Appendix I – *Text provided by the Australian Bureau of Statistics*

Queensland Small Area Population Projections (ABS)

This report outlines the method used for producing population and enrolment projections for all Census Collection Districts (CDs) in Queensland, spanning from June 2006 to June 2014.

Projection Method

The main technique employed for the projections was the cohort-component method, widely accepted as the best way of producing age/sex population projections. It involved applying annual fertility and mortality rates and internal migration and overseas migration by age and sex to the base population to produce a projected population, which then became the base for projecting the next year. This cycle was repeated until the projection horizon was reached.

A four-tiered approach was taken in projecting resident population aged 18 years and over for all Statistical Local Areas (SLAs) and CDs in Queensland.

1. Queensland's population was projected by age and sex.
2. Brisbane/Balance of Qld populations were projected by age and sex (constrained to 1).
3. The population of all Queensland SLAs was projected by age and sex (constrained to 2).
4. The SLA projections were split into CDs.

Finally, the projections were grouped into persons aged 18 years and over, and combined with enrolment data to produce projected enrolments.

1. State/Territory Projections

The base population for Queensland cohort-component projections was preliminary age/sex Estimated Resident Population (ERP) as at 30 June 2008, incorporating results from the 2006 Census. Assumptions for the projections were based on both short and long-term trends for each component of population change. These fertility, mortality, overseas migration and interstate migration assumptions were based on those used in the latest *Population Projections, Australia, 2006 to 2101* (ABS Cat. No. 3222.0), but adjusted to reflect more recently available data. All States and Territories were in fact independently projected, then constrained to sum to the Australian-level projection.

2. Capital City/Balance of State Projections

As per the State/Territory level, the capital city and balance of State projections used assumptions updated from the *Population Projections* publication. 30 June 2007 ERP base population was used, with assumptions reflecting historically observed region-specific patterns of fertility, mortality, overseas migration and internal migration. The Queensland projections acted as control totals.

3. SLA Projections

The base population for the SLA cohort-component projections was also 30 June 2007 SLA age/sex ERP. The fertility, mortality and migration assumptions were based on SLA-specific levels observed during the past five years, constrained to the assumed capital city/balance of State levels and trends. SLA age/sex migration profiles were derived from 2006 Census data on place of usual residence one year ago.

The ABS regularly collects demographic information down to the SLA level, which means that SLA projections (in contrast to smaller areas) are firmly based on series of known data. At each yearly cycle in this process, the resulting SLA projections were constrained to sum to the capital city/balance of State

projections, helping to produce more reliable SLA figures. SLAs with ERP less than 500 persons were generally held constant for the projection duration as assumptions for the accompanying tiny age/sex cells are too unreliable.

4. CD Projections

CD projections were formed using extrapolations from 2003-2006 CD ERP constrained to the SLA projections. Intercensal CD ERP is initially derived using 2001 Census CD-to-SLA usual residence population proportions updated for post-censal growth using AEC data by CD, then revised using 2006 Census-based CD ERPs. This approach allows for sub-SLA differential growth while retaining consistency with the SLA projections.

The final process adjusts the CD projections for persons aged 18 and over to reflect projected enrolments as at 9 July 2012 using the Febuary 2009 relationship between each CD's enrolments and its ERP (see Appendix III).

The lack of demographic data collected regularly at CD level makes it necessary to use such a conversion method as outlined above. While the process is quite complex, it should be reiterated that the basic concept of splitting SLAs to CD level cannot be expected to give projections as reliable as those for SLAs. However, as the end product will be aggregates of large numbers of CDs there is a high likelihood that any random errors or inconsistencies will be statistically offset in the aggregation process.

Boundaries

CD boundaries are from the *Australian Standard Geographical Classification (ASGC), 2006 Edition* (ABS Cat. 1216.0), corresponding to those used for the 2006 Census. SLA boundaries are from the same ASGC version, the *2006 Edition*.

Disclaimer

It is important to recognise that the projection results given in this report essentially reflect the assumptions made about future fertility, mortality and migration trends. While these assumptions are formulated on the basis of an objective assessment of historical demographic trends and their likely future dynamics, there can be no certainty that they will be realised.

ABS takes responsibility for the method employed, however in accordance with ABS policy regarding small area population projections, the assumptions used are the final responsibility of the client, and the projections are not official ABS population statistics.
The projections may be referred to as "...projections prepared by the ABS according to assumptions reflecting prevailing trends agreed to by the Australian Electoral Commission...".

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