

Queensland Government dwelling projections, 2023 edition: Methodology

Introduction

The Queensland Government compiles projections of dwellings for the following geographic boundaries:

- the State of Queensland
- statistical areas level 4 (SA4s)
- local government areas (LGAs).

The geographical boundaries are sourced from the 2021 Australian Statistical Geography Standard (ASGS) published by the Australian Bureau of Statistics (ABS)¹, and as per 2021 Queensland LGAs.

Scope

Projected dwellings include both occupied and vacant private dwellings. Private dwellings include structural dwellings (e.g. houses, flats, townhouses) but exclude temporary dwellings (e.g. tents, caravans). Non-private dwellings (e.g. hotels, hospitals, boarding schools, and mining camps) are also excluded.

Caveats

The Queensland Government dwelling projections, 2023 edition, have been compiled in association with and align with the broader suite of Queensland Government projections, which also include population and household projections. Dwelling projections at the State and SA4 level are informed by assumptions about living arrangements and propensities for household formation in the household projections, and core assumptions of fertility, mortality and migration underlying the population projections. Population and dwelling change in the major urban local government areas (LGAs) are more likely to be a function of available land supply and constraints, and consequent dwelling construction, rather than purely demographic factors. The spatial and temporal distribution of land supply arises from regional planning schemes and planning policies at the time of production and are therefore subject to change and review. The rate at which the available land supply is used is contingent upon economic conditions and disruptions, as well as decisions made by the business community and relevant government agencies.

Caution should be exercised when interpreting and using these projections for LGAs, especially those with relatively smaller populations. Figures have been displayed to the nearest whole number but a high degree of accuracy at this level of detail should not be assumed. Data from the national Census of Population and Housing have been used in modelling projected dwellings, households and living arrangements. These data are subject to a degree of uncertainty in addition to variability associated with perturbation of census data in output tables.

Given the additional assumptions required in their production, the degree of uncertainty in the timing and magnitude of these dwelling projections is greater than in the population projections. Furthermore, as with the population projections, the uncertainty associated with these dwelling projections increases as the time horizon is extended and the geographic area under consideration is reduced.

Dwelling projections should not be interpreted as precise point estimate forecasts or predictions. Rather, the projections reflect the outcomes of applying a set of assumptions about living arrangements, household formation and dwelling construction. While past and current trends provide background to the possible demographic outlook, there is uncertainty around how these trends will develop over the projection horizon.

To account for this uncertainty, a range of possible outcomes rather than a single projection series provides a more realistic view of the possible scenarios for future dwelling size and formation. As such, three projection series (low, medium, high) have been produced for dwellings at the State, SA4 and LGA levels.

¹ ABS *Australian Statistical Geography Standard (ASGS) Edition 3, July 2021 – June 2026*; (abs.gov.au)

Method

State and SA4 level

The 2023 edition Queensland Government dwelling projections for the State and SA4s are compiled by making assumptions about the future distribution of household type by dwelling type², and then applying this distribution to the Queensland Government household projections, 2023 edition, by household type.

The future distribution of household type by dwelling type was developed by trending forward the changes observed between the ABS 2006, 2011, 2016 and 2021 Censuses of Population and Housing.

Results for SA4s are scaled to the state-level projections.

SA2 level

Medium series dwelling projections at the SA2 level are an output from the modelling of projected populations at the SA2 level³. While not published, medium SA2 dwelling projections are used to inform development of the low, medium, and high series LGA dwelling projections.

Given that population and dwelling projections are generated interdependently at the SA2 level, the population projection process is outlined below.

Firstly, each SA2 is classified as either 'rural' or 'urban'. A 'rural' classification has been applied to SA2s where land supply availability and constraints are not expected to impact on future population change, whereas these factors would likely influence change in 'urban' SA2s. Different methods are used to project populations and dwellings for 'rural' and 'urban' SA2s.

Projected populations in 'rural' SA2s are compiled as a weighted average of two trend models:

- a constant share of the state's projected population, relative to the base year, and
- a variable share of the state's projection population growth, based on an exponential growth model.

Next, dwelling projections in these 'rural' SA2s are developed. In 'rural' SA2s with projected population growth, dwelling growth is allocated using assumed future dwelling occupancy rates. These assumed future rates are informed using the results of the 2001, 2006, 2011, 2016 and 2021 Censuses of Population and Housing. Dwelling projections for 'rural' SA2s were also informed by historical building approval trends.

Following this, dwelling projections in 'urban' SA2s are generated. In the Greater Brisbane Greater Capital City Statistical Area and remaining Queensland SA4s, the projected population and dwellings in 'rural' SA2s are subtracted from existing regional totals to derive the remainder of total population and dwellings to be shared between all 'urban' SA2s. Projected populations and dwellings in these 'urban' SA2s are then compiled using a housing unit model.

In the housing unit model, SA2-level dwelling supply data from council planning schemes are used to distribute projected dwellings for each SA4 remainder down to the SA2 level using:

- assumptions about the likely location and timing of infill
- vacant lots
- recent land subdivision and dwelling construction activity
- areas of greenfield land and their expected dwelling density and development timing.

Projected populations in these 'urban' SA2s are then determined based on the number of projected dwellings and assumed future dwelling occupancy rates, scaled to existing SA4 population totals.

The use of the housing unit model produces dwelling projections that align at the SA2 level with the projected population.

² Dwelling types include attached (e.g. apartments, townhouses, terraces) and detached (separate house).

³ www.ggso.qld.gov.au/statistics/theme/population/population-projections/overview#current-release-qld-government-population-projections-methodology-assumptions



LGA level

Medium series dwelling projections for LGAs are derived by summing dwelling projections at the SA2 level, or by splitting SA2 dwelling projections into LGAs (in the few cases where LGAs are smaller than SA2s).

Low and high series dwelling projections are developed using a share of dwelling change model. This model calculates the medium series dwelling change for each SA2 as a share of regional (Greater Brisbane Greater Capital City Statistical Area and remaining Queensland SA4s) dwelling change, then applies this to the regional dwelling change in each of the low and high series.

Caution should be exercised when using the low and high series dwelling projections. While the medium series dwelling projections in LGAs with 'urban' SA2s are directly informed by dwelling supply data from council planning schemes, the low and high series dwelling projections for these LGAs match lower or higher growth assumptions at the regional level, which may or may not be reflected in current planning schemes.