

Queensland Government dwelling projections, 2018 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 2016 Australian Statistical Geography Standard (ASGS) published by the Australian Bureau of Statistics (ABS)¹, and as per 2016 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 excluded.

Caveats

The Queensland Government dwelling projections, 2018 edition was created in association with the Queensland Government population projections, 2018 edition. In addition to assumptions about living arrangements and propensities for household formation and timing of dwelling construction, these dwelling projections depend on the core assumptions of fertility, mortality and migration underlying the population projections, especially at the state and SA4 level.

Population change at the statistical area level 2 (SA2) and LGA level is 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 and is therefore subject to change and review. The rate at which the available land supply is used is contingent upon economic conditions and decisions made by the business community.

Given the additional assumptions required in their production, the degree of uncertainty in these dwelling projections is greater than in the population projections. Furthermore, as with the population projections, the reliability of these dwelling projections declines 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 a long-term 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.

Method

State and SA4 level

The 2018 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, 2018 edition, by household type.

¹ ABS 1270.0 *Australian Geography Standard (ASGS): Volumes 1 and 3*, 2016

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



The future distribution of household type by dwelling type was developed by trending forward the changes observed between the ABS 2006, 2011 and 2016 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, and
- a variable share of the state's projection population growth.

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 and 2016 Censuses of Population and Housing. In 'rural' SA2s with projected population declines, dwelling growth is allocated consistent with historical building approval trends.

Following this, dwelling projections in 'urban' SA2s are generated. In each Queensland SA4, the projected population and dwellings in 'rural' SA2s are subtracted from existing SA4 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 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.

LGA level

Dwelling projections for LGAs are not directly modelled, but are instead 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).

³ <http://www.qgso.qld.gov.au/products/reports/qld-govt-pop-proj-reference-info/index.php>