [Appendix A: Glossary](#).

Chart 2 - Estimated resident population, Tasmania



Source: *National, state and territory population*, ABS

What are the projections?

The population projections provide an indication of what Tasmania's population would look like if particular demographic trends and patterns held true into the future. These trends and patterns reflect a set of assumptions about what could happen in the long term - how many children are born (fertility), how long people live (mortality), how many people move into and out of an area and the age and sex of these people (migration).

As a general comment, these assumptions are based on a continuation of long-run historical trends observed in Tasmania and its regions together with potential future developments.

Projection outputs

The Treasury population projections provide an indication of the size and composition of the population of Tasmania and its 29 LGAs for a 30-year period, from 2023 to 2053.

Tasmanian State-level projections have been prepared by single year of age and by sex. Sub-state (LGA) projections have been prepared by 5-year age groups, and by sex.

In disaggregating and modelling our projections by sex, readers will note that our projections make a binary distinction between males and females only. This is due to the population source data, which are predominantly from the ABS, distinguishing only between males and females at present. We also note that the binary distinction of sex into males and females is still a standard convention in demographic modelling in Australia, again due to the limitations of source data.

We have also prepared detailed information on the projected births, deaths and migration flows (together known as "the components") that underpin the overall projections. While summary information is included in this report, more detailed information on the components can be found in the associated spreadsheets.

We have prepared medium, high and low series for each region (State and each LGA) using different assumptions about the population growth components (fertility, mortality and migration).

Medium series: Reflects the outcome of a continuation of broadly average trends in the region for all assumptions, with judgement applied as to how these trends will develop in the long term. On balance, the medium series is considered the most likely outcome at the time that the projections were developed.

High and low series: Reflects the outcome of the upper (high series) and lower (low series) boundaries of assumptions that are still considered plausible. Where applicable, high and low series assumptions are grounded in historical precedent - for example, high and low migration assumptions are based on the highest and lowest past average migration flows that have been sustained for a length of time in the past two decades.

Why do we need them?

Population projections provide an indication of how many people will live in Tasmania and its regions, the age and sex of these people, and how this may change over time. Projections therefore have an important role in planning for services and infrastructure, and in shaping public policy, urban planning, and resource distribution.

By projecting shifts in population size, age demographics, geographical dispersion, and components of population change, users of the projections can better tailor their services and infrastructure development to meet the evolving needs of their customers or residents. Population projections allow users, such as educators to make more informed decisions to plan for future school enrolments or healthcare providers to better anticipate healthcare demands, than would usually be possible with simple growth assumptions or extrapolations.

Projections also provide an important indication of what will happen if the assumptions hold true. If the results are undesirable, this gives policy makers the opportunity to identify ways in which these impacts can be mitigated or avoided.

By preparing projections for the State and all LGAs, Treasury intends that Tasmanian Government agencies and other users are able to plan based on a common and consistent set of information and avoid the need to individually estimate or model their own future populations. Nevertheless, users should always note the limitations of small area projections and, where appropriate, consider them in conjunction with other available information on an area, such as local area knowledge, land supply data, planning intentions and strategies, or expert sources. At times, population projections will vary considerably from the predictions of other sources. This does not negate their value, provided that the user can identify what is driving the differences between the projections and the other sources of information and interpret them accordingly.

How to interpret the projections

The projections represent Treasury's best estimate of the trajectory of the population for Tasmania and its LGAs. However, it is important to note that projections simply reflect what the population would look like if certain assumptions held true. We know that the actual outcomes in coming years are unlikely to match these assumptions, and that there is an inevitable degree of uncertainty around long-term projections, which increases over time (see Chart 3 as an example of the level of uncertainty around a typical projection for a mid-sized LGA).

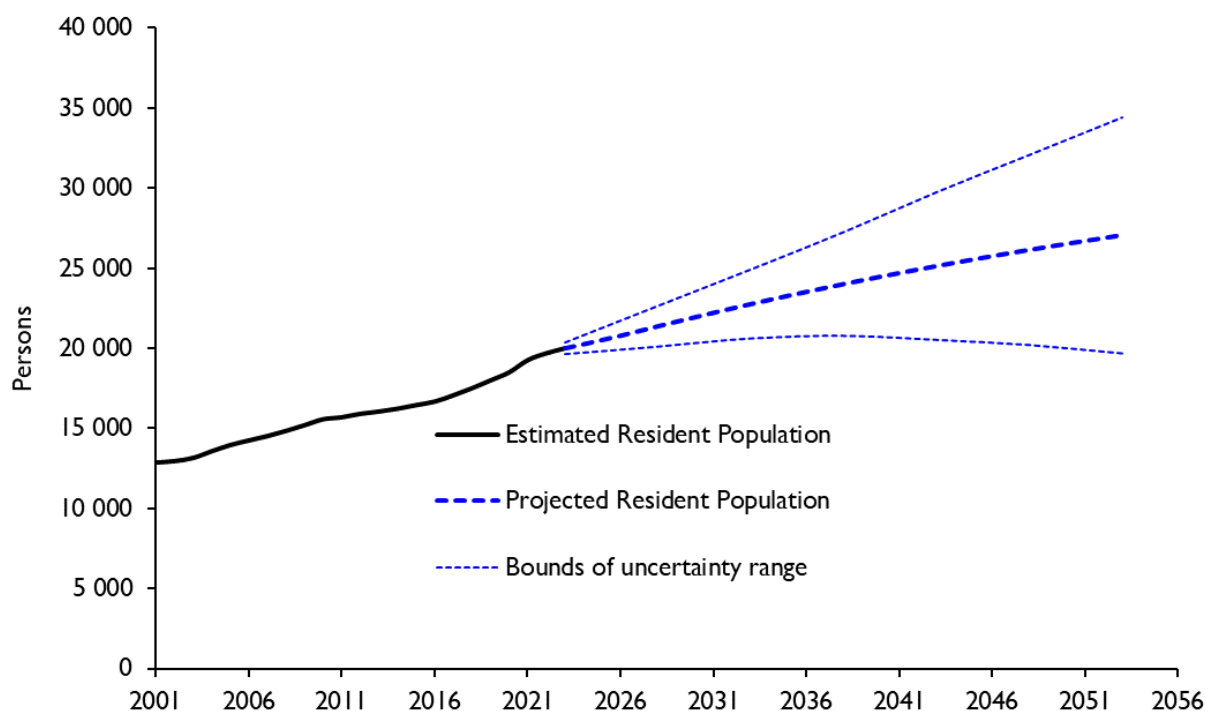
Note that while projections can indicate possible demographic change over time, they will never be perfect forecasts - it is not possible in a long-term projections exercise, for example, to predict economic cycles, the demographic impact of assorted government policies or targets, or the development of new major industries. While important for planning, they should not be used as a standalone decision-making tool.

As time goes on, the projections will inevitably vary to some extent from the actual populations recorded by the ABS. In interpreting the projections for planning or policy, particularly in later years, we recommend focusing on the direction and general magnitude of change (for example, the general strength of growth or decline over time), and broad trends (such as increases or decreases in certain age groups) rather than making decisions that rely on a precise estimate of population at a given time. Users are strongly encouraged to consider the range of possible future populations within the uncertainty range (Chart 3) when making decisions.

Finally, it is emphasised that projections are not targets. They reflect what we assess would happen under certain assumptions, but not necessarily what is desirable or undesirable from a policy point of view. Projections are nevertheless useful for policy makers, in that they reflect the outcomes that are likely to arise if current circumstances continue and can, therefore, provide an indication of what may need to change to achieve particular population targets or policies.

Information on the Tasmanian Government's population policy is available from the [Population Strategy](#) web page.

Chart 3 - Total projected population (medium series) and uncertainty range*, Brighton local government area



* The uncertainty range covers approximately 80% of possible future outcomes and is estimated from past forecast errors. Note that it is **not** the same as the high and low series.

Source: *Regional population by age and sex, ABS; TasPOPP projections; Advanced Demographic Modelling*

Supporting materials

In addition to this report, we have provided spreadsheets and other documents containing further information or more detailed projection data on [Treasury's population projections page](#), including:

TasPOPP 2024 quick guide - a short summary of what the projections are and how to use them;

Summary profiles - a concise two-page workbook containing medium series projection tables and charts for Tasmania and each LGA;

Main output file - contains historical population and projections and components of change for the State and each LGA, including by age group, and for each series (medium, high, low); and

State population pyramid - an interactive and animated chart that allows you to compare the distribution of the Tasmanian population in different age groups across time for each series.

Further resources may be added to Treasury's population projections page over time.

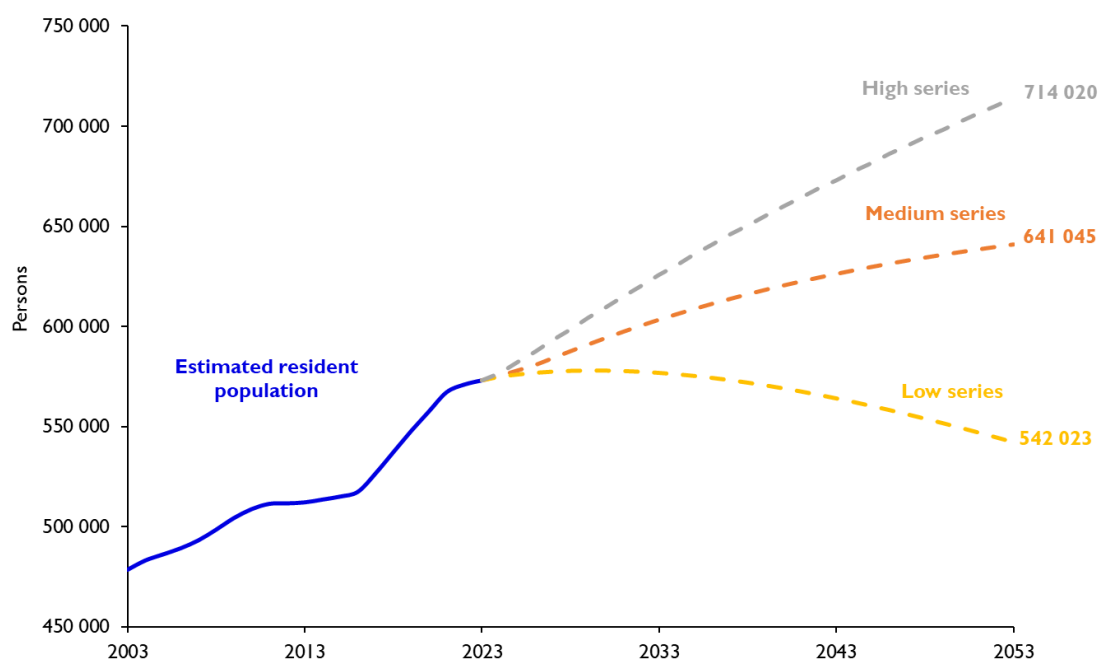
Projection Results

State projection results

Tasmania's estimated population, as at 30 June 2023, was just over 573 000 persons (the base year for the projections and the latest available disaggregated data). By 30 June 2053, Tasmania's population is projected to reach 641 045 persons under the medium series. This equates to an average annual growth rate of 0.37 per cent per year over the projection period. This compares to an average annual growth rate of 0.65 per cent over the past 30 years. Under the medium series, Tasmania's population increases each year, but the rate of growth slows towards the end of the 30-year projection period.

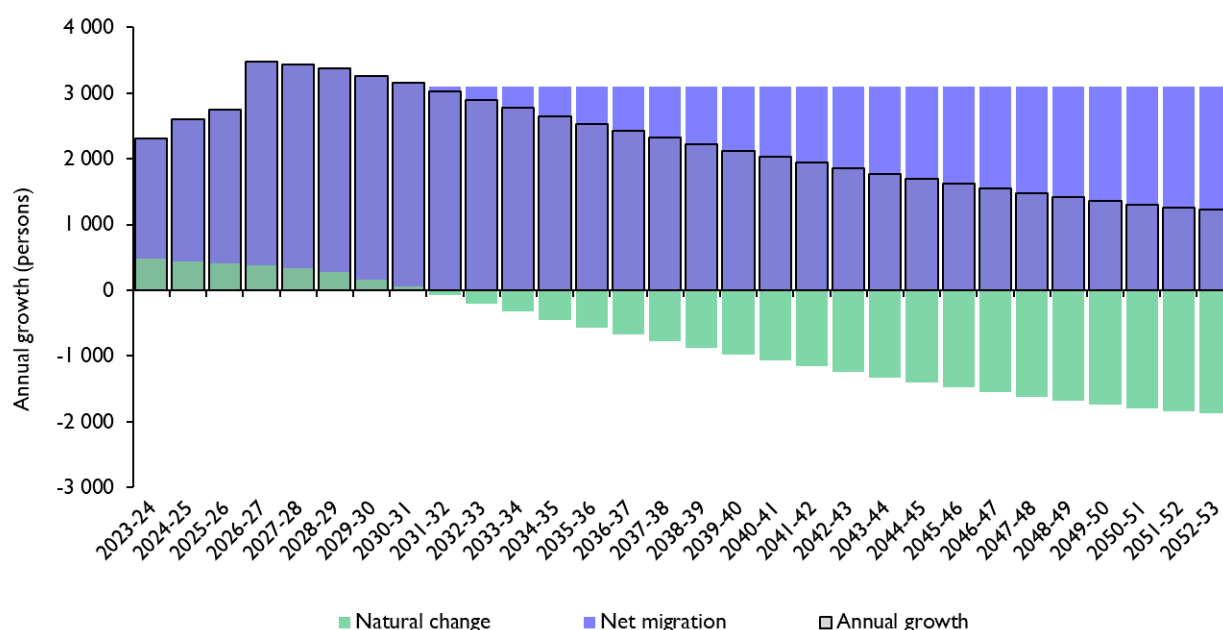
Under the high series, the State's population is projected to grow relatively strongly over the projection period, with an annual average growth rate of 0.74 per cent. Under the low series, the State's population is projected to grow until 2028-29, after which time it is projected to start declining, and at an increasing rate. Over the 30-year projection period, the average annual growth rate for the low series is -0.19 per cent.

Chart 4 - Total population, Tasmania, Estimated (ABS) and Projected, 2003 to 2053



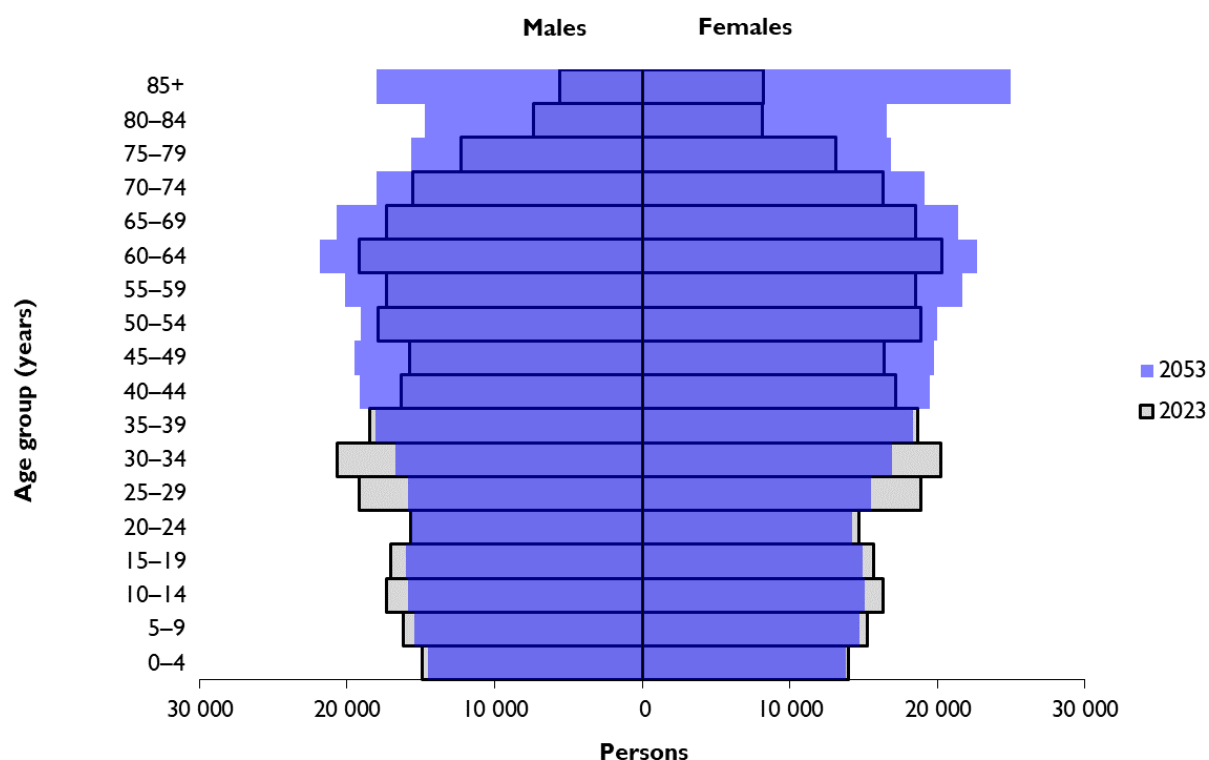
Source: National, state and territory population, ABS; TasPOPP projections

In each successive year, under each series, Tasmania is projected to be increasingly dependent on net migration for its growth, with a corresponding decline in natural change. In the case of the medium series, natural change is projected to become negative from 2031-32 onwards, with the number of people dying exceeding the number of people born in Tasmania from this point, and migration being the sole source of growth (Chart 5).

Chart 5 - Projected annual growth, medium series, Tasmania

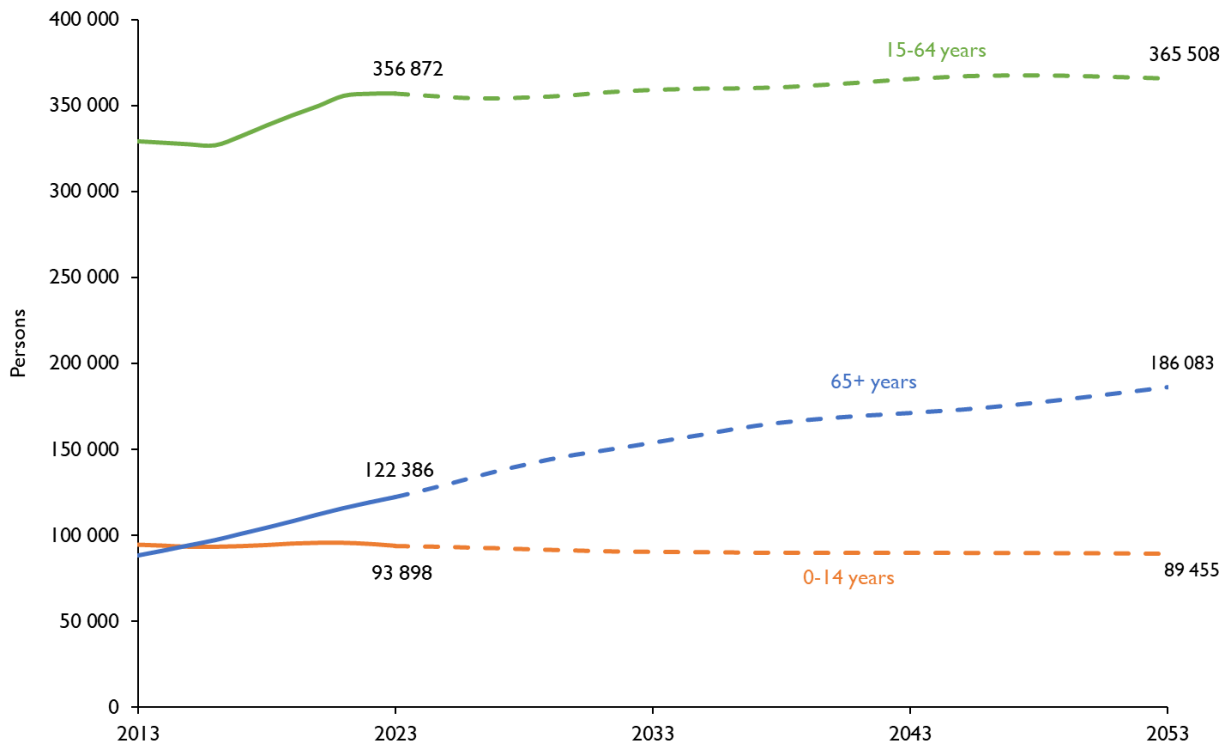
Source: TasPOPP projections

The population is projected to continue to age in Tasmania; under the medium series, the number of people in every age group from 40 years and above is expected to increase, with the biggest proportionate increases in those aged 75 and above (Chart 6).

Chart 6 - Age and sex population structure, state level, medium series, Tasmania, comparing 30 June 2023 to 30 June 2053

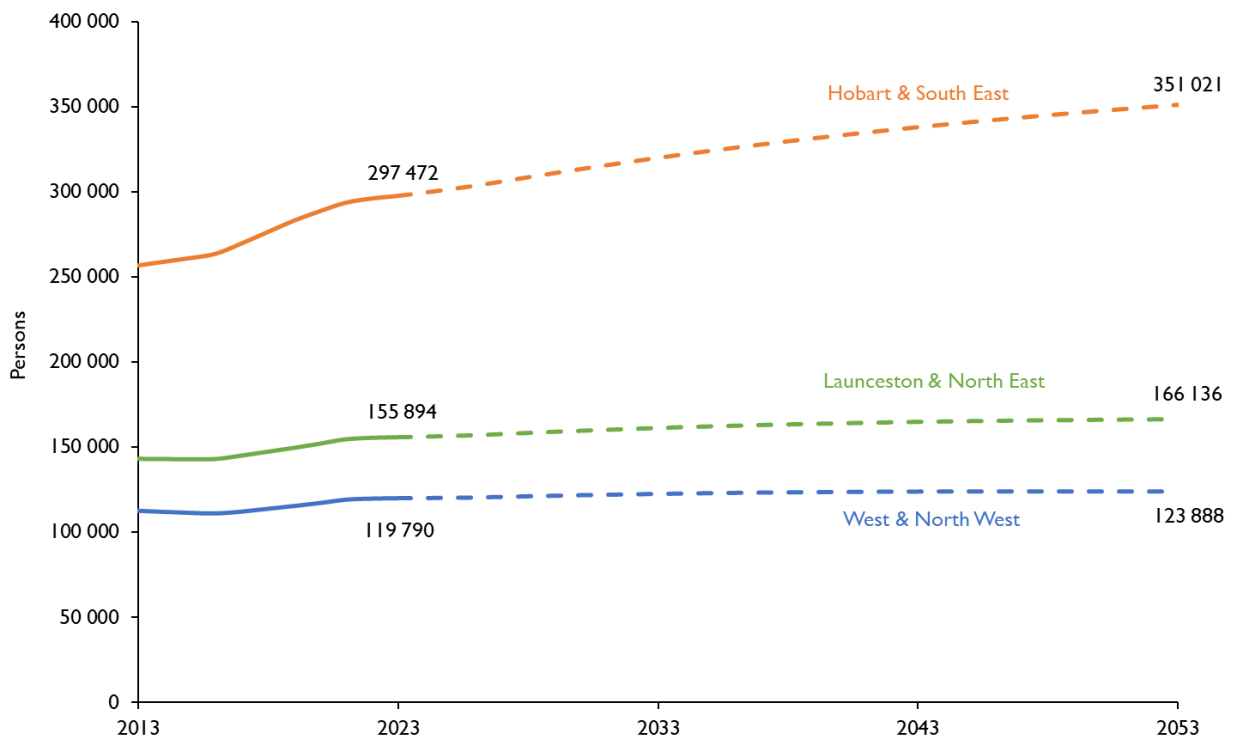
Source: National, state and territory population, ABS; TasPOPP projections

Chart 7 - Core age group population structure, medium series, Tasmania, Estimated (ABS) and Projected, 2013 to 2053



Source: National, state and territory population, ABS; TasPOPP projections

Chart 8 - Regional population growth, medium series, Tasmania, Estimated (ABS) and Projected, 2013 to 2053



Source: Regional population, ABS; TasPOPP projections

Chart 8 illustrates how the population of each of Tasmania's regions is projected to change over the projection period under the medium series. The Hobart and South East region is projected to steadily grow over the projection period, averaging 0.6 per cent per year, while population levels in Launceston & North East and West & North West regions are relatively steady over the projection period, growing at an average annual rate of 0.2 per cent and 0.1 per cent per year respectively. Projection results for individual LGAs are discussed in more detail in the following section.

Local government area projection results

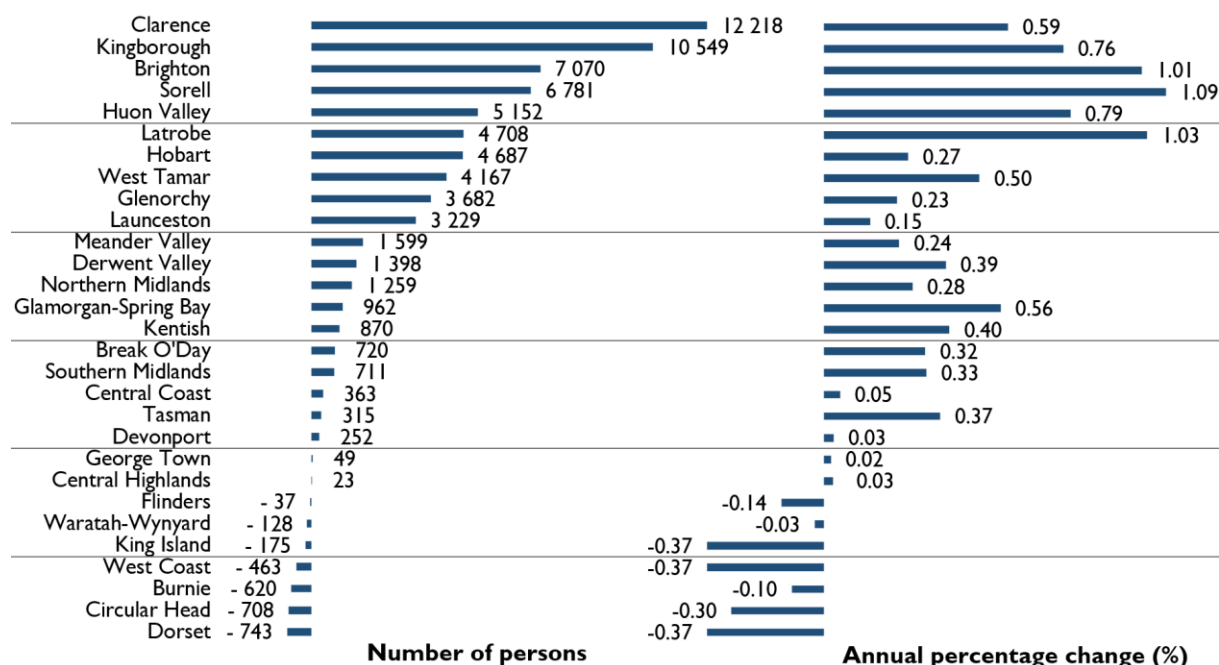
Projected population changes from 30 June 2023 to 30 June 2053 for each LGA under the medium series are shown in Chart 9 and Table 1. The high and low series are presented in Tables 2 and 3.

The populations of 22 LGAs are projected to grow overall under the medium series from 2023 to 2053, while the remaining seven LGAs are projected to experience population decline. However, over the projection period, nine LGAs are projected to experience total population change of under 500 persons.

Clarence is projected to experience the largest increase in absolute numbers of persons, with a projected population increase of 12 218 persons over the period to 2053. This projection result is driven by the high level of internal in-migration.

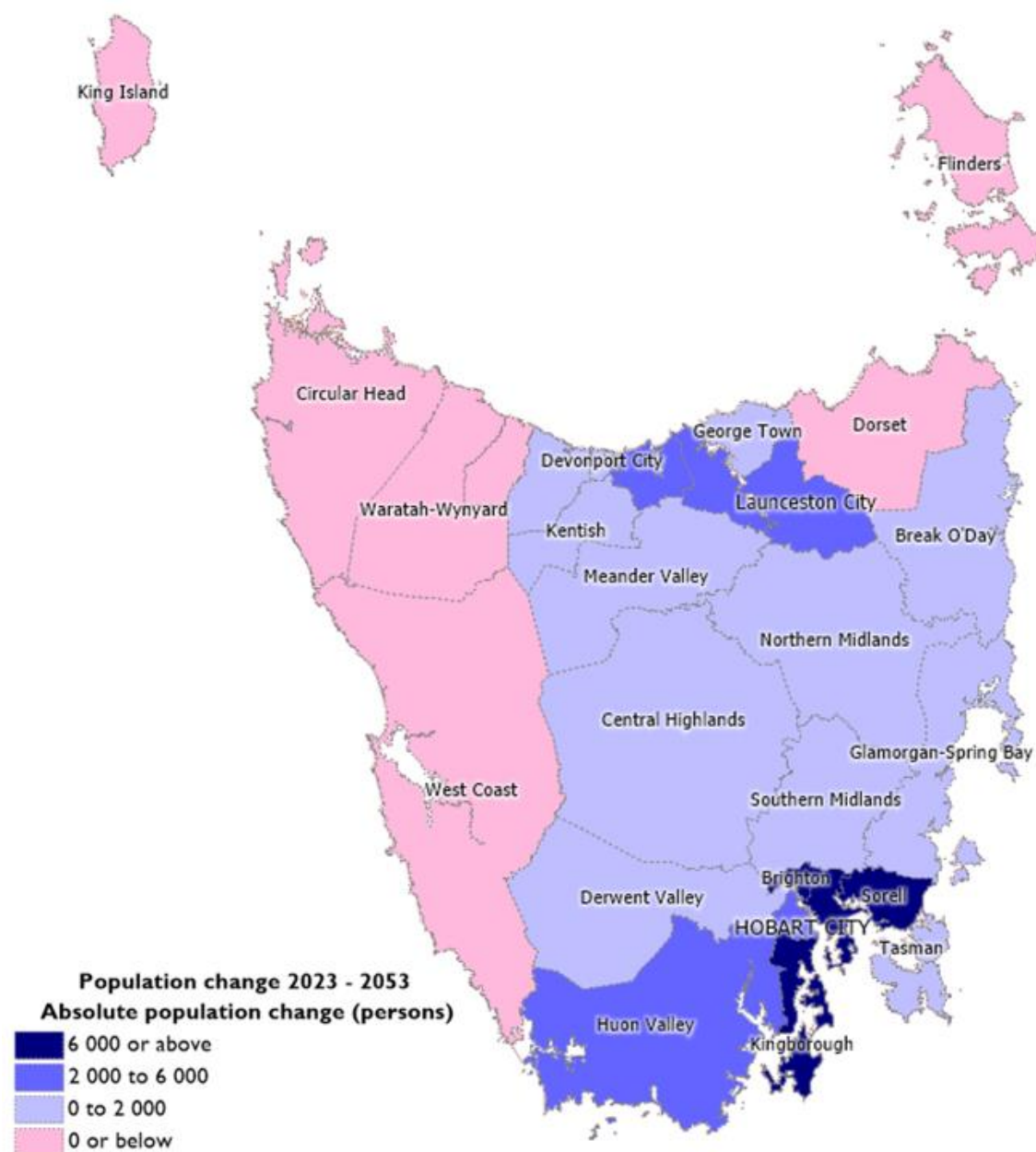
Sorell is projected to be the fastest-growing LGA in percentage terms from 2023 to 2053, with a projected average growth rate of 1.09 per cent per year under the medium series. The average growth projected in Sorell is driven by the assumption that its net migration inflow will continue to be strong.

Chart 9 - Projected LGA population growth, medium series, 30 June 2023 to 30 June 2053



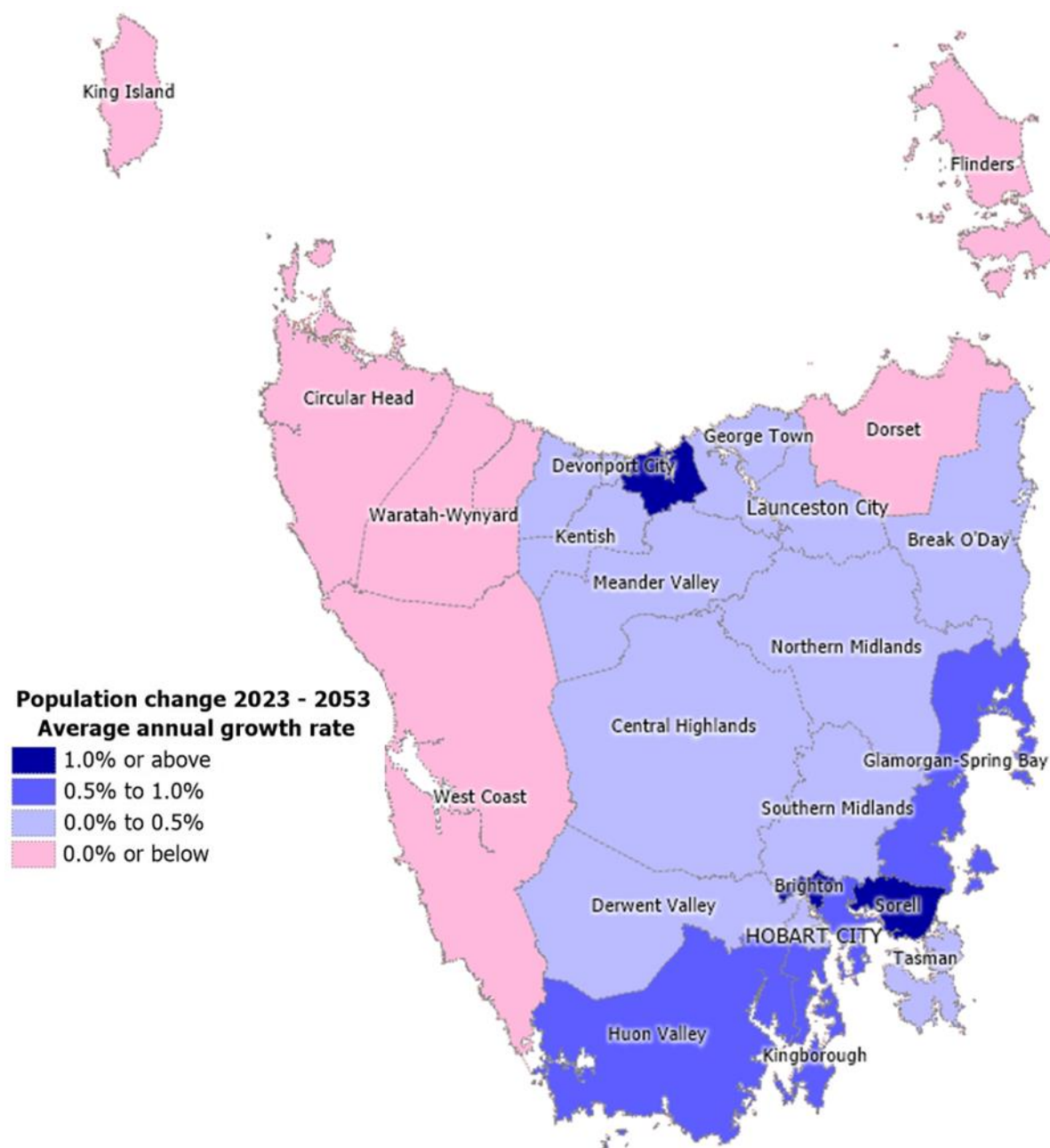
Source: *Regional population and Regional population by age and sex, ABS; TasPOPP projections*

Map 1 - Projected growth in number of persons by LGA, medium series, 30 June 2023 to 30 June 2053



Source: TasPOPP projections

Map 2 - Projected average annual population growth by LGA, medium series, 30 June 2023 to 30 June 2053



Source: TasPOPP projections

Table I - Projected LGA population change and components of change, medium series, 30 June 2023 to 30 June 2053

LGA	Estimated 30 June 2023	Projected 30 June 2053	Change (persons)	Natural change (persons)	Net migration (persons)
Break O'Day	7 075	7 795	720	-2 362	3 081
Brighton	19 998	27 068	7 070	2 992	4 078
Burnie	20 463	19 843	- 620	- 178	- 442
Central Coast	23 331	23 694	363	-3 824	4 187
Central Highlands	2 595	2 618	23	- 202	225
Circular Head	8 352	7 644	- 708	- 166	- 542
Clarence	63 663	75 881	12 218	- 891	13 109
Derwent Valley	11 341	12 739	1 398	- 381	1 779
Devonport	26 977	27 229	252	-2 402	2 653
Dorset	7 001	6 258	- 743	-1 008	265
Flinders	933	896	- 37	- 423	385
George Town	7 330	7 379	49	-1 491	1 540
Glamorgan-Spring Bay	5 237	6 199	962	-1 649	2 610
Glenorchy	50 808	54 490	3 682	3 238	444
Hobart	55 964	60 651	4 687	-1 428	6 115
Huon Valley	19 454	24 606	5 152	- 698	5 850
Kentish	6 831	7 701	870	- 730	1 601
King Island	1 648	1 473	- 175	- 58	- 117
Kingborough	41 179	51 728	10 549	261	10 288
Latrobe	13 062	17 770	4 708	-2 150	6 858
Launceston	71 788	75 017	3 229	-1 167	4 396
Meander Valley	21 449	23 048	1 599	-1 660	3 259
Northern Midlands	14 279	15 538	1 259	- 828	2 087
Sorell	17 635	24 416	6 781	467	6 313
Southern Midlands	6 912	7 623	711	- 41	752
Tasman	2 686	3 001	315	- 989	1 305
Waratah-Wynyard	14 767	14 639	- 128	-2 946	2 818
West Coast	4 359	3 896	- 463	- 425	- 38
West Tamar	26 039	30 206	4 167	-1 004	5 171
Tasmania	573 156	641 045	67 889	-22 141	90 030

Source: *Regional population and Regional population by age and sex, ABS; TasPOPP projections*

Table 2 - Projected LGA population change and components of change, high series, 30 June 2023 to 30 June 2053

LGA	Estimated 30 June 2023	Projected 30 June 2053	Change (persons)	Natural change (persons)	Net migration (persons)
Break O'Day	7 075	8 682	1 607	-2 113	3 720
Brighton	19 998	30 150	10 152	4 461	5 691
Burnie	20 463	22 102	1 639	828	811
Central Coast	23 331	26 391	3 060	-2 866	5 926
Central Highlands	2 595	2 917	322	- 79	400
Circular Head	8 352	8 514	162	257	- 95
Clarence	63 663	84 519	20 856	2 714	18 142
Derwent Valley	11 341	14 189	2 848	195	2 653
Devonport	26 977	30 328	3 351	-1 138	4 489
Dorset	7 001	6 970	- 31	- 739	708
Flinders	933	998	65	- 396	460
George Town	7 330	8 219	889	-1 211	2 100
Glamorgan-Spring Bay	5 237	6 904	1 667	-1 453	3 120
Glenorchy	50 808	60 693	9 885	6 150	3 735
Hobart	55 964	67 556	11 592	1 200	10 392
Huon Valley	19 454	27 407	7 953	306	7 647
Kentish	6 831	8 578	1 747	- 440	2 187
King Island	1 648	1 641	- 7	28	- 35
Kingborough	41 179	57 617	16 438	2 613	13 825
Latrobe	13 062	19 793	6 731	-1 506	8 237
Launceston	71 788	83 556	11 768	2 551	9 217
Meander Valley	21 449	25 671	4 222	- 683	4 906
Northern Midlands	14 279	17 307	3 028	- 115	3 144
Sorell	17 635	27 195	9 560	1 549	8 011
Southern Midlands	6 912	8 491	1 579	305	1 275
Tasman	2 686	3 343	657	- 906	1 563
Waratah-Wynyard	14 767	16 306	1 539	-2 314	3 853
West Coast	4 359	4 340	- 19	- 225	206
West Tamar	26 039	33 645	7 606	243	7 363
Tasmania	573 156	714 020	140 864	7 214	133 650

Source: *Regional population and Regional population by age and sex, ABS; TasPOPP projections*

Table 3 - Projected LGA population change and components of change, low series, 30 June 2023 to 30 June 2053

LGA	Estimated 30 June 2023	Projected 30 June 2053	Change (persons)	Natural change (persons)	Net migration (persons)
Break O'Day	7 075	6 591	- 484	-2 621	2 136
Brighton	19 998	22 887	2 889	841	2 048
Burnie	20 463	16 778	-3 685	-1 607	-2 078
Central Coast	23 331	20 034	-3 297	-5 118	1 820
Central Highlands	2 595	2 214	- 381	- 368	- 13
Circular Head	8 352	6 463	-1 889	- 762	-1 127
Clarence	63 663	64 159	496	-5 936	6 432
Derwent Valley	11 341	10 771	- 570	-1 195	625
Devonport	26 977	23 023	-3 954	-4 149	194
Dorset	7 001	5 291	-1 710	-1 376	- 333
Flinders	933	757	- 176	- 448	272
George Town	7 330	6 239	-1 091	-1 865	774
Glamorgan-Spring Bay	5 237	5 241	4	-1 896	1 900
Glenorchy	50 808	46 073	-4 735	- 929	-3 806
Hobart	55 964	51 283	-4 681	-5 029	348
Huon Valley	19 454	20 805	1 351	-2 096	3 447
Kentish	6 831	6 512	- 319	-1 117	798
King Island	1 648	1 245	- 403	- 178	- 225
Kingborough	41 179	43 738	2 559	-3 020	5 578
Latrobe	13 062	15 025	1 963	-3 013	4 976
Launceston	71 788	63 429	-8 359	-6 400	-1 960
Meander Valley	21 449	19 488	-1 961	-3 003	1 041
Northern Midlands	14 279	13 138	-1 141	-1 820	679
Sorell	17 635	20 644	3 009	-1 062	4 071
Southern Midlands	6 912	6 446	- 466	- 527	60
Tasman	2 686	2 538	- 148	-1 081	933
Waratah-Wynyard	14 767	12 378	-2 389	-3 804	1 414
West Coast	4 359	3 294	-1 065	- 701	- 363
West Tamar	26 039	25 540	- 499	-2 733	2 234
Tasmania	573 156	542 023	-31 133	-63 013	31 880

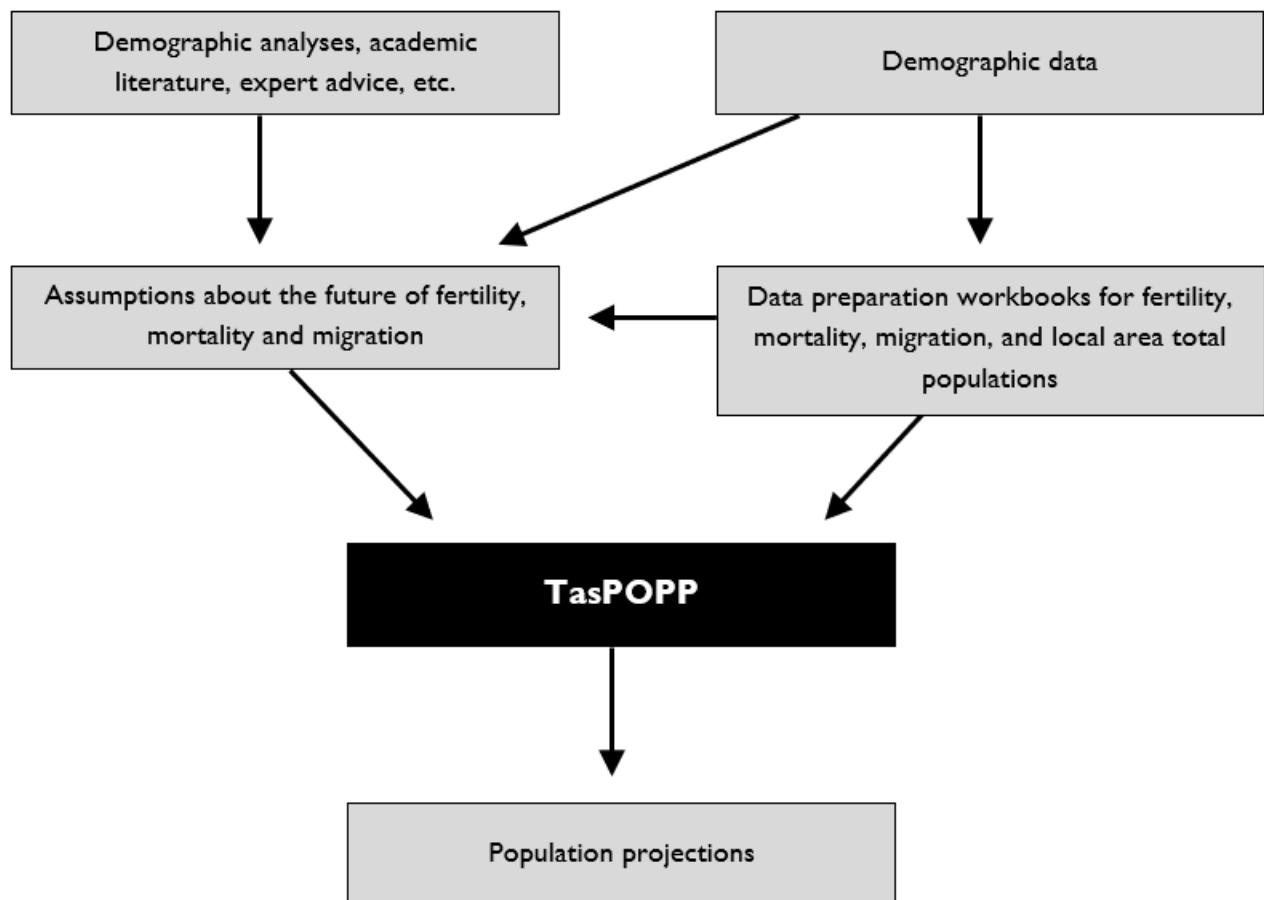
Source: Regional population and Regional population by age and sex, ABS; TasPOPP projections

Methodology

How the projections have been prepared

The projections were developed using a bespoke population projection model, TasPOPP, developed for Tasmania by Dr Tom Wilson (Advanced Demographic Modelling). The TasPOPP model uses a cohort-component method in which the populations, as at 30 June 2023 for Tasmania and each Tasmanian local government area and for each age group by sex, are projected forward year by year by applying assumptions about future trends in fertility, mortality and migration. The model and assumptions are informed by a variety of sources (Figure 1).

Figure 1 - Summary of the population projections process



Source: Advanced Demographic Modelling

The State-level projections and assumptions are fully consistent with the LGA projections; while each LGA is modelled separately using specific fertility, mortality, and migration assumptions, the totals and components of change are dynamically constrained to ensure that LGA populations sum to the State projections.

Assumptions

In developing assumptions about future fertility, mortality and migration for the three State population projection series, we took into account:

- analysis of births, deaths, migration and other related data produced by the ABS;
- expert demographic advice on the components of growth and their likely future direction from Dr Wilson;
- consultation with relevant government agencies on specific matters of their areas of expertise;
- research undertaken by Treasury; and
- feedback from stakeholders as part of our stakeholder consultation process on the draft projections.

Our State assumptions have been developed over a period of time based on analysis and expert input, and were initially tested with the Population Projections Advisory Group (a group of State Government agencies that rely heavily on the projections). While our projections have been independently developed, we have taken into consideration the recent assumptions and projections of other government organisations including those of some state and territory governments as well as the two Australian Government agencies that produce projections (the ABS and the Centre for Population).

Where possible we have attempted to anchor assumptions in historical or recent averages, and in the case of high and low series assumptions these have generally been based on high and low averages in the recent past. This approach still requires judgement but minimises purely arbitrary assumptions and is an important check to ensure the plausibility of the assumptions.

The assumptions are unable to predict future cycles or shocks, but instead represent long-run trends and developments. This approach still allows for a transition period, in which assumptions are phased in for the first few years of the projections to avoid sudden changes.

In the case of regional assumptions, TasPOPP automatically derives fertility rates for each LGA based on recent historical data and, where sufficient data exist, estimates life expectancy assumptions for each LGA. The model applies State life expectancy assumptions for smaller LGAs where insufficient data exist to estimate life expectancy separately. Migration assumptions are estimated separately for each LGA but migration is then dynamically constrained to fit State population changes and migration rates.

Table 4 - Summary of State-level Population Projection Assumptions

Assumption	2022-23 estimate	High series	Medium series	Low series
Mortality (Life expectancy at birth)	80.0 years (males)* 83.5 years (females)*	Increases from current levels to reach 86.9 years for males and 89.6 years for females by 2053.	Increases from current levels to reach 85.9 years for males and 88.6 years for females by 2053.	Increases from current levels to reach 84.9 years for males and 87.6 years for females by 2053.
Fertility* (Total Fertility Rate (TFR))	1.52 ⁺	Increases from current level to 1.78 by 2032, then remains constant.	Increases to 1.62 by 2032, then remains constant.	Decreases from current level to 1.31 by 2032, then remains constant.
Net Overseas Migration (per year)	+4 408 persons (net inflow)	Decreases from current level to +2 800 from 2024-25, then remains constant.	Decreases from current level to +2 300 from 2026-27, then remains constant.	Decreases from current level to +1 650 from 2024-25, then remains constant.
Net Interstate Migration (per year)	-2 597 persons (net outflow)	Increases from current level to +1 700 from 2024-25, then remains constant.	Increases from current level to +800 from 2026-27, then remains constant.	Increases from current level to -600 from 2024-25, then remains constant.

* 2022 calendar-year estimates, based on life tables prepared by Advanced Demographic Modelling.

+ 2023 calendar-year estimate, derived based on data from the Registrar of Births, Deaths and Marriages.

Cohort-component method

The projection models in TasPOPP for the State and LGA projections are cohort-component models in which the population is divided into *cohorts* and projected forward by adding and subtracting demographic *components* of change. For example, the female cohort of Tasmania aged 45 in mid-2023 is projected to mid-2024 when the cohort will be aged 46. The projection calculations start with the population aged 45 in mid-2023, then subtract deaths, interstate out-migration and emigration to overseas, and then add in interstate in-migration and immigration from overseas. The result is the projected population of females aged 46 in mid-2024 (Figure 2).

Figure 2 - Illustrative example of cohort-component method, females, Tasmania, medium series

Years of age	...	30 June 2023	30 June 2024	...
...	...	...	...	
45	...	3 269		
46	...	...	3 303	
...	...	...	...	

+ 17 overseas arrivals
 - 8 overseas departures
 (NOM = +9)
 + 68 interstate arrivals
 - 39 interstate departures
 (NIM = +29)
 4 deaths
 (Natural change = -4)
 = Net gain of 34 persons

Source: TasPOPP projections

LGA projections

LGA projections are projected in a similar manner to the State projections but with some modifications to ensure that they are constrained to, and fully consistent with, the State totals. Research shows that constraining small area age-sex projections to independent totals often improves their accuracy.

LGAs are initially projected using a simple extrapolative model and based on past growth before any individual assumptions are considered. Following this, the sum of LGA totals is constrained to the State population projections. Natural change is then modelled through the standard cohort-component approach, and migration is dynamically adjusted until it reconciles with LGA population totals and State projections by age and sex.

Input data

Data from the ABS were the primary source used to inform the projections. Most of the data utilised are from published ABS collections, but some customised or unpublished ABS data extracts were also obtained to provide the level of detail needed for the projections.

The other main quantitative data source used was birth notifications data provided to Treasury by the Tasmanian Registrar of Births, Deaths and Marriages, along with recently published updates on the Registrar's website, which augmented the official ABS births series and allowed us to analyse more recent trends in fertility.

We also took into account a variety of quantitative and qualitative data and other information for the purpose of applying judgement and adjustments to some of the projections and assumptions. These include recent research on the impact of the COVID-19 pandemic on mortality; data from the Greater Hobart Plan and associated documents; State Government visa nomination data; other reports and research published by government agencies; and some unpublished data provided by State Government agencies.

Expert demographic advice on the components of growth and their likely future direction was provided by Dr Wilson, and consultation was undertaken with key government agencies and other subject matter experts to seek additional information and insights to inform the projections.

Managing data limitations

With a relatively small population, Tasmania and its LGAs are prone to data limitations when it comes to population estimates and other demographic data, such as data quality issues, random noise (large random fluctuations in trends when populations are small), and ABS perturbation (intentional small adjustments to data to protect privacy). This issue becomes particularly acute when dealing with highly disaggregated data - for example, the number of males aged 71 in a small LGA is likely to be very low, meaning that Census and ERP counts may suppress or randomise these small numbers, and sample surveys are unlikely to be able to capture or represent such small cohorts accurately. Moreover, if projections are not done carefully, implausible outcomes can quickly emerge. The TasPOPP model is specifically designed to deal with these data limitations and to avoid implausible scenarios, through:

- restricting the Treasury projections to five-year age groups for LGAs;
- deriving LGA assumptions and past trends from data over longer periods of time, and from changes between population censuses, to reduce the noise created by random fluctuations from year to year;
- applying extrapolation methods to produce headline LGA projections, and constraining these to State results; and
- allowing the user to adjust age specific-migration rates to avoid implausible results.

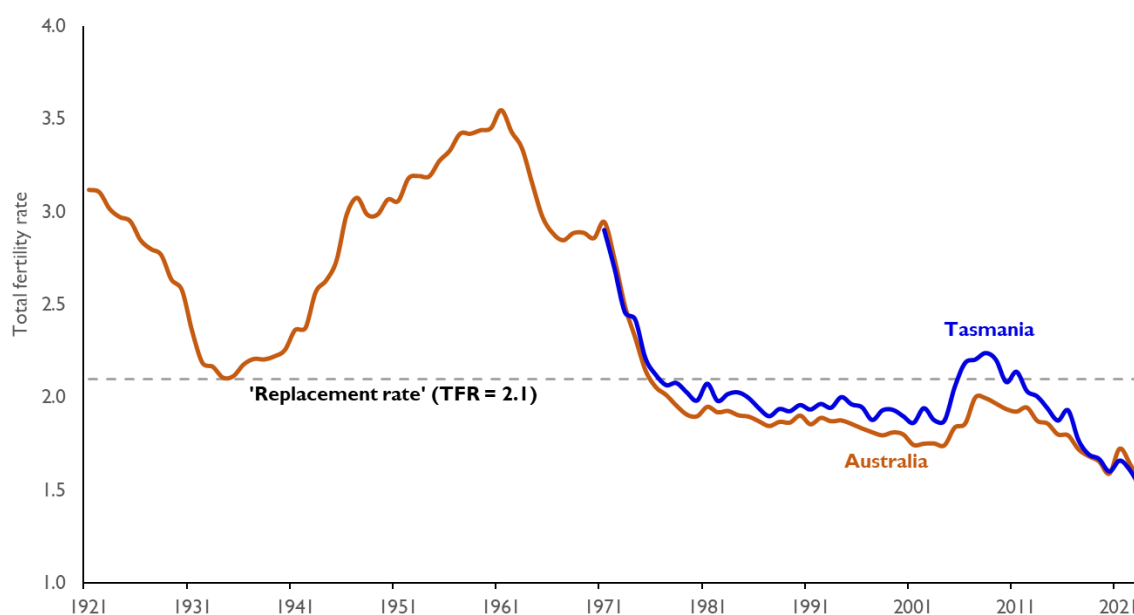
Treasury has also had to manage known problems with other datasets. The most significant of these was the underestimation of migration into Tasmania that occurred from the period from 2016 to 2021. This matter is addressed in the section on net internal migration and in [Appendix B](#).

State assumptions

Fertility

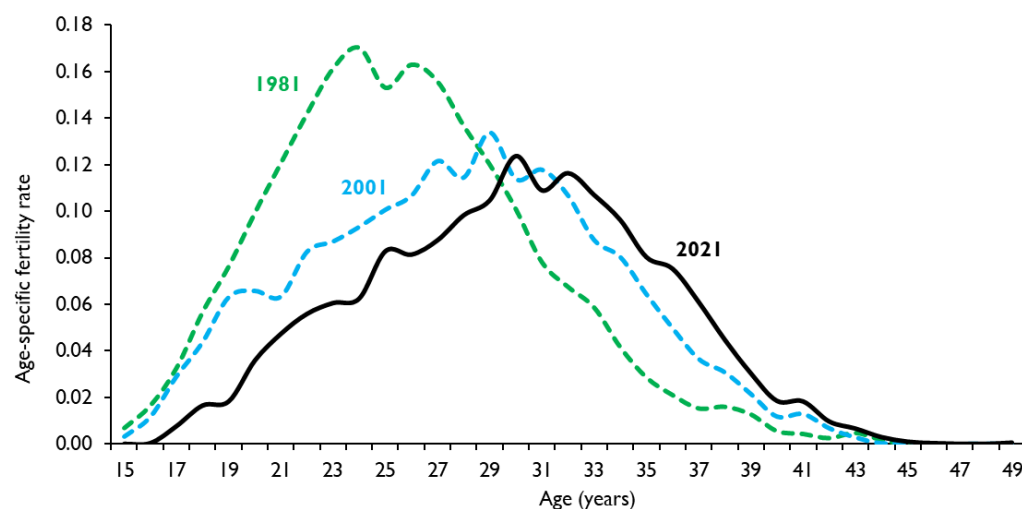
Fertility is typically measured by the Total Fertility Rate (TFR), which represents the total number of children a female would bear during her lifetime if she experienced current age-specific fertility rates at each age of her life. The TFR in Australia has been generally declining since the end of the Baby Boom period (Chart 10). Tasmania has followed a broadly similar trend to the rest of the country, although its total fertility rate has typically been higher than nationally until very recently.

Chart 10 - Historical Total Fertility Rate, Tasmania and Australia



Source: Australian Historical Population Statistics, ABS; Advanced Demographic Modelling and Treasury calculations

Chart 11 - Age-specific Fertility Rate snapshots, Tasmania



Source: National, state and territory population, ABS; Births, Australia, ABS; Advanced Demographic Modelling calculations

Chart 11 shows age-specific fertility for Tasmania and illustrates the shift in the fertility age profile over time. In 1981, peak fertility was around 24 years, whereas by 2021 it had shifted to 30 years.

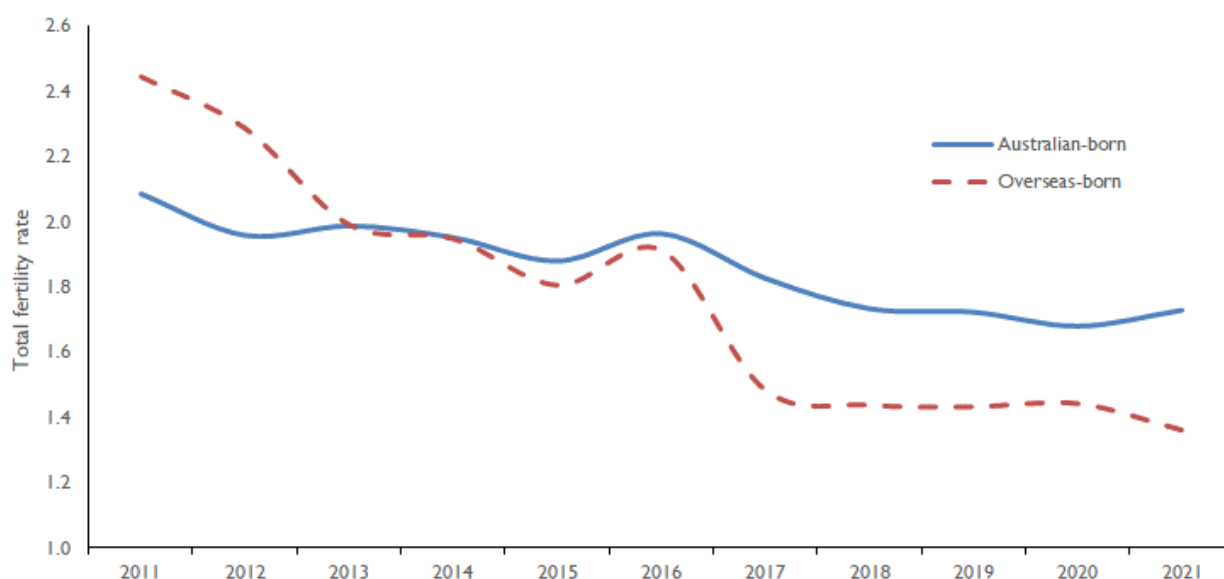
Understanding the recent fertility decline in Tasmania

While it was always possible that the fertility outcomes of Tasmanians had simply dropped at a faster rate than nationally in the most recent years due to social changes or economic factors, it is notable that the decline coincided with an increase, since around 2016, in Tasmania's overseas-born migrant population.

As noted by one stakeholder, it has been observed nationally that migrants tend to have fertility outcomes that are a little lower than the Australian-born population while temporary migrants, in particular, tend to have very low fertility rates in Australia.¹

We found this to be the case for Tasmania as well, with fertility outcomes for the overseas born population in Tasmania declining at a greater rate than the Australian born population (Chart 12).

Chart 12 - Estimated Total Fertility Rate by place of birth of mother, Tasmania



Source: ABS (custom data tables); Treasury calculations

We have received advice from stakeholders and some experts that Tasmania's high rates of migration of temporary visa holders are unlikely to be sustained at the same levels in the future. On this basis we have allowed for a small recovery in the total fertility rate in the medium series compared to its current levels.

Final assumptions

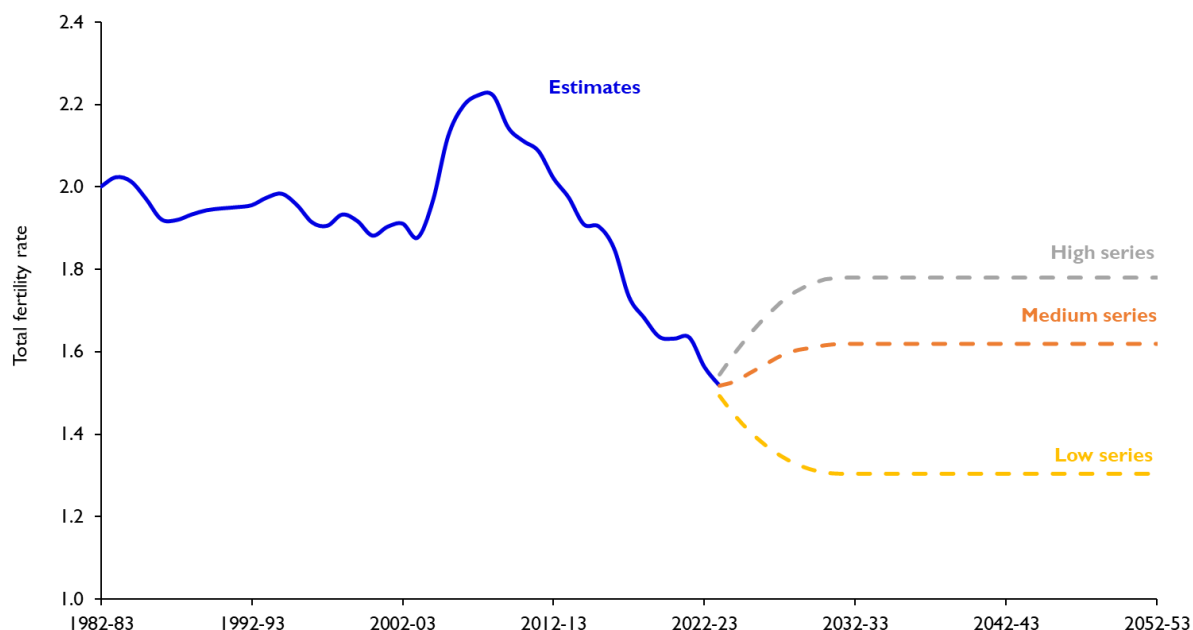
Aside from the adjustment noted above, fertility assumptions for each series have predominantly been based on analysis of past Tasmanian TFR observations, with the medium series being anchored in the approximate past five-year average, and high and low series being anchored to relatively recent high and low rates of change in fertility.

¹ See McDonald, P. (2020). *A Projection of Australia's Future Fertility Rates: Analysis for the Centre for Population*. <https://population.gov.au/research/research-fertility>

The following fertility assumptions have been adopted in the draft projections:

- **High series** - the current fertility rate increases to reach 1.78 by 2031-32 and then remains constant.
- **Medium series** - the current fertility rate increases gradually to reach 1.62 by 2031-32 and then remains constant.
- **Low series** - the current fertility rate decreases to 1.31 by 2031-32 and then remains constant.

Chart 13 - Estimated and Projected TFR, Tasmania



Source: National, state and territory population, ABS; Births, Australia, ABS; Registrar of Births, Deaths and Marriages; Advanced Demographic Modelling; Treasury calculations

Mortality

Life expectancy at birth estimates represent the average number of years that a newborn baby could expect to live, assuming current age-specific death rates are experienced through their lifetime. In 2022, life expectancy at birth for Tasmania was 80.0 years for males and 83.5 years for females.

In forming mortality assumptions, we have focused on:

- the possible ongoing impact of COVID-19 on mortality;
- the underlying age-specific trends in life expectancy in Tasmania and Australia; and
- the extent to which life expectancy will continue to improve.

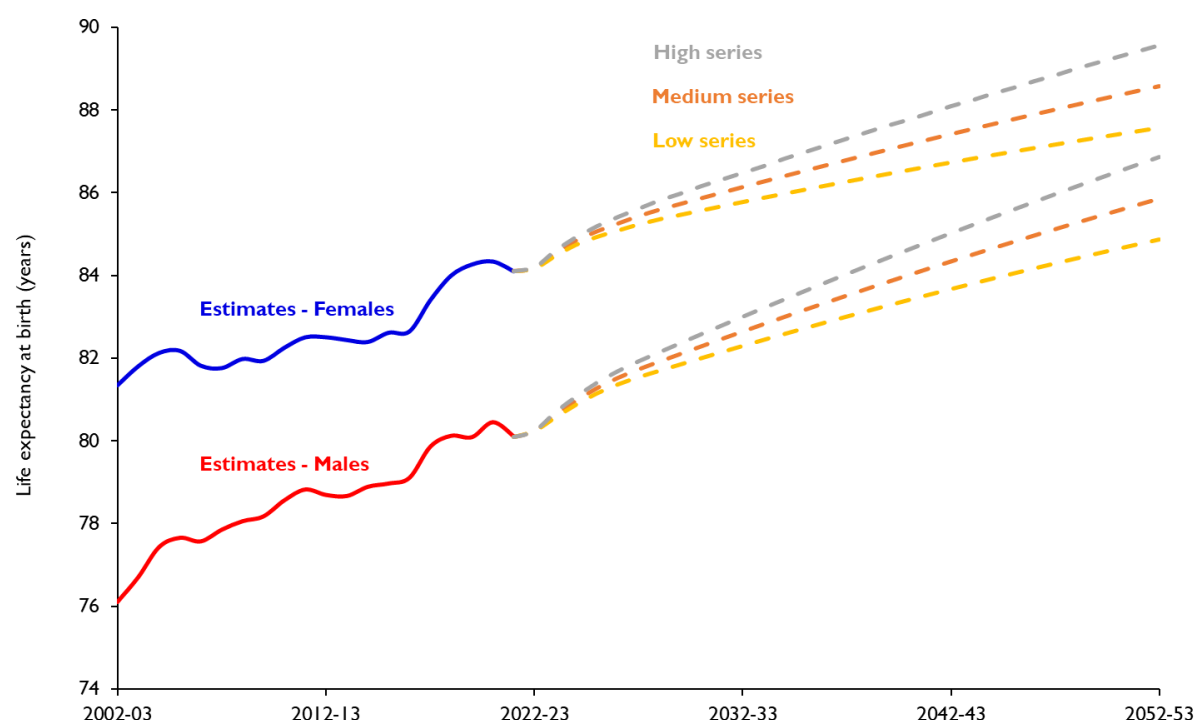
To project life expectancy, we have utilised the results of a simple extrapolative model prepared by Dr Wilson based on methods described by demographer Dalkhat Ediev.² The model produces Australian life expectancies, which we then convert to Tasmanian life expectancies based on the average differences between national and State life expectancies.

² See Ediev, D. M. (2008). *Extrapolative Projections of Mortality: Towards a More Consistent Method Part I: The Central Scenario*. Vienna Institute of Demography Working Paper 3 / 2008. <https://epub.oeaw.ac.at/0xc1aa5576%200x003d0a57.pdf>

The following life expectancy at birth assumptions have been adopted in the draft projections for Tasmania (Chart 14):

- **High series** - Increases from current levels to reach 86.9 years for males and 89.6 years for females by 2052-53.
- **Medium series** - Increases from current levels to reach 85.9 years for males and 88.6 years for females by 2052-53.
- **Low series** - Increases from current levels to reach 84.9 years for males and 87.6 years for females by 2052-53.

Chart 14 - Estimated (ABS) and Projected Life Expectancy, Tasmania



Source: National, state and territory population, ABS; Deaths, Australia, ABS; Advanced Demographic Modelling; Treasury calculations

TasPOPP models deaths in the Tasmanian population by converting life expectancies to age-specific death rates, allowing it to calculate the likelihood of people at given ages dying or surviving each year. The age-specific death rates are determined using a mortality surface, which is a collection of past and projected life tables. Life tables are data tables that measure mortality, survivorship and life expectancy by depicting the mortality experience of a hypothetical group of newborn babies throughout their entire lifetime.

The projection program searches for the values within the mortality surface which match each assumed life expectancy assumption for a particular year or place, and then calculates age-specific death rates from them. TasPOPP assumes that all geographical areas follow Australian mortality patterns, just from different starting points and at different rates of mortality improvement.

Migration

Net Overseas Migration (NOM)

In Tasmania, an assumption with a significant influence on the projected population is the future level of net overseas migration (NOM), which accounts for the net difference between overseas arrivals and departures. Predicting the future levels and distribution of NOM is a challenging task with NOM being influenced by a multitude of national and local factors, including:

- the size of the annual national migration program (this is subject to significant fluctuations, and ABS estimates of NOM results typically do not precisely match with the planning level);
- the proportion and types of visas issued, such as temporary working and student visas;
- regional residency requirements of some visa types;
- State visa nomination programs;
- the need for temporary workers to address skill gaps; and
- the resilience or vulnerability of the economic cycle and the relative appeal of various regions in Australia in terms of employment opportunities, lifestyle, study options, and connections to existing migrant communities, among other factors.

The long-term NOM assumption for the medium series has been updated for the final projections and is now more closely linked to the Australian Government's new migration strategy, particularly its desire to return national migration levels closer to pre-COVID-19 levels. While the Australian Government has not yet determined migration target levels beyond 2023-24, the Centre for Population's 2023 Population Statement has forecast longer-term national NOM of around 235 000 persons per year by 2026-27³ (this includes migrants on both permanent and temporary visas). Tasmania's historical share of Commonwealth NOM (pre-COVID-19) has been around one per cent over the past ten years. On this basis, we have assumed net overseas migration of 2 300 per year for Tasmania for the medium series.

The medium series allows for an extended phase-in period to the long run, compared to the high and low series, to allow for the assumed greater outflow of temporary migrants from Tasmania, both students and workers with temporary visas, over the first three projection years. More information on the outflow of temporary migrants from Tasmania over the first three projection years can be found in [Appendix C](#).

In deriving the high and low series assumptions, we focused on long-term moving averages of NOM to "see through" the short-term volatility and fluctuations that are a feature of this series. From these moving averages we examined previous historical peaks and troughs in NOM to inform our assumptions for the high and low series respectively.

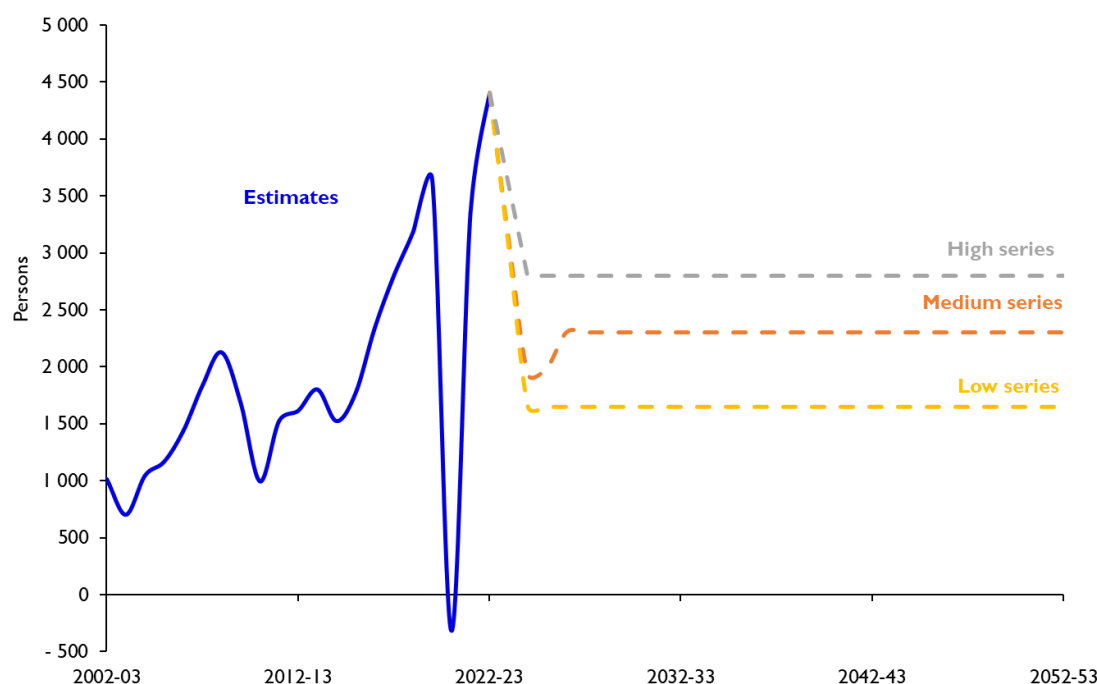
Chart 15 shows the published NOM for Tasmania from 2002-03 to 2022-23, and the projected NOM levels from 2023-24 to 2052-53. The impact of the international border closure during COVID-19 can be clearly seen with a recorded NOM of -320 persons (a net outflow) in 2020-21. As at the time of writing, the ABS has published one quarter of 2023-24 NOM data, which is supporting a lower level of NOM compared to the series high seen in 2022-23.

The following NOM assumptions have been used for these projections:

³ See 2023 Population Statement. Centre for Population.
<https://population.gov.au/publications/statements/2023-population-statement>

- **High series** - NOM settles at 2 800 persons per year from 2024-25 and then remains constant.
- **Medium series** - NOM transitions to 2 300 persons per year from 2026-27 and then remains constant.
- **Low series** - NOM settles at 1 650 persons per year from 2024-25 and then remains constant.

Chart 15 - Estimated (ABS) and Projected Annual Net Overseas Migration, Tasmania



Source: National, state and territory population, ABS; Treasury calculations.

Net Internal Migration / Net Interstate Migration

Internal Migration is the movement of people across a specified boundary within Australia involving a change in their place of usual residence. This can be within a state or territory, or even within a city. Internal migration includes both intrastate migration, where people migrate within the same state or territory, and interstate migration, where people move to and from other states and territories in Australia. As it relates to Tasmania's population projections, net internal migration (NIM) is equal to net interstate migration, and this is the relevant measure used for the State level assumptions and projections. In the case of the LGA projections, NIM comprises arrivals and departures into and out of the LGA from both interstate migrants and intrastate migrants moving between LGAs in the State.

State NIM can undergo sudden and significant fluctuations, with the net figure reflecting the balance of larger interstate migration flows. For instance, in the year ending June 2022, Tasmania saw 16 518 arrivals and nearly 16 897 departures, resulting in a relatively small net result: an interstate outflow of 379 persons. State NIM is the most uncertain demographic component of change due to its responsiveness to economic and social conditions, and due to it not being directly measured by the ABS, which mostly relies on Medicare change of address data to detect interstate movements, an important source but subject to some coverage and timeliness issues.

In setting NIM assumptions, Treasury has taken into account that historical State NIM for the period 2016 to 2021 is likely to be underestimated in official ABS statistics. The reasons for this are set out in more detail in [Appendix B](#), and relate to the fact that the ABS made large revisions to Tasmania's total population for the period 2016 to 2021, but did not update the individual components of change.

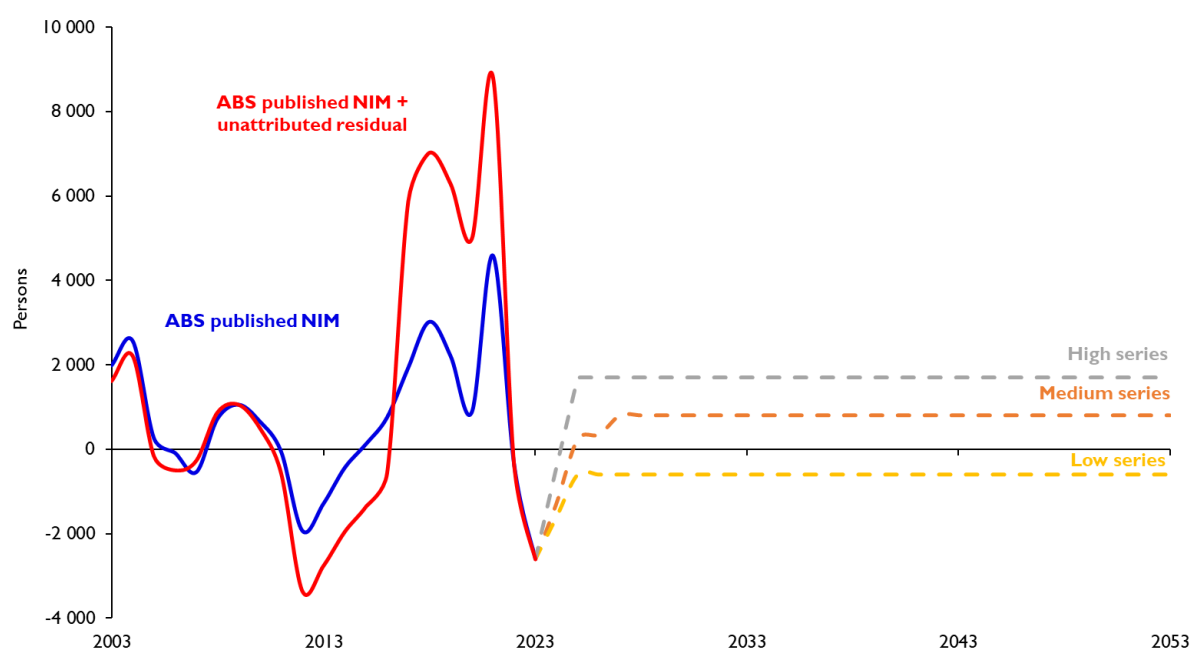
For various reasons outlined in the appendix, Treasury considers it defensible and appropriate to treat the "unattributed" changes to total population as additional NIM. This is captured in the red line in Chart 16.

We have prepared the medium State NIM assumption on the basis of the historical NIM data published by the ABS and analysis of the unattributed residual. Analysis of the peaks and troughs of short and long-term moving averages of NIM informed the high and low series assumptions.

Chart 16 shows the published NIM for Tasmania from 2002-03 to 2022-23, and the projected NIM for the period 2023-24 to 2052-53. The key assumptions are:

- For each series NIM will be at its lowest in 2022-23, before recovering to more normal flows.
- Similar to the NOM medium series, the NIM medium series has an extended phase-in period to the long-run, compared to the high and low series, to allow for the assumed greater outflow of temporary migrants from Tasmania, both students and workers with temporary visas, over the first three projection years (see [Appendix C](#)). As at the time of writing, the ABS has published one quarter of 2023-24 NIM data, with results that support the need to make a phase-in adjustment to NIM.
- **High series** - NIM recovers to a positive inflow of 1 700 persons per year from 2024-25 and then remains constant.
- **Medium series** - NIM reaches a positive inflow of 800 persons per year from 2026-27 and then remains constant.
- **Low series** - NIM partially recovers, to an outflow of 600 persons per year from 2024-25 and then remains constant.

Chart 16 - Estimated (ABS) and Projected Net Interstate Migration, Tasmania



Source: National, state and territory population, ABS; Advanced Demographic Modelling; Treasury calculations

Consultation feedback

Treasury released the draft projections via its website in late November 2023, and also directly contacted key stakeholders.

We received written feedback from 16 organisations or individuals, including demographic experts, several councils and government agencies. We have not attributed feedback to specific stakeholders.

The feedback can be broadly grouped into comments on our approach and methods; our State-level assumptions; and our local government area assumptions.

Feedback on approach and methodology

There is broad support for the cohort-component approach and a bespoke model

Stakeholders generally appeared to support our approach to preparing projections, with some noting that the cohort-component approach appeared sound; that the use of historical data to analyse trends and develop assumptions seemed reasonable; and that the use of five-year age groups and other more aggregated data for some local government area modelling was justified given the limitations of highly disaggregated data for small regions. There was general support for the adoption of the new, bespoke model built by a specialist demographer to manage the challenges of working with data for small areas in Tasmania.

A small number of stakeholders expressed concerns about the “backward-looking”, data-driven nature of this approach to preparing projections, noting:

- the lack of local area knowledge and nuance in a consolidated projections exercise;
- the more meaningful interpretations that can be produced by employing land supply, planning and other “bottom-up” information;
- the problems with using past trends to inform future trends given the uncertainty that exists at any given point of time; and
- the risk of unfavourable projections becoming a self-fulfilling prophecy.

While acknowledging these concerns, Treasury has not made any fundamental changes to the model and method used for the final projections.

The cohort-component approach to projections is used for official projections throughout Australian jurisdictions and most of the world. It has several advantages over other projection methods; critically, the cohort-component method allows us to project potential changes in the age and sex of the population, and it is considered the gold standard for preparing age-specific population projections. This is important in planning the type and volume of services and infrastructure that residents need at different life stages.

While our approach is primarily data-driven, we consulted academic literature and experts to inform assumptions about potential future population trends. Though it does not hold true in all circumstances, past trends are in fact one of the more reliable indicators of future developments in many demographic contexts, though we note the importance of applying judgement to chosen assumptions.

Our projections incorporate a wide variety of data for each LGA (including some ABS data not published), and the model incorporates local trends and patterns. We acknowledge that there are still some limitations in a data-driven approach for small areas and have sought local knowledge through the stakeholder consultation process.

We emphasise that projections are reflections of what would happen if particular trends were to eventuate - that is, they are best understood as “what if” scenarios, where the scenarios presented are considered plausible. As noted below, it is not our intention that users and planners discard other sources of information when using the projections.

The role of the projections in the broader planning information field

Some stakeholders highlighted that the production of “official” projections for LGAs has caused problems for councils and other local authorities in the past. One stakeholder pointed out that several influential organisations have utilised the projections in statutory and strategic documents and taken the projections, effectively, as a de facto source of truth. They considered that this has impeded local authorities where the official Treasury projections have diverged from real-time population data, and that this has limited the flexibility of some authorities to respond to emerging population pressures. They argued that the explanations and caveats provided in the draft projections and the 2019 projections have been inadequate for conveying the limitations and appropriate role of the Treasury projections.

In response we have sought to emphasise these matters more in this final report, and to stress the importance of considering the uncertainty levels (presented in the LGA summary profiles) that are inherent in the projections. For major decisions in particular, we recommend that decision-makers consider these uncertainty ranges by asking, for example: *would the same decision be made if population was at the lower or upper bounds of the uncertainty range?*

We consider that the production of a consolidated set of State and local government area projections is still important in ensuring that government agencies, councils and other organisations can access quality, consistently prepared long-term projections without having to prepare them separately or do without them.

Level of detail, output files and the presentation of data

There appeared to be general satisfaction with the projections output, including the basic tables and charts included in the report, and the Excel files containing detailed data for the State and for each LGA. Some respondents requested additional information, commentary or alternative presentations of data. We have included some of the requested material in this final paper where possible, and will continue to investigate other information and analysis in the future. We have also prepared a quick guide to using the projections which has been published on the website alongside the report.

One stakeholder noted the importance of the “so what?” implications of the projections, such as the impacts on future skills and workforce needs. The “so what” implications are not within the scope of this projections exercise and were not feasible to examine in the time available, but are an important consideration and one that could be examined at a future time (though potentially by, or with, other State Government agencies).

Another stakeholder noted a number of important points about recent trends in population data in Tasmania that were not mentioned in the draft projections report, such as:

- the unusually high inflows of temporary visa holders to Tasmania, many via interstate migration, which contributed to the undercount in ABS population estimates (prior to 2021 rebasing) and which may have important impacts on future migration and fertility trends; and
- the importance of distinguishing, within the model, the age groups of migrants moving into the State or into a region versus those leaving.

While Treasury had taken the above issues into account in the draft projections, this level of detail was not outlined in the draft paper. There were also issues raised by other stakeholders that we considered in forming our assumptions but did not document or elaborate on. We have expanded on a number of these issues in this final report.

Divergent views on the Housing Unit Model

A number of stakeholders were pleased that the new TasPOPP model included the potential to use a Housing Unit Model (HUM), providing the capacity to include the impact of dwelling developments. However, this support was not universal. One stakeholder noted that the inclusion of potential dwelling supply pushes the projections into forecasting territory to an extent that is at odds with the projections' agnosticism in respect of other types of developments (such as economic cycles or the development of new industries). The stakeholder considered that the impact is likely to be skewed by Tasmania's high rate of unoccupied dwellings and projections should inform dwelling supply rather than the other way around. Another stakeholder highlighted the highly unpredictable nature of housing developments and their timing and the futility of trying to capture these impacts from ad hoc information.

Although we received some information on dwelling developments, Treasury has not applied the HUM in this release of the projections. This was because our analysis suggested that the developments would not materially impact the projections for the LGAs in question, or would not improve the projections without introducing unacceptable levels of uncertainty (in the case of more speculative developments). However, we believe the incorporation of HUM adjustments should be left open as a possibility for future projection rounds. We note from discussions with our consultant-demographer Dr Tom Wilson that, provided there is good information on future dwelling numbers available, incorporating dwellings is often justified in urban areas because local population trends are closely correlated with dwelling numbers. The HUM-based method is common practice in Australia and overseas and utilising it in high housing demand urban areas can be expected to produce good quality projections. The HUM also takes into account the dwelling occupancy of an area and therefore would not be limited by any differences specific to Tasmania.

Please also note that we have made an adjustment to the high series total population for one LGA (George Town LGA), but this was incorporated through a custom population adjustment and not through the HUM. For more details on the George Town LGA adjustment please refer to the section on [LGA-level assumptions](#).

Consider incorporating or aligning the projections with other regional or third-party analysis

Several stakeholders drew Treasury's attention to other comprehensive analysis exercises currently underway in Tasmania, the most commonly cited being the residential land demand and supply analysis being undertaken by a private consulting firm on behalf of local government and other organisations.

Treasury investigated this matter but found that it would not be practical to incorporate these information sources for this round of the projections. The cited study was not publicly available at the time of writing and we understand that some of the analysis was not finalised at that point. We will continue to monitor the availability of this and other analysis that could inform our projections for future updates. It should be noted that, while these sources could be useful in sanity checking our results, such studies are usually prepared for a different purpose to our projections and we would not necessarily seek to align them under these circumstances.

Including a climate change scenario

One respondent suggested the inclusion of an additional climate change scenario, noting that climate change could increasingly impact internal and overseas migration patterns, and the types of agricultural activities that could be undertaken in different regions.

At present we do not have enough information on how climate change would tangibly impact on demographic trends in Tasmania, other than how it is impacting the movement of people currently. To the extent that people are moving in or out of Tasmania or its regions already due to climate change impacts, this trend would be picked up in the existing data and assumptions. For example, it is plausible that current overseas and interstate migration data already include a proportion of people who have made the decision to move to Tasmania due to current or expected climate change related impacts (such as extreme weather, droughts, floods or bushfires).

It is also possible that climate change could impact future fertility and mortality trends, given the complexity of what drives these. Again, to the extent that any factors (such as health, social-economic or environmental) are impacting mortality in Tasmania, or the decisions around having children, these trends should be picked up in some of the existing data and assumptions in the projections.

Feedback on State-level assumptions

Fertility

One stakeholder noted the high levels of temporary migrants into Tasmania in recent years and recommended that Treasury consider the impact of migration share on fertility rates. They noted that relatively high levels of temporary overseas migrants can result in lower fertility rates for an area.

As noted above, we did take this impact into consideration but did not document it previously. In forming migration assumptions for the draft projections, we obtained customised ABS data that confirmed that there was a lower fertility rate among overseas-born women in Tasmania when compared to Australian-born women, and that fertility among overseas-born women had fallen at a greater rate over time (which is in line with the increasing in-migration of temporary migrants into Tasmania over the same period). On this basis, we allowed for a small recovery in the fertility rate for the medium series in the short- to medium- term, in line with our assumption that the share of temporary migrants may fall slightly in the next few years. Refer to the sections on [migration](#) and [fertility](#) for further details.

One respondent noted the extended and inconsistent lengths of time over which each of our fertility rates were “phased in” before stabilising to the long-term assumption. We agree with this assessment and have revised each fertility assumption to phase in over a consistent ten-year period.

Mortality

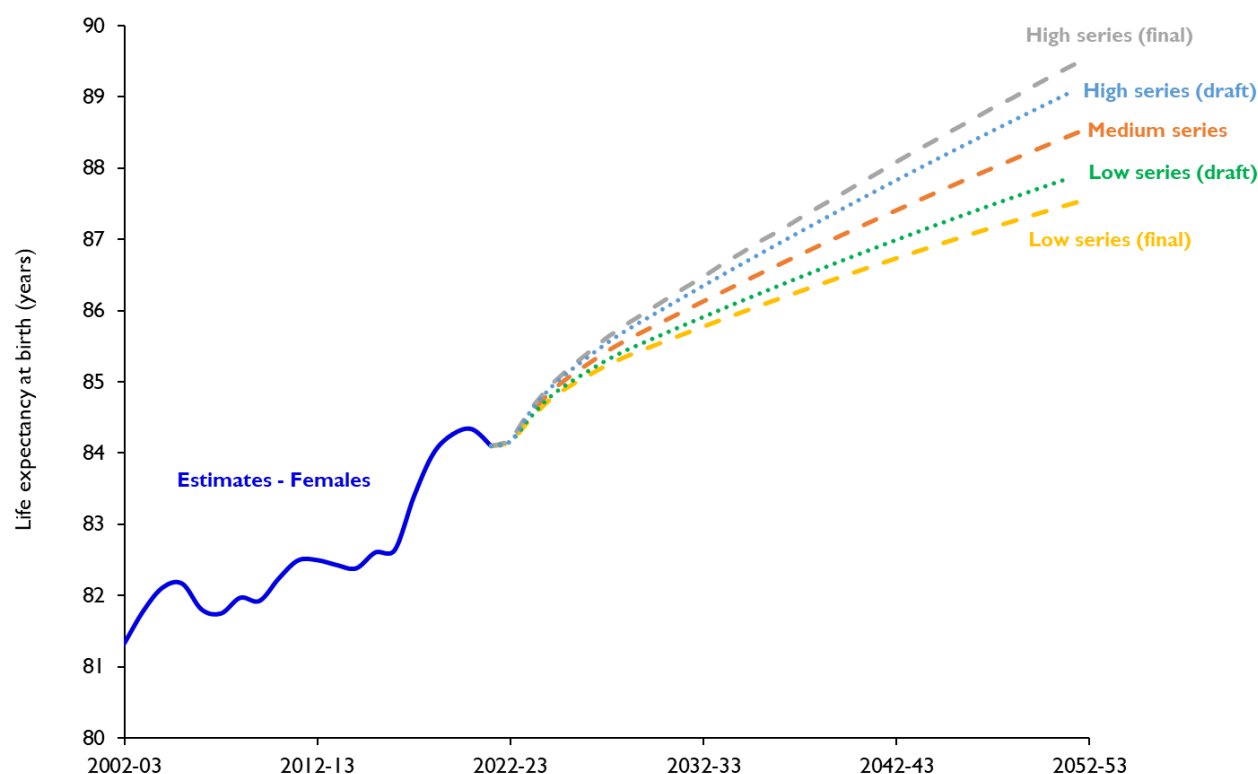
Some stakeholders raised queries about the life expectancy assumptions and requested further detail about the process used to derive this. One stakeholder recommended that Treasury consider the use of life tables in assessing mortality. They also considered that the life expectancy projections appeared somewhat optimistic and that the range between the high and low series life expectancies appeared narrow, noting that it is possible for life expectancy to plateau or decline, as has recently been observed in the United States.

The TasPOPP model does, in fact, utilise life tables in calculating mortality. While TasPOPP requires us to set our assumptions in terms of life expectancy, it projects deaths through the use of a mortality surface, which is used to calculate the age-specific death rates required in the projection calculations. The mortality surface is based on several past and projected life tables, which together act as a set of model life tables. We did not include these details in the draft projections paper and have expanded on the matter in this final report. For more details refer to the explanation under [mortality](#) in the assumptions section.

We acknowledge that the life expectancy projections assumed are reasonably optimistic in that they continue very long run trends of mortality improvement observed in Australia for many decades. Given that Australia has quite a different social and economic environment to the United States, Dr Wilson has suggested that life expectancy comparisons be made with countries like Canada or New Zealand. It should be noted that, according to the latest available ABS data, Australia itself recorded its first decline in life expectancy since the 1990s for the period 2020 to 2022, but the ABS attributed this in large degree to COVID-19 deaths. Our assumptions for mortality do allow for an impact on life expectancy in the near term as a result of the pandemic, but assume that Australia (and Tasmania) return to longer-term trends of increased life expectancy after this period.

Regarding the range between the high and low series being relatively narrow, we have now expanded the range of possibilities (see Chart 17 as an example of this change). We caution that the high and low assumptions are intended to provide higher and lower alternative scenarios that we consider remain in the bounds of plausibility, but they cannot strictly be interpreted as covering most of the range of uncertainty for mortality, fertility and migration.

Chart 17 - Life expectancy assumptions, draft and final (females only)



Source: National, state and territory population, ABS; Deaths, Australia, ABS; Advanced Demographic Modelling; Treasury calculations

Migration

We received only limited feedback on our migration assumptions. However, two stakeholders urged us to reconsider our migration assumptions in light of the Australian Government's new migration policy, released shortly after the draft projections were published.

The Australian Government announced its new migration strategy for Australia on 11 December 2023. The new policy is complex, with many moving parts and many details still to be determined. From a projections perspective, some expected implications are:

- a near-term reduction in net overseas migration into Australia when compared to the very high levels seen during 2022-23;
- a return to “normal” levels of net overseas migration nationally in the longer term; and
- reduced reliance on, and a tightening of requirements for, temporary migrants to Australia, including international students.

We also received advice from agencies and local experts that the very high levels of migration into Tasmania in recent years are unlikely to be sustained into the future.

We have therefore modified our migration assumptions slightly to allow for a slight decrease in overall migration in the nearer term when compared to the draft projections. We have also set a level of net overseas migration that is more closely linked to “normal” (that is, pre-COVID-19) national levels in the longer term. We note that the Australian Government had not set overall long-term migration targets at the time we finalised these projections; we have therefore set our assumptions around the longer-term national migration projections produced by the Australian Government’s Centre for Population. Refer to the [migration assumptions](#) section for further details.

Feedback on LGA-level assumptions

Some councils considered the projections for their municipality to be too low, and noted various rezoning, planning and other developments taking place that they expected would boost growth beyond that suggested by the projections. However, in many cases they were not able to provide evidence or enough specific details for Treasury to model these scenarios. We have therefore not made any specific adjustments to LGA projections (other than updates to data), except for a very small adjustment to the high series for George Town LGA (see below).

Tasmania, and many local government areas, have recorded very high rates of growth over most of the past seven years. The State medium series projections assume a softening in this growth, and this softening trickles down to the growth projections at the LGA level. As a result, the medium series projections reflect a situation in which LGAs (including strongly growing LGAs) do not experience a continuation of their very recent, often historically high, growth rates. Many LGAs are projected to experience increasing natural decrease in coming years, so it will be harder to maintain the levels of growth seen in past decades.

In the case of the George Town LGA, Treasury considered the impact of two major projects proposed for the Bell Bay Industrial Precinct. At the time of finalising our projections, final investment decisions had not been announced for either project and so we have not adjusted the medium series for the George Town LGA. However, partly because of the LGA’s relatively small population, we have seen enough evidence to demonstrate that the projects would have a material impact on migration into the municipality during their construction phase if they were to proceed. We have therefore made a conservative adjustment to the high series for the George Town LGA during the suggested construction phase for the projects. Please note that this is not a statement about whether the projects will or should proceed. This adjustment temporarily increases the high series projection for the LGA in the near-term only and does not affect its long-term projection count or growth rate.

Other changes and new issues since the draft projections

Updated data

Since the publication of the draft projections in November 2023, new and updated data used to inform the projections have been released from various sources, most notably from the ABS. These updated data have been incorporated into the final projections. The most notable new and updated data released since the publication of the draft projections are detailed below.

New 2023 State-level and LGA ERPs: Since the release of the draft projections, the ABS has released national, state, and territory population estimates for 30 June 2023 and 30 September 2023, as well as LGA estimates for 30 June 2023. This has allowed Treasury to update our projections, “jumping off” from 30 June 2023, as opposed to 30 June 2022, which was the jump-off period for the draft projections. The 30 June 2023 LGA ERPs released were total populations for each LGA, and were not broken down by age or sex, which consequently affects the handling of incomplete LGA data, as explained further in the section below on [managing incomplete LGA data](#).

Updated 2022 State-level and LGA ERPs: With the release of new ABS population data, the ABS will often revise past population estimates for recent periods. The 30 June 2022 estimates for Tasmania and for LGAs used in the draft projections have since been revised by the ABS.

For example, as at the latest ABS national, state and territory population release, being for the September quarter 2023, the 30 June 2022 ERP for Tasmania was revised to 571 051 persons. This is slightly above the 30 June 2022 ERP for Tasmania used in the draft projections, of 571 013 persons. The revisions to the 30 June 2022 LGA estimates applied to headline LGA figures and did not include age or sex breakdowns of the revisions. This therefore affects the handling of incomplete LGA data, as explained further in the [managing incomplete LGA data](#) section below.

New migration estimates: As part of the release of new ABS national, state and territory population data the ABS publishes new overseas and interstate migration data for Australia and each state and territory. As at the time of writing, the latest ABS national, state and territory release is for the September quarter 2023, meaning that Treasury now has migration estimates for 30 June 2023 and the September quarter 2023, which we did not have for the draft projections. These new migration data have been used to update our migration assumptions for these projections.

Availability of 2023 birth registrations: The Registrar of Births, Deaths and Marriages previously provided Treasury with monthly birth notice and registration counts to 30 June 2023. Since then the Registrar has also published total birth registrations for the 2023 calendar year online. While more limited than the data previously provided to Treasury, we were able to estimate new fertility rates for the 2023 calendar year from this data and revise our assumptions accordingly.

Managing incomplete LGA data

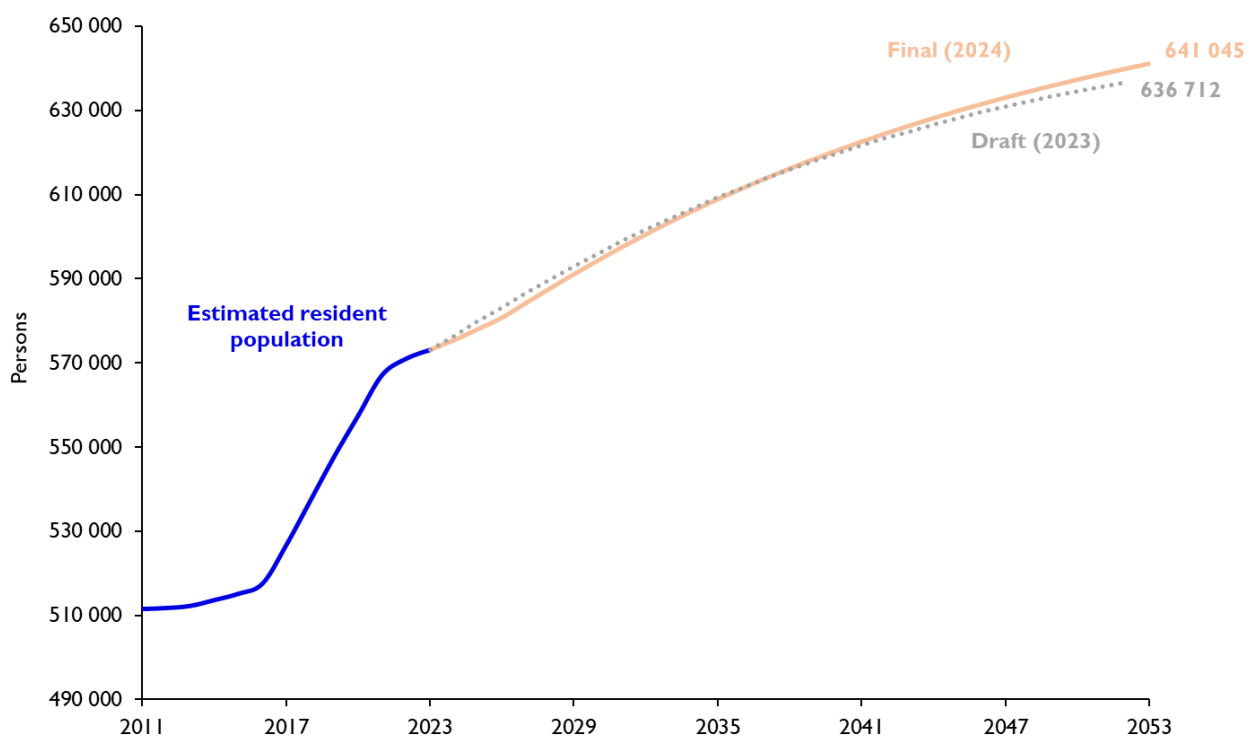
With revisions to LGA ERP totals for 30 June 2022, and the release of new LGA ERP totals for 30 June 2023, but the absence of new age and sex breakdowns for both, we have had to estimate these new age and sex LGA ERPs for 30 June 2022 and 30 June 2023. This means that the 2022 and 2023 LGA age and sex breakdowns in our results and output files are Treasury estimates rather than ABS estimates and should be interpreted with caution.

In order to deal with this estimation, iterative proportional fitting (IPF) was used. IPF is a procedure for adjusting a table of data cells such that they add up to selected totals for both the columns and rows of the table. IPF allows for the LGA data to be 'fitted' to the state-level totals of age and sex estimates and also to the headline ERP totals for LGAs, so that they are consistent. This method should provide good approximations of the age and sex breakdowns for LGAs for 2022 and 2023.

Combined impact of all assumption changes and data revisions

Chart 18 illustrates the impact on the final projections of all changes to assumptions and data updates and revisions made since the draft projections published in November 2023 for the medium series.

Chart 18 - Total population, Tasmania, estimated (ABS) and draft and final projections, medium series



Source: National, state and territory population, ABS; TasPOPP projections

Appendix A

Glossary

Age-specific rate

The rate at which a demographic event occurs. Rates are calculated as the number of demographic events divided by the person-years at risk of that event.

Cohort-component model

The standard demographic projection model in which the population is divided into birth cohorts and projected into the future by adding and subtracting the demographic components of change (births, deaths and migration).

Emigration

Migration out of a country to another (defined by the ABS as for a minimum of 12 months over a 16-month period)

Estimated Resident Population (ERP)

The best estimate of the usually resident population of a region or country.

Immigration

Migration into a country from another (defined by the ABS as for a minimum of 12 months over a 16-month period)

In-migration

Migration into a region from elsewhere within the country.

Jump-off populations

The starting populations for a set of projections.

Jump-off year

The starting year of the projections, from which the projections “jump-off” into the future.

Life expectancy at birth

The average number of years of life a newly-born baby would live if a particular set of age-specific death rates remained constant.

Life tables

Data tables that measure mortality, survivorship and life expectancy by depicting the mortality experience of a hypothetical group of newborn babies throughout their lifetime.

Mortality surface

A collection of past and/or model life tables that allow a user to convert a given life expectancy into age-specific death rates for projection or forecasting purposes.

Net Interstate Migration (NIM)

Interstate in-migration minus interstate out-migration.

Net internal migration

In-migration to a local area from the rest of the country minus out-migration from the local area to the rest of the country.

Net Overseas Migration (NOM)

Immigration minus emigration (or in ABS terminology, overseas migrant arrivals and overseas migrant departures).

Net Total Migration

All forms of inward migration to a geographical area minus all forms of outward migration. For example, Net Total Migration for Tasmania is NIM and NOM combined.

Out-migration

Migration out of a region to elsewhere within the country.

Projection horizon

The period between the jump-off year and the final year of the projections.

Projection interval

The length of individual time periods between projected populations (usually one year or five years) over the projection horizon.

Total Fertility Rate

The average number of children born to women according to a particular set of age-specific fertility rates.

Appendix B

Underestimation of net migration from 2016 to 2021

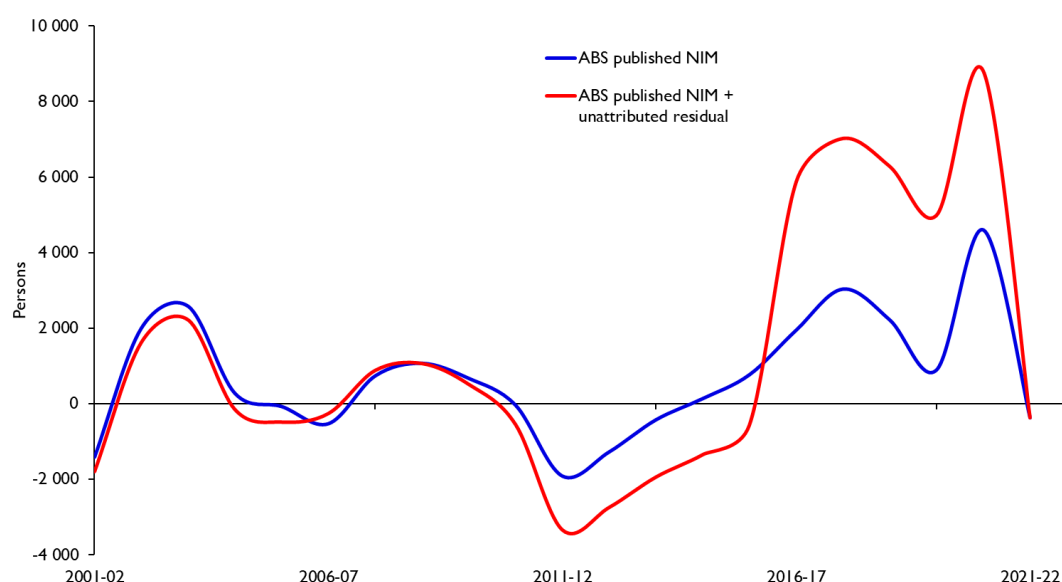
In the period leading up to the release of the 2021 Census of Population and Housing data, there was accumulating evidence that the official ABS estimated resident population (ERP) counts were underestimating net migration into the State. This was evident, for example, through very tight housing supply (which official population growth at that time did not appear to fully explain) and Tasmanian COVID-19 vaccination numbers that exceeded ERP estimates for some age groups.

The 2021 Census confirmed that ERP estimates had undercounted actual population in Tasmania, and analysis suggests that nearly all of the discrepancy was due to net interstate migration to Tasmania that was not adequately captured. Analysis by Treasury and other experts suggested that this was likely due to the high rates of migration of temporary visa holders into Tasmania via interstate migration; temporary migrants do not usually have Medicare coverage, which is the usual dataset that the ABS uses to track interstate migration.

While the ABS revised total population estimates for the previous five years in light of the new data (a regular process known as “rebasing”), it did not update individual ERP components, being births, deaths, NIM, and NOM, for most of this period.

Given that the ABS directly and reliably measures births, deaths, and overseas arrivals and departures, typically substantial revisions would not apply to these figures. It is therefore likely that nearly all of the revisions to Tasmania’s population were due to an undercount of NIM. On this basis, in preparing our assumptions we have treated the differences arising from the revisions as unattributed residual NIM (that is, the additional interstate migration necessary to account for the annual ERP change) (Chart B1).

Chart B1 - Annual net interstate migration, recorded and residual, Tasmania



Source: National, state and territory population, ABS; Advanced Demographic Modelling

Appendix C

Adjusting migration phase-in for temporary visa holder departures

Rather than jumping straight to our long-run assumption in a short period, the medium series for migration has an extended phase-in period to the long-run levels, compared to the high and low series, to allow for a greater outflow of temporary migrants from Tasmania, both students and workers with temporary visas, over the next three years until 2026-27.

In recent years, net migration into Tasmania has been unusually high due to strong national immigration levels and to some extent the incentives provided through regional visa schemes. As international migrants can move directly to Tasmania, or can move here after spending a period in other jurisdictions, the movement of recent international migrants in Tasmania has contributed to strong growth in both the net overseas migration and net interstate migration experienced recently.

On the day of the Census of Population and Housing (10 August 2021), the ABS estimated that there were nearly 26 000 temporary residents in Tasmania, based on 2021 Census data linked to temporary visa holder data from the Department of Home Affairs (Table C1).

Table C1 - Temporary residents in Tasmania by major visa type, 10 August 2021

Temporary skilled	Student	Special Category (New Zealand Citizen)	Working Holiday Maker	Other Temporary	Total temporary residents
623	8 026	4 998	439	11 914	25 996

Source: *Temporary visa holders in Australia*, ABS

These exceptionally high levels of migration are not expected to be sustained, at least in the near future, with the Australian Government's new migration strategy expected to target generally lower, pre-COVID-19, migration flows in coming years. This issue was raised multiple times by experts and stakeholders, even before the Australian Government announced its new migration strategy.

In our medium series migration assumptions, we have allowed for a small increased outflow of temporary migrants over the first three projection years for both NOM and NIM, after which both series are phased into their long-run assumptions by 2026-27.

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