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THE AUSTRALIAN NATURAL DISASTER RESILIENCE INDEX

VOLUME II – INDEX DESIGN AND COMPUTATION

Chapter 2 – Indicators

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CHAPTER 2 INDICATORS

In this chapter

Section 2.1	Describes the method used to identify and select indicators for the Australian Natural Disaster Resilience Index.
Section 2.2	Lists the indicators used in the index themes, including the source of each indicator and how it was calculated.
Section 2.3	Justifies the relationships between indicators and disaster resilience for each theme in the index, using a literature review.
Section 2.4	Describes the method used to disaggregate some of the indicators to an SA2 resolution.

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2.1 INDICATOR IDENTIFICATION AND SELECTION

Indicators are the variables used to determine the status of a theme: the raw data used to compute the index. An indicator is a quantitative measure 'intended to represent a characteristic of a system of interest' (Tate 2012). An indicator can be composed of one variable, or many. In the latter case it is known as a composite indicator or index (OECD 2008; Tate 2012). An index responds directionally according to the behaviour of the system (Burton 2015) and can be arrayed along a continuum of good to poor status. Indicators are based on normative understandings of relationships between a variable and a broader thematic concept, with varying degrees of empirical support (Maggino and Zumbo 2012; Birkmann 2013). The evidence supporting these relationships can be literature-based logical plausibility (e.g. Cutter et al. 2003) or causal validation (direct observation or indirect structural equation modelling) of the relationship between an indicator and the thematic dimension it represents (e.g. Paton 2007; Burton 2015). The use of logical plausibility is presently most common in disaster resilience assessment because causal validation specifying the association between an indicator and disaster resilience or vulnerability is only recently attracting research focus (Rufat et al. 2015).

Selecting indicators is both an art and a science. An indicator always implies that a relationship exists between the indicator and a latent construct representing some aspect of resilience. Thus, the process of indicator selection is also coupled with the purpose, framework, design and interpretation of the index. While there will always be trade-offs between indicator specificity, data availability, cost effectiveness and sensitivity (Birkmann 2013; Winderl 2014), the selection of indicators can be guided by criteria that help to bound large sets of potential indicators (Table 2.1). The use of indicator selection criteria minimises potential sources of uncertainty in the interpretation of disaster resilience arising from the types of indicators included in computation.

2.1.1 Indicator identification and selection methods

An intensive, three step process was used to identify and select indicators for the Australian Natural Disaster Resilience Index (Figure 2.1). The indicator identification process begins with the conceptual model for the index, which determines the focus on coping and adaptive capacity and the definition of these capacities. The conceptual model subsequently sets the structure and design of the index and identifies latent dimensions of disaster resilience (see Chapter 1). These latent dimensions correspond to the eight themes of the index: social character; economic capital; emergency services; planning and the built environment; community capital; information and access; social and community engagement; and, governance and leadership. Themes guide the identification and selection of indicators where the goal is to obtain indicators that quantitatively measure the status of that theme. Thus, the selection of

indicators for the Australian Natural Disaster Resilience Index was initially constrained by the requirements of the conceptual model and latent dimensions of resilience (e.g. Parsons et al. 2016).

Table 2.1: Generalised criteria for indicator selection. Compiled from Brown (2009), Maggino and Zumbo (2012), Bene (2013), Birkmann (2013) and Winderl (2014).

Criteria for indicator selection	Requirements
1. The indicator reflects a justifiable element of natural hazard resilience	• The relationship between the indicator and natural hazard resilience has been verified in the academic/professional literature
2. The indicator can track change and variability in natural hazard resilience	• Change in the indicator can be determined and associated with change in resilience spatially and temporally
3. The indicator is relevant to the scale(s) of assessment	• The indicator aligns with the scale at which the assessment is undertaken. There may be a requirement for an indicator to remain valid across scales (e.g. local to national).
4. The indicator is measurable and readily interpretable	• The indicator is specific and precisely defined. • The indicator is quantifiable and spatially referenced • The indicator is easy to define, understand and communicate
5. The measurement method for the indicator is robust	• Measurement is reliable (and verifiable) and representative of reality • Measurement occurs regularly enough for the purpose • Measurement is methodologically sound
6. The indicator is achievable – data are available, accessible and cost effective	• Data are available at the required scales across most of the study area • Data are readily available from secondary sources • Data can be accessed within the cost and resource framework

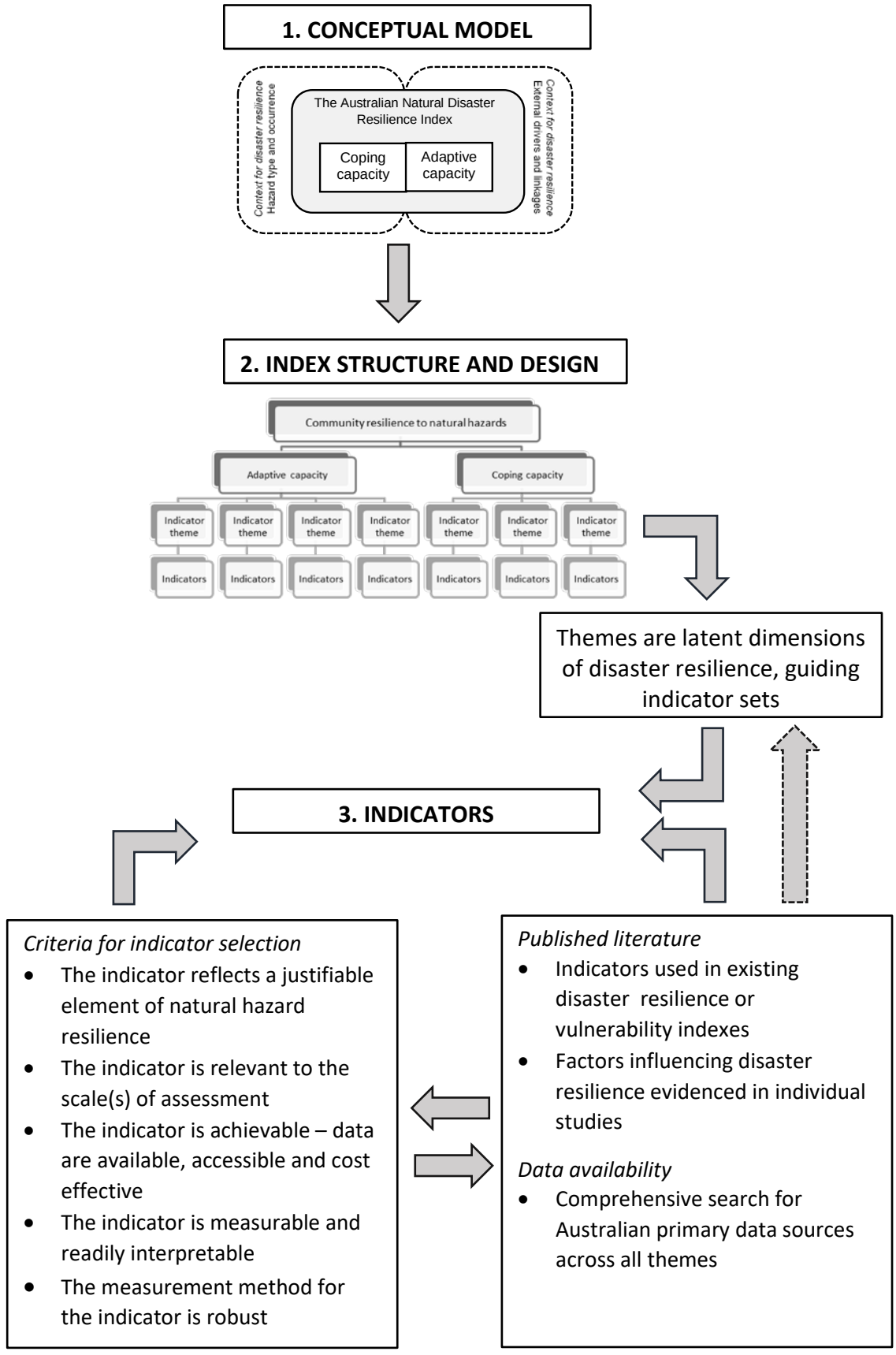

Figure 2.1: (Caption on next page).

Figure 2.1: Identification and selection of indicators for the Australian Natural Disaster Resilience Index. The indicator identification process begins with the conceptual model for the index, which subsequently sets the structure and design of the index and identifies latent dimensions of disaster resilience. Published literature and the availability of primary data are used to identify indicators suitable for the index, and in rare cases the availability of data resulted in adjustments to the latent dimensions of disaster resilience in the index structure and design. Indicators were then selected by applying a sub-set of the generalised criteria for indicator selection (see Table 2.1), where the focus was on relationship to disaster resilience, relevance to the scale of assessment, measurability and data availability. Modified from Parsons et al. (2016).

The second step in indicator selection was an iterative process of literature evaluation, data availability and filtering against four generalised criteria (Figure 2.1). Scores of indicators have been used to assess disaster vulnerability or resilience in top-down assessments (see reviews by Beccari 2016 and Cutter 2016). Most of these published indicators are aligned with the coping capacity part of the ANDRI conceptual model. Indicators of adaptive capacity have been used within the climate change and adaptive governance literature (Gupta et al. 2010; Engle 2011; Engle et al. 2014; IPCC 2012). We reviewed the indicators from published indexes or scorecards (e.g. Cutter et al. 2003; Cutter et al. 2010; Mayunga and Peacock 2010; Sherrieb et al. 2010; Malcolm et al. 2012; Arbon 2014) and used them as a starting point to populate the themes. Further indicators were derived for themes through exploration of available data sets, and the literature underpinning each of the latent dimensions of resilience (Figure 2.1).

Data availability was a major consideration in the identification and selection of indicators. The index takes a top-down assessment approach that provides continuous spatial coverage of the entire country at a national level. Therefore, it was necessary to use indicators that also had spatial coverage of the entire country. A comprehensive search was undertaken for available data sets relating to the latent dimensions of disaster resilience and which were also accessible by the public or for a reasonable fee. Data sources that were investigated are listed in Table 2.2.

Table 2.2 Example data sets considered for the purpose of selecting indicators in the Australian Natural Disaster Resilience Index. This list is not exhaustive: data sets available within only one State or Territory are not included.

Data sets	
National Exposure Information System (NEXIS) Geoscience Australia	National health workforce dataset Australian Institute of Health and Welfare
Census of Population and Housing Australian Bureau of Statistics	National aged care data clearinghouse Australian Institute of Health and Welfare
Household Expenditure Survey and Survey of Income and Housing Australian Bureau of Statistics	Specialist homelessness services collection Australian Institute of Health and Welfare
Australian Health Survey Australian Bureau of Statistics	The Household, Income and Labour Dynamics in Australia (HILDA) Survey The Melbourne Institute
State of the Environment Report Australian Government Department of Sustainability, Environment, Water, Populations and Communities.	Australian Urban Infrastructure Research Network (AURIN) University of Melbourne
Key General Insurance Industry Statistics - Trend Series Insurance Council of Australia	Report on Government Services Productivity Commission

Suitability criteria were used to further filter available data into a set of indicators for index computation (Figure 2.1). The relationship between the indicator and natural hazard resilience was considered using available literature, particularly that pertaining to Australian circumstances and that which establishes a relationship between disaster resilience and the indicator (see Section 2.3). Availability of data covering the whole of Australia was also essential in this top-down national-scale assessment, and useful State or local level data were excluded because they did not meet this criteria. The measurability and interpretability of the indicator criteria was applied to ensure that an indicator was measurable and could subsequently be interpreted by non-experts. Approaches to indicator quantification include direct numerical measures (e.g. percentages of population, expenditure per capita) and derivation of quantitative indicators through evaluation of policy documents. The accuracy and reliability of data were also considered, particularly where spatial modelling techniques had been applied to data sets. Data sets with unacceptable levels of reported error were excluded.

Academics from human geography, physical geography, economics, urban planning and data analytics were part of the project team and each subject matter expert oversaw the derivation of indicators. Input was also received from emergency service practitioners. Considerable time was devoted to deriving an indicator set that was justified by the literature, had data available

nationwide, and covered the latent dimensions of disaster resilience used in the index. The indicators used in the Australian Natural Disaster Resilience Index convey the picture of disaster resilience within the boundaries of the conceptual model, and the constraints of data availability at a national level.

Some indicators were excluded from the calculation of the index for statistical reasons, such as high correlation with other indicators. This process occurred separately to the indicator identification process, during the later statistical analysis stage. These cases are detailed in Chapter 5.

2.1.2 Data gaps

Gaps in data availability and access precluded the use of some highly desirable indicators of disaster resilience. Insurance data is only available within the insurance industry and is commercial in confidence. The Regional Wellbeing Survey is an annual survey of the subjective wellbeing of people living in rural and regional areas of Australia, and how they are experiencing the many changes occurring in their communities (Schirmer et al. 2015). This data set is publically available and contains indicators of social and community engagement, including community leadership, having a say and being heard, equity and inclusion, spending time with family and friends, getting involved and sense of belonging. Despite the great value of wellbeing data to disaster resilience, the focus of the Regional Wellbeing Survey is presently on the regional areas of Australia and data are not collected for metropolitan areas. Thus, coverage for the whole nation could not be obtained.

The adaptive capacity indicators presented a particular challenge. Adaptive capacity is the arrangements and processes that enable adjustment through learning, adaptation and transformation (Parsons et al. 2016). Although adaptation is considered a vital component of emergency service practice (O'Neill and Handmer 2012), few data are reported on mechanisms and outcomes for adaptation and transformation, particularly within institutions. Any reporting that does occur is inconsistent across States, making national level comparison difficult.

Other indicators that were excluded, but desirable, include measures of critical infrastructure and utilities resilience (Deloitte Access Economics 2016), political and institutional leadership (Arklay 2015; Ono 2017), previous experience of disasters (Usher et al. 2013; Lawrence et al. 2014), child-centered resilience education (Towers et al. 2014; Johnson et al. 2016) and pet ownership (Smith et al. 2015; Taylor et al. 2015a &b). Any future iterations of the Australian Natural Disaster Resilience Index should reconsider availability of datasets and attempt to include these important indicators of the latent dimensions of disaster resilience if possible.

2.2 INDICATORS USED IN THE AUSTRALIAN NATURAL DISASTER RESILIENCE INDEX

Overall, 77 indicators were used to compute the Australian Natural Disaster Resilience Index, across the 8 themes. The tables in this section describe the indicators included in each theme. Each theme contains four parts:

1) **A list of indicators used to compute the index**. The table includes details of the aspect of disaster resilience the indicator is associated with, source of the indicator and disaggregation details.

2) **A list of indicators collected but not used to compute the index**. The table details why the indicator was excluded.

3) **The resilience direction of each indicator**. The association between an indicator and disaster resilience sets the direction of indicator values as higher or lower resilience.

4) **Methods for computing derived indicators**. Derived indicators were used to produce semi-quantitative data from underlying policy and procedures, for some themes.

2.2.1 Social character

2.2.1.1 Social character indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Immigration	% population arrived in Australia 2001 onwards	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable YARRP (Year of arrival in Australia)
Internal migration	% of total households with all or some residents not present a year ago	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable MV1D (Household 1 year mobility indicator)
Language proficiency	% speaks English not well or not at all	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable ENGLP (Proficiency in spoken English/Language)
Need for assistance	% population with a core activity need for assistance	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable ASSNP (Core activity need for assistance)
Family composition	% one parent families	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable CDCF (Count of dependent children in family)
	% households with children	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable HCFMD (Family household composition – dwelling)

Social character indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Household composition	% lone person households	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable HCFMD (Family household composition – dwelling)
	% group households	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable HCFMD (Family household composition – dwelling)
Sex	Sex ratio	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable SEXP (Sex) as the ratio of males to females
Age	% population aged over 75	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable AGEP (Age)
	% population aged below 15	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable AGEP (Age)
Education	Ratio of certificate/postgrad attainment to year 8-12 attainment	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable HEAP (Level of highest educational attainment) as the ratio of persons with certificate through postgraduate level qualifications to persons with high school qualifications

Social character indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Employment and occupation	% of labour force unemployed	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable LFHRP (Labour force status and hours worked not stated)
	% not in labour force	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable LFHRP (Labour force status and hours worked not stated)
	% managers and professionals	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable OCCP (Occupation)

2.2.1.2 Social character indicators collected but not used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note	Reason for exclusion
Family composition	% households without children	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable HCFMD (Family household composition – dwelling)	Inverse of % households with children
Age	Median age of persons	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile (Median age of persons)	No directionality with resilience.
Income	Median total household income weekly	SA2	No disaggregation - ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile (Median total household income weekly)	Income is included in economic capital theme

2.2.1.3 Social character indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Immigration	% population arrived in Australia 2001 onwards	Higher percentage of new arrivals in Australia = lower disaster resilience	Yes
Internal migration	% of total households with all or some residents not present a year ago	Higher percentage of residents new to an area = lower disaster resilience	Yes
Language proficiency	% speaks English not well or not at all	Higher percentage of poor English = lower disaster resilience	Yes
Need for assistance	% population with a core activity need for assistance	Higher percentage requiring core need for assistance = lower disaster resilience	Yes
Family composition	% one parent families	Higher percentage of one parent families = lower disaster resilience	Yes
	% households with children	Higher percentage of households with children = lower disaster resilience	Yes
Household composition	% lone person households	Higher percentage of lone person households = lower disaster resilience	Yes
	% group households	Higher percentage of group households = lower disaster resilience	Yes
Sex	Sex ratio	More females = lower disaster resilience	No
Age	% population aged over 75	Higher percentage of older people = lower disaster resilience	Yes
	% population aged below 15	Higher percentage of children = lower disaster resilience	Yes

Social character indicators resilience directions (cont.)

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Education	Ratio of certificate/postgrad attainment to year 8-12 attainment	Higher educational attainment = higher disaster resilience	No
Employment and occupation	% of labour force unemployed	Higher percentage unemployment = lower disaster resilience	Yes
	% not in labour force	Higher percentage not in labour force = higher disaster resilience	No*
	% managers and professionals	Higher percentage managers/professionals = higher disaster resilience	No

*Subsequently reversed because of high positive correlation with % population with a core activity need for assistance and with % population aged over 75

2.2.2 Economic capital

2.2.2.1 Economic capital indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Home ownership	% residents owning their home outright	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B32 (Tenure and Landlord Type by Dwelling Structure) as the total number of dwellings owned outright/total dwellings
	% residents owning their home with a mortgage	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B32 (Tenure and Landlord Type by Dwelling Structure) as the total number of dwellings owned with a mortgage/total dwellings
	% residents renting their home	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B32 (Tenure and Landlord Type by Dwelling Structure) as the total number of dwellings rented under any arrangement/total dwellings
	Median weekly rent ($)	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile B02 (Selected means and averages)
	Median monthly mortgage repayment ($)	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile B02 (Selected means and averages)
Income	Median weekly personal income ($)	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile B02 (Selected means and averages)

Economic capital indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
	Median weekly family income ($)	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	ABS community profile B02 (Selected means and averages)
	% families with less than $600 p.w. income	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B26 (Total family income (weekly) by family composition) as the Sum of total families with income less than $600 p.w./Total family households
	% families with more than $3,000 p.w. income	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B26 (Total family income (weekly) by family composition) as the Sum of total families with income more than $3000 p.w./Total family households
Economy	% employment in largest single sector	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B43c (Industry of employment by age by sex) as the largest sector of employment/total employed persons aged 15 years and over
	Economic Diversity Index	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B43c (Industry of employment by age by sex) using the method of Stenekes et al. 2012
	% businesses employing 20 or more people	SA2	No disaggregation – ABS data at SA2	ABS Counts of Australian Businesses	Computed from ABS Counts of Australian Businesses, including Entries and Exits, June 2010 to June 2014, using June 2014 data. The indicator is Businesses employing 20-199 people + businesses employing >200 people/ total businesses)

Economic capital indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
	Retail and or commercial establishments per 1,000 people	SA2	No disaggregation – ABS data at SA2	ABS	Computed from ABS Counts of Australian Businesses, including Entries and Exits, June 2010 to June 2014, using June 2014 data and the ABS community profile B04 (Total population) The indicator is total number of businesses/total population/1000
	% population change 2001 to 2011	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile T03c (Age by sex) as Total Persons 2011 Census/Total Persons 2001 Census
	Local government grant per capita	SA2	LGA	Department of Infrastructure and Regional Development	Data from the Local Government National Report, 2013-14

2.2.2.2 Economic capital indicators collected but not used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Reason for exclusion
Home ownership	Income/mortgage differential ($/monthly)	SA2	No disaggregation - original data at SA2	ABS 2011 Census of Population and Housing	Covered by existing mortgage and income indicators
	% dwellings with one or more cars	SA2	No disaggregation - original data at SA2	ABS 2011 Census of Population and Housing	Included in community capital theme as an indicator of access Relationship to economic dimensions of disaster resilience unclear.
Economy	GINI Coefficient	SA2	SA3	ABS Estimates of personal income 2012-13 (Table 4)	Relationship with resilience unclear. Correlation between sub-index with and without Gini coefficient of 0.99 so indicator has minimal contribution.

2.2.2.3 Economic capital indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required
Home ownership	% residents owning their home outright	Higher levels of home ownership = greater wealth and economic stability = higher resilience	No
	% residents owning their home with a mortgage	Higher proportions of mortgages =lower economic stability = lower resilience	No
	% residents renting their home	Higher levels of renting = lower control over mitigation = lower resilience	Yes
	Median weekly rent ($)	Higher median rent = lower economic stability = lower resilience	Yes
	Median monthly mortgage repayment ($)	Higher median monthly mortgage repayment = greater occurrence of financial stress = lower resilience	Yes
Income	Median weekly personal income ($)	Higher median weekly personal income = greater wealth and economic stability = higher resilience	No
	Median weekly family income ($)	Higher median weekly family income = greater wealth and economic stability = higher resilience	No
	% families with less than $600 p.w. income	Higher proportion of low income families = greater financial stress = lower resilience	Yes

Economic capital indicators resilience directions (cont.)

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required
	% families with more than $3,000 p.w. income	Higher proportion of high income families = lower financial stress = higher resilience	No
Economy	% employment in largest single sector	Greater single sector employment dependence = lower diversity and redundancy = lower resilience	Yes
	Economic Diversity Index	Higher index value = greater diversity of local economy relative to the Australian economy = higher resilience	No
	% businesses employing 20 or more people	More large businesses = greater livelihood stability = higher resilience	No
	Retail and or commercial establishments per 1,000 people	More business and commerce = greater livelihood stability = higher resilience	No
	% population change 2001 to 2011	Lower population change = declining population = lower resilience	Yes
	Local government grant per capita	Higher government grant per capita = less well-resourced council = lower resilience	Yes

2.2.3 Emergency services

2.2.3.1 Emergency services indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Health response workforce	Medical practitioners per 1000 population	SA2	SA3	Australian Institute of Health and Welfare: 2011 National Health Workforce Dataset	Per capita workforce computed using ABS Estimated Resident Population: 2011, SA3
	Registered nurses per 1000 population	SA2	SA3	Australian Institute of Health and Welfare: 2011 National Health Workforce Dataset	Per capita workforce computed using ABS Estimated Resident Population: 2011, SA3
	Psychologists per 1000 population	SA2	SA3	Australian Institute of Health and Welfare: 2011 National Health Workforce Dataset	Per capita workforce computed using ABS Estimated Resident Population: 2011, SA3
	Welfare support workers per 1000 population	SA2	SA4	ABS 2011 Census of Population and Housing	Computed from census variable OCCP (Occupation) Per capita workforce computed using ABS Estimated Resident Population: 2011, SA4
	Available hospital beds per 1000 population	SA2	States by ABS remoteness categories	Australian Institute of Health and Welfare: 2013-14 Hospital Resources	Table 2.10: Average available beds and beds per 1,000 population by remoteness area, public hospitals, states and territories, 2013–14.
Emergency response workforce	Ambulance officers and paramedics per 1000 population	SA2	SA4	ABS 2011 Census of Population and Housing	Computed from census variable OCCP (Occupation) Per capita workforce computed using ABS Estimated Resident Population: 2011, SA4
	Fire and emergency workers per 1000 population	SA2	SA4	ABS 2011 Census of Population and Housing	Computed from census variable OCCP (Occupation) Per capita workforce computed using ABS Estimated Resident Population: 2011, SA4

Emergency services indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
	Police per 1000 population	SA2	SA4	ABS 2011 Census of Population and Housing	Computed from census variable OCCP (Occupation) Per capita workforce computed using ABS Estimated Resident Population: 2011, SA4
Emergency response funding	Fire and emergency services and SES organisations_Cost per 1000 population	SA2	State	Productivity Commission Report on Government Services, 2014-15	Volume D, Emergency Management, Table DA.3 Per capita funding computed using ABS Estimated Resident Population: 2015, State
	Ambulance organisations_Cost per 1000 population	SA2	State	Productivity Commission Report on Government Services, 2014-15	Volume D, Emergency Management, Table DA.3 Per capita funding computed using ABS Estimated Resident Population: 2015, State
Volunteer workforce	Fire service volunteers per 1000 population	SA2	State	Volunteer numbers as reported in fire service and state emergency service agency annual reports, 2014-15	Per capita volunteer numbers computed using ABS Estimated Resident Population: 2015, State
	SES volunteers per 1000 population	SA2	State	Volunteer numbers as reported in fire service and state emergency service agency annual reports, 2014-15	Per capita funding computed using ABS Estimated Resident Population: 2015, State
Remoteness	Distance to medical facility (km)	SA2	LGA	Regional Australia Institute [In]Sight	Computed by Regional Australia Institute as the average distance to medical facility, using a GIS

2.2.3.2 Emergency services indicators collected but not used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Remoteness	Distance to airport (km)	SA2	LGA	Regional Australia Institute [In]Sight	Relationship to disaster resilience unclear. The relationship between remoteness and disaster resilience is best captured by the distance to medical facility indicator
	Road Infrastructure (%)	SA2	LGA	Regional Australia Institute [In]Sight	Relationship to disaster resilience unclear. The relationship between remoteness and disaster resilience is best captured by the distance to medical facility indicator

2.2.3.3 Emergency services indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Health response workforce	Medical practitioners per 1000 population	Higher medical practitioners per 1000 people = greater medical support capacity = higher disaster resilience	No
	Registered nurses per 1000 population	Higher medical practitioners per 1000 people = greater medical support capacity = higher disaster resilience	No
	Psychologists per 1000 population	Higher medical practitioners per 1000 people = greater medical support capacity = higher disaster resilience	No
	Welfare support workers per 1000 population	Higher medical practitioners per 1000 people = greater medical support capacity = higher disaster resilience	No
	Available hospital beds per 1000 population	Higher hospital beds per 1000 people = greater medical support capacity = higher disaster resilience	No
Emergency response workforce	Ambulance officers and paramedics per 1000 population	Higher representation = greater response capacity = higher disaster resilience	No
	Fire and emergency workers per 1000 population	Higher representation = greater response capacity = higher disaster resilience	No
	Police per 1000 population	Higher representation = greater response capacity = higher disaster resilience	No

Emergency services indicator resilience directions (cont.)

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Emergency response funding	Fire and emergency services and SES organisations_Cost per 1000 population	Higher expenditure = greater resourcing = higher disaster resilience	No
	Ambulance organisations_Cost per 1000 population	Higher expenditure = greater resourcing = higher disaster resilience	No
Volunteer workforce	Fire service volunteers per 1000 population	Higher volunteer numbers = greater response capacity = higher disaster resilience	No
	SES volunteers per 1000 population	Higher volunteer numbers = greater response capacity = higher disaster resilience	No
Remoteness	Distance to medical facility (km)	Greater distance to medical facility = higher response time = lower resilience	Yes

2.2.4 Planning and the built environment

2.2.4.1 Planning and the built environment indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Buildings	% caravan & improvised dwellings	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable STRD (Dwelling structure)
	% residential dwellings built post 1981	SA2	SA1	National Exposure Information System (NEXIS) – Geoscience Australia	Computed from a composite of Version 7 and 9
	% commercial & industrial buildings built post 1981	SA2	SA1	National Exposure Information System (NEXIS) – Geoscience Australia	Computed from a composite of Version 7 and 9
Emergency planning	Emergency planning assessment score	SA2	LGA	Derived from systematic evaluation of emergency plans	Method outlined below.
Planning for natural hazards	Full time equivalent (FTE) council staff 2014-15	SA2	LGA	Various local government sources	FTE includes all staff categories within the council, sourced from: NSW - Office of Local Government Time Series Data 2014-15 VIC - Annual budget reports by individual municipality WA - Local Grants Commission report: "Financial Assistance Grants 2016/7" QLD - QLD Grants Commission Report SA - Local Government Grants Commission Database reports 2014-15 TAS - Grant commission report 15/16 NT - Annual reports by individual councils ACT - ACT Audit Office Annual report 2014-15

Planning and the built environment indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
	Council area per FTE council staff	SA2	LGA	Australian Bureau of Statistics and various local government sources	Computed as LGA (km^2)/FTE council staff LGA area from Australian Bureau of Statistics (3218.0), March 2016
	Number of dwellings per FTE council staff	SA2	LGA	Australian Bureau of Statistics and various local government sources	Number of dwellings in LGA/FTE council staff
	New dwellings (2012-16) as a proportion of 2011 dwellings	SA2	LGA	Australian Bureau of Statistics	New dwellings in LGA (2012-16)/ total number of dwellings in LGA (2011) x100
	New dwellings per week (2015 - 16)	SA2	LGA	Various local government sources Compiled by James	Number of new dwellings approved in the 2015-2016 year/52
	Planning assessment score	SA2	LGA	Derived from systematic evaluation of local and regional planning documents	Method outlined below.

2.2.4.2 Planning and the built environment indicators collected but not used in index computation

Resilience dimension	Indicator	Final resolution	Disaggregated from	Data source	Note
Buildings	% residential dwellings built pre 1980	SA2	SA1	National Exposure Information System (NEXIS) – Geoscience Australia	Inverse of % residential dwellings built post 1980
	% commercial & industrial buildings built pre 1980	SA2	SA1	National Exposure Information System (NEXIS) – Geoscience Australia	Inverse of % commercial buildings built post 1980
Planning for natural hazards	LGA population per FTE council staff	SA2	LGA	Australian Bureau of Statistics and various local government sources	High correlation with dwellings. See theme report.
	Roads per FTE council staff	SA2	LGA	State Government Grants Commission and various local government sources	High correlation with area. See theme report.

2.2.4.3 Planning and the built environment indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Buildings	% caravan & improvised dwellings	Greater % improvised dwellings = lower resilience	Yes
	% residential dwellings built post 1981	Greater % buildings post 1981 = stronger building codes = higher resilience	No
	% commercial & industrial buildings built post 1981	Greater % buildings post 1981 = stronger building codes = higher resilience	No
Emergency planning	Emergency planning assessment score	Higher score = better planning = higher resilience	No
Planning for natural hazards	Full time equivalent (FTE) council staff 2014-15	High numbers of full time equivalent staff = a well-resourced council with capacity to undertake planning tasks = higher resilience	No
	Council area per FTE council staff	High area/FTE ratio = council staff cover more area in their day-to day-duties = lower resilience	Yes
	Number of dwellings per FTE council staff	High dwelling/FTE = higher number of households per council staff member = lower resilience	Yes
	New dwellings (2012-16) as a proportion of 2011 dwellings	High proportions of new dwellings = fast rate of growth that places dynamic stresses on council staffing = lower resilience	Yes
	New dwellings per week (2015 - 16)	High numbers of new dwellings per week = higher pressures on planning and development assessment staff = lower resilience	Yes
	Planning assessment score	Higher scores = more complete regulatory framework for hazards planning = higher resilience	No

2.2.4.4 Planning and the built environment – methods for derived indicators

Four semi-quantitative indicators were derived using content analysis of relevant legislation, policy and reporting documents. The rationale was to produce semi-quantitative data from underlying policy and procedures. These indicators were used when quantitative proxies were not available for this important latent dimension of disaster resilience.
There are four derived semi-quantitative indicators in the Australian Natural Disaster Resilience Index:

- Emergency planning assessment score (Planning and the built environment theme)
- Planning assessment score (Planning and the built environment theme)
- Governance, policy and leadership score (Governance and leadership theme)
- Community engagement score (Information access theme)

Emergency planning assessment score

Rationale
Emergency management planning enhances the capacity for disaster resilience by planning in advance for an emergency response. Emergency management planning consists of legislative, policy, procedural, operational and risk management functions that may include: identifying the actors involved in responding to emergency situations, defining operational roles and responsibilities; and, outlining governance arrangements and processes.
This rationale was captured as an indicator of the presence of these components of emergency planning. It does not capture 'how well' plans are enacted in an emergency. Rather this indicator is derived from asking a series of questions about whether the components required for sound emergency management planning are 'in place'.

Derivation of the emergency management planning score

Step 1

The emergency management legislative landscape was mapped from the State through to the local government level to consider the comparative operation of emergency management planning systems in Australia. It was assumed that, taken together across Australia, the legislative, policy, procedural, operational and risk management functions represent best practice under Australian legislative and hazard exposure circumstances. Absence of these best practice elements indicate a lower capacity for emergency management planning to contribute to disaster resilience.

Based on the emergency policy landscape in Australia, eight questions were designed to evaluate the status of emergency planning systems. These questions (Table 2.3) are applicable to all States and Territories, and encapsulate legislative, policy, procedural, operational and risk management functions across the State/Territory to local Council/Municipal levels.

Step 2

Content analysis was used to question legislation, policy and emergency planning documents. The documents examined are outlined in Table 2.4. A score was assigned to each question, where 2=yes, 1=partly and 0=no. All documents were assessed by the same researcher. A sub-set of 20 local-level emergency plans and State legislation was assessed by a second researcher, with high agreement among scores.

A protocol was developed to systematically obtain the relevant local-level emergency plans in Australia. A systematic online search procedure was first applied by searching each Council/Municipality or administering agency website for current emergency management plans. If the plan could not be found online, the Council/Municipality or agency was contacted by email requesting a copy of the plan. The email explained the research being undertaken and the development of an emergency planning indicator. If a reply had not been received within one month, a reminder email was sent. If the plan was not forthcoming within a further month, a score of 0 was applied to the local-level emergency management plan assessment items. In some cases it was possible to determine if an emergency management plan had been developed and here, a score of 2 was assigned for item 9 (Table 2.3) to reflect that the plan was developed but not accessible for content analysis.

Step 3

Scores for items 1-12 (Table 2.3) were tallied and standardised by converting to a percentage of the maximum possible score. The maximum possible score is the score that could be derived if all items were relevant and answered as 'yes'. For example, councils in NSW using the newer EMPlan format have a maximum possible score of 22 because only 11 of the 12 items apply.
Higher scores indicate greater capacity for emergency planning.

Table 2.3 Items used for content analysis of Australian emergency management planning.

Level	Item number	Item
State/Territory-level emergency management plan legislation	1	Does the State or Territory legislation stipulate the development of a State or Territory emergency management plan?
	2	Does the State or Territory legislation, or associated guidelines, stipulate the content of a State or Territory emergency management plan?
	3	Does the State or Territory legislation, or associated guidelines, stipulate the timeframe and/or circumstances for review of the State or Territory emergency management plan?
	4	Does the State or Territory legislation, emergency management plan or associated guidelines, describe the principles guiding the State or Territory emergency management plan?
Local-level emergency management plans (legislated aspects)	5	Does the State or Territory legislation, or associated guidelines, stipulate the development of a local emergency management plan?
	6	Does the State or Territory legislation, or associated guidelines, stipulate the content of a local emergency management plan?
	7	Does the State or Territory legislation, or associated guidelines, stipulate the timeframe and/or circumstances for review of the local emergency management plan?
	8	Does the State or Territory legislation, or associated guidelines, stipulate the accessibility of the local emergency management plan to the public?* *Non-confidential information only
Local-level emergency management plans (content aspects)	9	Has the local-level emergency management plan been prepared?

Table 2.3 (cont.)

Level	Item number	Item
	10	Does the local-level emergency management plan identify potential hazards in the local plan area?
	11	Does the local-level emergency management plan set out the roles and responsibilities of the members of the local emergency management committee?
	12	Does the local-level emergency management plan include details for exercising the plan?

Table 2.4 State/Territory and local-government documents used in the content analysis.

State	State/Territory-level emergency management planning (Items 1-8)	Local-level emergency management planning (Items 9-12)
New South Wales	State Emergency and Rescue Management Act 1989 (No. 165)	Assessed using the latest available Shire Emergency Management Plan or DISPLAN. Item 11 was excluded for the newer Emergency Management Plan format because the overview of LEMC responsibilities is not required in these plans.
Victoria	Emergency Management Act 1986 (No. 30 of 1986, Version incorporating amendments as at 1 July 2014) Emergency Management Act 2013 (No. 73 of 2013) EMV Emergency Management Manual (September 2013)	Assessed using the latest available Municipal Emergency Management Plans
Queensland	Disaster Management Act 2003 (Version current October 2014)	Assessed using the latest available Shire Local Disaster Management Plans
South Australia	Emergency Management Act 2004 (Version 1.7.2016) Fire and Emergency Services Act 2005 (Version 1.7.2015)	Assessed at the zone level using the latest available Zone Emergency Management Plans
Western Australia	Emergency Management Act 2005 (Version 00-g0-02) Emergency Management Regulations 2006 (Version 03-a0-02)	Assessed using the latest available Shire Local Emergency Management Arrangements
Tasmania	Emergency Management Act 2006 (No. 12 of 2006) Tasmanian Emergency Management Plan (Issue 8)	Assessed using the latest available Municipal Emergency Management Plans
Northern Territory	Emergency Management Act 2013 (November 2013)	Assessed at the regional level (Darwin Metro, Northern, Southern) using the 2016 Region Emergency Plans
Australian Capital Territory	Emergencies Act 2004 (Republication No. 25, April 2016)	The ACT is one government jurisdiction. Local planning was assessed using: Emergencies (Emergency Plan) 2014 (No 1) Instrument NI2014-442

Planning assessment score

Rationale

Land use planning is an important tool in the mitigation of natural hazards. By controlling the use and development of land, including the location and design of uses and developments, planning plays an important role in enhancing the resilience of communities. Good planning policy is essential to ensure that that role is performed responsibly. Planning policy ranges from large scale, long term strategic plans, through to fine-scaled development controls. These different scales of policy implicate different governance scales: state government, regional planning bodies, and local councils. Good natural hazard policy across each of these scales will be crucial to sustaining the capacity to plan for disaster resilience.

The Australian Natural Disaster Resilience Index includes an indicator relating to the breadth of planning policy for natural hazards in local council jurisdictions. The data for that indicator is based on an assessment of how well the combination of state policy, regional plans, and local controls address natural hazards at the local scale. The presence of policy at the local scale indicates the capacity the system provides local planners to contribute to disaster resilience in their day-to-day planning work. The indicator is not based on how effectively that policy is actually administered by staff at each Council (i.e. how effectively policy is utilised in practice) – an infinitely more difficult thing to measure.

Derivation of the planning assessment score

The goal was to arrive at a "planning policy" score for each Australian local government area (after which that score would ultimately be distributed to SA2 level). It was essential that the score was derived from consistent criteria across LGAs, and that it reflected the performance of state, regional and local policy in combination at the local scale. This required an assessment of policies at all scales, a relatively small task at the state scale (as there are only 8 state and territories), but quite a large task at local level (with 566 LGAs). The potential for significant differences in the character of LGAs required some limitations to ensure consistency. A key decision was to limit policy on specific hazards to bushfire and flood (riverine or coastal), the most common hazards across Australia (some inner metro LGAs were exempted from bushfire questions because of their isolation from bushfire risk).

Step 1: Broad review of planning documents at local, regional and state scales

Because planning systems are not standardised in Australia, and the diversity of documents can vary significantly from context to context, it was not viable to initially target a narrow set of questions towards a narrowly prescribed form of planning policy document. The process therefore first involved a broad assessment of the wider range of policy documents in each state, regional and local jurisdiction. This process gathered evidence of all explicit provisions for hazards in planning documentation in each scale, and in each unique state context.

Questions asked and documentation considered at this initial stage are outlined below.

State Scale:

Forms of documentation:

- State Legislation
- State Planning Policies
- State Standard Provisions
- State-wide hazard mapping platforms

Questions asked:

- Are there state planning policies and/or provisions for hazards (and specifically for bushfire and flood)?
- Is planning's responsibility for addressing hazards clarified at state level?
- Do state provisions require hazards to be mapped at the local scale?

Regional Scale:

Forms of documentation:

- Metropolitan Strategic Plans, including district plans
- Regional Plans, including sub-regional plans
- Regional or sub-regional hazard-related studies

Questions asked:

- Are there regional strategic plans across the state, and do they include specific objectives for natural hazards?
- Are regional hazards identified in the plan, and are they represented in maps?

Local Scale:

Forms of documentation:

- Local planning strategies and planning policies
- Planning maps and associated hazard assessments for planning purposes (flood studies)
- Planning schemes, environmental planning instruments, development control plans, etc. (containing planning regulations)

Questions asked:

- Is there local policy or strategy specific to planning for natural hazards?
- Are there local planning maps showing flood prone land?
- Are there local planning maps showing bushfire prone land?
- Local planning codes/development controls addressing hazards generally, and flood and bushfire specifically.

Step 2: Focussed assessment and scoring of policy

After a comprehensive review of planning documentation and its influence on decision making in land use planning at the local level, a more distilled, standardised set of questions was asked to arrive at the policy score. Drawing on the data tables assembled through Step 1, the new set of questions addressed the way hazard-based policy at all scales came to bear on the planning framework in the LGA. The questions effectively combined a vertical assessment of jurisdictional contributions to hazard policy, and a horizontal assessment of operational policy components (the policy tools that planners use in their day to day work). There were seven questions in the scoring system, as follows:

1. Does state policy require mapping of local bushfire & flood/inundation?
2. Does state policy require code for bushfire & flood/inundation in local plans?

3. Does a region scale strategy stipulate planning principles for hazard risk?
4. Is local bushfire prone land mapped?
5. Is local land prone to inundation mapped?
6. Is there local development code for bushfire prone areas?
7. Is there local development code for flood prone areas?

Those questions were composed to flexibly encompass the diversity of planning systems across Australia, as clarified in Step 1. In most cases, a question could be answered in the affirmative by multiple possible sources: a flood map, for example, might be found in a planning scheme overlay; in a separate policy document; or in a flood study that might be a reference document for planning provisions. A bushfire map could be a locally produced static map made publically available as a PDF; or part of an interactive database maintained by a state agency. The questions don't discriminate about the *form* of the provision, they simply ask whether the provision exists, whether it is publically available, and whether it is viably an effective part of the hazard-planning toolkit for local planning practice. It is also important to stress that the focus was only on policy that was publically available via web searches.

Each LGA was scored out of a possible 2 for each of the seven questions. A score of 0 meant the object of the question was not fulfilled by any local, regional or state provision; 1 meant it was partially fulfilled; and 2 meant it was fulfilled. The maximum policy score was therefore 14.

2.2.5 Community capital

2.2.5.1 Community capital indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Crime and safety	Offences against person_Per 100,000 population	SA2	Various - police districts, LGA, suburbs	State and Territory crime statistics, 2011-12	Offences against person include assault, homicide, robbery, sexual offences, abduction.
	Offences against property_Per 100,000 population	SA2	Various - police districts, LGA, suburbs	State and Territory crime statistics, 2011-12	Offences against property include burglary, arson, theft, property damage. Driving, drug and liquor offences are not included.
	Safe walking in neighbourhood_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of persons aged 18 years and over who feel very safe/safe walking alone in local area after dark. This indicator is the Social Health Atlas variable - Persons aged 18 years and over who feel very safe/safe walking alone in local area after dark (modelled estimates), derived from the ABS General Social Survey, 2010. For the disaster resilience index, LGAs with missing data (for very remote areas and areas with <1000 population) were imputed from surrounding areas. ASR = Age standardised rate

Community capital indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Household support	Support in crisis_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of persons aged 18 years and over who are able to get support in times of crisis from persons outside the household. This indicator is the Social Health Atlas variable - Persons aged 18 years and over who are able to get support in times of crisis from persons outside the household (modelled estimates), derived from the ABS General Social Survey, 2010. For the disaster resilience index, LGAs with missing data (for very remote areas and areas with <1000 population) were imputed from surrounding areas. ASR = Age standardised rate
	Raise 2000 in week_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of Persons aged 18 years and over whose household could raise $2,000 within a week. This indicator is the Social Health Atlas variable - Persons aged 18 years and over whose household could raise $2,000 within a week (modelled estimates), derived from the ABS General Social Survey, 2010. For the disaster resilience index, LGAs with missing data (for very remote areas and areas with <1000 population) were imputed from surrounding areas. ASR = Age standardised rate

Community capital indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Access to services	Difficulty accessing services_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of persons aged 18 years and over who had difficulty accessing services. This indicator is the Social Health Atlas variable - Persons aged 18 years and over who had difficulty accessing services (modelled estimates), derived from the ABS General Social Survey, 2010. For the disaster resilience index, LGAs with missing data (for very remote areas and areas with <1000 population) were imputed from surrounding areas. ASR = Age standardised rate
	% households with no motor vehicle	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable VEHD (Number of motor vehicles).
Wellbeing	Poor self-assessed health_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of the estimated population, aged 15 years and over, with fair or poor self-assessed health. This indicator is the Social Health Atlas variable - Estimated population, aged 15 years and over, with fair or poor self-assessed health, derived as modelled estimates from the ABS Australian Health Survey, 2011-13. For the disaster resilience index, LGAs with missing data (for very remote areas and areas with <1000 population) were imputed from surrounding areas. ASR = Age standardised rate

Community capital indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Place attachment	% residents in same residence > 5 years	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable MV5D (Household five year mobility indicator)
Volunteering	% population undertaking voluntary work	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable VOLWP (Voluntary work for an organisation or group)
Unemployment	% jobless families	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable LFSF (Labour force status of parents/partners in families)

2.2.5.2 Community capital indicators collected but not used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Household support	Support relatives outside household_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of persons aged 18 years and over (or their partner) who provide support to other relatives living outside the household. Although this variable had good data quality, it was excluded because it do not fit within a latent dimension of resilience.
Access to services	Can't get transport_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of Persons aged 18 years and over who often has a difficulty or can't get to places needed with transport This variable contained a mix of moderate (use with caution) and poor (not for general use) data and was excluded. Access to services is also accounted for by the difficulty accessing services indicator.
Wellbeing	High self assessed psych distress_ASR per 100 population	SA2	LGA	PHIDU Social Health Atlas of Australia	Age standardised number of people per 100 population of the estimated population, aged 18 years and over, with high or very high psychological distress based on the Kessler 10 Scale. This variable contained a mix of moderate (use with caution) and poor (not for general use) data and was excluded. Wellbeing is also accounted for by the self-assessed health indicator.

2.2.5.3 Community capital indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Crime and safety	Offences against person_Per 100,000 population	Higher crime rate = lower community capital = lower disaster resilience	Yes
	Offences against property_Per 100,000 population	Higher crime rate = lower community capital = lower disaster resilience	Yes
	Safe walking in neighbourhood_ASR per 100 population	Higher perceived safety = greater community capital = higher disaster resilience	No
Household support	Support in crisis_ASR per 100 population	Higher access to support = greater household capacity = higher disaster resilience	No
	Raise 2000 in week_ASR per 100 population	Higher access to funds = greater household capacity = higher disaster resilience	No
Access to services	Difficulty accessing services_ASR per 100 population	Greater difficulty accessing services = lower community satisfaction = lower disaster resilience	Yes
	% households with no motor vehicle	Lower car ownership = less mobility and access = lower disaster resilience	No

Community capital indicator resilience directions (cont.)

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Wellbeing	Poor self-assessed health_ASR per 100 population	Lower health = lower disaster resilience	No
Place attachment	% residents in same residence > 5 years	Longer residence = greater place attachment and hazard awareness = higher disaster resilience	No
Volunteering	% population undertaking voluntary work	Higher volunteering rate = greater community participation = higher disaster resilience	No
Unemployment	% jobless families	Higher jobless families = greater disadvantage = lower disaster resilience	Yes

2.2.6 Information access

2.2.6.1 Information access indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Internet and mobile phone coverage	% area with excellent or good ADSL cover	SA2	Computed from raster layers	MyBroadband ADSL availability, Department of Communications, 2016	Between 60-80 (good) or 81-100 (excellent) per cent of premises have access to at least one fixed broadband technology
	% area with mobile phone coverage	SA2	Computed from raster layers	Telstra coverage map, 2016	The area within the SA2 that has access to Telstra 3G or 4G mobile phone network for device only
Community engagement and hazard education	Community engagement score	SA2	State	Derived from systematic assessment of community engagement policy and activity	Method outlined below.

2.2.6.2 Information access indicators collected but not used in index computation

Disaster resilience dimension	Indicator	Final resolution	Disaggregated from	Data source	Note
Internet and mobile phone coverage	% area with some, limited or no ADSL cover	SA2	Computed from raster layers	MyBroadband ADSL availability, Department of Communications, 2016	Inverse of % area with excellent or good ADSL cover

2.2.6.3 Information access indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Internet and mobile phone coverage	% area with excellent or good ADSL cover	Greater % good/excellent ADSL coverage = greater facilitation of information access = higher disaster resilience	No
	% area with mobile phone coverage	Greater mobile phone coverage = greater phone service = higher disaster resilience	No
Community engagement and hazard education	Community engagement score	Higher community engagement score = greater community engagement capacity and activity = higher disaster resilience	No

2.2.6.4 Information access – methods for derived indicators

Four semi-quantitative indicators were derived using content analysis of relevant legislation, policy and reporting documents. The rationale was to produce semi-quantitative data from underlying policy and procedures. These indicators were used when quantitative proxies were not available for this important latent dimension of disaster resilience.
There are four derived semi-quantitative indicators in the Australian Natural Disaster Resilience Index:

- Emergency planning assessment score (Planning and the built environment theme)
- Planning assessment score (Planning and the built environment theme)
- Governance, policy and leadership score (Governance and leadership theme)
- Community engagement score (Information access theme)

Community engagement score

Rationale
Community engagement is the process of stakeholders working together to build resilience through collaborative action (AGD n.d.). While an approach that seeks to empower communities is relatively new in the emergency management sector, it has been the basis of community development practice for decades (AGD n.d.). Embedding community engagement into core agency business is considered a fundamental aspect of disaster resilience. Principles of community engagement include: participation (building connected networks and relationships); consultation (sharing ideas, questioning and developing shared understanding and outcomes); collaboration (partnering with communities to support action); empowerment (building individual and community capacity); and, information (sharing information and ideas).

Community engagement was captured as an indicator of the capacities and commitments to community engagement within emergency service agencies. It does not capture 'how well' emergency service agencies are achieving community engagement outcomes, through community engagement principles. Rather, this indicator is derived from asking a series of questions about whether components of community engagement practice are 'in place' at State/Territory and agency levels.

Derivation of the community engagement score

Step 1

The availability of quantitative data for community engagement principles is limited and not consistent throughout Australia. Thus, focus was placed on building an overall picture of community engagement as core business and the capacities and commitments to community engagement within emergency service agencies. Based on the structure of emergency service agencies in Australia, seven questions were designed to evaluate the status of community engagement. These questions (Table 2.5) are applicable to all States and Territories and encapsulate the commitment to community engagement in State and Territory policy and planning, and community engagement as agency core business.

Step 2

Content analysis was used to evaluate legislation, plans, documents and websites. Only documents that were publically available or reported, or which were mentioned on organisation websites or in annual reports were included. All documents were assessed by the same researcher.

A score was assigned to each item, where 2=yes, 1=partly and 0=no.

Scores for items 1-7 (Table 2.5) were tallied and standardised by converting to a percentage of the maximum possible score. The maximum possible score is the score that could be derived if all items were relevant and answered as 'yes'. Each State/Territory has one value for this indicator.

Higher scores indicate greater capacity for community engagement.

Table 2.5 Items used for derivation of the community engagement score.

Level	Item number	Item	Data source
State level commitment to community engagement	1	Is community engagement mentioned in State emergency management legislation?	State Emergency Management legislation
	2	Is community engagement mentioned in State emergency management plans?	State Emergency Management Plans
Community engagement as agency core business	3	Is community engagement mentioned in the agency annual report?	Organisation websites, annual reports and policy documents.
	4	Is community engagement mentioned in the agency strategic goals?	Organisation websites, annual reports and policy documents.
	5	Does the agency have a community engagement strategy?	Organisation websites, annual reports and policy documents.
	6	Are community engagement activities promoted on the agency website?	Organisation websites, annual reports and policy documents.
	7	Does the agency have staff whose core role is community engagement?	Organisation websites, annual reports and policy documents.

2.2.7 Social and community engagement

2.2.7.1 Social and community engagement indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Social engagement	Percent population with life satisfaction scale 70 and above	SA2	No disaggregation – NATSEM data at SA2	AURIN and NATSEM	Life Satisfaction in 3 Groups (Synthetic Data) 2011. The data is calculated using a spatial microsimulation method to estimate small area (SA2) subjective wellbeing in Australia. The procedure uses the Australian Unity Wellbeing Index survey and the 2011 Census data. Subjective Wellbeing Homeostasis proposes that each person has a 'set-point' for personal wellbeing that is internally maintained and defended. This set-point is genetically determined and, on average, causes personal wellbeing to be held at 75 points on a 0-100 scale. Low levels of personal resources weaken homeostasis. For the disaster resilience index, SA2s with missing data were imputed as the average of all SA2s within the surrounding SA3.
	Percent population with high generalised trust	SA2	No disaggregation – AURIN data at SA2	AURIN	Estimates of generalised trust (Synthetic Data) 2011. Generalised trust estimated from Wave 10 of the HILDA dataset. The question used on HILDA was "To what extent do you agree or disagree with the following statements?- g) Generally speaking, most people can be trusted" and was ranked on a scale of 1 (strongly disagree) to 7, (strongly agree). A spatial microsimulation technique was applied to estimate generalised trust from the HILDA dataset. The indicator was computed as the % population with survey responses agree-strongly agree. For the disaster resilience index, SA2s with missing data were imputed as the average of all SA2s within the surrounding SA3 or SA4.

Social and community engagement indicators (cont.)

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
	Migration effectiveness 2006-2011	SA2	No disaggregation – ABS data at SA2	ABS	This measure assesses how effective migration has been in redistributing the population. Computed as gross in and out migration as a percentage of population.
Skills for learning	Percentage of population with post school qualification	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from the ABS community profile B40b (Non-school qualification: Level of education)
	People over 15 in further education	SA2	No disaggregation – ABS data at SA2	ABS 2011 Census of Population and Housing	Computed from census variable TYSTAP (Educational institution: attendee status)
	Participation in personal interest learning	SA2	State	ABS 2013 Survey of Work-Related Training and Adult Learning	Percentage of survey respondents aged 15-74 participating in personal interest learning.

2.2.7.2 Social and community engagement indicators collected but not used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Social engagement	Life satisfaction scale 60 and below	SA2	No disaggregation	AURIN and NATSEM	Inverse of life satisfaction scale 70 and above
	Migration effectiveness ratio 2006-15	SA2	No disaggregation – ABS data at SA2	ABS	The migration effectiveness ratio was computed using the 2006-2011 period

Regional Wellbeing Survey

The Regional Wellbeing Survey is an annual survey of the subjective wellbeing of people living in rural and regional areas of Australia, and how they are experiencing the many changes occurring in their communities (Schirmer et al. 2015). Several wellbeing determinants were examined in the 2014 Regional Wellbeing Survey, focusing on access to:

- Financial capital, in the form of (i) household financial wellbeing and (ii) local economic wellbeing
- Human capital, focusing on (i) confidence in skills and education, (ii) health and (iii) community leadership and collaboration
- Institutional capital, in the form of (i) having a say and being heard, and (ii) equity and inclusion
- Social capital, focusing on (i) spending time with friends and family, (ii) getting involved in the local community, and (iii) sense of belonging
- Physical capital, including (i) access to services and infrastructure, (ii) access to telecommunications, (iii) crime and safety, and (iv) landscape and aesthetics
- Natural capital, in the form of perceived environmental health.

Thus, the Regional Wellbeing Survey provides a valuable source of data for the Social and Community Engagement theme of the Australian Natural Disaster Resilience Index. The following indicators are of particular relevance for the theme:

- Community leadership

- Having a say and being heard
- Equity and inclusion
- Spending time with family and friends
- Getting involved
- Sense of belonging

Despite the great value of this wellbeing data, the focus of the Regional Wellbeing Survey is on the regional areas of Australia. Some 1,240 SA2s are missing from this data. Most are located in highly populated urban areas, and the characteristic differences between rural and urban areas preclude imputation. One approach to examining the impact of omitting this group of indicators from the Social and Community Engagement Theme is to regress each of the Regional Wellbeing Survey indicators against all available indicators in the other themes.

Scatterplots of the five Regional Wellbeing Survey indicators against all available indicators (transformed where needed to reduce undue skewness and leptokurtosis) showed a number of obvious outliers. These were omitted, leaving 795 SA2s. There were no obvious non-linear relationships. Combined forward and backward stepwise regression was used to find the set of independent variables that maximised the R^2 value (Table 2.6). The table of R squared values suggests that the Regional Wellbeing Survey indicators are reasonably well predicted by the remaining indicators already included in the Australian Natural Disaster Resilience Index. Thus, while the Regional Wellbeing Survey indicators contribute to the understanding of wellbeing in communities, the omission of these indicators from the index does not result in complete loss of information about social and community engagement.

Table 2.6 Correlations of the Regional Wellbeing Survey data with ANDRI indicators for corresponding regional SA2s.

Dependent variable	Adjusted R^2
Community leadership mean score	0.817
Having a say mean score	0.818
Equity mean score	0.802
Family and friends mean score	0.683
Getting involved mean score	0.869
Sense of belonging mean score	0.659

2.2.7.3 Social and community engagement indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Social engagement	Percent population with life satisfaction scale 70 and above	Greater percentage population with life satisfaction >70 = standard or high life satisfaction = greater social engagement capacity = higher disaster resilience	No
	Percent population with high generalised trust	Greater agreement with trust statement = greater trust = greater social engagement capacity = higher disaster resilience	No
	Migration effectiveness 2006-2011	Higher percentage = greater population turnover = lower community resilience	Yes
Skills for learning	Percentage of population with post school qualification	Greater percentage of qualified population = greater skills for learning = higher disaster resilience	No
	People over 15 in further education	Greater percentage participation = greater skills for learning = higher disaster resilience	No
	Participation in personal interest learning	Greater percentage participation = greater skills for learning = higher disaster resilience	No

2.2.8 Governance and leadership

2.2.8.1 Governance and leadership indicators used in index computation

Disaster resilience dimension	Indicator name	Final resolution	Disaggregated from	Data source	Note
Research and development	Presence of research organisations	SA2	LGA	Regional Australia Institute	This is the % of research organisations out of all businesses variable from the [In]Sight 2014 Regional Competitiveness Index. Data derived from Innovation Australia – registered research organisation records
Capacity for development	Business Dynamo sub-index	SA2	LGA	Regional Australia Institute	This is the Business dynamo sub-index variable from the [In]Sight 2014 Regional Competitiveness Index. The Business Dynamo sub-index focuses on the new measures of innovation: 1. New business entries as a proportion of total businesses, 2010-2014 2. Owner-managers as a proportion of total employed persons 3. Trademark applications, average annual per 10,000 working age population 4. Knowledge-intensive business services (KIBS), employees per 10,000 working age population
	Local economic development support	SA2	LGA	Regional Australia Institute	This is the Local economic development support variable from the [In]Sight 2014 Regional Competitiveness Index. Data derived from systematic assessment of the availability of business information and pro-business policies
Emergency service governance environment	Governance, policy & leadership score	SA2	State level	Derived from systematic assessment of emergency service governance elements	Method outlined below

2.2.8.2 Governance and leadership indicators collected but not used in index computation

None

2.2.8.3 Governance and leadership indicator resilience directions

Disaster resilience dimension	Indicator name	Disaster resilience direction	Reversal required?
Research and development	Presence of research organisations	Higher presence of research organisations = greater opportunity for knowledge production and innovation = greater resilience	No
Capacity for development	Business dynamo sub-index	Higher business dynamo index = higher capacity for business innovation = greater resilience	No
	Local economic development support	Higher development support = higher commitment to business growth = greater resilience	No
Emergency service governance environment	Governance, policy & leadership score	Higher score = better performance in organisational governance and leadership = greater resilience	No

2.2.8.4 Governance and leadership – methods for derived indicators

Four semi-quantitative indicators were derived using content analysis of relevant legislation, policy and reporting documents. The rationale was to produce semi-quantitative data from underlying policy and procedures. These indicators were used when quantitative proxies were not available for this important latent dimension of disaster resilience.
There are four derived semi-quantitative indicators in the Australian Natural Disaster Resilience Index:

- Emergency planning assessment score (Planning and the built environment theme)
- Planning assessment score (Planning and the built environment theme)
- Governance, policy and leadership score (Governance and leadership theme)
- Community engagement score (Information access theme)

Governance, policy and leadership score

Rationale
Adaptation is the decision-making process and actions undertaken to adjust to current or future predicted change. Adaptation involves deliberate incremental and transformational change across social, government and economic systems. The capacities which enable adaptation are related to the existence of institutions and networks that learn and store knowledge and experience, create flexibility in problem solving, and balance power among interest groups.

This rationale was captured as an indicator of the presence of these components of adaptive emergency service institutions. It does not capture 'how well' emergency service institutions are adapting to change. Rather this indicator is derived from asking a series of questions about whether the components required for responding to change through adaptation are 'in place'.

Derivation of the governance, policy and leadership score
Step 1

The Adaptive Capacity Wheel (Gupta et al. 2010) was designed to assess if institutions stimulate the adaptive capacity of society to respond to climate change. It is comprised of six dimensions for analyzing the adaptive capacity fostered by institutions: variety; learning capacity; room for autonomous change; leadership; resources; and, fair governance. The availability of Australian data to

populate these desired categories of institutional adaptive capacity were limited. Thus, it was not possible to use the Adaptive Capacity Wheel in the Australian Natural Disaster Resilience Index.

However, these dimensions were used as the conceptual basis for designing a content analysis of institutional adaptive capacity using available data. Five dimensions were identified for incorporation in the index, based on the landscape of legislative, management and internal planning factors in Australian emergency management institutions: leadership; lessons management; strategic planning; sector oversight; and research engagement.

Nine questions were designed to evaluate institutional adaptive capacity. These questions (Table 2.7) are applicable to all State and Territory emergency service organisations. Land management agencies with some responsibility for bushfires were generally excluded from the analysis.

Step 2

Content analysis was used to question documents and data for each institutional capacity dimension. Only documents and data that were publically available or reported, or which were mentioned on organisation websites or in annual reports were included. All documents were assessed by the same researcher.

A score was assigned to each item, where 2=yes, 1=partly and 0=no.

Scores for items 1-9 (Table 2.7) were tallied and standardised by converting to a percentage of the maximum possible score. The maximum possible score is the score that could be derived if all items were relevant and answered as 'yes'. Each State/Territory has one value for this indicator. Higher scores indicate greater capacity for institutional adaptive capacity.

Table 2.7 Items used for derivation of the governance, policy and leadership score.

Dimension	Item number	Item	Data source	Note
Leadership	1	Staff engagement as reported (% agreement)	State of the Public Service reports from each State/Territory, 2014	Data were standardised by applying an engagement score where: % agreement >75% = 2 % agreement 50-75% = 1 % agreement <50% = 0 Percent agreement was averaged across agencies within the same State/Territory, prior to the engagement score being applied.
	2	Staff confidence in organisational leadership as reported (% agreement)	State of the Public Service reports from each State/Territory, 2014	Data were standardised by applying a leadership score where: % agreement >75% = 2 % agreement 50-75% = 1 % agreement <50% = 0 Percent agreement was averaged across agencies within the same State/Territory, prior to the engagement score being applied.
	3	Opportunity for employee innovation	State of the Public Service reports from each State/Territory, 2014	Data were standardised by applying an innovation score where: % agreement >75% = 2 % agreement 50-75% = 1 % agreement <50% = 0 Percent agreement was averaged across agencies within the same State/Territory, prior to the engagement score being applied.

Table 2.7 (cont.)

Dimension	Item number	Item	Data source	Note
Lessons management	4	Does the organisation or the oversight body have a lessons management system?	Organisation websites, annual reports and policy documents.	
Strategic planning	5	Does the organisation have a current strategic plan?	Organisation websites	
	6	Does the strategic plan place agility, flexibility, resilience or adaptation as a key pillar/theme of strategy?	Organisation websites	
Sector oversight	7	Does the emergency services sector have an oversight body responsible for strategic and policy direction?	Organisation websites and policy documents	
Research engagement	8	Is the organisation a partner in the Bushfire and Natural Hazards CRC?	BNHCRC Website	Land management agencies were included in this item.
	9	Is the organisation a member of AFAC?	AFAC Website	Land management agencies were included in this item.

2.3 RELATIONSHIPS BETWEEN INDICATORS AND DISASTER RESILIENCE: A LITERATURE REVIEW

2.3.1 Social character

The social character theme is the social characteristics of the community and represents the social and demographic factors that influence the ability to prepare for and recover from a natural hazard event.

Social and demographic factors have well-known influences on the capacity to prepare for, respond to and recover from a natural hazard event.

Natural hazards are socially, culturally and historically situated events. Natural hazards become natural disasters when unequal social, economic and political relations influence, create or worsen the effects of hazards (O'Keefe et al. 1976). Thus, social resilience and vulnerability to disasters both arise from stratified processes of social inequity and historic patterns of social relations that manifest as deeply embedded structural enablers and barriers (Fordham et al. 2013). These structural enablers and barriers can be assessed through social and demographic factors such as income disparity, class, race/ethnicity, gender, age, disability, health, literacy, family composition and household composition (Fordham et al. 2013). Specific activities associated with the preparation, response and recovery aspects of the disaster management cycle are also influenced by social and demographic factors.

Household and family composition

Household and family composition have a complex interaction with disaster resilience. Households and families can generate internal resources and skills useful in disaster preparation, response and recovery (Wachtendorf et al. 2013). Households with children reported shock and panic related to the presence of children during the 2009 Black Saturday bushfires (Victoria Police 2014). The presence of children also contributed to the death of others because of diversion from active defence of the house or unexpected behaviour of children (Victoria Police 2014). Households with children performed fewer disaster-planning actions than childless households, because of lower motivation, perceived difficultly and lack of time (McNeill and Ronan 2017). However, households with children may also have a higher probability of perceiving risk and be more prone to evacuate (Wachtendorf et al. 2013). Single parent families, particularly those headed by women, are vulnerable to disasters because they are more likely to be poor, have heavy care-giving responsibilities and lack family and social resources (Morrow 1999). The needs of LGBQTI families also need to be considered as there may be stigma associated with these families in the post-disaster environment (Watchtendorf et al. 2013).

As recorded in the 2011 Census, about a quarter of Australian households are lone person households and about 13% of Australian adults live alone (de Vaus

and Qu 2015a). Living alone is not a permanent arrangement for many younger people and rates of living alone increase with age (de Vaus and Qu 2015b). Circumstances around living alone include relationship separation, widowhood, leaving the parental home, children departing a single-parent household or choice to live alone (de Vaus and Qu 2015b). Women, especially younger women who live alone are more socially advantaged in terms of education, income and labour force participation than men living alone (de Vaus and Qu 2015a). Thus, for some people living alone may confer resilience through greater access to resources, but for others, living alone interacts with sex, age and income to increase vulnerability through social isolation, health, lack of resources and motivation to prepare (Wachtendorf et al. 2013). While living with someone was a protective factor in post-bushfire mental health following the 2009 Black Saturday bushfires, the risks of living alone were offset by group involvement (Gibbs et al. 2016). Further, family members were reported as the main source of support outside of formal support services following these bushfires (Gibbs et al. 2016).

Age and sex

The structural effects of age and sex on disaster resilience is inherently compounded by the broader socio-economic environment. People facing disadvantage – not only due to age or gender but because of poverty, homelessness or migration – are more vulnerable at all stages of a disaster and pre-existing structural disadvantage can magnify during disasters (Morrow 1999; VCOSS 2014). People facing disadvantage may have little choice or control over where they live, may live in high risk areas or have less ability to influence decision makers (VCOSS 2014). The social transformations underway, including widening wealth gaps, population movements and food security, exacerbate burdens on women and children (Cutter 2017). Women, children and the aged may lack human, economic or physical resources relative to other groups, and these deficits feed back onto each other to compound disaster vulnerability and limit adaptive options (Morrow 1999). Affluent women have different options during disasters than poor women, but it is women's incomes that are most likely to be affected by loss of secondary employment (Morrow 1999; Tobin-Gurley and Enarson 2013). Women, those on lower incomes, the elderly and young adults are less likely to be able to afford protective actions such as insurance, imposing barriers to recovery (ICA 2007; Peek 2013; Box et al. 2016).

Disaster fatality rates have strong relationships to age and sex. Women's fatality rates are generally higher than men's fatality rates in disasters (Gonzalez-Riancho et al. 2015). However, in Australia, more than twice as many males than females have been killed in bushfires between 1900 and 2008, largely while defending property (Haynes et al. 2010) and twice as many males than females have been killed in floods between 1950-2008 (Haynes et al. 2009). In the 2009 Black Saturday bushfires, seniors and children represented 44% of the fatalities which is twice as many as would be expected from

demographics of the area (Handmer and O'Neill 2016). Women's fatality rates may be associated with parenting and carer responsibilities (Victoria Police 2014; Gonzalez-Riancho et al. 2015). Older persons and children often have higher disaster mortality percentages because of mobility, illness, dependency and carer issues (Victoria Police 2014; Gonzalez-Riancho et al. 2015; Rufat et al. 2015). Older persons and children are also particularly susceptible to heatwaves (Loughnan et al. 2013 & 2014; Saman et al. 2013; Coates et al. 2014).

Women, the elderly and children may be at greater risk of psychological distress following disasters (McFarlane 2005; Parslow et al. 2006; Caruana 2010; Frankenburg et al. 2013; Kwan and Walsh 2017). The aftermath of disaster may also increase the exposure of women and children to interpersonal violence (Phillips and Jenkins 2013). However, men may be at risk of social isolation, poorer mental health outcomes and alcohol abuse following disasters (McFarlane 2005; Arbes et al. 2014; Gibbs et al. 2016).

Natural hazard preparation, response and recovery is influenced by sex. While there was no definitive trend in staying to defend as a masculine trait or leaving as a feminine trait following the 2009 Black Saturday bushfires, in households where children were present women often left with the children while men stayed to defend (Whittaker et al. 2016). Gendered household roles or patriarchal norms may also lead to disagreements during preparation and response, leading to fatalities or risky outcomes (Eriksen 2014; Whittaker et al. 2016; Tyler and Fairbrother 2018). For example, it may be difficult for women to voice concerns and be taken seriously during bushfire planning because of a cultural environment that views men's knowledge of bushfire as innately more authoritative (Tyler and Fairbrother 2018). Women have been shown to play a key role in disaster recovery, through family support, disaster relief and improving post-disaster communities (Gordon 2013).

The association between age and hazard preparedness is complex. Despite increased fatalities of older people in natural disasters, older people have been shown to have higher levels of evacuation preparation (McNeill et al. 2013) and more awareness of bushfire risk (Handmer and O'Neill 2016). The elderly may cope better during emergencies because of prior experiences, and may also act as resources for families and communities in times of crisis, or mobilise social capital (Buckle et al. 2000; Ngo 2001; Cornell et al. 2012; Kwan and Walsh 2017; Howard et al. 2017; Soetanto et al. 2017). However, the elderly may also have reduced mobility and financial capacity to plan for and prepare for hazards (Morrow 1999; Buckle et al. 2000), have undertaken less preparation than younger people (Box et al. 2016), be less likely to receive warning messages (Peek 2013) or have reduced family support systems during emergencies (Astill 2017). Material losses among the elderly may be proportionally greater because they have less access to liquidity and may perceive their losses as greater (Ngo 2001). In the 2011 Japan tsunami, the high death toll in the Rikuzentakata area was attributed partly to misguided beliefs about tsunamis

from aged and inaccurate memories, particularly among the elderly (Nakasu et al. 2018). Children may be more likely to believe warnings and pressure parents to take action (Drabeck 2013) or have enhanced disaster literacy and understanding through participation in child-centered disaster risk reduction activities (Ronan and Johnston 2005; Ronan et al. 2016). However, children, particularly very young children, do not have the same level of experience, independence or resources as adults during emergencies (Peek 2013).

Education and employment

Evidence suggests that education itself is a protective factor in disasters, although this has arisen from research conducted in developing countries. In the 2004 Indian Ocean tsunami, education did not confer a survival advantage for women, but higher-educated males were less likely to die in the tsunami (Frankenburg et al. 2013). While the better-educated were as likely as others to be displaced by the tsunami, the better educated were less likely to move to temporary housing because of the greater availability of financial and social resources (Frankenburg et al. 2013). The better educated were also in better psychosocial health five years after the tsunami (Frankenburg et al. 2013). In Thailand, Muttarak and Pothisiri (2013) showed that formal education had a positive relationship with taking preparedness measures and living in a community with a higher proportion of women who have at least a secondary education increases the likelihood of disaster preparedness. In contrast, Sharma et al. (2013) found that formal education did not enhance cyclone adaptive capacity in India, with non-formal education and traditional knowledge a significant determinant of the ability to understand and interpret cyclone warning information.

The protective nature of education and employment is complex and interacts with sex, household composition and age. Rufat et al (2015) showed that at the individual level, lack of resources, power relationships, poverty and marginalization translate into social vulnerability through access to resources, coping behaviour and stress. At the community level, social vulnerability is determined by relative distribution of income, access to resources and diversity of economic assets. In Australia, tertiary education is associated with higher overall career earnings (Norton et al. 2018) conferring advantages in relation to access to resources and avoidance of structural barriers to disaster resilience.

Need for assistance, language and migration

Disability is associated with increased fatality and reduced preparation and recovery options. People with disabilities are often over-represented in disaster fatality statistics in comparison with background demographics (Gonzalez-Riancho et al. 2015, Quail et al. 2018). Barriers during hazard events include accessible transport for evacuation, lack of access to warning messages and suitability and staffing of evacuation centres (Davis et al. 2013). Barriers during recovery include housing, transportation, employment, physical and mental

health and accessing recovery services (Stough et al. 2016). While these challenges are common to most survivors of disaster, there are additional challenges for disabled people in negotiating the recovery process, maintaining independence and acquiring resources that accommodate their disabilities (Stough et al. 2016; Quail et al. 2018). Chronic health conditions can also influence disaster outcomes. In the 2009 Black Saturday bushfires, 24% of all fatalities had chronic health conditions that possibly or definitely affected their mobility, judgement or stamina (Handmer and O'Neill 2016). People with chronic health conditions are also more susceptible to heatwaves (Coates et al. 2014).

Immigration and language proficiency can place people at increased risk during natural hazard events because of literacy, linguistic competency, social isolation, socio-economic disadvantage, cultural practices, underlying health issues and poor rental housing conditions (Dash 2013; Hansen et al. 2013; Santos-Hernandez and Morrow 2013). Hansen et al. (2013) and Loughnan et al. (2013) showed that ethnicity was a significant factor increasing the vulnerability of communities to heatwaves, and that members of new and emerging communities were often unprepared for the extreme conditions of Australian summers and did not access the protective factors for heatwaves such as air-conditioning, swimming skills or congregation in air-conditioned places. Ethnic minorities may also be less likely to respond to and be more sceptical of emergency service authorities (Drabeck 2013). However, people who settle in Australia from overseas often have high adaptive capacity because of their previous settlement experiences (Hansen et al. 2013).

Familiarity of place increases social cohesion and community involvement (Henly-Shepard et al. 2015). Independent of cultural or linguistic diversity, new residents may be unfamiliar with hazard risks, warning systems and lack protective factors (Usher et al. 2013; Victoria Police 2014; Henly-Shepard et al. 2015). Rufat et al. (2015) showed that flood awareness was related to prior experience, length of residence and time since last flood. New residents may also have reduced social networks and resources to enable disaster preparation and recovery. Migration also influences familiarity of place. Migration is driven by a range of factors, including economic factors, lifestyle choices, environmental change, amenity, housing, employment and social capital. These factors can be influenced by natural hazard events, with subsequent migration responses into and out of locations (Shumway et al. 2014).

2.3.2 Economic capital

The economic capital theme is the economic characteristics of a community and represents the economic factors that influence the ability to prepare for and recover from a natural hazard event.

Economic capital can facilitate disaster resilience by reducing the losses from natural hazard events.

Economic capital is related to the fundamental economic problem of the efficient and equitable provision of human material wellbeing, which can be damaged or destroyed in the context of disasters (Rose 2007). Economic resilience is the ability of an entity or system to maintain function (e.g., continue producing) when shocked (Rose 2007). Economic resilience can occur at three levels: microeconomic (individual behaviour of firms, households, or organisations); mesoeconomic (economic sector, individual market, or cooperative group); and macroeconomic (all individual units and markets in a region, state or nation, allowing for the fact that the whole is not simply the sum of the parts of an economy) (Rose 2004). Economic resilience can contribute to the reduction of losses from natural disasters, through improved mitigation and risk management, individual flexibility and adaptation, enhanced recovery, market continuity and business continuity (Rose 2004).

Economic resilience to disasters is associated with a number of economic factors, many of which are compounded with social factors (Tierney 2014; Rufat et al. 2015). Many of the same factors that disadvantage communities on a day-to-day basis are exacerbated during disasters (Tierney 2014; VCOSS 2014; Banks and Bowman 2017). Neighbourhood affluence was negatively associated with heat wave mortality in Chicago (Browning et al. 2006). Low-income communities often live in high risk areas or in residences that are physically vulnerable (Morrow 1999; Tierney 2014). People on low incomes are more likely to be killed, injured or left homeless in disasters (Tierney 2014), more likely to ignore disaster warnings (Drabeck 2013), require evacuation (Prasad 2016) or develop post-traumatic stress disorder following a disaster (McFarlane 2005). In contrast, communities with higher levels of economic resilience and community capital were more likely to perceive hurricane risks (Shao et al. 2018) and to experience lower levels of depression following a disaster (Ahern and Galea 2006). High levels of economic capital often go hand in hand with high levels of social capital (Thomas et al. 2013).

Disasters disrupt the flow of money and people's financial routines (Farrell and Greig 2018). Following Hurricane Irma, bank account inflows were more than 20 percent, or roughly USD400, lower than baseline in the week of landfall (Farrell and Greig 2018). While checking account balances remained stable or grew in the short run, these healthier balances may mask welfare losses, such as incidents of deferred medical care and debt payments, as well as anticipated costs to repair homes and replace property (Farrell and Greig 2018). In this sense, in the face of a hurricane families appeared financially resilient but may not have been economically resilient (Farrell and Greig 2018), where 'financially' means in a cash-flow sense, and 'economically' refers to one's overall material well-being, taking into account debt and level of material need.

Economic capital is a contributing factor to business continuity. A well-prepared business might be able to experience growth following a natural disaster if they continue to function and can take advantage of increased demand for their products or services (Paton and McClure 2013). Marshall et al. (2015) showed that business owners with more experience, older businesses, service businesses and larger businesses were less likely to meet demise following Hurricane Katrina. Businesses with prior experience of disaster and prior cash flow problems were also less likely to meet demise (Marshall et al. 2015). Businesses more likely to meet their demise were owned by women, minorities or veterans and were home-based (Marshall et al. 2015). Following the 2011 Christchurch earthquake, businesses' prior financial viability heavily influenced their chance of survival (Fabling et al. 2014). Cash flow, electricity supply and damage to equipment was identified as a significant challenge for non-farm businesses following the earthquake (Whitman et al. 2013). A well-prepared business

Macroeconomic resilience refers to the capacity of the State or national economy to recover from and adapt to the effects of natural hazard events. Part of the adaptive capacity of a community is represented by the ability of local authorities, businesses and residents to draw on the public and private resources of the broader economy in the course of their recovery. For example, affected residents may find temporary or permanent employment, or draw on the resources of extended families elsewhere, and the likelihood of this is greater in a strong macro-economy. Similarly, the capacity of State and national governments to provide funds for local authorities to deliver relief and recovery from natural hazard events depends partly on the strength of their macro-economies.

Losses from natural hazards may increase with greater wealth, but increased potential for loss can also be a motivation for mitigation.

Home ownership influences available resources and attitudes towards expenditure on disaster preparation and mitigation. Following the 2011 Queensland Floods, people who did not own their home believed that they were less able to make changes to reduce their flood risk (Bird et al. 2013). However, home owners also indicated that they were unlikely to make changes to their homes following the floods (Bird et al. 2013). Approximate average costs for a resident to prepare their home for bushfire is AUD$10,000, with subsequent annual maintenance costs of AUD$1,000 (Penman et al. 2016). Overall, decision to prepare are driven by perceived risk, property location and the planned actions for a future bushfire (Penman et al. 2016). Renters believed that their capacity to act in the home and adapt to climate events was inhibited by landlords and property managers (Instone 2013). Strata titled homes may also have reduced awareness of hazards and hazard risk, but even if these are identified, strata residents can only implement change through complex community title decision making processes (Guilding et al 2013).

Household financial position and home ownership also influences the uptake of insurance as a mitigation strategy. People on lower incomes, including home owners, are less likely to have both building and contents insurance (ICA 2007; Banks and Bowman 2017). Low income households may be most exposed to the risk of harmful and financially high-impact events but these low-income households are the most likely to lack private insurance cover (Hudson et al 2016; Banks and Bowman 2017). Long-term renters are more likely to be on lower incomes, and experience high rates of housing stress relative to other tenure groups (Stone et al. 2013). Non-insurance of household contents is also greater for renters than home owners (ICA 2007). Other barriers to insurance uptake include individual risk perception and the decisions by insurance companies about which hazard risks are calculable, profitable and affordable (Savitt 2017).

2.3.3 Emergency services

The emergency services theme is the presence, capability and resourcing of emergency services and represents the potential to respond to a natural hazard event.

Emergency management is a core function of government.

Communities, businesses and governments are expected to address risks associated with natural hazards and disasters. Emergency management is an essential role of government and the validity of this core function has never been in question (Haddow et al. 2011). Communities also place a range of expectations of assistance and coordination onto emergency service organisations during emergency events (Manock et al. 2013; Singh-Peterson et al. 2015).

Emergency services play an essential role across the PPRR cycle, but most acutely in the response phase. The response function of emergency management includes actions aimed at limiting injuries, loss of life and damage to property and the environment that are taken before, during and immediately after a hazard event (Coppola 2011). Response functions may include, but are not limited to: alerts and warnings, active mitigation such as firefighting, search and rescue, evacuation, first aid, medical treatment, safety and security, volunteer management, fatality management, evacuation centre management, sanitation, infrastructure protection, disaster assessment and the coordination of these activities (Coppola 2011).

The capacity for emergency response (here defined as capabilities plus the management of those capabilities) is integral to community disaster resilience. Mayunga and Peacock (2010) assert that: “In general, lack of… critical facilities may have a direct negative impact on a community’s capacity to prepare, respond, and recover from disasters.” Availability of trained and equipped emergency service personnel, including volunteers, can influence disaster outcomes (Parliament of Victoria 2010; QLD Floods Commission of Enquiry

2012). The importance of human capital in the emergency services sector, including knowledge and skills, is further promoted in this context. Community resilience is enhanced if available resources are commensurate with community needs and the risks they face, and the resources are effectively managed.

Emergency management is a key inclusion in policies guiding disaster resilience and disaster risk reduction.

Global and national frameworks and policies are also acknowledging the prime importance of emergency management for disaster resilience and disaster risk reduction. Based on the collective knowledge and experiences of the global disaster risk-reduction community, the United Nations Sendai Framework for Disaster Risk Reduction identifies the allocation of necessary logistical resources, and development of planning and warning systems as priorities to enhance resilience (UNISDR 2015). Earlier, UNISDR (2014) justified emergency response capability as a key indicator of disaster resilience. In developing their resilience scorecard for cities, UNISDR (2014) includes the following emergency management variables under their Essential Theme #9 - "Install early warning systems and emergency management capacities in your cities and hold regular public preparedness drills". Specific items highlighted in this regard include:

- Existence and effectiveness of early warning systems;
- Existence of emergency response plans that integrate professional responders and grass roots organisations;
- 'Surge' capacity of police also to support first responder duties;
- Definition of other first responder and other staffing needs, availability – including fire, ambulance, healthcare, neighbourhood support etc.;
- Definition of equipment and supply needs, and availability of equipment;
- Likely ability to continue to feed population and meet likely needs for shelter/safe places, staple goods and fuel;
- Interoperability with neighbouring cities/states and other levels of government of critical systems and procedures; and
- Emergency operations centre;
- Practices and rehearsals – involving both the public and professionals; and
- Effectiveness of drills and training (UNISDR 2014).

The intrinsic importance of emergency services to community resilience in Australia is demonstrated by their inclusion in emergency/disaster management at all levels of government and acknowledgement in national policy (e.g. Steering Committee for the Review of Government Service Provision, Report on

Government Services, National Strategy for Disaster Resilience). Australia's National Emergency Risk Assessment Guidelines (AIDR 2015) delineate emergency response resources as key controls of risk where they are able to make a material difference to the consequences of an emergency. The National Strategy for Disaster Resilience (COAG 2011) describes resilient communities as having "committed the necessary resources and are capable of organising themselves before, during and after disasters which helps to restore social, institutional and economic activity". It also recognises the value of volunteerism in this context.

Newer approaches to disaster resilience policy and management in Australia also align with the idea of shared responsibility, where political leaders, governments, business and community leaders, and the not-for-profit sector all adopt increased or improved emergency management and advisory roles, and contribute to achieving integrated and coordinated disaster resilience. In turn, communities, individuals and households need to take greater responsibility for their own safety and act on information, advice and other cues provided before, during and after a disaster (COAG 2011). Thus, there can be tensions between the role of emergency service agencies in building community resilience and the role of agencies as first responders (Bosomworth et al. 2017). These tensions inform budget debates within agencies, where resources need to be assigned through all aspects of the PPRR cycle. During emergencies, political involvement can create further tensions between political drivers and operational realities (Bosomworth et al. 2017).

Remoteness influences the provision of and access to services.

The distribution of services in Australia is strongly influenced by remoteness. Public policy, institutional arrangements and autonomous economic and social events act together to determine the economic and social geography of rural areas (Sorensen and Epps 1993). The climate and environment associated with biophysical regions of Australia also influences individual and enterprise behaviour (Sorensen and Epps 1993). The well-being of rural populations is also inextricably linked to socio-economic structural changes (Rolley and Humphreys 1993).

The Australian Statistical Geography Standard (ASGS) divides Australia into 5 classes of remoteness on the basis of a measure of relative access to services (ABS 2011). Classes are delineated from the remoteness of a point based on the physical road distance to the nearest urban centre in each of five size classes (ABS 2011). Remoteness classes are:

- Major cities of Australia;
- Inner regional Australia;
- Outer regional Australia;
- Remote Australia; and,

- Very remote Australia (ABS 2011).

Australia has well-known deficiencies in access to services with increasing remoteness. There is a difference in the pattern of engagement with the health system by residents of different regional areas (AIHW 2011). There is an annual shortfall in services for country people of more than 25 million services and a primary care deficit in regional and remote areas of at least $2.1 billion in 2006-07 – the latest year for which data on expenditure by rurality are available (National Rural Health Alliance 2016). In aggregate, people who live in rural areas have shorter lives and higher levels of illness and disease risk factors than those in major cities. This can be explained in part because they have poorer access to goods and services and educational and employment opportunities, as well as lower levels of income (National Rural Health Alliance 2018). The prevalence of people experiencing mental illness is similar across the nation: around 20 per cent. However, rates of self-harm and suicide increase with remoteness suggesting that there are very significant mental health issues to be addressed in rural and remote areas (National Rural Health Alliance 2017).

It is expected that access to services with increasing remoteness may also reduce the capacity of emergency services to respond to natural hazards, and to provide equivalent expectations of emergency response for communities across different remoteness categories. However, unlike the health sector, the relationships between remoteness and disaster outcomes are not well-studied in Australia. Although not examining emergency response specifically, Peden and Queiroga (2014) reported that the percentage of river drowning deaths over 10 years varied by remoteness category: major cities (29%); inner regional (30%); outer regional (25%); remote (7%) and very remote (10%). Similarly, Haynes et al. (2017) reported that flood fatalities in Australia between 1900-2015 varied by catchment character and location: shorter coastal rivers (54%); longer coastal rivers (17%); inland rivers (16%); ephemeral rivers (4%); dam failure (1%); and, urban rivers (7%). On a per capita basis, regional and remote Australia appears over represented in both sets of fatality statistics, suggesting that further research about the factors that influence the relationship between remoteness and disaster outcomes is warranted.

2.3.4 Planning and the built environment

The planning and the built environment theme is the presence of legislation, plans, structures or codes to protect communites and their built environment. It represents preparation for natural hazard events using strategies of mitigation, planning or risk management.

Considered land use planning is a core hazard mitigation strategy in built environments.

Land use planning is an important tool in mitigating the risks of natural hazards (Smith 2009). By controlling the use and development of land, including the location and design of uses and developments, planning plays an important

role in reducing risk and enhancing the resilience of communities. Understanding the risks associated with existing development and the options and pressures for future development is an ongoing challenge in land use planning. Good planning policy is essential to reduce risk and enhance resilience (March and Henry 2007; King 2008; Frazier et al. 2013). Effective land use planning systems incorporate multiple complexities arising from hazard exposure, development pressure, community values, and political factors. Planning policy ranges from large scale, long term strategic plans, through to fine-scaled development controls. These different scales of policy implicate different governance scales: state government, regional planning bodies, and local councils. Good natural hazard policy across each of these scales will be crucial to sustaining the capacity to plan for disaster resilience.

In Australia, there are three key roles for planners contributing to disaster resilient communities: mainstream disaster resilience into planning; enhance risk management processes; and, building back better (PIA n.d). Actions that can be undertaken by planners include: leading the drive for resilience; coordinating and collaborating across disciplines; building confidence and capability; participating in natural hazard management; developing resilient land use and infrastructure policy; implementing resilience plans; and participating in post-disaster recovery (PIA n.d). Despite the identified need to play a strong role in reducing risk and improving resilience, planners and other built environment professionals do face a range of barriers and challenges in implementing disaster resilience initiatives into everyday practice (PIA n.d.). These barriers include: capability and capacity; understanding and defining risk; existing use; development pressures; and, legal and political factors (PIA n.d.).

There is much evidence demonstrating how land use planning decisions – past and future – influence both hazard losses and hazard mitigation. The siting, pattern and density of residential structures within the urban-wildland interface greatly influences bushfire risk (Syphard et al. 2012). For example, in the Black Saturday bushfires, about 25% of destroyed buildings were located physically within the bushland boundary, and 60 to 90% were within 10 and 100m of bushland (Crompton et al. 2010). Of the residential properties affected in the Brisbane flood, around 90% were in areas developed prior to the introduction of floodplain development controls, with many also suffering inundation during the 1974 floods (Mason et al. 2012). For land considered at risk of flooding, standard practice allows land use planning controls to determine minimum floor elevations and set a minimum freeboard, but issues arise in areas where flood mapping has not been undertaken or no existing flood information is available (Mason et al. 2012). Floodplain development planning often involves the demand for levees, but levees do not offer a long-term solution to adaptation (Wenger 2015). Past poor land use planning decisions also have insurance implications, leaving some home owners now in areas designated as high risk, particularly for floods (van den Honert and McAneney 2011).

Sound land use planning can also reduce future risk. Planning can provide evacuation routes, ensure access for emergency workers, impose water supply requirements, identify preferred settlement patterns, create land use restrictions, locate buildings on land parcels to enable the building to provide a sanctuary during bushfire events and restrict development in areas of highest risk (Browne and Minnery 2015). However, the application of hazard assessments in development applications can vary greatly, according to local conditions, organisational resources and institutional governance (King 2008; Glavovic et al. 2010; Frazier et al. 2013; Saunders et al. 2015; Kornakova et al. 2018), weakening the potential for future risk mitigation. For example, resettlement of the town of Grantham off the floodplain following flooding in 2011 has reduced hazard exposure for many residents but was difficult to enact because of planning restrictions (Okada et al. 2014). In Victoria, the restrictive and overly risk averse new regulations in planning policies and the Bushfire Management Overlay following the 2009 bushfires received significant negative reactions from users and professionals and led to significant community protest (Kornakova et al. 2018).

Building codes set construction standards to reduce damage from natural hazards.

Building codes also contribute to reducing the impacts of hazards on infrastructure. In Australia, the National Construction Code sets out the minimum necessary requirements for safety and health; amenity and accessibility, and sustainability in the design, construction, performance and livability of new buildings (and new building work in existing buildings) throughout Australia. Administration of the NCC is the responsibility of the States and Territories under their various building and plumbing Acts and Regulations. Buildings are currently designed and constructed in accordance with the NCC to withstand climate related natural hazards such as cyclones and extreme winds, intense rain, bushfire, snow and flood, as appropriate to their location (ABCB 2014). The ABCB has robust processes in place to ensure the NCC adequately addresses future extreme weather events, and that they are continually refined and improved (ABCB 2014). Precipitated following Cyclone Tracy in 1974, the introduction of wind resilient construction standards post-1980 has reduced insurance losses in tropical cyclones by 67% (Walker 2010; McAneney et al. 2016). With the adaptation measures and changes to design standards that have been put in place post Tracy, in the event of recurrence, the average per structure damage would be reduced by up to 85% (Mason and Haynes 2010). This contrasts with developing countries which may lack a robust or enforceable building code. In developing countries, there is often a correlation between the number of completely damaged buildings and the number of victims, with houses made of temporary or organic materials most vulnerable (Gonzalez-Riancho et al. 2011; Usamah et al. 2014).

Emergency planning enhances the readiness and capability of organisations to respond to natural hazard events.

Planning enhances the readiness and capacity of organisations to respond to events. Planning considers the range of events that may occur and works in a systematic manner to improve preparedness (Haddow et al. 2011). The plan is usually assembled as a formal emergency operations plan (Coppola 2011) mandated under relevant legislation. Tasks associated with the development of emergency plans include identification and assessment of risks, community profiles, inventory of equipment, evacuation planning, outlining jurisdictional roles and responsibilities, identification of training needs, practicing the plan using exercises and drills, plan evaluation and improvement and plan administration (Haddow et al. 2011). Elements of good management of an emergency operations plan include coordination among stakeholders, knowledge and information management, presentation for a diversity of users, collaboration, communication to ensure information delivery and collaboration, and ability to generate intelligence by gathering data from different sources (Penadés et al 2017). Catastrophic disaster planning is also an increasing focus of governments worldwide as catastrophic natural hazard events such as earthquakes may go beyond current arrangements, thinking, experience and imagination (Gissing et al. 2018).

2.3.5 Community capital

The community capital theme is the cohesion and connectedness of the community and represents the features of a community that facilitate coordination and cooperation for mutual benefit.

Participation in social networks can enhance solutions to collective action problems.

Community is a contested term and can refer to locality, shared sense of belonging, or social networks (Fairbrother et al. 2013). Disaster resilience is enhanced by the ways that sense of community fosters participation, community competency, prosocial behaviour and preparedness through working with others to solve shared local problems (Paton and McClure 2013). There is a significant, positive and moderately strong correlation between sense of community and participation (Talo et al. 2014). Research in rural and regional Victoria suggests that projects such as the community fireguard groups do not directly create or build community but rather that a self-reported sense of community is built by increasing social networking within a very limited geographical area (Fairbrother et al. 2013). In Christchurch following the 2011 earthquake, social networks that facilitated the development of a sense of community emerged in several ways with some developing from existing relationships and others emerging from a need to deal with local response issues (Paton et al. 2013). In Chile, increased exposure to earthquakes was consistently associated with higher levels of social cohesion, with people

compensating for worse environmental conditions by being more cooperative (Calo-Blanco et al. 2017). However, the strength of the relationship between social cohesion and resilience varies by location (Townshend et al. 2015). Existing disorder may become worse in a disaster. In Queensland, perceptions of collective efficacy decreased significantly following disaster, and was more pronounced for those individuals who had initially low perceptions of community efficacy (Fay-Ramirez et al. 2015). Those without the social networks and resources to aid recovery may be at further risk for victimization and isolation (Fay-Ramirez et al. 2015). Some top-down recovery programs may also break existing social bonds, or further entrench social or economic disadvantage (Aldrich 2012).

There is generally a positive relationship between place attachment, social networks and disaster resilience. Residence length is the single most positive predictor of place attachment, along with recreation, home ownership, environmental amenity and relationships with neighbours (Lewicka 2011). Rural people are often more attached to local areas than urban people (Anton and Lawrence 2014). In a flood-impacted rural Australian town, sense of place was a strong predictor of resilience and was negatively linked to a desire to relocate (Boon 2014a). Following the Black Saturday bushfires, longevity of connection to the local environment affected recovery, with farmers and long-term residents more able to psychologically adapt (Borrell and Boulet 2009). People with greater place attachment are more inclined to undertake hazard mitigation and preparatory actions in rural areas, although not in the wildfire-urban interface (Anton and Lawrence, 2016). Short-term residents tend to be less aware of the effects of hazard risks (Li 2009b).

Volunteering can be used as a measure of community participation. Volunteering contributes $14.6 billion to the Australian economy. Volunteers report that contributing and making a different is an important motivating factor for their decisions to volunteer and provides an increased sense of belonging to their community, opportunities to use their skills and to learn and develop (Volunteering Australia 2012). More extensive or diverse social networks draw people in to volunteering at greater levels of intensity (Stewart et al. 2014).

Social capital facilitates disaster resilience, before, during and after disasters.

There is much evidence linking social capital and disaster resilience. Social capital is the information, data, expectations and resources that flow through connections between people and communities (Aldrich 2012) and the ways that actors have the capacity to secure benefits by virtue of their membership and position in social networks (MacGillivray 2018). Social capital is often highlighted in times of disaster because it is a resource that facilitates collective action for mutual benefit (Boon 2014a; Storr et al. 2018). There are three types of social capital. Bonding social capital is the nature of relationships or associations within communities. Bonding social capital links people who are

the same and allows them to bypass social niceties to solve problems (Aldrich 2012). Family, friends and neighbours are often the first responders in crisis situations (MacGillivray 2018). Bridging social capital connects members of different groups or networks, crossing racial, ethnic, socio-economic and other cleavages (Aldrich 2012). Bridging social capital facilitates cooperation among people who are different (Aldrich 2012). By providing access to a diverse range of skills, bridging social capital is important for adaptation (MacGillivray 2018). Linking social capital represents the vertical linkages between people and formal institutions. Linking social capital links networks of people who are interacting across formal or institutionalised power or authority gradients in society to achieve mutually agreed beneficial goals (Aldrich, 2012). Linking social capital provides communities with access to support that could not be sourced endogenously and assists in securing long-term post-disaster investments (MacGillivray 2018).

While the strength of the relationship between social capital and disaster resilience may vary among communities, in general, it is moderate to strong (Townshend et al. 2015; Storr et al. 2018). Respondents who were part of a more cohesive community had greater confidence in their ability to effectively respond to a terrorist attack (Ramirez et al. 2013). Emergent roles within social networks may help communities to build adaptive capacity and awareness of the risks they face from fire (Akama et al. 2014). In Chile, increased exposure to hazards was associated with higher levels of positive social cohesion, with people in affected areas more likely to engage in civic activity, less likely to engage in crime and more satisfied with their lives (Calo-Blanco et al. 2017). In the Netherlands, residents who participated in their community were more likely to undertake flood preparedness activities (Kerstholt et al. 2017). Factors that influence social capital in the context of disaster resilience include health and well-being (Hogan et al. 2013), economic conditions (Hogan et al. 2013), place attachment (Keogh et al. 2011; Boon 2014a), perceptions of local government (Wickes et al. 2015), ethnicity (Barnes-Mauthe et al. 2015), length of residence (Madsen and O'Mullan 2016), and religion (Cheema et al. 2014; Gianisa and De 2018).

Social capital also influences disaster recovery, demonstrated repeatedly in post-event studies. Following the 2009 Black Saturday bushfires, involvement in community groups was a protective factor against negative mental health outcomes, and being close to others was generally related to better mental health and personal wellbeing (Gibbs et al. 2016). A healthy community was characterised as having many groups with high levels of participation spread across the community, so that the majority of people participate in several groups (Gibbs et al. 2016). The risk of Post-Traumatic Stress Disorder was associated with more fractured social networks (Gibbs et al. 2016). Restoring social networks is an important mesosystem aspect of disaster resilience (van Kessel et al. 2014). Following the 2003 Canberra bushfires, people reported that

the support of family, friends and neighbours helped their recovery (Camilleri et al. 2010).

Following the 2011 Brisbane floods, communities with higher levels of cognitive and structural social capital before the flood experienced lower perceived problems post disaster, and disadvantaged and larger communities experienced greater community problems post disaster (Wickes et al. 2015). However, there was no difference in this pattern between flooded and non-flooded communities, suggesting that while social capital reduced local community problems under normal conditions, there was no added effect of social capital on regulating these problems in post-flood environments (Wickes et al. 2015). In Pakistan, social capital and levels of socio-political trust was correlated with life recovery following floods (Akbar and Aldrich 2018).

In Japan, strong social networks facilitated a smoother and faster recovery than similar neighbourhoods with weaker ties following the 1995 Kobe earthquake (Aldrich 2011). In Tamil Nadu, India, villages with high levels of bonding and linking social capital demonstrated better recoveries than those with only bonding connections, or none at all (Aldrich, 2012). Following Hurricane Katrina in 2005, social capital played a role in improving the quality of life for individual neighbourhoods (Aldrich 2012). Following tornadoes in Indiana, households with stronger personal networks and higher levels of social capital experienced faster recovery (Sadri et al. 2018). However, disaster recovery was simultaneously slowed because social capital was not distributed uniformly throughout the city. This is the 'dark side' of social capital where bonding, bridging and linking capital can be used to mobilise collective action that harms 'out-groups'. For example, organised groups with greater social connection and power were able to influence the siting and timing of post-disaster projects (Aldrich 2012), intensifying existing social inequality and social justice issues associated with race, poverty and gender (Hartman and Squires 2006; Williamson 2013).

2.3.6 Information access

The information access theme is the potential for communities to engage with natural hazard information and represents the relationship between communities and natural hazard information and the uptake of knowledge required for preparation and self-reliance.

Telecommunications and internet access is vital to information sharing through all phases of a disaster.

Communications services work in the interests of citizens across a range of functional areas. There were 8.46 million retail and resale fixed-line telephone services in operation in Australia at June 2017, compared to 8.48 million services in June 2016 (ACMA 2017). An estimated 33.64 million mobile voice and data services were in operation in Australia at June 2017, an increase of 3.2 per cent on the previous year (ACMA 2017). Mobile and/or landline phone access is a

vital resource during emergencies, for accessing information, alerting family and friends and for emergency 000 calls. In the UK, mobile phone compared to landline reporting of emergencies resulted in significant reductions in the risk of death at the scene but not for death in the ED or during inpatient admission (Wu et al. 2012). In South-East Asia, risk perception and disaster preparedness were linked for smartphone users, but non-smartphone users relied solely on social support as the motivator of disaster preparedness (Lai et al. 2018).

Social media is also increasing in importance during disasters. Disaster social media users include communities, government, individuals, organisations, and media outlets (Houston et al. 2015). Fifteen distinct disaster social media uses have been identified at different stages of disaster. These range from preparing and receiving disaster preparedness information and warnings and signalling and detecting disasters prior to an event to (re)connecting community members following a disaster. Social media connects people through time and space to enhance collaborative problem-solving and citizens' ability to make sense of the situation and cope with it, thereby enhancing individual resilience (Jurgens and Helsloot 2018). Social media and mobile technology have reduced information barriers to participating in response and recovery and has fuelled 'digitally-enabled' emergent forms of volunteering (McLennan et al. 2016). Jung and Moro (2014) reviewed social media use following the Great East Japan Earthquake and showed that it was used for interpersonal communications, channels for local governments, and as channels for local and mass media. However, other studies have reported low use of social media during disasters (e.g. Trigg et al. 2015) or higher use within communities of higher socioeconomic status (Zou et al. 2018).

As the internet has become the default medium for everyday exchanges, information-sharing, and access to essential services, the disadvantages of being offline grow greater (Thomas et al. 2018). In every State and Territory, emergency service agencies house preparation, warnings, response and recovery information on their websites. For example, the NSW SES website consists of plan and prepare, during bad weather and recovery tabs, each containing a range of community education resources. The Western Australian Department of Fire and Emergency Services website hosts the Emergency WA portal which is divided into sections of prepare, warnings and incidents and recovery. The Bureau of Meteorology produces forecasts, warnings, monitoring and advice about natural hazards, disseminated through websites and social media. Recovery resources and information are often also coordinated and accessed online. In Australia, Boon (2014b) showed that information received from neighbours or community members, access to websites and radio and TV were most predictive of preparation. However, the same study also showed that mobile phone use was unimportant in some sites because of poor mobile phone coverage.

Despite the importance of digital inclusion for disaster resilience, digital inclusion follows social and economic trends. Australians with low levels of income,

education, and employment are significantly less digitally included (Thomas et al. 2018). There is also a geographical pattern to digital inclusion, with significant differences in access, affordability and digital ability between metropolitan and rural and remote areas (Bankwest Curtin Economics Centre 2018; Thomas et al. 2018). People with lower access to telecommunications may be less able to access preparation, response and recovery information in the dominant form in which it is provided.

Community engagement activities enable disaster resilience through public participation in decision making about natural hazards.

Community engagement is a vehicle for public participation in decision making about natural hazards (Handmer and Dovers 2013). The purposes of participation in emergency management include social debate and problem framing, strategic policy choice and policy formation, transparency and accountability, enforcement and compliance, information inputs to policy, policy learning, policy and programme implementation and operational emergency management (Handmer and Dovers 2013). Operational emergency management includes formal community-based management processes for preparation and response or informal and formal volunteering (Handmer and Dovers 2013). Emergency service agencies in Australia focus many community engagement activities in this domain, using processes of information provision, participation, consultation, collaboration and empowerment.

Community engagement has been shown to have direct benefits for community resilience through capacity building, social connectedness and empowerment, self-reliance, education and training, awareness of risk and psychosocial preparation (Dufty 2011; Dean 2015; Cohen et al. 2017). Communities should be seen as a resource, rather than a barrier (Cottrell et al. 2008) and building trust is a key objective of community engagement (Shindler et al. 2014). For example, in Cairns, Anderson-Berry (2003) showed that limited success of cyclone awareness eduction in changing self-protective behaviours was largely due to the failure of information providers to truly engage the public in the education process. Participation in community programs has been associated with reduced property loss, psychosocial preparedness, greater risk awareness and self-reliance (Elsworth et al. 2008; Kievik and Gutteling 2011; Brenkert-Smith et al. 2012; Gibbs et al. 2015; Maidl and Buchecker 2015; BNHCRC 2016; Howe et al. 2018). However, the delivery of community programs is important, with strategy, informal collaboration, cost and social networks factors that influence effectiveness (Bushnell and Cottrell 2007).

2.3.7 Social and community engagement

The social and community engagement theme is the capacity within communities to adaptively learn and transform in the face of complex change

and represents the resources and support available within communities for engagement and renewal for mutual benefit.

Adaptive communities are able to manage complex change. Characteristics of adaptive communities include social engagement, trust, cooperation, learning and well-being.

Australia faces increasing complexity and surprise associated with natural hazards, exacerbated by climate change, political change and societal change (Tarrant 2010; COAG 2011; Howes et al. 2014; King et al. 2014; Nalau and Handmer 2015). Adaptive communities have the characteristics to understand the uncertainty associated with natural hazards and to implement anticipatory, adaptive and mitigative actions to thrive in an increasingly uncertain and predictable natural and social environment, and to rebuild and re-establish when necessary (Magis 2010; EMV 2017). Members of resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future (Magis 2010). Community engagement and citizen participation have long been important themes in liberal democratic theory (Head 2007). In response to the increasingly complex issues faced by society, emphasis has been placed on building institutional bridges between governmental leaders and citizenry (Head 2007) and enhancing the communal practices, participation and pro-social behaviours that facilitate adaptation from within communities (Ensor and Berger 2009).

Trust is an element of social capital that generates reciprocal bonds within communities (Welch et al. 2005). Trust is an important psycho-social asset that can offer substantial protection against distress (Berry and Rodgers 2013). Social trust is the mutually shared expectation, often expressed as confidence, that people will manifest sensible and, when needed, reciprocally beneficial behaviour in their interactions with others (Welch et al. 2005). Trust is a requirement for social order and the consequences of trust include prosocial behaviour, increased productivity, moral order, civic engagement, economic exchange and egalitarianism (Welch et al. 2005). While civic engagement may not create generalised trust within communities, civic engagement brings trusting individuals together (van Ingen and Bekkers 2015). Factors which may weaken trust in communities include changing lifestyles, increased residential mobility, mass and social media, historical experiences and workforce pressures (Welch et al. 2005).

Learning is beneficial to adaptation because it fosters the skills, knowledge and attitudes to understand and engage with issues, change behaviour and advocate for an ideology. Learning has a broader role in society to do with achievement of freedom of choice, control over individual and group destinies, health and well-being, cultural identity and culture tolerance (Wheeler et al. 2013). For communities, this translates into having some control over challenges

associated with economic, social and environmental change (Wheeler et al. 2014). Learning is both individual and social in nature. Individual learning emphasises a student's role in learning, according to the needs, strengths and challenges of individuals. There is a growing body of evidence that adult learning, in particular, impacts positively on individual health, employability, social relationships, and the likelihood of participating in voluntary work (Wheeler et al. 2013). Learning communities emphasise partnerships for collective learning with learning embedded in everyday settings – the family, the community, the school and the workplace (Wheeler et al. 2013). Learning partnerships are fundamental to increasing community capacity, social capital and social cohesion through inclusion (Wheeler et al. 2013). However, social learning can also be mal-adaptive if it reinforces undesirable traits. Li (2009a) showed that adaptation to cyclone risk in Australia had been mal-adaptive and blind spots had developed in the form of policy resistance to land use planning and building code solution to risk reduction.

2.3.8 Governance and leadership

The governance and leadership theme is the capacity within organisations to adaptively learn, review and adjust policies and procedures, or to transform organisational practices. It represents the flexibility within organisations to learn from experience and adjust accordingly.

Adaptive institutions have conditions suited to the development of the skills, knowledge and culture for managing complex change. Enabling conditions include social learning, research, innovation, collaboration and leadership.

Australia faces increasing complexity and surprise associated with natural hazards, exacerbated by climate change, political change and societal change (Tarrant 2010; COAG 2011; Howes et al. 2014; King et al. 2014; Nalau and Handmer 2015). Effective response to natural hazard events can be facilitated by long term design efforts in public leadership and governance (Comfort et al. 2010; Tierney 2014). Assuming that disaster resilience is considered desirable, adaptability and transformability are the mechanisms of human and institutional behaviour available to influence disaster resilience (Brown and Westaway 2011). Adaptability is the capacity of human actors and institutions within a system to influence disaster resilience while transformability is the capacity to create a new system when changed conditions make the existing system untenable (Walker and Salt 2006). Thus, adaptation is a process of deliberate change in anticipation of external stresses (Nelson et al. 2007). Transformative adaptation goes beyond incremental adjustments to emphasise system-wide dynamics and resilience (Nelson et al. 2007), within a whole-of-society context (O'Neill and Handmer 2012; Wagner et al. 2014). Thus, transformative adaptation is a long-term (years to decades) process because it reforms the fundamental structures and values of governance systems.

Social learning

Social learning builds adaptive capacity within institutions by encouraging a deliberate intent to learn from action and enhance the practice of management (McLoughlin and Thoms 2015). Social learning moves away from single-loop technocratic learning towards double- and triple-loop learning which emphasises adaptive learning, trust, reflection, and transformation of institutional fundamentals such as policy, goals and culture (Gupta et al. 2010; McLoughlin and Thoms 2015). The application of social learning approaches in institutions encourages participatory decision making that includes community perspectives (Ireni-Saban 2012; Malakar 2013), knowledge exchange (Lonsdale 2012), interdisciplinarity, and incremental approaches to policy development (Heazle et al. 2013). Many calls have been made for enhanced double and triple loop learning in emergency management institutions (O'Brien et al 2010; Voss and Wagner 2010; Lonsdale 2012; O'Neill and Handmer 2012; Handmer and Dovers 2013; Pahl-Wostl et al. 2013; Aldunce et al. 2015).

While social learning is an ideal companion to transformative adaptation, other types of learning can contribute to the anticipation of change processes, including lesson drawing, political learning and government learning (Birkland 2006). Disasters attract great public attention. Inquiries often follow disasters, examining how the disaster occurred and how to prevent future losses (Eburn and Dovers 2015). The recommendations from quasi-judicial inquiries and the public and political attention on the disaster may then lead to substantial policy reform (Johnson et al. 2005; Birkland 2006; Birkmann et al. 2010; Bubeck et al. 2017). However, the quasi-judicial process does not necessarily lead to desired institutional learning. The process may identify recommendations, but these may not be completely or effectively implemented (Eburn and Dovers 2015; Cole et al. 2018). Eburn and Dovers (2015) suggest that institutional learning can be enhanced by framing post-event inquires to focus on what went well, rather than what went wrong, in a no-blame environment. Small events may also contribute to political learning. Small events tend to be local and do not attract high political and media interest: multi-level learning from these events can be fed into political processes at an aggregated level (Voss and Wagner 2010). A lessons management process is a valued aspect of emergency service organisations (Owen et al. 2017; Jackson and Shepherd 2018). A lessons management cycle contributes to learning by capturing observations, analysing insights, identifying lessons, assessing action, implementing and disseminating and monitoring and measuring lessons learned (Jackson 2016).

Organisational leadership

Organisational leadership can foster the institutional conditions for transformative adaptation. In the case of complex change, organisations need to be enabled by a clear mandate, central leadership, pattern breaking behaviour and a shared understanding (Blackman et al. 2013). Visionary,

entrepreneurial and collaborative leadership is seen as a hallmark of adaptive organisations (Gupta et al. 2010; Wilby and Vaughn 2011; Boyd 2012). Leadership that includes sense and meaning making and adaptation also facilitates the response to challenges ('tHart 2014). Following the 2011 Christchurch earthquake, leadership and associated flexibility of permission were identified as crucial enablers of innovation in disaster recovery initiatives (Ombler and Washington 2014).

Leadership, and the styles of leaders, set the tone for the complex elements of transformation facing the emergency management sector (Owen et al. 2015). These elements include whole-of-government and networked collaboration (Cashman 2011; Victorian Auditor General 2013; Howes et al. 2014; Bosomworth et al. 2017; Caraynnopoulos 2018), shared-responsibility and community-led resilience (Marshall 2010; Stark and Taylor 2014; Bankoff 2015; Zurita et al. 2015; Mees et al. 2016; Bosomworth et al. 2017), institutional cultures and values (Malakar 2013, Owen et al. 2015, Owen et al. 2016), strategic planning for non-routine and complex events (Nalau and Handmer 2015; Bosomworth et al. 2017), sophistication of evidence, information and social media (Bosomworth et al. 2017) and professional competencies and capabilities (AFAC 2017; Owen et al. 2018). The expectation can be of the government to make sense of the disaster and do something to restore order (Linnenluecke and Griffiths 2013). Entrenched conventional approaches to emergency management using chain of command institutional frameworks may break down under severe events (Linnenluecke and Griffiths 2013). There is a need to broaden conventional emergency management approaches to include a greater mindfulness of the dynamics of changeable and uncertain environments and as the complexity of emergency events increases (Linnenluecke and Griffiths 2013; Bosomworth et al. 2017).

Research and innovation

Public policy making is increasingly reliant on scientific research advice to address complex problems which cut across many policy and research domains (Australian Government n.d.). Policy making benefits from a rigorous, evidence-based approach that routinely and systematically draws upon science as a key, but not only, element of policy advice (Parsons et al. 2017; Australian Government n.d.). One of the challenges of evidence based policy development is facilitating the flow of knowledge between researchers, policy makers, and resource managers (Roux et al. 2006). Ideally, knowledge is not a 'thing to transfer' but rather, is co-produced through a process of relating that involves negotiation of meaning among partners (Roux et al. 2006). Transformative adaptation engages the conditions underpinning co-production of knowledge including social learning, trust and communities of practice. While the relationship between research and innovation is complex, in principle, research can foster organisational innovation, societal transformation and broader economic growth.

Research opportunity and utilisation is fundamental to the practice of hazard and emergency management. Research outcomes contribute to lessons management, collective sense-making, incident management, policy and strategy development, community engagement, behaviour change, strategic planning, institutional change, monitoring, professional development and learning (Jackson and Shepherd 2018; Leahy 2018; Owen 2018; Parsons et al. 2018) within adaptive emergency management agencies.

2.4 DISAGGREGATION

While a key principle of the index was to obtain data collected at the SA2 resolution this was not always possible, particularly for data sourced from organisations other than the Australian Bureau of Statistics. Where data were only available at a resolution greater than SA2, data were disaggregated to SA2 resolution using one of the methods outlined below. Indicators that were disaggregated to SA2 resolution for use in the index are listed in Section 2.2. The effects of disaggregation on index computation were investigated in the sensitivity analysis (see Chapter 6).

Disaggregation from SA3 and SA4 resolution

The SA2, SA3 and SA4 levels of the Australian Statistical Geography Standard are hierarchically nested (ABS 2011). Indicators collected at SA3 and SA4 level were disaggregated to SA2 using the 9-digit fully hierarchical code (ABS 2011). The value of the indicator collected at SA3 or SA4 was assigned to each component SA2.

Disaggregation from State or Territory level

State and Territory governments are responsible for emergency management in their jurisdictions. Indicators of some dimensions of disaster resilience were collected at State or Territory resolution, because this is the level at which they function, or are required to be reported, in the emergency management sector. The value of the indicator at the State or Territory level was assigned to each component SA2.

Disaggregation from Local Government Area

Many indicators related to local government functions, services and community safety are collected and reported at the local government area (LGA) level. Local government areas are not an ABS structure (ABS 2011) and do not have nested concordance with ABS structures such as SA2s. There are two options for disaggregation of LGA data to SA2 level. First, a semi-quantitative matching technique can be applied, where each LGA is allocated to an SA2 based on area-weighted population ratios calculated by the Australian Bureau of Statistics. Second, statistical disaggregation techniques (e.g. modelling and interpolation of data based on population and area weighting) can be applied, where the data for each LGA is recomputed for each intersecting SA2.

There are advantages and disadvantages to each technique. The semi-quantitative matching technique avoids recalculation of raw data into a new variable, with consequent advantages for data interpretation and communication. It also allows expert judgement based on the geographical profile of an area to determine allocation of LGA data to an SA2. The disadvantages of the semi-quantitative matching technique is that in some cases an LGA may be split equally over two or more SA2s and vice versa, and

errors may be introduced where data values in the excluded portion of the LGA differ from those in the allocated LGA-SA2 match. Statistical disaggregation techniques are quantitative and have the advantage of re-mapping data using population and areal weighting. The disadvantage of these statistical methods is that the recomputed data surfaces no longer mirror raw data, with consequent difficulties for data interpretation and communication. Errors may be introduced by quantitatively remodelling already modelled social variables, and is best avoided. This technique is also computationally more intensive than the semi-quantitative matching technique.

Based on the advantages and disadvantages of each technique, the semi-quantitative matching technique was used to disaggregate data collected at LGA level to the SA2 resolution for the Australian Natural Disaster Resilience Index. Matches were made on the basis of the 2011 SA2-LGA population weighted correspondence table (Australian Bureau of Statistics 1270.0.55.006.C022). The matching process used these rules:

1. Consider all SA2s with the same code and the PERCENTAGE field which describes the percentage of the FROM region that is being donated to the TO region.
2. If there is a > 80% / 20% split of the SA2 between two LGAs, then match the SA2 to the LGA with > 80 % population weighted area. Thus, >80% of the population-weighted area of the SA2 falls within the LGA.
3. If there is a < 80% / 20% split of the SA2 between two LGAs, or if the SA2 is split over more than two LGAs, flag this occurrence. Explore on maps the underlying reasons for the SA2 being split between LGAs. If satisfied of the underlying geographical explanation (e.g. a rural area containing one small population centre), assign the SA2 to the LGA with the highest % population-weighted area.
4. If not satisfied, refer case for panel decision. The panel consisted of three geographers with knowledge of population statistics who looked at each case to match an SA2 to an LGA.

The match between SA2s and LGAs is given in Table 2.8. Overall, 1982 (95%) of the 2084 SA2s had a >80% population-weighted area match with an LGA (Table 2.8). The remaining 102 (5%) of SA2s were not as well matched with an LGA (Table2.8). In using the semi-quantitative matching technique several LGAs were not used in the matching to an SA2, often because these are small council areas within a large SA2. The LGAs not used in disaggregation are listed in Table 2.8. Even though data may have been available, these LGAs were excluded based on the rules given above, with the effect most pronounced in rural and remote Western Australia which consists of small LGAs and large SA2s.

The value of the indicator at the LGA level was assigned to component SA2s.

Other cases

Crime data were used to derive several indicators within the Community Capital theme. State and Territory crime data are reported at different resolutions: Local Government Area (NSW, SA); suburb (ACT); and police district (NT, QLD, TAS, VIC, WA). Crime data reported at Local Government Area and suburb resolution were disaggregated using the method described above. Crime data reported at police district resolution were disaggregated to SA2 by overlaying maps of police districts and SA2s and assigning the crime data associated with a police district to all component SA2s.

Local Government Grant data used in the economic capital theme was disaggregated from LGA to SA2 resolution using a population-weighted mean. Where this process did not determine a figure for some SA2s, the matching approach was used.

Table 2.8 Disaggregation of LGA level data to SA2 resolution. For example, 100% of the population-weighted area of the Goulburn SA2 (101011001) is located within the Goulburn-Mulwaree Shire boundary: the value of an indicator collected at the LGA level was assigned to this SA2.

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
101011001	Goulburn	Goulburn Mulwaree (A)	13310	100.0
101011002	Goulburn Region	Upper Lachlan Shire (A)	17640	51.8
101011003	Yass	Yass Valley (A)	18710	100.0
101011004	Yass Region	Yass Valley (A)	18710	83.5
101011005	Young	Young (A)	18750	98.9
101011006	Young Region	Harden (A)	13700	42.8
101021007	Braidwood	Palerang (A)	16180	92.6
101021008	Karabar	Queanbeyan (C)	16470	100.0
101021009	Queanbeyan	Queanbeyan (C)	16470	100.0
101021010	Queanbeyan - East	Queanbeyan (C)	16470	100.0
101021011	Queanbeyan Region	Palerang (A)	16180	78.8
101021012	Queanbeyan West - Jerrabomberra	Queanbeyan (C)	16470	100.0
101031013	Bombala	Bombala (A)	11000	99.7
101031014	Cooma	Cooma-Monaro (A)	12050	98.3
101031015	Cooma Region	Cooma-Monaro (A)	12050	76.9
101031016	Jindabyne - Berridale	Snowy River (A)	17050	100.0
101041017	Batemans Bay	Eurobodalla (A)	12750	100.0
101041018	Batemans Bay - South	Eurobodalla (A)	12750	100.0
101041019	Bega - Tathra	Bega Valley (A)	10550	100.0
101041020	Bega-Eden Hinterland	Bega Valley (A)	10550	99.7
101041021	Broulee - Tomakin	Eurobodalla (A)	12750	100.0
101041023	Eden	Bega Valley (A)	10550	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
101041024	Eurobodalla Hinterland	Eurobodalla (A)	12750	94.1
101041025	Merimbula - Tura Beach	Bega Valley (A)	10550	100.0
101041026	Moruya - Tuross Head	Eurobodalla (A)	12750	100.0
101041027	Narooma - Bermagui	Eurobodalla (A)	12750	75.2
102011028	Avoca Beach - Copacabana	Gosford (C)	13100	100.0
102011029	Box Head - MacMasters Beach	Gosford (C)	13100	100.0
102011030	Calga - Kulnura	Gosford (C)	13100	91.5
102011031	Erina - Green Point	Gosford (C)	13100	100.0
102011032	Gosford - Springfield	Gosford (C)	13100	100.0
102011033	Kariong	Gosford (C)	13100	100.0
102011034	Kincumber - Picketts Valley	Gosford (C)	13100	100.0
102011035	Narara	Gosford (C)	13100	100.0
102011036	Niagara Park - Lisarow	Gosford (C)	13100	100.0
102011037	Point Clare - Koolewong	Gosford (C)	13100	100.0
102011038	Saratoga - Davistown	Gosford (C)	13100	100.0
102011039	Terrigal - North Avoca	Gosford (C)	13100	100.0
102011040	Umina - Booker Bay - Patonga	Gosford (C)	13100	100.0
102011041	Wamberal - Forresters Beach	Gosford (C)	13100	96.8
102011042	Woy Woy - Blackwall	Gosford (C)	13100	100.0
102011043	Wyoming	Gosford (C)	13100	100.0
102021044	Bateau Bay - Killarney Vale	Wyong (A)	18550	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
102021045	Blue Haven - San Remo	Wyong (A)	18550	100.0
102021046	Budgewoi - Buff Point - Halekulani	Wyong (A)	18550	100.0
102021047	Chittaway Bay - Tumbi Umbi	Wyong (A)	18550	100.0
102021048	Gorokan - Kanwal - Charmhaven	Wyong (A)	18550	100.0
102021049	Jilliby - Yarramalong	Wyong (A)	18550	100.0
102021050	Lake Munmorah - Mannering Park	Wyong (A)	18550	100.0
102021051	Ourimbah - Fountaindale	Wyong (A)	18550	100.0
102021052	Summerland Point - Gwandalan	Wyong (A)	18550	100.0
102021053	The Entrance	Wyong (A)	18550	100.0
102021054	Toukley - Norah Head	Wyong (A)	18550	100.0
102021055	Tuggerah - Kangy Angy	Wyong (A)	18550	100.0
102021056	Warnervale - Wadalba	Wyong (A)	18550	100.0
102021057	Wyong	Wyong (A)	18550	100.0
103011058	Bathurst	Bathurst Regional (A)	10470	100.0
103011059	Bathurst - East	Bathurst Regional (A)	10470	100.0
103011060	Bathurst Region	Bathurst Regional (A)	10470	90.9
103011061	Oberon	Oberon (A)	16100	100.0
103021062	Condobolin	Lachlan (A)	14600	93.6
103021063	Cowra	Cowra (A)	12350	100.0
103021064	Cowra Region	Cowra (A)	12350	59.8
103021065	Forbes	Forbes (A)	12900	92.1
103021066	Grenfell	Weddin (A)	18100	100.0
103021067	Parkes (NSW)	Parkes (A)	16200	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
103021068	Parkes Region	Parkes (A)	16200	96.4
103021069	West Wyalong	Bland (A)	10800	100.0
103031070	Lithgow	Lithgow (C)	14870	100.0
103031071	Lithgow Region	Lithgow (C)	14870	100.0
103031072	Mudgee	Mid-Western Regional (A)	15270	100.0
103031073	Mudgee Region - East	Mid-Western Regional (A)	15270	100.0
103031074	Mudgee Region - West	Mid-Western Regional (A)	15270	85.4
103041076	Blayney	Blayney (A)	10850	99.7
103041077	Orange	Orange (C)	16150	100.0
103041078	Orange - North	Orange (C)	16150	99.0
103041079	Orange Region	Cabonne (A)	11400	83.7
104011080	Grafton	Clarence Valley (A)	11730	100.0
104011081	Grafton Region	Clarence Valley (A)	11730	100.0
104011082	Maclean - Yamba - Iluka	Clarence Valley (A)	11730	100.0
104021083	Bellingen	Bellingen (A)	10600	99.9
104021084	Coffs Harbour - North	Coffs Harbour (C)	11800	100.0
104021085	Coffs Harbour - South	Coffs Harbour (C)	11800	100.0
104021086	Coramba - Nana Glen - Bucca	Coffs Harbour (C)	11800	100.0
104021087	Dorrigo	Bellingen (A)	10600	69.1
104021088	Korora - Emerald Beach	Coffs Harbour (C)	11800	100.0
104021089	Sawtell - Boambee	Coffs Harbour (C)	11800	100.0
104021090	Urunga	Bellingen (A)	10600	100.0
104021091	Woolgoolga - Arrawarra	Coffs Harbour (C)	11800	100.0
105011092	Bourke - Brewarrina	Bourke (A)	11150	67.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
105011093	Cobar	Cobar (A)	11750	99.8
105011094	Coonamble	Coonamble (A)	12150	94.1
105011095	Nyngan - Warren	Bogan (A)	10950	55.4
105011096	Walgett - Lightning Ridge	Walgett (A)	17900	94.6
105021097	Broken Hill	Broken Hill (C)	11250	100.0
105021098	Far West	Central Darling (A)	11700	74.4
105031099	Coonabarabran	Warrumbungle Shire (A)	18020	99.8
105031100	Dubbo - East	Dubbo (C)	12600	100.0
105031101	Dubbo - South	Dubbo (C)	12600	100.0
105031102	Dubbo - West	Dubbo (C)	12600	100.0
105031103	Dubbo Region	Dubbo (C)	12600	93.1
105031104	Gilgandra	Gilgandra (A)	12950	98.0
105031105	Narromine	Narromine (A)	15850	98.6
105031106	Wellington	Wellington (A)	18150	95.0
106011107	Branxton - Greta - Pokolbin	Cessnock (C)	11720	78.3
106011108	Cessnock	Cessnock (C)	11720	100.0
106011109	Cessnock Region	Cessnock (C)	11720	100.0
106011110	Dungog	Dungog (A)	12700	100.0
106011111	Kurri Kurri - Abermain	Cessnock (C)	11720	99.9
106011112	Singleton	Singleton (A)	17000	100.0
106011113	Singleton Region	Singleton (A)	17000	100.0
106021114	Maitland	Maitland (C)	15050	100.0
106021115	Maitland - East	Maitland (C)	15050	100.0
106021116	Maitland - North	Maitland (C)	15050	100.0
106021117	Maitland - West	Maitland (C)	15050	99.5

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
106021118	Thornton - Millers Forest	Maitland (C)	15050	100.0
106031119	Anna Bay	Port Stephens (A)	16400	100.0
106031120	Lemon Tree Passage - Tanilba Bay	Port Stephens (A)	16400	100.0
106031121	Nelson Bay Peninsula	Port Stephens (A)	16400	100.0
106031122	Raymond Terrace	Port Stephens (A)	16400	100.0
106031123	Seaham - Woodville	Port Stephens (A)	16400	100.0
106031124	Tea Gardens - Hawks Nest	Great Lakes (A)	13320	100.0
106031125	Williamtown - Medowie - Karuah	Port Stephens (A)	16400	99.0
106041126	Muswellbrook	Muswellbrook (A)	15650	100.0
106041127	Muswellbrook Region	Muswellbrook (A)	15650	100.0
106041128	Scone	Upper Hunter Shire (A)	17620	100.0
106041129	Scone Region	Upper Hunter Shire (A)	17620	100.0
107011130	Berkeley - Warrawong - Windang	Wollongong (C)	18450	100.0
107011131	Dapto - Avondale	Wollongong (C)	18450	100.0
107011132	Horsley - Kembla Grange	Wollongong (C)	18450	100.0
107011134	Unanderra - Mount Kembla	Wollongong (C)	18450	100.0
107031136	Albion Park - Macquarie Pass	Shellharbour (C)	16900	100.0
107031137	Albion Park Rail	Shellharbour (C)	16900	100.0
107031138	Kiama	Kiama (A)	14400	100.0
107031139	Kiama Downs - Minnamurra	Kiama (A)	14400	100.0
107031140	Kiama Hinterland - Gerringong	Kiama (A)	14400	100.0
107031141	Shellharbour - Flinders	Shellharbour (C)	16900	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
107031142	Shellharbour - Oak Flats	Shellharbour (C)	16900	100.0
107031143	Warilla	Shellharbour (C)	16900	100.0
107041144	Balgownie - Fairy Meadow	Wollongong (C)	18450	100.0
107041145	Corrimal - Tarrawanna - Bellambi	Wollongong (C)	18450	100.0
107041146	Figtree - Keiraville	Wollongong (C)	18450	100.0
107041147	Helensburgh	Wollongong (C)	18450	99.7
107041148	Thirroul - Austinmer - Coalcliff	Wollongong (C)	18450	100.0
107041149	Wollongong	Wollongong (C)	18450	100.0
107041150	Woonona - Bulli - Russell Vale	Wollongong (C)	18450	100.0
108011151	Bulahdelah - Stroud	Great Lakes (A)	13320	100.0
108011152	Forster	Great Lakes (A)	13320	100.0
108011153	Forster-Tuncurry Region	Great Lakes (A)	13320	99.2
108011154	Tuncurry	Great Lakes (A)	13320	100.0
108021155	Kempsey	Kempsey (A)	14350	100.0
108021156	Kempsey Region	Kempsey (A)	14350	99.4
108021157	Macksville - Scotts Head	Nambucca (A)	15700	100.0
108021158	Nambucca Heads	Nambucca (A)	15700	100.0
108021159	Nambucca Heads Region	Nambucca (A)	15700	100.0
108021160	South West Rocks	Kempsey (A)	14350	100.0
108041162	Laurieton - Bonny Hills	Port Macquarie-Hastings (A)	16380	100.0
108041163	Port Macquarie - East	Port Macquarie-Hastings (A)	16380	100.0
108041164	Port Macquarie - West	Port Macquarie-Hastings (A)	16380	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
108041165	Port Macquarie Region	Port Macquarie-Hastings (A)	16380	99.7
108041166	Wauchope	Port Macquarie-Hastings (A)	16380	100.0
108051167	Gloucester	Gloucester (A)	13050	100.0
108051168	Old Bar - Manning Point - Red Head	Greater Taree (C)	13380	100.0
108051169	Taree	Greater Taree (C)	13380	100.0
108051170	Taree Region	Greater Taree (C)	13380	99.9
108051171	Wingham	Greater Taree (C)	13380	100.0
109011172	Albury - East	Albury (C)	10050	100.0
109011173	Albury - North	Albury (C)	10050	100.0
109011174	Albury - South	Albury (C)	10050	100.0
109011175	Albury Region	Greater Hume Shire (A)	13340	88.4
109011176	Lavington	Albury (C)	10050	100.0
109021177	Hay	Hay (A)	13850	98.6
109021178	Wentworth - Buronga	Wentworth (A)	18200	100.0
109021179	Wentworth-Balranald Region	Balranald (A)	10300	62.4
109031180	Corowa	Corowa Shire (A)	12300	100.0
109031181	Corowa Region	Corowa Shire (A)	12300	82.8
109031182	Deniliquin	Deniliquin (A)	12500	100.0
109031183	Deniliquin Region	Wakool (A)	17800	50.3
109031184	Moama	Murray (A)	15500	100.0
109031185	Tocumwal - Finley - Jerilderie	Berrigan (A)	10650	86.7
110011186	Armidale	Armidale Dumaresq (A)	10110	100.0
110011187	Armidale Region - North	Guyra (A)	13650	73.8

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
110011188	Armidale Region - South	Uralla (A)	17650	91.7
110011189	Walcha	Walcha (A)	17850	94.7
110021190	Glen Innes	Glen Innes Severn (A)	13010	100.0
110021191	Inverell	Inverell (A)	14200	100.0
110021192	Inverell Region - East	Inverell (A)	14200	66.3
110021193	Inverell Region - West	Gwydir (A)	13660	78.9
110021194	Tenterfield	Tenterfield (A)	17400	100.0
110031195	Moree	Moree Plains (A)	15300	100.0
110031196	Moree Region	Moree Plains (A)	15300	90.7
110031197	Narrabri	Narrabri (A)	15750	100.0
110031198	Narrabri Region	Narrabri (A)	15750	100.0
110041199	Gunnedah	Gunnedah (A)	13550	100.0
110041200	Gunnedah Region	Gunnedah (A)	13550	73.7
110041201	Quirindi	Liverpool Plains (A)	14920	100.0
110041202	Tamworth - East	Tamworth Regional (A)	17310	100.0
110041203	Tamworth - North	Tamworth Regional (A)	17310	100.0
110041204	Tamworth - West	Tamworth Regional (A)	17310	100.0
110041205	Tamworth Region	Tamworth Regional (A)	17310	100.0
111011206	Belmont - Bennetts Green	Lake Macquarie (C)	14650	100.0
111011207	Belmont South - Blacksmiths	Lake Macquarie (C)	14650	100.0
111011208	Charlestown - Dudley	Lake Macquarie (C)	14650	100.0
111011209	Glendale - Cardiff - Hillsborough	Lake Macquarie (C)	14650	97.7
111011210	Mount Hutton - Windale	Lake Macquarie (C)	14650	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
111011211	Redhead	Lake Macquarie (C)	14650	100.0
111011212	Swansea - Caves Beach	Lake Macquarie (C)	14650	100.0
111011213	Valentine - Eleebana	Lake Macquarie (C)	14650	100.0
111011214	Warners Bay - Boolaroo	Lake Macquarie (C)	14650	100.0
111021215	Bolton Point - Teralba	Lake Macquarie (C)	14650	100.0
111021216	Bonnells Bay - Silverwater	Lake Macquarie (C)	14650	100.0
111021217	Edgeworth - Cameron Park	Lake Macquarie (C)	14650	100.0
111021218	Morisset - Cooranbong	Lake Macquarie (C)	14650	100.0
111021219	Toronto - Awaba	Lake Macquarie (C)	14650	100.0
111021220	Wangi Wangi - Rathmines	Lake Macquarie (C)	14650	100.0
111021221	West Wallsend - Barnsley - Killingworth	Lake Macquarie (C)	14650	100.0
111031222	Adamstown - Kotara	Newcastle (C)	15900	84.1
111031223	Beresfield - Hexham	Newcastle (C)	15900	62.5
111031224	Hamilton - Broadmeadow	Newcastle (C)	15900	100.0
111031225	Lambton - New Lambton	Newcastle (C)	15900	100.0
111031226	Maryland - Fletcher - Minmi	Newcastle (C)	15900	100.0
111031227	Mayfield - Warabrook	Newcastle (C)	15900	100.0
111031228	Merewether - The Junction	Newcastle (C)	15900	100.0
111031229	Newcastle - Cooks Hill	Newcastle (C)	15900	100.0
111031231	Shortland - Jesmond	Newcastle (C)	15900	100.0
111031232	Stockton - Fullerton Cove	Newcastle (C)	15900	68.5

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
111031233	Wallsend - Elermore Vale	Newcastle (C)	15900	98.5
111031234	Waratah - North Lambton	Newcastle (C)	15900	100.0
111031235	Wickham - Carrington - Tighes Hill	Newcastle (C)	15900	100.0
112011236	Ballina	Ballina (A)	10250	100.0
112011237	Ballina Region	Ballina (A)	10250	100.0
112011238	Bangalow	Byron (A)	11350	100.0
112011239	Brunswick Heads - Ocean Shores	Byron (A)	11350	100.0
112011240	Byron Bay	Byron (A)	11350	100.0
112011241	Evans Head	Richmond Valley (A)	16610	98.1
112011242	Lennox Head - Skennars Head	Ballina (A)	10250	100.0
112011243	Mullumbimby	Byron (A)	11350	100.0
112021244	Casino	Richmond Valley (A)	16610	100.0
112021245	Casino Region	Richmond Valley (A)	16610	76.1
112021246	Goonellabah	Lismore (C)	14850	100.0
112021247	Kyogle	Kyogle (A)	14550	100.0
112021248	Lismore	Lismore (C)	14850	100.0
112021249	Lismore Region	Lismore (C)	14850	97.4
112031250	Kingscliff - Fingal Head	Tweed (A)	17550	100.0
112031251	Murwillumbah	Tweed (A)	17550	100.0
112031252	Murwillumbah Region	Tweed (A)	17550	100.0
112031253	Pottsville	Tweed (A)	17550	100.0
112031254	Tweed Heads	Tweed (A)	17550	100.0
112031255	Tweed Heads - South	Tweed (A)	17550	100.0
113011256	Griffith (NSW)	Griffith (C)	13450	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
113011257	Griffith Region	Griffith (C)	13450	51.0
113011258	Leeton	Leeton (A)	14750	100.0
113011259	Narrandera	Narrandera (A)	15800	95.2
113021260	Tumbarumba	Tumbarumba (A)	17450	99.1
113021261	Tumut	Tumut Shire (A)	17500	100.0
113021262	Tumut Region	Tumut Shire (A)	17500	100.0
113031263	Cootamundra	Cootamundra (A)	12200	98.4
113031264	Gundagai	Gundagai (A)	13500	99.9
113031265	Junee	Junee (A)	14300	100.0
113031266	Temora	Temora (A)	17350	90.9
113031267	Wagga Wagga - East	Wagga Wagga (C)	17750	100.0
113031268	Wagga Wagga - North	Wagga Wagga (C)	17750	100.0
113031269	Wagga Wagga - South	Wagga Wagga (C)	17750	100.0
113031270	Wagga Wagga - West	Wagga Wagga (C)	17750	100.0
113031271	Wagga Wagga Region	Wagga Wagga (C)	17750	53.0
114011272	Berry - Kangaroo Valley	Shoalhaven (C)	16950	100.0
114011273	Callala Bay - Currarong	Shoalhaven (C)	16950	100.0
114011274	Culburra Beach	Shoalhaven (C)	16950	100.0
114011276	Huskisson - Vincentia	Shoalhaven (C)	16950	100.0
114011277	North Nowra - Bomaderry	Shoalhaven (C)	16950	100.0
114011278	Nowra	Shoalhaven (C)	16950	100.0
114011279	St Georges Basin - Erowal Bay	Shoalhaven (C)	16950	100.0
114011280	Sussex Inlet - Berrara	Shoalhaven (C)	16950	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
114011281	Tomerong - Wandandian - Woollamia	Shoalhaven (C)	16950	100.0
114011282	Ulladulla	Shoalhaven (C)	16950	100.0
114011283	Ulladulla Region	Shoalhaven (C)	16950	100.0
114021284	Bowral	Wingecarribee (A)	18350	100.0
114021285	Hill Top - Colo Vale	Wingecarribee (A)	18350	100.0
114021286	Mittagong	Wingecarribee (A)	18350	100.0
114021287	Moss Vale - Berrima	Wingecarribee (A)	18350	100.0
114021288	Robertson - Fitzroy Falls	Wingecarribee (A)	18350	98.1
114021289	Southern Highlands	Wingecarribee (A)	18350	100.0
115011290	Baulkham Hills (East)	The Hills Shire (A)	17420	100.0
115011291	Baulkham Hills (West) - Bella Vista	The Hills Shire (A)	17420	100.0
115011292	Castle Hill	The Hills Shire (A)	17420	100.0
115011293	Cherrybrook	Hornsby (A)	14000	100.0
115011294	Glenhaven	The Hills Shire (A)	17420	95.8
115011295	Kellyville	The Hills Shire (A)	17420	100.0
115011296	West Pennant Hills	The Hills Shire (A)	17420	100.0
115021297	Dural - Kenthurst - Wisemans Ferry	The Hills Shire (A)	17420	63.5
115021298	Galston - Laughtondale	Hornsby (A)	14000	100.0
115031299	Bilpin - Colo - St Albans	Hawkesbury (C)	13800	90.7
115031300	Kurrajong Heights - Ebenezer	Hawkesbury (C)	13800	100.0
115041301	Pitt Town - McGraths Hill	Hawkesbury (C)	13800	96.2
115041302	Rouse Hill - Beaumont Hills	The Hills Shire (A)	17420	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
116011303	Blacktown (East) - Kings Park	Blacktown (C)	10750	100.0
116011304	Blacktown (North) - Marayong	Blacktown (C)	10750	100.0
116011305	Blacktown (South)	Blacktown (C)	10750	100.0
116011306	Doonside - Woodcroft	Blacktown (C)	10750	100.0
116011307	Lalor Park - Kings Langley	Blacktown (C)	10750	96.6
116011308	Seven Hills - Toongabbie	Blacktown (C)	10750	92.8
116021309	Glenwood	Blacktown (C)	10750	100.0
116021310	Parklea - Kellyville Ridge	Blacktown (C)	10750	100.0
116021311	Quakers Hill - Acacia Gardens	Blacktown (C)	10750	100.0
116021312	Riverstone - Marsden Park	Blacktown (C)	10750	100.0
116031313	Bidwill - Hebersham - Emerton	Blacktown (C)	10750	100.0
116031314	Glendenning Dean Park	Blacktown (C)	10750	100.0
116031315	Hassall Grove - Plumpton	Blacktown (C)	10750	100.0
116031316	Lethbridge Park - Tregear	Blacktown (C)	10750	100.0
116031317	Mount Druitt - Whalan	Blacktown (C)	10750	100.0
116031319	Rooty Hill - Minchinbury	Blacktown (C)	10750	100.0
117011321	Botany	Botany Bay (C)	11100	100.0
117011322	Mascot - Eastlakes	Botany Bay (C)	11100	100.0
117011323	Pagewood - Hillsdale - Daceyville	Botany Bay (C)	11100	100.0
117021326	Marrickville	Marrickville (A)	15200	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
117021327	Petersham - Stanmore	Marrickville (A)	15200	100.0
117021328	Sydenham - Tempe - St Peters	Marrickville (A)	15200	99.7
117031329	Darlinghurst	Sydney (C)	17200	100.0
117031330	Erskineville - Alexandria	Sydney (C)	17200	100.0
117031331	Glebe - Forest Lodge	Sydney (C)	17200	100.0
117031332	Newtown - Camperdown - Darlington	Sydney (C)	17200	53.5
117031333	Potts Point - Woolloomooloo	Sydney (C)	17200	100.0
117031334	Pyrmont - Ultimo	Sydney (C)	17200	100.0
117031335	Redfern - Chippendale	Sydney (C)	17200	100.0
117031336	Surry Hills	Sydney (C)	17200	100.0
117031337	Sydney - Haymarket - The Rocks	Sydney (C)	17200	100.0
117031338	Waterloo - Beaconsfield	Sydney (C)	17200	100.0
118011339	Bondi - Tamarama - Bronte	Waverley (A)	18050	100.0
118011340	Bondi Beach - North Bondi	Waverley (A)	18050	100.0
118011341	Bondi Junction - Waverly	Waverley (A)	18050	100.0
118011343	Double Bay - Bellevue Hill	Woollahra (A)	18500	100.0
118011344	Dover Heights	Waverley (A)	18050	100.0
118011345	Paddington - Moore Park	Woollahra (A)	18500	65.5
118011346	Rose Bay - Vaucluse - Watsons Bay	Woollahra (A)	18500	100.0
118011347	Woollahra	Woollahra (A)	18500	100.0
118021348	Coogee - Clovelly	Randwick (C)	16550	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
118021349	Kensington - Kingsford	Randwick (C)	16550	100.0
118021350	Malabar - La Perouse - Chifley	Randwick (C)	16550	100.0
118021351	Maroubra	Randwick (C)	16550	100.0
118021352	Randwick	Randwick (C)	16550	100.0
119011353	Bankstown	Bankstown (C)	10350	100.0
119011354	Bass Hill - Georges Hall	Bankstown (C)	10350	100.0
119011356	Condell Park	Bankstown (C)	10350	100.0
119011357	Greenacre - Mount Lewis	Bankstown (C)	10350	94.1
119011358	Padstow	Bankstown (C)	10350	100.0
119011359	Panania - Milperra - Picnic Point	Bankstown (C)	10350	100.0
119011360	Revesby	Bankstown (C)	10350	100.0
119011361	Yagoona - Birrong	Bankstown (C)	10350	100.0
119021362	Belmore - Belfield	Canterbury (C)	11550	92.7
119021363	Canterbury (South) - Campsie	Canterbury (C)	11550	100.0
119021364	Kingsgrove (North) - Earlwood	Canterbury (C)	11550	100.0
119021365	Lakemba - Wiley Park	Canterbury (C)	11550	100.0
119021366	Punchbowl	Canterbury (C)	11550	61.5
119021367	Roselands	Canterbury (C)	11550	100.0
119031368	Hurstville	Hurstville (C)	14150	100.0
119031369	Mortdale - Penshurst	Hurstville (C)	14150	100.0
119031370	Narwee - Beverly Hills	Hurstville (C)	14150	77.1
119031371	Oatley - Hurstville Grove	Kogarah (C)	14450	92.0
119031372	Peakhurst - Lugarno	Hurstville (C)	14150	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
119031373	Riverwood	Hurstville (C)	14150	55.7
119031374	South Hurstville - Blakehurst	Kogarah (C)	14450	100.0
119041375	Arncliffe - Bardwell Valley	Rockdale (C)	16650	100.0
119041376	Bexley	Rockdale (C)	16650	100.0
119041377	Kingsgrove (South) - Bardwell Park	Rockdale (C)	16650	75.4
119041378	Kogarah	Rockdale (C)	16650	50.5
119041379	Kogarah Bay - Carlton - Allawah	Kogarah (C)	14450	100.0
119041380	Monterey - Brighton-le-Sands - Kyeemagh	Rockdale (C)	16650	100.0
119041381	Rockdale - Banksia	Rockdale (C)	16650	100.0
119041382	Sans Souci - Ramsgate	Rockdale (C)	16650	82.4
120011383	Concord - Mortlake - Cabarita	Canada Bay (A)	11520	100.0
120011384	Concord West - North Strathfield	Canada Bay (A)	11520	100.0
120011385	Drummoyne - Rodd Point	Canada Bay (A)	11520	100.0
120011386	Five Dock - Abbotsford	Canada Bay (A)	11520	100.0
120021387	Balmain	Leichhardt (A)	14800	100.0
120021388	Leichhardt - Annandale	Leichhardt (A)	14800	100.0
120021389	Lilyfield - Rozelle	Leichhardt (A)	14800	100.0
120031390	Ashfield	Ashfield (A)	10150	100.0
120031391	Burwood - Croydon	Burwood (A)	11300	83.6
120031392	Canterbury (North) - Ashbury	Canterbury (C)	11550	100.0
120031393	Croydon Park - Enfield	Burwood (A)	11300	63.1

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
120031394	Dulwich Hill - Lewisham	Marrickville (A)	15200	100.0
120031395	Haberfield - Summer Hill	Ashfield (A)	10150	100.0
120031396	Homebush	Strathfield (A)	17100	100.0
120031397	Strathfield	Strathfield (A)	17100	76.5
121011398	Chatswood (East) - Artarmon	Willoughby (C)	18250	100.0
121011399	Chatswood (West) - Lane Cove North	Willoughby (C)	18250	59.6
121011400	Lane Cove - Greenwich	Lane Cove (A)	14700	100.0
121011401	St Leonards - Naremburn	Willoughby (C)	18250	80.9
121011402	Willoughby - Castle Cove - Northbridge	Willoughby (C)	18250	100.0
121021403	Asquith - Mount Colah	Hornsby (A)	14000	100.0
121021404	Berowra - Brooklyn - Cowan	Hornsby (A)	14000	100.0
121021405	Hornsby - Waitara	Hornsby (A)	14000	99.6
121021406	Normanhurst - Thornleigh - Westleigh	Hornsby (A)	14000	100.0
121031407	Gordon - Killara	Ku-ring-gai (A)	14500	100.0
121031408	Lindfield - Roseville	Ku-ring-gai (A)	14500	98.1
121031409	Pymble	Ku-ring-gai (A)	14500	100.0
121031410	St Ives	Ku-ring-gai (A)	14500	100.0
121031411	Turramurra	Ku-ring-gai (A)	14500	100.0
121031412	Wahroonga - Warrawee	Ku-ring-gai (A)	14500	100.0
121041413	Cremorne - Cammeray	North Sydney (A)	15950	100.0
121041414	Crows Nest - Waverton	North Sydney (A)	15950	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
121041415	Mosman	Mosman (A)	15350	100.0
121041416	Neutral Bay - Kirribilli	North Sydney (A)	15950	100.0
121041417	North Sydney - Lavender Bay	North Sydney (A)	15950	100.0
122011418	Balgowlah - Clontarf - Seaforth	Manly (A)	15150	100.0
122011419	Manly - Fairlight	Manly (A)	15150	100.0
122021420	Avalon - Palm Beach	Pittwater (A)	16370	100.0
122021421	Bayview - Elanora Heights	Pittwater (A)	16370	100.0
122021422	Newport - Bilgola	Pittwater (A)	16370	100.0
122021423	Warriewood - Mona Vale	Pittwater (A)	16370	100.0
122031424	Beacon Hill - Narraweena	Warringah (A)	18000	100.0
122031425	Cromer	Warringah (A)	18000	100.0
122031426	Dee Why - North Curl Curl	Warringah (A)	18000	100.0
122031427	Forestville - Killarney Heights	Warringah (A)	18000	100.0
122031428	Frenchs Forest - Belrose	Warringah (A)	18000	100.0
122031429	Freshwater - Brookvale	Warringah (A)	18000	100.0
122031430	Manly Vale - Allambie Heights	Warringah (A)	18000	100.0
122031431	Narrabeen - Collaroy	Warringah (A)	18000	100.0
122031432	Terrey Hills - Duffys Forest	Warringah (A)	18000	100.0
123011433	Camden - Ellis Lane	Camden (A)	11450	84.9
123011434	Elderslie - Harrington Park	Camden (A)	11450	100.0
123011435	Mount Annan - Currans Hill	Camden (A)	11450	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
123021436	Bradbury - Wedderburn	Campbelltown (C)	11500	100.0
123021437	Campbelltown - Woodbine	Campbelltown (C)	11500	100.0
123021438	Claymore - Eagle Vale - Raby	Campbelltown (C)	11500	100.0
123021440	Ingleburn - Denham Court	Campbelltown (C)	11500	92.8
123021441	Leumeah - Minto Heights	Campbelltown (C)	11500	100.0
123021442	Macquarie Fields - Glenfield	Campbelltown (C)	11500	100.0
123021443	Minto - St Andrews	Campbelltown (C)	11500	100.0
123021444	Rosemeadow - Glen Alpine	Campbelltown (C)	11500	100.0
123031445	Bargo	Wollondilly (A)	18400	100.0
123031446	Douglas Park - Appin	Wollondilly (A)	18400	100.0
123031447	Picton - Tahmoor - Buxton	Wollondilly (A)	18400	99.5
123031448	The Oaks - Oakdale	Wollondilly (A)	18400	100.0
124011449	Blackheath - Megalong Valley	Blue Mountains (C)	10900	100.0
124011450	Blaxland - Warrimoo - Lapstone	Blue Mountains (C)	10900	100.0
124011452	Katoomba - Leura	Blue Mountains (C)	10900	100.0
124011453	Lawson - Hazelbrook - Linden	Blue Mountains (C)	10900	100.0
124011454	Springwood - Winmalee	Blue Mountains (C)	10900	100.0
124011455	Wentworth Falls	Blue Mountains (C)	10900	100.0
124031457	Cambridge Park	Penrith (C)	16350	100.0
124031458	Castlereagh - Cranebrook	Penrith (C)	16350	100.0
124031459	Emu Plains - Leonay	Penrith (C)	16350	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
124031460	Glenmore Park - Regentville	Penrith (C)	16350	100.0
124031461	Jamisontown - South Penrith	Penrith (C)	16350	100.0
124031462	Kingswood - Werrington	Penrith (C)	16350	100.0
124031463	Mulgoa - Luddenham - Orchard Hills	Penrith (C)	16350	86.9
124031464	Penrith	Penrith (C)	16350	100.0
124031465	Warragamba - Silverdale	Wollondilly (A)	18400	100.0
124041466	Richmond - Clarendon	Hawkesbury (C)	13800	100.0
124041467	Windsor - Bligh Park	Hawkesbury (C)	13800	100.0
124041468	Yarramundi - Londonderry	Penrith (C)	16350	87.4
124051469	Erskine Park	Penrith (C)	16350	100.0
124051470	St Clair	Penrith (C)	16350	100.0
124051471	St Marys - Colyton	Penrith (C)	16350	100.0
125011472	Auburn	Auburn (C)	10200	100.0
125011473	Homebush Bay - Silverwater	Auburn (C)	10200	100.0
125011474	Lidcombe - Regents Park	Auburn (C)	10200	97.7
125021476	Carlingford	The Hills Shire (A)	17420	51.8
125021477	Ermington - Rydalmere	Parramatta (C)	16250	100.0
125021478	Oatlands - Dundas Valley	Parramatta (C)	16250	77.1
125031479	Chester Hill - Sefton	Bankstown (C)	10350	100.0
125031480	Fairfield - East	Fairfield (C)	12850	99.0
125031481	Granville - Clyde	Parramatta (C)	16250	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
125031482	Greystanes - Pemulwuy	Holroyd (C)	13950	100.0
125031483	Guildford - South Granville	Parramatta (C)	16250	100.0
125031484	Guildford West - Merrylands West	Holroyd (C)	13950	100.0
125031485	Merrylands - Holroyd	Holroyd (C)	13950	100.0
125041488	Girraween - Westmead	Holroyd (C)	13950	100.0
125041489	North Parramatta	Parramatta (C)	16250	96.7
125041490	North Rocks	The Hills Shire (A)	17420	100.0
125041491	Northmead	Parramatta (C)	16250	78.1
125041492	Parramatta - Rosehill	Parramatta (C)	16250	85.5
125041493	Toongabbie - Constitution Hill	Parramatta (C)	16250	100.0
125041494	Winston Hills	Parramatta (C)	16250	99.5
126011495	Epping - North Epping	Hornsby (A)	14000	71.6
126011496	Pennant Hills - Cheltenham	Hornsby (A)	14000	100.0
126021497	Eastwood - Denistone	Ryde (C)	16700	82.9
126021498	Gladesville - Huntleys Point	Ryde (C)	16700	74.6
126021499	Hunters Hill - Woolwich	Hunters Hill (A)	14100	100.0
126021500	Macquarie Park - Marsfield	Ryde (C)	16700	100.0
126021501	North Ryde - East Ryde	Ryde (C)	16700	100.0
126021502	Ryde - Putney	Ryde (C)	16700	100.0
126021503	West Ryde - Meadowbank	Ryde (C)	16700	100.0
127011504	Ashcroft - Busby - Miller	Liverpool (C)	14900	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
127011505	Badgerys Creek - Greendale	Liverpool (C)	14900	100.0
127011506	Cobbitty - Leppington	Camden (A)	11450	98.4
127011507	Green Valley - Cecil Hills	Liverpool (C)	14900	100.0
127011508	Hoxton Park - Horningsea Park	Liverpool (C)	14900	100.0
127021509	Bonnyrigg Heights - Bonnyrigg	Fairfield (C)	12850	100.0
127021510	Bossley Park - Abbotsbury	Fairfield (C)	12850	100.0
127021511	Cabramatta - Lansvale	Fairfield (C)	12850	100.0
127021512	Cabramatta West - Mount Pritchard	Fairfield (C)	12850	97.1
127021513	Canley Vale - Canley Heights	Fairfield (C)	12850	100.0
127021514	Edensor Park	Fairfield (C)	12850	100.0
127021515	Fairfield	Fairfield (C)	12850	100.0
127021516	Fairfield - West	Fairfield (C)	12850	100.0
127021517	Greenfield Park - Prairiewood	Fairfield (C)	12850	100.0
127021518	Horsley Park - Kemps Creek	Fairfield (C)	12850	61.5
127021519	Smithfield - Wetherill Park	Fairfield (C)	12850	100.0
127021520	St Johns Park - Wakeley	Fairfield (C)	12850	100.0
127031522	Casula	Liverpool (C)	14900	100.0
127031523	Chipping Norton - Moorebank	Liverpool (C)	14900	100.0
127031524	Holsworthy - Wattle Grove	Liverpool (C)	14900	97.0
127031525	Liverpool - Warwick Farm	Liverpool (C)	14900	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
127031526	Prestons - Lurnea	Liverpool (C)	14900	100.0
128011527	Caringbah - Lilli Pilli	Sutherland Shire (A)	17150	100.0
128011528	Cronulla - Kurnell - Bundeena	Sutherland Shire (A)	17150	100.0
128011529	Gymea - Grays Point	Sutherland Shire (A)	17150	100.0
128011530	Miranda - Yowie Bay	Sutherland Shire (A)	17150	100.0
128011531	Sylvania - Taren Point	Sutherland Shire (A)	17150	100.0
128021532	Engadine - Loftus	Sutherland Shire (A)	17150	100.0
128021533	Heathcote - Waterfall	Sutherland Shire (A)	17150	100.0
128021534	Illawong - Alfords Point	Sutherland Shire (A)	17150	100.0
128021535	Menai - Lucas Heights - Woronora	Sutherland Shire (A)	17150	100.0
128021536	Oyster Bay - Como - Jannali	Sutherland Shire (A)	17150	100.0
128021538	Sutherland - Kirrawee	Sutherland Shire (A)	17150	100.0
201011001	Alfredton	Ballarat (C)	20570	100.0
201011002	Ballarat	Ballarat (C)	20570	100.0
201011003	Ballarat - North	Ballarat (C)	20570	99.4
201011004	Ballarat - South	Ballarat (C)	20570	100.0
201011005	Buninyong	Ballarat (C)	20570	98.6
201011006	Delacombe	Ballarat (C)	20570	100.0
201011007	Smythes Creek	Golden Plains (S)	22490	100.0
201011008	Wendouree - Miners Rest	Ballarat (C)	20570	100.0
201021009	Bacchus Marsh Region	Moorabool (S)	25150	100.0
201021010	Creswick - Clunes	Hepburn (S)	22910	82.4
201021011	Daylesford	Hepburn (S)	22910	97.6
201021012	Gordon (Vic.)	Moorabool (S)	25150	91.5

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
201031013	Avoca	Pyrenees (S)	25990	91.8
201031014	Beaufort	Pyrenees (S)	25990	93.9
201031015	Golden Plains - North	Golden Plains (S)	22490	100.0
201031016	Maryborough (Vic.)	Central Goldfields (S)	21670	100.0
201031017	Maryborough Region	Central Goldfields (S)	21670	95.9
202011018	Bendigo	Greater Bendigo (C)	22620	100.0
202011019	California Gully - Eaglehawk	Greater Bendigo (C)	22620	100.0
202011020	East Bendigo - Kennington	Greater Bendigo (C)	22620	100.0
202011021	Flora Hill - Spring Gully	Greater Bendigo (C)	22620	100.0
202011022	Kangaroo Flat - Golden Square	Greater Bendigo (C)	22620	100.0
202011023	Maiden Gully	Greater Bendigo (C)	22620	100.0
202011024	Strathfieldsaye	Greater Bendigo (C)	22620	100.0
202011025	White Hills - Ascot	Greater Bendigo (C)	22620	100.0
202021026	Bendigo Region - South	Greater Bendigo (C)	22620	98.1
202021027	Castlemaine	Mount Alexander (S)	25430	100.0
202021028	Castlemaine Region	Mount Alexander (S)	25430	95.7
202021029	Heathcote	Greater Bendigo (C)	22620	100.0
202021030	Kyneton	Macedon Ranges (S)	24130	99.8
202021031	Woodend	Macedon Ranges (S)	24130	100.0
202031032	Bendigo Region - North	Greater Bendigo (C)	22620	97.4
202031033	Loddon	Loddon (S)	23940	100.0
203011034	Bannockburn	Golden Plains (S)	22490	100.0
203011035	Golden Plains - South	Golden Plains (S)	22490	100.0
203011036	Winchelsea	Surf Coast (S)	26490	100.0
203021037	Belmont	Greater Geelong (C)	22750	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
203021038	Corio - Norlane	Greater Geelong (C)	22750	100.0
203021039	Geelong	Greater Geelong (C)	22750	100.0
203021040	Geelong West - Hamlyn Heights	Greater Geelong (C)	22750	100.0
203021041	Grovedale	Greater Geelong (C)	22750	100.0
203021042	Highton	Greater Geelong (C)	22750	100.0
203021043	Lara	Greater Geelong (C)	22750	100.0
203021044	Leopold	Greater Geelong (C)	22750	100.0
203021045	Newcomb - Moolap	Greater Geelong (C)	22750	100.0
203021046	Newtown (Vic.)	Greater Geelong (C)	22750	100.0
203021047	North Geelong - Bell Park	Greater Geelong (C)	22750	100.0
203031048	Clifton Springs	Greater Geelong (C)	22750	100.0
203031049	Lorne - Anglesea	Surf Coast (S)	26490	100.0
203031050	Ocean Grove - Barwon Heads	Greater Geelong (C)	22750	98.9
203031051	Portarlington	Greater Geelong (C)	22750	100.0
203031052	Queenscliff	Queenscliffe (B)	26080	73.7
203031053	Torquay	Surf Coast (S)	26490	100.0
204011054	Alexandra	Murrindindi (S)	25620	100.0
204011055	Euroa	Strathbogie (S)	26430	99.9
204011056	Kilmore - Broadford	Mitchell (S)	24850	100.0
204011057	Mansfield (Vic.)	Mansfield (S)	24250	96.8
204011058	Nagambie	Strathbogie (S)	26430	98.9
204011059	Seymour	Mitchell (S)	24850	100.0
204011060	Seymour Region	Mitchell (S)	24850	100.0
204011061	Upper Yarra Valley	Yarra Ranges (S)	27450	100.0
204011062	Yea	Murrindindi (S)	25620	99.2
204021063	Benalla	Benalla (RC)	21010	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
204021064	Benalla Region	Benalla (RC)	21010	98.2
204021065	Rutherglen	Indigo (S)	23350	100.0
204021066	Wangaratta	Wangaratta (RC)	26700	100.0
204021067	Wangaratta Region	Wangaratta (RC)	26700	100.0
204031068	Beechworth	Indigo (S)	23350	100.0
204031069	Bright - Mount Beauty	Alpine (S)	20110	95.0
204031070	Chiltern - Indigo Valley	Indigo (S)	23350	100.0
204031071	Myrtleford	Alpine (S)	20110	100.0
204031072	Towong	Towong (S)	26670	100.0
204031073	West Wodonga	Wodonga (RC)	27170	100.0
204031074	Wodonga	Wodonga (RC)	27170	100.0
204031075	Yackandandah	Indigo (S)	23350	98.8
205011076	Drouin	Baw Baw (S)	20830	100.0
205011077	Mount Baw Baw Region	Baw Baw (S)	20830	96.4
205011078	Trafalgar (Vic.)	Baw Baw (S)	20830	99.8
205011079	Warragul	Baw Baw (S)	20830	100.0
205021081	Bairnsdale	East Gippsland (S)	22110	100.0
205021082	Bruthen - Omeo	East Gippsland (S)	22110	98.5
205021084	Lakes Entrance	East Gippsland (S)	22110	100.0
205021085	Orbost	East Gippsland (S)	22110	100.0
205021086	Paynesville	East Gippsland (S)	22110	100.0
205031087	Foster	South Gippsland (S)	26170	100.0
205031089	Korumburra	South Gippsland (S)	26170	96.6
205031090	Leongatha	South Gippsland (S)	26170	99.2
205031091	Phillip Island	Bass Coast (S)	20740	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
205031093	Wonthaggi - Inverloch	Bass Coast (S)	20740	99.8
205041094	Churchill	Latrobe (C)	23810	99.5
205041095	Moe - Newborough	Latrobe (C)	23810	99.9
205041096	Morwell	Latrobe (C)	23810	100.0
205041097	Traralgon	Latrobe (C)	23810	100.0
205041098	Yallourn North - Glengarry	Latrobe (C)	23810	99.5
205051100	Longford - Loch Sport	Wellington (S)	26810	99.9
205051101	Maffra	Wellington (S)	26810	100.0
205051102	Rosedale	Wellington (S)	26810	100.0
205051103	Sale	Wellington (S)	26810	100.0
205051104	Yarram	Wellington (S)	26810	100.0
206011105	Brunswick	Moreland (C)	25250	100.0
206011106	Brunswick East	Moreland (C)	25250	100.0
206011107	Brunswick West	Moreland (C)	25250	100.0
206011108	Coburg	Moreland (C)	25250	100.0
206011109	Pascoe Vale South	Moreland (C)	25250	100.0
206021110	Alphington - Fairfield	Darebin (C)	21890	100.0
206021111	Northcote	Darebin (C)	21890	100.0
206021112	Thornbury	Darebin (C)	21890	100.0
206031113	Ascot Vale	Moonee Valley (C)	25060	100.0
206031114	Essendon - Aberfeldie	Moonee Valley (C)	25060	100.0
206031115	Flemington	Moonee Valley (C)	25060	100.0
206031116	Moonee Ponds	Moonee Valley (C)	25060	100.0
206041117	Carlton	Melbourne (C)	24600	100.0
206041118	Docklands	Melbourne (C)	24600	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
206041119	East Melbourne	Melbourne (C)	24600	100.0
206041121	Kensington	Melbourne (C)	24600	100.0
206041122	Melbourne	Melbourne (C)	24600	100.0
206041123	North Melbourne	Melbourne (C)	24600	100.0
206041124	Parkville	Melbourne (C)	24600	100.0
206041125	South Yarra - West	Melbourne (C)	24600	100.0
206041126	Southbank	Melbourne (C)	24600	100.0
206051128	Albert Park	Port Phillip (C)	25900	100.0
206051129	Elwood	Port Phillip (C)	25900	100.0
206051130	Port Melbourne	Port Phillip (C)	25900	100.0
206051132	South Melbourne	Port Phillip (C)	25900	100.0
206051133	St Kilda	Port Phillip (C)	25900	100.0
206051134	St Kilda East	Port Phillip (C)	25900	100.0
206061135	Armadale	Stonnington (C)	26350	100.0
206061136	Prahran - Windsor	Stonnington (C)	26350	100.0
206061137	South Yarra - East	Stonnington (C)	26350	100.0
206061138	Toorak	Stonnington (C)	26350	100.0
206071139	Abbotsford	Yarra (C)	27350	100.0
206071140	Carlton North - Princes Hill	Yarra (C)	27350	100.0
206071141	Collingwood	Yarra (C)	27350	100.0
206071142	Fitzroy	Yarra (C)	27350	100.0
206071143	Fitzroy North	Yarra (C)	27350	93.6
206071144	Richmond (Vic.)	Yarra (C)	27350	100.0
206071145	Yarra - North	Yarra (C)	27350	100.0
207011146	Ashburton (Vic.)	Boroondara (C)	21110	100.0
207011147	Balwyn	Boroondara (C)	21110	100.0
207011148	Balwyn North	Boroondara (C)	21110	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
207011149	Camberwell	Boroondara (C)	21110	100.0
207011150	Glen Iris - East	Boroondara (C)	21110	100.0
207011151	Hawthorn	Boroondara (C)	21110	100.0
207011152	Hawthorn East	Boroondara (C)	21110	100.0
207011153	Kew	Boroondara (C)	21110	100.0
207011154	Kew East	Boroondara (C)	21110	100.0
207011155	Surrey Hills (West) - Canterbury	Boroondara (C)	21110	100.0
207021156	Bulleen	Manningham (C)	24210	100.0
207021157	Doncaster	Manningham (C)	24210	100.0
207021158	Doncaster East	Manningham (C)	24210	100.0
207021159	Templestowe	Manningham (C)	24210	100.0
207021160	Templestowe Lower	Manningham (C)	24210	100.0
207031161	Blackburn	Whitehorse (C)	26980	100.0
207031162	Blackburn South	Whitehorse (C)	26980	100.0
207031163	Box Hill	Whitehorse (C)	26980	100.0
207031164	Box Hill North	Whitehorse (C)	26980	100.0
207031165	Burwood	Whitehorse (C)	26980	100.0
207031166	Burwood East	Whitehorse (C)	26980	100.0
207031167	Surrey Hills (East) - Mont Albert	Whitehorse (C)	26980	100.0
208011168	Beaumaris	Bayside (C)	20910	100.0
208011169	Brighton (Vic.)	Bayside (C)	20910	100.0
208011170	Brighton East	Bayside (C)	20910	100.0
208011171	Cheltenham - Highett (West)	Bayside (C)	20910	100.0
208011172	Hampton	Bayside (C)	20910	100.0
208011173	Sandringham - Black Rock	Bayside (C)	20910	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
208021174	Bentleigh - McKinnon	Glen Eira (C)	22310	100.0
208021175	Bentleigh East	Glen Eira (C)	22310	100.0
208021176	Carnegie	Glen Eira (C)	22310	100.0
208021177	Caulfield - North	Glen Eira (C)	22310	100.0
208021178	Caulfield - South	Glen Eira (C)	22310	100.0
208021179	Elsternwick	Glen Eira (C)	22310	100.0
208021180	Hughesdale	Monash (C)	24970	100.0
208021181	Murrumbeena	Glen Eira (C)	22310	100.0
208021182	Ormond - Glen Huntly	Glen Eira (C)	22310	100.0
208031183	Aspendale Gardens - Waterways	Kingston (C)	23430	100.0
208031185	Carrum - Patterson Lakes	Kingston (C)	23430	100.0
208031186	Chelsea - Bonbeach	Kingston (C)	23430	100.0
208031187	Chelsea Heights	Kingston (C)	23430	100.0
208031188	Cheltenham - Highett (East)	Kingston (C)	23430	100.0
208031189	Edithvale - Aspendale	Kingston (C)	23430	100.0
208031190	Mentone	Kingston (C)	23430	100.0
208031191	Moorabbin - Heatherton	Kingston (C)	23430	100.0
208031193	Mordialloc - Parkdale	Kingston (C)	23430	100.0
208041194	Malvern - Glen Iris	Stonnington (C)	26350	100.0
208041195	Malvern East	Stonnington (C)	26350	100.0
209011196	Bundoora - East	Banyule (C)	20660	100.0
209011197	Greensborough	Banyule (C)	20660	100.0
209011198	Heidelberg - Rosanna	Banyule (C)	20660	100.0
209011199	Heidelberg West	Banyule (C)	20660	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
209011200	Ivanhoe	Banyule (C)	20660	100.0
209011201	Ivanhoe East - Eaglemont	Banyule (C)	20660	100.0
209011202	Montmorency - Briar Hill	Banyule (C)	20660	100.0
209011203	Viewbank - Yallambie	Banyule (C)	20660	100.0
209011204	Watsonia	Banyule (C)	20660	100.0
209021205	Kingsbury	Darebin (C)	21890	100.0
209021206	Preston	Darebin (C)	21890	100.0
209021207	Reservoir - East	Darebin (C)	21890	100.0
209021208	Reservoir - West	Darebin (C)	21890	100.0
209031209	Eltham	Nillumbik (S)	25710	100.0
209031210	Hurstbridge	Nillumbik (S)	25710	100.0
209031211	Kinglake	Murrindindi (S)	25620	100.0
209031212	Panton Hill - St Andrews	Nillumbik (S)	25710	100.0
209031213	Plenty - Yarrambat	Nillumbik (S)	25710	100.0
209031214	Research - North Warrandyte	Nillumbik (S)	25710	100.0
209031215	Wattle Glen - Diamond Creek	Nillumbik (S)	25710	100.0
209041216	Bundoora - North	Whittlesea (C)	27070	100.0
209041217	Bundoora - West	Whittlesea (C)	27070	100.0
209041218	Epping	Whittlesea (C)	27070	100.0
209041219	Lalor	Whittlesea (C)	27070	100.0
209041220	Mill Park - North	Whittlesea (C)	27070	100.0
209041221	Mill Park - South	Whittlesea (C)	27070	100.0
209041222	South Morang	Whittlesea (C)	27070	100.0
209041223	Thomastown	Whittlesea (C)	27070	100.0
209041224	Wallan	Mitchell (S)	24850	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
209041225	Whittlesea	Whittlesea (C)	27070	100.0
210011226	Airport West	Moonee Valley (C)	25060	100.0
210011228	Keilor	Brimbank (C)	21180	100.0
210011229	Keilor East	Moonee Valley (C)	25060	100.0
210011230	Niddrie - Essendon West	Moonee Valley (C)	25060	100.0
210011231	Strathmore	Moonee Valley (C)	25060	100.0
210021232	Gisborne	Macedon Ranges (S)	24130	100.0
210021233	Macedon	Macedon Ranges (S)	24130	100.0
210021234	Riddells Creek	Macedon Ranges (S)	24130	100.0
210021235	Romsey	Macedon Ranges (S)	24130	100.0
210031236	Coburg North	Moreland (C)	25250	100.0
210031237	Fawkner	Moreland (C)	25250	100.0
210031238	Glenroy - Hadfield	Moreland (C)	25250	100.0
210031239	Pascoe Vale	Moreland (C)	25250	100.0
210041240	Sunbury	Hume (C)	23270	100.0
210041241	Sunbury - South	Hume (C)	23270	92.4
210051242	Broadmeadows	Hume (C)	23270	100.0
210051243	Campbellfield - Coolaroo	Hume (C)	23270	100.0
210051244	Craigieburn - Mickleham	Hume (C)	23270	100.0
210051245	Gladstone Park - Westmeadows	Hume (C)	23270	100.0
210051246	Greenvale - Bulla	Hume (C)	23270	100.0
210051247	Meadow Heights	Hume (C)	23270	100.0
210051249	Roxburgh Park - Somerton	Hume (C)	23270	100.0
210051250	Tullamarine	Hume (C)	23270	100.0
211011251	Bayswater	Knox (C)	23670	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
211011252	Boronia - The Basin	Knox (C)	23670	100.0
211011253	Ferntree Gully	Knox (C)	23670	100.0
211011254	Knoxfield - Scoresby	Knox (C)	23670	100.0
211011255	Lysterfield	Knox (C)	23670	99.4
211011256	Rowville - Central	Knox (C)	23670	100.0
211011257	Rowville - North	Knox (C)	23670	100.0
211011258	Rowville - South	Knox (C)	23670	100.0
211011259	Wantirna	Knox (C)	23670	100.0
211011260	Wantirna South	Knox (C)	23670	100.0
211021261	Donvale - Park Orchards	Manningham (C)	24210	100.0
211021262	Warrandyte - Wonga Park	Manningham (C)	24210	96.0
211031263	Bayswater North	Maroondah (C)	24410	100.0
211031264	Croydon	Maroondah (C)	24410	100.0
211031265	Croydon Hills - Warranwood	Maroondah (C)	24410	100.0
211031266	Ringwood	Maroondah (C)	24410	100.0
211031267	Ringwood East	Maroondah (C)	24410	100.0
211031268	Ringwood North	Maroondah (C)	24410	100.0
211041269	Forest Hill	Whitehorse (C)	26980	100.0
211041270	Mitcham (Vic.)	Whitehorse (C)	26980	100.0
211041271	Nunawading	Whitehorse (C)	26980	97.4
211041272	Vermont	Whitehorse (C)	26980	95.7
211041273	Vermont South	Whitehorse (C)	26980	100.0
211051274	Belgrave - Selby	Yarra Ranges (S)	27450	98.2
211051275	Chirnside Park	Yarra Ranges (S)	27450	100.0
211051276	Healesville - Yarra Glen	Yarra Ranges (S)	27450	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
211051277	Kilsyth	Yarra Ranges (S)	27450	100.0
211051278	Lilydale - Coldstream	Yarra Ranges (S)	27450	100.0
211051279	Monbulk - Silvan	Yarra Ranges (S)	27450	100.0
211051280	Montrose	Yarra Ranges (S)	27450	100.0
211051281	Mooroolbark	Yarra Ranges (S)	27450	100.0
211051282	Mount Dandenong - Olinda	Yarra Ranges (S)	27450	100.0
211051283	Mount Evelyn	Yarra Ranges (S)	27450	100.0
211051284	Upwey - Tecoma	Yarra Ranges (S)	27450	100.0
211051285	Wandin - Seville	Yarra Ranges (S)	27450	100.0
211051286	Yarra Valley	Yarra Ranges (S)	27450	100.0
212011287	Beaconsfield - Officer	Cardinia (S)	21450	100.0
212011288	Bunyip - Garfield	Cardinia (S)	21450	100.0
212011289	Emerald - Cockatoo	Cardinia (S)	21450	98.1
212011290	Koo Wee Rup	Cardinia (S)	21450	100.0
212011291	Pakenham - North	Cardinia (S)	21450	100.0
212011292	Pakenham - South	Cardinia (S)	21450	100.0
212021293	Berwick - North	Casey (C)	21610	100.0
212021294	Berwick - South	Casey (C)	21610	100.0
212021295	Doveton	Casey (C)	21610	100.0
212021296	Endeavour Hills	Casey (C)	21610	100.0
212021297	Hallam	Casey (C)	21610	100.0
212021298	Narre Warren	Casey (C)	21610	100.0
212021299	Narre Warren North	Casey (C)	21610	100.0
212031300	Cranbourne	Casey (C)	21610	100.0
212031301	Cranbourne East	Casey (C)	21610	100.0
212031302	Cranbourne North	Casey (C)	21610	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
212031303	Cranbourne South	Casey (C)	21610	100.0
212031304	Cranbourne West	Casey (C)	21610	100.0
212031305	Hampton Park - Lynbrook	Casey (C)	21610	100.0
212031306	Lynbrook - Lyndhurst	Casey (C)	21610	100.0
212031307	Narre Warren South	Casey (C)	21610	100.0
212031308	Pearcedale - Tooradin	Casey (C)	21610	100.0
212041309	Clarinda - Oakleigh South	Kingston (C)	23430	100.0
212041310	Clayton South	Kingston (C)	23430	100.0
212041311	Dandenong	Greater Dandenong (C)	22670	100.0
212041312	Dandenong North	Greater Dandenong (C)	22670	100.0
212041313	Dingley Village	Kingston (C)	23430	100.0
212041314	Keysborough	Greater Dandenong (C)	22670	100.0
212041315	Noble Park	Greater Dandenong (C)	22670	100.0
212041316	Noble Park North	Greater Dandenong (C)	22670	100.0
212041317	Springvale	Greater Dandenong (C)	22670	100.0
212041318	Springvale South	Greater Dandenong (C)	22670	100.0
212051319	Ashwood - Chadstone	Monash (C)	24970	100.0
212051320	Clayton	Monash (C)	24970	100.0
212051321	Glen Waverley - East	Monash (C)	24970	100.0
212051322	Glen Waverley - West	Monash (C)	24970	100.0
212051323	Mount Waverley - North	Monash (C)	24970	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
212051324	Mount Waverley - South	Monash (C)	24970	100.0
212051325	Mulgrave	Monash (C)	24970	100.0
212051326	Oakleigh - Huntingdale	Monash (C)	24970	100.0
212051327	Wheelers Hill	Monash (C)	24970	100.0
213011328	Ardeer - Albion	Brimbank (C)	21180	100.0
213011329	Cairnlea	Brimbank (C)	21180	100.0
213011330	Deer Park - Derrimut	Brimbank (C)	21180	100.0
213011331	Delahey	Brimbank (C)	21180	100.0
213011332	Keilor Downs	Brimbank (C)	21180	100.0
213011333	Kings Park (Vic.)	Brimbank (C)	21180	100.0
213011334	St Albans - North	Brimbank (C)	21180	100.0
213011335	St Albans - South	Brimbank (C)	21180	100.0
213011336	Sunshine	Brimbank (C)	21180	100.0
213011337	Sunshine North	Brimbank (C)	21180	100.0
213011338	Sunshine West	Brimbank (C)	21180	100.0
213011339	Sydenham	Brimbank (C)	21180	100.0
213011340	Taylors Lakes	Brimbank (C)	21180	100.0
213021341	Altona	Hobsons Bay (C)	23110	100.0
213021342	Altona Meadows	Hobsons Bay (C)	23110	100.0
213021343	Altona North	Hobsons Bay (C)	23110	100.0
213021344	Newport	Hobsons Bay (C)	23110	100.0
213021345	Seabrook	Hobsons Bay (C)	23110	100.0
213021346	Williamstown	Hobsons Bay (C)	23110	100.0
213031347	Braybrook	Maribyrnong (C)	24330	100.0
213031348	Footscray	Maribyrnong (C)	24330	100.0
213031349	Maribyrnong	Maribyrnong (C)	24330	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
213031350	Seddon - Kingsville	Maribyrnong (C)	24330	100.0
213031351	West Footscray - Tottenham	Maribyrnong (C)	24330	100.0
213031352	Yarraville	Maribyrnong (C)	24330	100.0
213041353	Bacchus Marsh	Moorabool (S)	25150	100.0
213041354	Caroline Springs	Melton (S)	24650	100.0
213041355	Hillside	Melton (S)	24650	100.0
213041356	Melton	Melton (S)	24650	100.0
213041357	Melton South	Melton (S)	24650	100.0
213041358	Melton West	Melton (S)	24650	100.0
213041359	Rockbank - Mount Cottrell	Melton (S)	24650	100.0
213041360	Taylors Hill	Melton (S)	24650	100.0
213051361	Hoppers Crossing - North	Wyndham (C)	27260	100.0
213051362	Hoppers Crossing - South	Wyndham (C)	27260	100.0
213051363	Laverton	Hobsons Bay (C)	23110	83.1
213051364	Point Cook	Wyndham (C)	27260	100.0
213051365	Tarneit	Wyndham (C)	27260	100.0
213051366	Truganina	Wyndham (C)	27260	100.0
213051367	Werribee	Wyndham (C)	27260	100.0
213051368	Werribee - South	Wyndham (C)	27260	100.0
213051369	Wyndham Vale	Wyndham (C)	27260	100.0
214011370	Carrum Downs	Frankston (C)	22170	100.0
214011371	Frankston	Frankston (C)	22170	100.0
214011372	Frankston North	Frankston (C)	22170	100.0
214011373	Frankston South	Frankston (C)	22170	100.0
214011374	Langwarrin	Frankston (C)	22170	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
214011375	Seaford (Vic.)	Frankston (C)	22170	100.0
214011376	Skye - Sandhurst	Frankston (C)	22170	100.0
214021377	Dromana	Mornington Peninsula (S)	25340	100.0
214021378	Flinders	Mornington Peninsula (S)	25340	100.0
214021379	Hastings - Somers	Mornington Peninsula (S)	25340	100.0
214021380	Mornington	Mornington Peninsula (S)	25340	100.0
214021381	Mount Eliza	Mornington Peninsula (S)	25340	100.0
214021382	Mount Martha	Mornington Peninsula (S)	25340	100.0
214021383	Point Nepean	Mornington Peninsula (S)	25340	100.0
214021384	Rosebud - McCrae	Mornington Peninsula (S)	25340	100.0
214021385	Somerville	Mornington Peninsula (S)	25340	100.0
215011386	Ararat	Ararat (RC)	20260	100.0
215011387	Ararat Region	Ararat (RC)	20260	98.8
215011388	Horsham	Horsham (RC)	23190	100.0
215011389	Horsham Region	Horsham (RC)	23190	99.3
215011390	Nhill Region	Hindmarsh (S)	22980	80.6
215011391	St Arnaud	Northern Grampians (S)	25810	99.5
215011392	Stawell	Northern Grampians (S)	25810	100.0
215011393	West Wimmera	West Wimmera (S)	26890	100.0
215011394	Yarriambiack	Yarriambiack (S)	27630	99.9
215021395	Irymple	Mildura (RC)	24780	100.0
215021396	Merbein	Mildura (RC)	24780	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
215021397	Mildura	Mildura (RC)	24780	100.0
215021398	Mildura Region	Mildura (RC)	24780	100.0
215021399	Red Cliffs	Mildura (RC)	24780	100.0
215031400	Buloke	Buloke (S)	21270	100.0
215031401	Gannawarra	Gannawarra (S)	22250	100.0
215031402	Kerang	Gannawarra (S)	22250	100.0
215031403	Robinvale	Swan Hill (RC)	26610	100.0
215031404	Swan Hill	Swan Hill (RC)	26610	100.0
215031405	Swan Hill Region	Swan Hill (RC)	26610	99.9
216011406	Echuca	Campaspe (S)	21370	100.0
216011407	Kyabram	Campaspe (S)	21370	98.3
216011408	Lockington - Gunbower	Campaspe (S)	21370	100.0
216011409	Rochester	Campaspe (S)	21370	100.0
216011410	Rushworth	Campaspe (S)	21370	100.0
216021411	Cobram	Moira (S)	24900	100.0
216021412	Moira	Moira (S)	24900	100.0
216021413	Numurkah	Moira (S)	24900	100.0
216021414	Yarrawonga	Moira (S)	24900	100.0
216031415	Mooroopna	Greater Shepparton (C)	22830	100.0
216031416	Shepparton - North	Greater Shepparton (C)	22830	100.0
216031417	Shepparton - South	Greater Shepparton (C)	22830	100.0
216031418	Shepparton Region - East	Greater Shepparton (C)	22830	100.0
216031419	Shepparton Region - West	Greater Shepparton (C)	22830	100.0
217011420	Glenelg (Vic.)	Glenelg (S)	22410	99.3

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
217011421	Hamilton (Vic.)	Southern Grampians (S)	26260	100.0
217011422	Portland	Glenelg (S)	22410	100.0
217011423	Southern Grampians	Southern Grampians (S)	26260	97.6
217021424	Camperdown	Corangamite (S)	21830	100.0
217021425	Colac	Colac-Otway (S)	21750	100.0
217021426	Colac Region	Colac-Otway (S)	21750	99.6
217021427	Corangamite - North	Corangamite (S)	21830	99.7
217021428	Corangamite - South	Corangamite (S)	21830	98.4
217021429	Moyne - East	Moyne (S)	25490	96.9
217021430	Moyne - West	Moyne (S)	25490	99.4
217021431	Otway	Colac-Otway (S)	21750	100.0
217021432	Warrnambool - North	Warrnambool (C)	26730	99.4
217021433	Warrnambool - South	Warrnambool (C)	26730	97.8
301011001	Alexandra Hills	Redland (C)	36250	100.0
301011002	Belmont - Gumdale	Brisbane (C)	31000	100.0
301011003	Birkdale	Redland (C)	36250	100.0
301011004	Capalaba	Redland (C)	36250	100.0
301011005	Thorneside	Redland (C)	36250	100.0
301011006	Wellington Point	Redland (C)	36250	100.0
301021007	Cleveland	Redland (C)	36250	100.0
301021008	Ormiston	Redland (C)	36250	100.0
301021009	Redland Bay	Redland (C)	36250	100.0
301021010	Redland Islands	Redland (C)	36250	96.6
301021011	Sheldon - Mount Cotton	Redland (C)	36250	100.0
301021012	Thornlands	Redland (C)	36250	100.0
301021013	Victoria Point	Redland (C)	36250	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
301031015	Manly - Lota	Brisbane (C)	31000	100.0
301031016	Manly West	Brisbane (C)	31000	100.0
301031017	Murarrie	Brisbane (C)	31000	100.0
301031018	Tingalpa	Brisbane (C)	31000	100.0
301031019	Wakerley	Brisbane (C)	31000	100.0
301031020	Wynnum	Brisbane (C)	31000	100.0
301031021	Wynnum West - Hemmant	Brisbane (C)	31000	100.0
302011022	Bald Hills	Brisbane (C)	31000	100.0
302011023	Bridgeman Downs	Brisbane (C)	31000	100.0
302011024	Carseldine	Brisbane (C)	31000	100.0
302011025	Everton Park	Brisbane (C)	31000	100.0
302011026	McDowall	Brisbane (C)	31000	100.0
302021027	Aspley	Brisbane (C)	31000	100.0
302021028	Chermside	Brisbane (C)	31000	100.0
302021029	Chermside West	Brisbane (C)	31000	100.0
302021030	Geebung	Brisbane (C)	31000	100.0
302021031	Kedron - Gordon Park	Brisbane (C)	31000	100.0
302021032	Stafford	Brisbane (C)	31000	100.0
302021033	Stafford Heights	Brisbane (C)	31000	100.0
302021034	Wavell Heights	Brisbane (C)	31000	100.0
302031035	Boondall	Brisbane (C)	31000	100.0
302031038	Northgate - Virginia	Brisbane (C)	31000	100.0
302031039	Nudgee - Banyo	Brisbane (C)	31000	100.0
302031040	Nundah	Brisbane (C)	31000	100.0
302041041	Bracken Ridge	Brisbane (C)	31000	100.0
302041042	Brighton (Qld)	Brisbane (C)	31000	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
302041043	Deagon	Brisbane (C)	31000	100.0
302041044	Sandgate - Shorncliffe	Brisbane (C)	31000	100.0
302041045	Taigum - Fitzgibbon	Brisbane (C)	31000	100.0
302041046	Zillmere	Brisbane (C)	31000	100.0
303011047	Camp Hill	Brisbane (C)	31000	100.0
303011048	Cannon Hill	Brisbane (C)	31000	100.0
303011049	Carina	Brisbane (C)	31000	100.0
303011050	Carina Heights	Brisbane (C)	31000	100.0
303011051	Carindale	Brisbane (C)	31000	100.0
303021052	Annerley	Brisbane (C)	31000	100.0
303021053	Coorparoo	Brisbane (C)	31000	100.0
303021054	Fairfield - Dutton Park	Brisbane (C)	31000	100.0
303021055	Greenslopes	Brisbane (C)	31000	100.0
303021056	Holland Park	Brisbane (C)	31000	100.0
303021057	Holland Park West	Brisbane (C)	31000	100.0
303021058	Woolloongabba	Brisbane (C)	31000	100.0
303021059	Yeronga	Brisbane (C)	31000	100.0
303031060	Eight Mile Plains	Brisbane (C)	31000	100.0
303031061	Macgregor (Qld)	Brisbane (C)	31000	100.0
303031062	Mansfield (Qld)	Brisbane (C)	31000	100.0
303031063	Mount Gravatt	Brisbane (C)	31000	100.0
303031064	Rochedale - Burbank	Brisbane (C)	31000	100.0
303031065	Upper Mount Gravatt	Brisbane (C)	31000	100.0
303031066	Wishart	Brisbane (C)	31000	100.0
303041067	Coopers Plains	Brisbane (C)	31000	100.0
303041068	Moorooka	Brisbane (C)	31000	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
303041069	Robertson	Brisbane (C)	31000	100.0
303041070	Salisbury - Nathan	Brisbane (C)	31000	100.0
303041071	Tarragindi	Brisbane (C)	31000	100.0
303051072	Algester	Brisbane (C)	31000	100.0
303051073	Calamvale - Stretton	Brisbane (C)	31000	100.0
303051074	Pallara - Willawong	Brisbane (C)	31000	100.0
303051075	Parkinson - Drewvale	Brisbane (C)	31000	100.0
303051076	Rocklea - Acacia Ridge	Brisbane (C)	31000	100.0
303061077	Kuraby	Brisbane (C)	31000	100.0
303061078	Runcorn	Brisbane (C)	31000	100.0
303061079	Sunnybank	Brisbane (C)	31000	100.0
303061080	Sunnybank Hills	Brisbane (C)	31000	100.0
304011081	Jindalee - Mount Ommaney	Brisbane (C)	31000	100.0
304011082	Middle Park - Jamboree Heights	Brisbane (C)	31000	100.0
304011083	Riverhills	Brisbane (C)	31000	100.0
304011084	Seventeen Mile Rocks - Sinnamon Park	Brisbane (C)	31000	100.0
304011085	Westlake	Brisbane (C)	31000	100.0
304021086	Bellbowrie - Moggill	Brisbane (C)	31000	100.0
304021087	Brookfield - Kenmore Hills	Brisbane (C)	31000	100.0
304021088	Chapel Hill	Brisbane (C)	31000	100.0
304021089	Fig Tree Pocket	Brisbane (C)	31000	100.0
304021090	Kenmore	Brisbane (C)	31000	100.0
304021091	Pinjarra Hills - Pullenvale	Brisbane (C)	31000	100.0
304031092	Chelmer - Graceville	Brisbane (C)	31000	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
304031093	Corinda	Brisbane (C)	31000	100.0
304031094	Indooroopilly	Brisbane (C)	31000	100.0
304031095	Sherwood	Brisbane (C)	31000	100.0
304031096	St Lucia	Brisbane (C)	31000	100.0
304031097	Taringa	Brisbane (C)	31000	100.0
304041098	Enoggera	Brisbane (C)	31000	100.0
304041100	Keperra	Brisbane (C)	31000	100.0
304041101	Mitchelton	Brisbane (C)	31000	100.0
304041103	The Gap	Brisbane (C)	31000	100.0
304041104	Upper Kedron - Ferny Grove	Brisbane (C)	31000	100.0
305011105	Brisbane City	Brisbane (C)	31000	100.0
305011106	Fortitude Valley	Brisbane (C)	31000	100.0
305011107	Highgate Hill	Brisbane (C)	31000	100.0
305011108	Kangaroo Point	Brisbane (C)	31000	100.0
305011109	New Farm	Brisbane (C)	31000	100.0
305011110	South Brisbane	Brisbane (C)	31000	100.0
305011111	Spring Hill	Brisbane (C)	31000	100.0
305011112	West End	Brisbane (C)	31000	100.0
305021113	Balmoral	Brisbane (C)	31000	100.0
305021114	Bulimba	Brisbane (C)	31000	100.0
305021115	East Brisbane	Brisbane (C)	31000	100.0
305021116	Hawthorne	Brisbane (C)	31000	100.0
305021117	Morningside - Seven Hills	Brisbane (C)	31000	100.0
305021118	Norman Park	Brisbane (C)	31000	100.0
305031119	Albion	Brisbane (C)	31000	100.0
305031120	Alderley	Brisbane (C)	31000	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
305031121	Ascot	Brisbane (C)	31000	100.0
305031122	Clayfield	Brisbane (C)	31000	100.0
305031123	Grange	Brisbane (C)	31000	100.0
305031124	Hamilton (Qld)	Brisbane (C)	31000	100.0
305031125	Hendra	Brisbane (C)	31000	100.0
305031126	Kelvin Grove - Herston	Brisbane (C)	31000	100.0
305031127	Newmarket	Brisbane (C)	31000	100.0
305031128	Newstead - Bowen Hills	Brisbane (C)	31000	100.0
305031129	Wilston	Brisbane (C)	31000	100.0
305031130	Windsor	Brisbane (C)	31000	100.0
305031131	Wooloowin - Lutwyche	Brisbane (C)	31000	100.0
305041132	Ashgrove	Brisbane (C)	31000	100.0
305041133	Auchenflower	Brisbane (C)	31000	100.0
305041134	Bardon	Brisbane (C)	31000	100.0
305041135	Paddington - Milton	Brisbane (C)	31000	100.0
305041136	Red Hill (Qld)	Brisbane (C)	31000	100.0
305041137	Toowong	Brisbane (C)	31000	100.0
306011138	Brinsmead	Cairns (R)	32070	100.0
306011139	Clifton Beach - Kewarra Beach	Cairns (R)	32070	100.0
306011140	Freshwater - Stratford	Cairns (R)	32070	100.0
306011141	Redlynch	Cairns (R)	32070	100.0
306011142	Trinity Beach - Smithfield	Cairns (R)	32070	100.0
306011143	Yorkeys Knob - Machans Beach	Cairns (R)	32070	100.0
306021144	Bentley Park	Cairns (R)	32070	100.0
306021145	Cairns City	Cairns (R)	32070	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
306021146	Earlville - Bayview Heights	Cairns (R)	32070	100.0
306021147	Edmonton	Cairns (R)	32070	100.0
306021148	Gordonvale - Trinity	Cairns (R)	32070	100.0
306021149	Kanimbla - Mooroobool	Cairns (R)	32070	100.0
306021151	Manoora	Cairns (R)	32070	100.0
306021152	Manunda	Cairns (R)	32070	100.0
306021153	Mount Sheridan	Cairns (R)	32070	100.0
306021154	Westcourt - Bungalow	Cairns (R)	32070	100.0
306021155	White Rock	Cairns (R)	32070	100.0
306021156	Whitfield - Edge Hill	Cairns (R)	32070	100.0
306021157	Woree	Cairns (R)	32070	100.0
306031158	Babinda	Cairns (R)	32070	82.4
306031159	Innisfail	Cassowary Coast (R)	32260	100.0
306031160	Johnstone	Cassowary Coast (R)	32260	100.0
306031161	Tully	Cassowary Coast (R)	32260	100.0
306031163	Yarrabah	Yarrabah (S)	37600	100.0
306041164	Daintree	Cairns (R)	32070	100.0
306041165	Port Douglas	Cairns (R)	32070	100.0
306051166	Atherton	Tablelands (R)	36810	100.0
306051167	Herberton	Tablelands (R)	36810	100.0
306051168	Kuranda	Tablelands (R)	36810	100.0
306051169	Malanda - Yungaburra	Tablelands (R)	36810	100.0
306051170	Mareeba	Tablelands (R)	36810	100.0
307011171	Balonne	Balonne (S)	30300	100.0
307011172	Chinchilla	Western Downs (R)	37310	100.0
307011173	Goondiwindi	Goondiwindi (R)	33610	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
307011174	Inglewood - Waggamba	Goondiwindi (R)	33610	100.0
307011175	Miles - Wandoan	Western Downs (R)	37310	100.0
307011176	Roma	Maranoa (R)	34860	100.0
307011177	Roma Region	Maranoa (R)	34860	100.0
307011178	Tara	Western Downs (R)	37310	99.0
307021179	Crows Nest - Rosalie	Toowoomba (R)	36910	100.0
307021180	Jondaryan	Toowoomba (R)	36910	99.1
307021181	Millmerran	Toowoomba (R)	36910	100.0
307021182	Pittsworth	Toowoomba (R)	36910	100.0
307021183	Wambo	Western Downs (R)	37310	99.9
307031184	Clifton - Greenmount	Toowoomba (R)	36910	100.0
307031185	Southern Downs - East	Southern Downs (R)	36660	100.0
307031186	Southern Downs - West	Southern Downs (R)	36660	98.0
307031187	Stanthorpe	Southern Downs (R)	36660	100.0
307031188	Stanthorpe Region	Southern Downs (R)	36660	100.0
307031189	Warwick	Southern Downs (R)	36660	100.0
308011190	Central Highlands - East	Central Highlands (R)	32270	87.5
308011191	Central Highlands - West	Central Highlands (R)	32270	100.0
308011192	Emerald	Central Highlands (R)	32270	100.0
308021193	Agnes Water - Miriam Vale	Gladstone (R)	33360	100.0
308021194	Banana	Banana (S)	30370	100.0
308021195	Biloela	Banana (S)	30370	100.0
308021196	Boyne Island - Tannum Sands	Gladstone (R)	33360	100.0
308021198	Clinton - New Auckland	Gladstone (R)	33360	100.0
308021199	Gladstone	Gladstone (R)	33360	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
308021200	Gladstone Hinterland	Gladstone (R)	33360	100.0
308021201	Kin Kora - Sun Valley	Gladstone (R)	33360	100.0
308021203	Telina - Toolooa	Gladstone (R)	33360	100.0
308021204	West Gladstone	Gladstone (R)	33360	100.0
308031205	Berserker	Rockhampton (R)	36360	100.0
308031206	Bouldercombe	Rockhampton (R)	36360	100.0
308031207	Emu Park	Rockhampton (R)	36360	100.0
308031208	Frenchville - Mount Archer	Rockhampton (R)	36360	100.0
308031209	Glenlee - Rockyview	Rockhampton (R)	36360	100.0
308031210	Gracemere	Rockhampton (R)	36360	100.0
308031211	Lakes Creek	Rockhampton (R)	36360	100.0
308031212	Mount Morgan	Rockhampton (R)	36360	100.0
308031213	Norman Gardens	Rockhampton (R)	36360	100.0
308031214	Park Avenue	Rockhampton (R)	36360	100.0
308031215	Parkhurst - Kawana	Rockhampton (R)	36360	100.0
308031216	Rockhampton - West	Rockhampton (R)	36360	100.0
308031217	Rockhampton City	Rockhampton (R)	36360	100.0
308031218	Rockhampton Region - East	Rockhampton (R)	36360	100.0
308031219	Rockhampton Region - North	Rockhampton (R)	36360	100.0
308031220	Rockhampton Region - West	Rockhampton (R)	36360	100.0
308031222	The Range - Allenstown	Rockhampton (R)	36360	100.0
308031223	Yeppoon	Rockhampton (R)	36360	100.0
309011224	Broadbeach Waters	Gold Coast (C)	33430	100.0
309011225	Burleigh Heads	Gold Coast (C)	33430	100.0
309011226	Burleigh Waters	Gold Coast (C)	33430	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
309011227	Mermaid Beach - Broadbeach	Gold Coast (C)	33430	100.0
309011228	Mermaid Waters	Gold Coast (C)	33430	100.0
309011229	Miami	Gold Coast (C)	33430	100.0
309021230	Coolangatta	Gold Coast (C)	33430	100.0
309021231	Currumbin - Tugun	Gold Coast (C)	33430	100.0
309021232	Currumbin Waters	Gold Coast (C)	33430	100.0
309021233	Elanora	Gold Coast (C)	33430	100.0
309021234	Palm Beach	Gold Coast (C)	33430	100.0
309031235	Arundel	Gold Coast (C)	33430	100.0
309031236	Biggera Waters	Gold Coast (C)	33430	100.0
309031237	Coombabah	Gold Coast (C)	33430	100.0
309031238	Labrador	Gold Coast (C)	33430	100.0
309031239	Paradise Point - Hollywell	Gold Coast (C)	33430	100.0
309031240	Runaway Bay	Gold Coast (C)	33430	100.0
309041241	Guanaba - Springbrook	Gold Coast (C)	33430	100.0
309041242	Tamborine - Canungra	Scenic Rim (R)	36510	100.0
309051243	Currumbin Valley - Tallebudgera	Gold Coast (C)	33430	100.0
309051244	Mudgeeraba - Bonogin	Gold Coast (C)	33430	100.0
309051245	Reedy Creek - Andrews	Gold Coast (C)	33430	100.0
309061246	Carrara	Gold Coast (C)	33430	100.0
309061247	Highland Park	Gold Coast (C)	33430	100.0
309061248	Nerang - Mount Nathan	Gold Coast (C)	33430	100.0
309061249	Pacific Pines - Gaven	Gold Coast (C)	33430	100.0
309061250	Worongary - Tallai	Gold Coast (C)	33430	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
309071251	Coomera	Gold Coast (C)	33430	100.0
309071252	Helensvale	Gold Coast (C)	33430	100.0
309071253	Hope Island	Gold Coast (C)	33430	100.0
309071254	Jacobs Well - Alberton	Gold Coast (C)	33430	100.0
309071255	Ormeau - Yatala	Gold Coast (C)	33430	100.0
309071256	Oxenford - Maudsland	Gold Coast (C)	33430	100.0
309071257	Pimpama	Gold Coast (C)	33430	100.0
309071258	Upper Coomera - Willow Vale	Gold Coast (C)	33430	100.0
309081259	Clear Island Waters	Gold Coast (C)	33430	100.0
309081260	Merrimac	Gold Coast (C)	33430	100.0
309081261	Robina	Gold Coast (C)	33430	100.0
309081262	Varsity Lakes	Gold Coast (C)	33430	100.0
309091263	Ashmore	Gold Coast (C)	33430	100.0
309091264	Molendinar	Gold Coast (C)	33430	100.0
309091265	Parkwood	Gold Coast (C)	33430	100.0
309091266	Southport	Gold Coast (C)	33430	100.0
309101267	Benowa	Gold Coast (C)	33430	100.0
309101268	Bundall	Gold Coast (C)	33430	100.0
309101269	Main Beach	Gold Coast (C)	33430	100.0
309101270	Surfers Paradise	Gold Coast (C)	33430	100.0
310011271	Darra - Sumner	Brisbane (C)	31000	100.0
310011272	Durack	Brisbane (C)	31000	100.0
310011273	Forest Lake - Doolandella	Brisbane (C)	31000	100.0
310011274	Inala - Richlands	Brisbane (C)	31000	100.0
310011275	Oxley (Qld)	Brisbane (C)	31000	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
310011276	Wacol	Brisbane (C)	31000	100.0
310021277	Boonah	Scenic Rim (R)	36510	100.0
310021278	Esk	Somerset (R)	36580	100.0
310021280	Lockyer Valley - East	Lockyer Valley (R)	34580	100.0
310021281	Lowood	Somerset (R)	36580	100.0
310021282	Rosewood	Ipswich (C)	33960	100.0
310031283	Brassall	Ipswich (C)	33960	100.0
310031284	Bundamba	Ipswich (C)	33960	100.0
310031285	Churchill - Yamanto	Ipswich (C)	33960	100.0
310031286	Ipswich - Central	Ipswich (C)	33960	100.0
310031287	Ipswich - East	Ipswich (C)	33960	100.0
310031288	Ipswich - North	Ipswich (C)	33960	98.0
310031289	Karalee - Barellan Point	Ipswich (C)	33960	100.0
310031290	Karana Downs	Brisbane (C)	31000	100.0
310031291	Leichhardt - One Mile	Ipswich (C)	33960	100.0
310031292	North Ipswich - Tivoli	Ipswich (C)	33960	100.0
310031293	Raceview	Ipswich (C)	33960	100.0
310031294	Ripley	Ipswich (C)	33960	100.0
310031295	Riverview	Ipswich (C)	33960	100.0
310041296	Bellbird Park - Brookwater	Ipswich (C)	33960	100.0
310041297	Camira - Gailes	Ipswich (C)	33960	100.0
310041299	Collingwood Park - Redbank	Ipswich (C)	33960	100.0
310041300	Goodna	Ipswich (C)	33960	100.0
310041302	Redbank Plains	Ipswich (C)	33960	100.0
310041303	Springfield	Ipswich (C)	33960	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
310041304	Springfield Lakes	Ipswich (C)	33960	100.0
311011305	Beaudesert	Scenic Rim (R)	36510	100.0
311021306	Beenleigh	Logan (C)	34590	100.0
311021307	Eagleby	Logan (C)	34590	100.0
311021308	Edens Landing - Holmview	Logan (C)	34590	100.0
311021309	Mount Warren Park	Logan (C)	34590	100.0
311021310	Wolffdene - Bahrs Scrub	Logan (C)	34590	100.0
311031311	Boronia Heights - Park Ridge	Logan (C)	34590	100.0
311031312	Browns Plains	Logan (C)	34590	100.0
311031313	Chambers Flat - Logan Reserve	Logan (C)	34590	100.0
311031314	Crestmead	Logan (C)	34590	100.0
311031316	Hillcrest	Logan (C)	34590	100.0
311031317	Marsden	Logan (C)	34590	100.0
311031318	Munruben - Park Ridge South	Logan (C)	34590	100.0
311031319	Regents Park - Heritage Park	Logan (C)	34590	100.0
311041320	Greenbank	Logan (C)	34590	100.0
311041321	Jimboomba	Logan (C)	34590	100.0
311041322	Logan Village	Logan (C)	34590	100.0
311051323	Bethania - Waterford	Logan (C)	34590	100.0
311051324	Cornubia - Carbrook	Logan (C)	34590	100.0
311051325	Loganholme - Tanah Merah	Logan (C)	34590	100.0
311051326	Loganlea	Logan (C)	34590	100.0
311051327	Shailer Park	Logan (C)	34590	100.0
311051328	Waterford West	Logan (C)	34590	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
311061329	Daisy Hill	Logan (C)	34590	100.0
311061330	Kingston	Logan (C)	34590	100.0
311061331	Logan Central	Logan (C)	34590	100.0
311061332	Rochedale South - Priestdale	Logan (C)	34590	100.0
311061333	Slacks Creek	Logan (C)	34590	100.0
311061334	Springwood	Logan (C)	34590	100.0
311061335	Underwood	Logan (C)	34590	100.0
311061336	Woodridge	Logan (C)	34590	100.0
312011337	Bowen	Whitsunday (R)	37340	100.0
312011338	Broadsound - Nebo	Isaac (R)	33980	100.0
312011339	Clermont	Isaac (R)	33980	100.0
312011340	Collinsville	Whitsunday (R)	37340	100.0
312011341	Moranbah	Isaac (R)	33980	100.0
312021342	Andergrove - Beaconsfield	Mackay (R)	34770	100.0
312021343	East Mackay	Mackay (R)	34770	100.0
312021344	Eimeo - Rural View	Mackay (R)	34770	100.0
312021346	Mackay	Mackay (R)	34770	100.0
312021347	Mackay Harbour	Mackay (R)	34770	100.0
312021348	Mount Pleasant - Glenella	Mackay (R)	34770	100.0
312021349	North Mackay	Mackay (R)	34770	100.0
312021350	Ooralea - Bakers Creek	Mackay (R)	34770	100.0
312021351	Pioneer Valley	Mackay (R)	34770	100.0
312021352	Sarina	Mackay (R)	34770	100.0
312021353	Seaforth - Calen	Mackay (R)	34770	100.0
312021354	Shoal Point - Bucasia	Mackay (R)	34770	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
312021355	Slade Point	Mackay (R)	34770	100.0
312021356	South Mackay	Mackay (R)	34770	100.0
312021357	Walkerston - Eton	Mackay (R)	34770	100.0
312021358	West Mackay	Mackay (R)	34770	100.0
312031359	Airlie - Whitsundays	Whitsunday (R)	37340	100.0
312031361	Proserpine	Whitsunday (R)	37340	100.0
313011362	Beachmere - Sandstone Point	Moreton Bay (R)	35010	100.0
313011363	Bribie Island	Moreton Bay (R)	35010	100.0
313021364	Burpengary - East	Moreton Bay (R)	35010	100.0
313021365	Caboolture	Moreton Bay (R)	35010	100.0
313021366	Caboolture - South	Moreton Bay (R)	35010	100.0
313021367	Elimbah	Moreton Bay (R)	35010	100.0
313021368	Morayfield - East	Moreton Bay (R)	35010	100.0
313021369	Wamuran	Moreton Bay (R)	35010	100.0
313031370	Kilcoy	Somerset (R)	36580	100.0
313031371	Woodford - D'Aguilar	Moreton Bay (R)	35010	100.0
313041372	Burpengary	Moreton Bay (R)	35010	100.0
313041373	Deception Bay	Moreton Bay (R)	35010	100.0
313041374	Morayfield	Moreton Bay (R)	35010	100.0
313041375	Narangba	Moreton Bay (R)	35010	100.0
313041376	Upper Caboolture	Moreton Bay (R)	35010	100.0
313051377	Clontarf	Moreton Bay (R)	35010	100.0
313051378	Margate - Woody Point	Moreton Bay (R)	35010	100.0
313051379	Redcliffe	Moreton Bay (R)	35010	100.0
313051380	Rothwell - Kippa-Ring	Moreton Bay (R)	35010	100.0
313051381	Scarborough - Newport	Moreton Bay (R)	35010	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
314011382	Albany Creek	Moreton Bay (R)	35010	100.0
314011383	Cashmere	Moreton Bay (R)	35010	100.0
314011384	Dayboro	Moreton Bay (R)	35010	100.0
314011385	Eatons Hill	Moreton Bay (R)	35010	100.0
314011386	Hills District	Moreton Bay (R)	35010	100.0
314011387	Samford Valley	Moreton Bay (R)	35010	100.0
314021388	Dakabin - Kallangur	Moreton Bay (R)	35010	100.0
314021389	Murrumba Downs - Griffin	Moreton Bay (R)	35010	100.0
314021390	North Lakes - Mango Hill	Moreton Bay (R)	35010	100.0
314031391	Bray Park	Moreton Bay (R)	35010	100.0
314031392	Lawnton	Moreton Bay (R)	35010	100.0
314031393	Petrie	Moreton Bay (R)	35010	100.0
314031394	Strathpine - Brendale	Moreton Bay (R)	35010	100.0
315011395	Aurukun	Aurukun (S)	30250	100.0
315011396	Cape York	Cook (S)	32500	58.9
315011397	Croydon - Etheridge	Etheridge (S)	33100	74.0
315011398	Kowanyama - Pormpuraaw	Kowanyama (S)	34420	60.9
315011399	Northern Peninsula	Northern Peninsula Area (R)	35780	100.0
315011400	Tablelands	Tablelands (R)	36810	100.0
315011401	Torres	Torres (S)	36950	100.0
315011402	Torres Strait Islands	Torres Strait Island (R)	36960	100.0
315011403	Weipa	Weipa (T)	37300	100.0
315021404	Carpentaria	Carpentaria (S)	32250	40.8
315021405	Mount Isa	Mount Isa (C)	35300	100.0
315021406	Mount Isa Region	Cloncurry (S)	32450	83.7

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
315021407	Northern Highlands	Flinders (S)	33200	48.8
315031408	Barcaldine - Blackall	Barcaldine (R)	30410	59.4
315031409	Charleville	Murweh (S)	35600	100.0
315031410	Far Central West	Winton (S)	37400	54.6
315031411	Far South West	Paroo (S)	35800	57.4
315031412	Longreach	Longreach (R)	34710	100.0
316011413	Buderim - North	Sunshine Coast (R)	36710	100.0
316011414	Buderim - South	Sunshine Coast (R)	36710	100.0
316011415	Mountain Creek	Sunshine Coast (R)	36710	100.0
316011416	Sippy Downs	Sunshine Coast (R)	36710	100.0
316021417	Aroona - Currimundi	Sunshine Coast (R)	36710	100.0
316021418	Buddina - Minyama	Sunshine Coast (R)	36710	100.0
316021419	Caloundra - Kings Beach	Sunshine Coast (R)	36710	100.0
316021420	Caloundra - West	Sunshine Coast (R)	36710	100.0
316021421	Golden Beach - Pelican Waters	Sunshine Coast (R)	36710	100.0
316021422	Moffat Beach - Battery Hill	Sunshine Coast (R)	36710	100.0
316021423	Parrearra - Warana	Sunshine Coast (R)	36710	100.0
316021424	Wurtulla - Birtinya	Sunshine Coast (R)	36710	100.0
316031425	Coolum Beach	Sunshine Coast (R)	36710	100.0
316031426	Marcoola - Mudjimba	Sunshine Coast (R)	36710	100.0
316031427	Maroochydore - Kuluin	Sunshine Coast (R)	36710	100.0
316031428	Mooloolaba - Alexandra Headland	Sunshine Coast (R)	36710	100.0
316041429	Bli Bli	Sunshine Coast (R)	36710	100.0
316041430	Diddillibah - Rosemount	Sunshine Coast (R)	36710	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
316041431	Eumundi - Yandina	Sunshine Coast (R)	36710	100.0
316041432	Nambour	Sunshine Coast (R)	36710	100.0
316041433	Noosa Hinterland	Sunshine Coast (R)	36710	100.0
316051434	Noosa Heads	Sunshine Coast (R)	36710	100.0
316051435	Noosaville	Sunshine Coast (R)	36710	100.0
316051436	Peregian	Sunshine Coast (R)	36710	100.0
316051437	Sunshine Beach	Sunshine Coast (R)	36710	100.0
316051438	Tewantin	Sunshine Coast (R)	36710	100.0
316061439	Beerwah	Sunshine Coast (R)	36710	100.0
316061440	Caloundra Hinterland	Sunshine Coast (R)	36710	100.0
316061441	Glass House Mountains	Sunshine Coast (R)	36710	100.0
316061442	Landsborough	Sunshine Coast (R)	36710	100.0
316061443	Maroochy Hinterland	Sunshine Coast (R)	36710	100.0
316061444	Palmwoods	Sunshine Coast (R)	36710	100.0
317011445	Cambooya - Wyreema	Toowoomba (R)	36910	100.0
317011446	Darling Heights	Toowoomba (R)	36910	100.0
317011447	Drayton - Harristown	Toowoomba (R)	36910	100.0
317011448	Gatton	Lockyer Valley (R)	34580	100.0
317011449	Gowrie (Qld)	Toowoomba (R)	36910	100.0
317011450	Highfields	Toowoomba (R)	36910	100.0
317011451	Lockyer Valley - West	Lockyer Valley (R)	34580	100.0
317011452	Middle Ridge	Toowoomba (R)	36910	100.0
317011453	Newtown (Qld)	Toowoomba (R)	36910	100.0
317011454	North Toowoomba - Harlaxton	Toowoomba (R)	36910	100.0
317011455	Rangeville	Toowoomba (R)	36910	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
317011456	Toowoomba - Central	Toowoomba (R)	36910	100.0
317011457	Toowoomba - East	Toowoomba (R)	36910	100.0
317011458	Toowoomba - West	Toowoomba (R)	36910	100.0
317011459	Wilsonton	Toowoomba (R)	36910	100.0
318011460	Ayr	Burdekin (S)	31900	100.0
318011461	Burdekin	Burdekin (S)	31900	100.0
318011462	Charters Towers	Charters Towers (R)	32310	100.0
318011463	Dalrymple	Charters Towers (R)	32310	100.0
318011464	Ingham	Hinchinbrook (S)	33800	100.0
318011465	Ingham Region	Hinchinbrook (S)	33800	100.0
318011466	Palm Island	Palm Island (S)	35790	100.0
318021467	Aitkenvale	Townsville (C)	37010	100.0
318021468	Annandale	Townsville (C)	37010	100.0
318021469	Belgian Gardens - Pallarenda	Townsville (C)	37010	100.0
318021470	Bohle Plains	Townsville (C)	37010	100.0
318021471	Condon - Rasmussen	Townsville (C)	37010	100.0
318021472	Cranbrook	Townsville (C)	37010	100.0
318021473	Deeragun	Townsville (C)	37010	100.0
318021474	Douglas	Townsville (C)	37010	100.0
318021475	Garbutt - West End	Townsville (C)	37010	100.0
318021476	Gulliver - Currajong - Vincent	Townsville (C)	37010	100.0
318021477	Heatley	Townsville (C)	37010	100.0
318021478	Hermit Park - Rosslea	Townsville (C)	37010	100.0
318021479	Hyde Park - Pimlico	Townsville (C)	37010	100.0
318021480	Kelso	Townsville (C)	37010	100.0
318021481	Kirwan - East	Townsville (C)	37010	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
318021482	Kirwan - West	Townsville (C)	37010	100.0
318021483	Magnetic Island	Townsville (C)	37010	100.0
318021484	Mount Louisa	Townsville (C)	37010	100.0
318021485	Mundingburra	Townsville (C)	37010	100.0
318021486	Northern Beaches	Townsville (C)	37010	100.0
318021487	Oonoonba	Townsville (C)	37010	100.0
318021488	South Townsville - Railway Estate	Townsville (C)	37010	100.0
318021489	Townsville - South	Townsville (C)	37010	98.3
318021490	Townsville City - North Ward	Townsville (C)	37010	100.0
318021491	Wulguru - Roseneath	Townsville (C)	37010	100.0
319011492	Ashfield - Kepnock	Bundaberg (R)	31820	100.0
319011493	Bargara - Burnett Heads	Bundaberg (R)	31820	100.0
319011494	Branyan - Kensington	Bundaberg (R)	31820	100.0
319011495	Bundaberg	Bundaberg (R)	31820	100.0
319011496	Bundaberg East - Kalkie	Bundaberg (R)	31820	100.0
319011497	Bundaberg North - Gooburrum	Bundaberg (R)	31820	100.0
319011498	Bundaberg Region - North	Bundaberg (R)	31820	100.0
319011499	Bundaberg Region - South	Bundaberg (R)	31820	100.0
319011500	Millbank - Avoca	Bundaberg (R)	31820	100.0
319011501	Svensson Heights - Norville	Bundaberg (R)	31820	100.0
319011502	Walkervale - Avenell Heights	Bundaberg (R)	31820	100.0
319021503	Gayndah - Mundubbera	North Burnett (R)	35760	100.0
319021504	Gin Gin	Bundaberg (R)	31820	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
319021505	Kingaroy	South Burnett (R)	36630	100.0
319021506	Kingaroy Region - North	South Burnett (R)	36630	86.8
319021507	Kingaroy Region - South	South Burnett (R)	36630	100.0
319021508	Monto - Eidsvold	North Burnett (R)	35760	100.0
319021509	Nanango	South Burnett (R)	36630	100.0
319031511	Cooloola	Gympie (R)	33620	100.0
319031512	Gympie - North	Gympie (R)	33620	100.0
319031513	Gympie - South	Gympie (R)	33620	100.0
319031514	Gympie Region	Gympie (R)	33620	99.9
319031515	Kilkivan	Gympie (R)	33620	100.0
319041516	Booral - River Heads	Fraser Coast (R)	33220	100.0
319041517	Craignish - Dundowran Beach	Fraser Coast (R)	33220	100.0
319041518	Pialba - Eli Waters	Fraser Coast (R)	33220	100.0
319041519	Point Vernon	Fraser Coast (R)	33220	100.0
319041520	Torquay - Scarness - Kawungan	Fraser Coast (R)	33220	100.0
319041521	Urangan - Wondunna	Fraser Coast (R)	33220	100.0
319051522	Burrum - Fraser	Fraser Coast (R)	33220	100.0
319051523	Granville	Fraser Coast (R)	33220	100.0
319051524	Maryborough (Qld)	Fraser Coast (R)	33220	100.0
319051525	Maryborough Region - South	Fraser Coast (R)	33220	99.1
319051526	Tinana	Fraser Coast (R)	33220	100.0
401011001	Adelaide	Adelaide (C)	40070	100.0
401011002	North Adelaide	Adelaide (C)	40070	100.0
401021003	Adelaide Hills	Adelaide Hills (DC)	40120	100.0
401021004	Aldgate - Stirling	Adelaide Hills (DC)	40120	99.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
401021005	Hahndorf - Echunga	Mount Barker (DC)	44550	100.0
401021006	Lobethal - Woodside	Adelaide Hills (DC)	40120	99.4
401021007	Mount Barker	Mount Barker (DC)	44550	100.0
401021008	Mount Barker Region	Mount Barker (DC)	44550	100.0
401021009	Nairne	Mount Barker (DC)	44550	100.0
401021010	Uraidla - Summertown	Adelaide Hills (DC)	40120	100.0
401031011	Burnside - Wattle Park	Burnside (C)	40700	100.0
401031012	Glenside - Beaumont	Burnside (C)	40700	100.0
401031013	Toorak Gardens	Burnside (C)	40700	100.0
401041014	Athelstone	Campbelltown (C)	40910	100.0
401041015	Paradise - Newton	Campbelltown (C)	40910	100.0
401041016	Rostrevor - Magill	Campbelltown (C)	40910	98.4
401051017	Norwood (SA)	Norwood Payneham St Peters (C)	45290	100.0
401051018	Payneham - Felixstow	Norwood Payneham St Peters (C)	45290	100.0
401051019	St Peters - Marden	Norwood Payneham St Peters (C)	45290	100.0
401061020	Nailsworth - Broadview	Prospect (C)	46510	100.0
401061021	Prospect	Prospect (C)	46510	100.0
401061022	Walkerville	Walkerville (M)	48260	100.0
401071023	Goodwood - Millswood	Unley (C)	47980	100.0
401071024	Unley - Parkside	Unley (C)	47980	100.0
402011025	Gawler - North	Light (RegC)	43650	60.9
402011026	Gawler - South	Gawler (T)	42030	97.1
402011027	Lewiston - Two Wells	Mallala (DC)	43920	100.0
402021028	Craigmore - Blakeview	Playford (C)	45680	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
402021029	Davoren Park	Playford (C)	45680	100.0
402021030	Elizabeth	Playford (C)	45680	96.2
402021031	Elizabeth East	Playford (C)	45680	100.0
402021032	Munno Para West - Angle Vale	Playford (C)	45680	100.0
402021033	One Tree Hill	Playford (C)	45680	100.0
402021034	Smithfield - Elizabeth North	Playford (C)	45680	100.0
402021035	Virginia - Waterloo Corner	Playford (C)	45680	89.9
402031036	Enfield - Blair Athol	Port Adelaide Enfield (C)	45890	100.0
402031037	Northgate - Oakden - Gilles Plains	Port Adelaide Enfield (C)	45890	73.9
402031038	Windsor Gardens	Port Adelaide Enfield (C)	45890	100.0
402041040	Ingle Farm	Salisbury (C)	47140	100.0
402041041	Para Hills	Salisbury (C)	47140	91.6
402041043	Parafield Gardens	Salisbury (C)	47140	100.0
402041044	Paralowie	Salisbury (C)	47140	100.0
402041045	Pooraka	Salisbury (C)	47140	100.0
402041046	Salisbury	Salisbury (C)	47140	100.0
402041047	Salisbury East	Salisbury (C)	47140	95.2
402041048	Salisbury North	Salisbury (C)	47140	100.0
402051049	Golden Grove	Tea Tree Gully (C)	47700	100.0
402051050	Greenwith	Tea Tree Gully (C)	47700	100.0
402051051	Highbury - Dernancourt	Port Adelaide Enfield (C)	47700	97.8
402051052	Hope Valley - Modbury	Tea Tree Gully (C)	47700	96.4
402051053	Modbury Heights	Tea Tree Gully (C)	47700	100.0
402051054	Redwood Park	Tea Tree Gully (C)	47700	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
402051055	St Agnes - Ridgehaven	Tea Tree Gully (C)	47700	100.0
403011056	Brighton (SA)	Holdfast Bay (C)	42600	100.0
403011057	Glenelg (SA)	Holdfast Bay (C)	42600	100.0
403021058	Edwardstown	Marion (C)	44060	100.0
403021059	Hallett Cove	Marion (C)	44060	100.0
403021060	Marino - Seaview Downs	Marion (C)	44060	85.3
403021061	Mitchell Park	Marion (C)	44060	100.0
403021062	Morphettville	Marion (C)	44060	100.0
403021063	Sheidow Park - Trott Park	Marion (C)	44060	100.0
403021064	Warradale	Marion (C)	44060	100.0
403031065	Belair	Mitcham (C)	44340	100.0
403031066	Bellevue Heights	Mitcham (C)	44340	100.0
403031067	Blackwood	Mitcham (C)	44340	100.0
403031068	Colonel Light Gardens	Mitcham (C)	44340	100.0
403031069	Mitcham (SA)	Mitcham (C)	44340	100.0
403031070	Panorama	Mitcham (C)	44340	100.0
403041071	Aberfoyle Park	Onkaparinga (C)	45340	100.0
403041072	Aldinga	Onkaparinga (C)	45340	100.0
403041073	Christie Downs	Onkaparinga (C)	45340	100.0
403041074	Christies Beach	Onkaparinga (C)	45340	100.0
403041075	Clarendon	Onkaparinga (C)	45340	100.0
403041076	Coromandel Valley	Onkaparinga (C)	45340	71.0
403041077	Flagstaff Hill	Onkaparinga (C)	45340	100.0
403041078	Hackham - Onkaparinga Hills	Onkaparinga (C)	45340	100.0
403041079	Hackham West - Huntfield Heights	Onkaparinga (C)	45340	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
403041080	Happy Valley	Onkaparinga (C)	45340	100.0
403041083	McLaren Vale	Onkaparinga (C)	45340	100.0
403041084	Morphett Vale - East	Onkaparinga (C)	45340	100.0
403041085	Morphett Vale - West	Onkaparinga (C)	45340	100.0
403041086	Reynella	Onkaparinga (C)	45340	100.0
403041087	Seaford (SA)	Onkaparinga (C)	45340	100.0
403041088	Willunga	Onkaparinga (C)	45340	100.0
403041089	Woodcroft	Onkaparinga (C)	45340	100.0
404011090	Beverley	Charles Sturt (C)	41060	100.0
404011091	Flinders Park	Charles Sturt (C)	41060	100.0
404011092	Henley Beach	Charles Sturt (C)	41060	100.0
404011093	Hindmarsh - Brompton	Charles Sturt (C)	41060	100.0
404011094	Royal Park - Hendon - Albert Park	Charles Sturt (C)	41060	100.0
404011095	Seaton - Grange	Charles Sturt (C)	41060	100.0
404011096	West Lakes	Charles Sturt (C)	41060	100.0
404011097	Woodville - Cheltenham	Charles Sturt (C)	41060	100.0
404021099	Largs Bay - Semaphore	Port Adelaide Enfield (C)	45890	100.0
404021100	North Haven	Port Adelaide Enfield (C)	45890	100.0
404021101	Port Adelaide	Port Adelaide Enfield (C)	45890	100.0
404021102	The Parks	Port Adelaide Enfield (C)	45890	99.5
404031105	Fulham	West Torrens (C)	48410	100.0
404031106	Lockleys	West Torrens (C)	48410	100.0
404031107	Plympton	West Torrens (C)	48410	99.1
404031108	Richmond (SA)	West Torrens (C)	48410	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
404031109	West Beach	Charles Sturt (C)	41060	59.4
405011110	Barossa - Angaston	Barossa (DC)	40310	100.0
405011111	Light	Light (RegC)	43650	100.0
405011112	Lyndoch	Barossa (DC)	40310	100.0
405011113	Mallala	Mallala (DC)	43920	100.0
405011114	Nuriootpa	Barossa (DC)	40310	94.5
405011115	Tanunda	Barossa (DC)	40310	100.0
405021116	Clare	Clare and Gilbert Valleys (DC)	41140	100.0
405021117	Gilbert Valley	Clare and Gilbert Valleys (DC)	41140	100.0
405021118	Goyder	Goyder (DC)	42110	99.4
405021119	Wakefield - Barunga West	Wakefield (DC)	48130	72.5
405031120	Jamestown	Northern Areas (DC)	45120	98.8
405031121	Peterborough - Mount Remarkable	Mount Remarkable (DC)	44830	52.6
405031122	Port Pirie	Port Pirie City and Dists (M)	46450	100.0
405031123	Port Pirie Region	Port Pirie City and Dists (M)	46450	100.0
405041124	Kadina	Copper Coast (DC)	41560	99.3
405041125	Moonta	Copper Coast (DC)	41560	100.0
405041126	Wallaroo	Copper Coast (DC)	41560	100.0
405041127	Yorke Peninsula - North	Yorke Peninsula (DC)	48830	100.0
405041128	Yorke Peninsula - South	Yorke Peninsula (DC)	48830	100.0
406011129	Ceduna	Ceduna (DC)	41010	100.0
406011130	Eyre Peninsula	Lower Eyre Peninsula (DC)	43710	59.4
406011131	Kimba - Cleve - Franklin Harbour	Cleve (DC)	41190	40.9

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
406011132	Le Hunte - Elliston	Wudinna (DC)	48640	52.9
406011133	Port Lincoln	Port Lincoln (C)	46300	92.6
406011134	West Coast (SA)	Streaky Bay (DC)	47490	58.7
406011135	Western	Maralinga Tjarutja (AC)	44000	68.8
406011136	Whyalla	Whyalla (C)	48540	100.0
406021138	APY Lands	Anangu Pitjantjatjara (AC)	40250	100.0
406021139	Coober Pedy	Coober Pedy (DC)	41330	100.0
406021140	Flinders Ranges	Flinders Ranges (DC)	41830	74.6
406021141	Outback	Unincorporated SA	49399	100.0
406021142	Port Augusta	Port Augusta (C)	46090	100.0
406021143	Roxby Downs	Roxby Downs (M)	46970	99.6
407011144	Goolwa - Port Elliot	Alexandrina (DC)	40220	100.0
407011145	Kangaroo Island	Kangaroo Island (DC)	42750	100.0
407011146	Strathalbyn	Alexandrina (DC)	40220	100.0
407011147	Strathalbyn Region	Alexandrina (DC)	40220	99.4
407011148	Victor Harbor	Victor Harbor (C)	48050	98.5
407011149	Yankalilla	Yankalilla (DC)	48750	87.6
407021150	Grant	Grant (DC)	42250	99.0
407021151	Kingston - Robe	Kingston (DC)	43360	61.9
407021152	Millicent	Wattle Range (DC)	48340	100.0
407021153	Mount Gambier	Mount Gambier (C)	44620	91.0
407021154	Naracoorte	Naracoorte and Lucindale (DC)	45090	100.0
407021155	Naracoorte Region	Naracoorte and Lucindale (DC)	45090	100.0
407021156	Penola	Wattle Range (DC)	48340	100.0
407021157	Tatiara	Tatiara (DC)	47630	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
407021158	Wattle Range	Wattle Range (DC)	48340	99.8
407031159	Barmera	Berri and Barmera (DC)	40520	99.3
407031160	Berri	Berri and Barmera (DC)	40520	100.0
407031161	Karoonda - Lameroo	Southern Mallee (DC)	47290	68.3
407031162	Loxton	Loxton Waikerie (DC)	43790	100.0
407031163	Loxton Region	Loxton Waikerie (DC)	43790	100.0
407031164	Mannum	Mid Murray (DC)	44210	98.6
407031165	Murray Bridge	Murray Bridge (RC)	45040	100.0
407031166	Murray Bridge Region	Murray Bridge (RC)	45040	89.4
407031167	Renmark	Renmark Paringa (DC)	46670	100.0
407031168	Renmark Region	Renmark Paringa (DC)	46670	100.0
407031169	The Coorong	The Coorong (DC)	47800	99.8
407031170	Waikerie	Loxton Waikerie (DC)	43790	68.0
501011001	Augusta	Augusta-Margaret River (S)	50280	100.0
501011002	Busselton	Busselton (S)	51260	100.0
501011003	Busselton Region	Busselton (S)	51260	100.0
501011004	Margaret River	Augusta-Margaret River (S)	50280	100.0
501021005	Australind - Leschenault	Harvey (S)	53990	100.0
501021006	Bunbury	Bunbury (C)	51190	100.0
501021007	Capel	Capel (S)	51400	99.0
501021008	College Grove - Carey Park	Bunbury (C)	51190	100.0
501021009	Collie	Collie (S)	51890	100.0
501021010	Dardanup	Dardanup (S)	52660	100.0
501021012	Eaton - Pelican Point	Dardanup (S)	52660	92.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
501021013	Gelorup - Dalyellup - Stratham	Capel (S)	51400	100.0
501021014	Harvey	Harvey (S)	53990	100.0
501021015	Koombana	Bunbury (C)	51190	100.0
501021016	Waroona	Waroona (S)	58820	100.0
501031017	Bridgetown - Boyup Brook	Bridgetown-Greenbushes (S)	50840	73.1
501031018	Donnybrook - Balingup	Donnybrook-Balingup (S)	52870	100.0
501031019	Manjimup	Manjimup (S)	55180	100.0
501031020	Pemberton	Manjimup (S)	55180	74.9
502011021	Dawesville - Bouvard	Mandurah (C)	55110	100.0
502011022	Falcon - Wannanup	Mandurah (C)	55110	100.0
502011023	Greenfields	Mandurah (C)	55110	100.0
502011024	Halls Head - Erskine	Mandurah (C)	55110	100.0
502011025	Mandurah	Mandurah (C)	55110	100.0
502011026	Mandurah - East	Murray (S)	56230	100.0
502011027	Mandurah - North	Mandurah (C)	55110	96.0
502011028	Mandurah - South	Mandurah (C)	55110	100.0
502011029	Pinjarra	Murray (S)	56230	100.0
503011030	City Beach	Cambridge (T)	51310	100.0
503011031	Claremont (WA)	Claremont (T)	51750	96.1
503011032	Cottesloe	Cottesloe (T)	52170	100.0
503011033	Floreat	Cambridge (T)	51310	86.6
503011034	Mosman Park - Peppermint Grove	Mosman Park (T)	55740	84.9
503011035	Nedlands - Dalkeith - Crawley	Nedlands (C)	56580	78.3
503011036	Swanbourne - Mount Claremont	Nedlands (C)	56580	71.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
503021038	Mount Hawthorn - Leederville	Vincent (T)	58570	100.0
503021039	Mount Lawley - Inglewood	Stirling (C)	57910	77.6
503021040	North Perth	Vincent (T)	58570	100.0
503021041	Perth City	Perth (C)	57080	61.6
503021042	Subiaco - Shenton Park	Subiaco (C)	57980	98.0
503021043	Wembley - West Leederville - Glendalough	Cambridge (T)	51310	71.7
504011044	Bassendean - Eden Hill - Ashfield	Bassendean (T)	50350	100.0
504011045	Bayswater - Embleton - Bedford	Bayswater (C)	50420	100.0
504011046	Maylands	Bayswater (C)	50420	100.0
504011047	Morley	Bayswater (C)	50420	100.0
504011048	Noranda	Bayswater (C)	50420	82.6
504021049	Chidlow	Mundaring (S)	56090	100.0
504021050	Glen Forrest - Darlington	Mundaring (S)	56090	100.0
504021051	Helena Valley - Koongamia	Mundaring (S)	56090	78.5
504021053	Mundaring	Mundaring (S)	56090	100.0
504021054	Swan View - Greenmount - Midvale	Mundaring (S)	56090	70.5
504031056	Ballajura	Swan (C)	58050	100.0
504031057	Beechboro	Swan (C)	58050	100.0
504031058	Bullsbrook	Swan (C)	58050	100.0
504031059	Ellenbrook	Swan (C)	58050	100.0
504031060	Gidgegannup	Swan (C)	58050	100.0
504031061	Hazelmere - South Guildford	Swan (C)	58050	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
504031062	Lockridge - Kiara	Swan (C)	58050	100.0
504031065	Middle Swan - Herne Hill	Swan (C)	58050	100.0
504031066	Midland - Guildford	Swan (C)	58050	93.1
504031067	Stratton - Jane Brook	Swan (C)	58050	100.0
504031068	The Vines	Swan (C)	58050	100.0
505011070	Craigie - Beldon	Joondalup (C)	54170	100.0
505011071	Currambine - Kinross	Joondalup (C)	54170	100.0
505011072	Duncraig	Joondalup (C)	54170	100.0
505011073	Greenwood - Warwick	Joondalup (C)	54170	100.0
505011074	Heathridge - Connolly	Joondalup (C)	54170	100.0
505011075	Hillarys	Joondalup (C)	54170	100.0
505011076	Iluka - Burns Beach	Joondalup (C)	54170	100.0
505011077	Joondalup - Edgewater	Joondalup (C)	54170	100.0
505011078	Kingsley	Joondalup (C)	54170	100.0
505011079	Mullaloo - Kallaroo	Joondalup (C)	54170	100.0
505011080	Ocean Reef	Joondalup (C)	54170	100.0
505011081	Padbury	Joondalup (C)	54170	100.0
505011082	Sorrento - Marmion	Joondalup (C)	54170	100.0
505011083	Woodvale	Joondalup (C)	54170	99.8
505021084	Balcatta - Hamersley	Stirling (C)	57910	100.0
505021085	Balga - Mirrabooka	Stirling (C)	57910	100.0
505021086	Dianella	Stirling (C)	57910	100.0
505021088	Innaloo - Doubleview	Stirling (C)	57910	100.0
505021089	Karrinyup - Gwelup - Carine	Stirling (C)	57910	100.0
505021090	Nollamara - Westminster	Stirling (C)	57910	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
505021092	Scarborough	Stirling (C)	57910	100.0
505021093	Stirling - Osborne Park	Stirling (C)	57910	100.0
505021094	Trigg - North Beach - Watermans Bay	Stirling (C)	57910	100.0
505021095	Tuart Hill - Joondanna	Stirling (C)	57910	100.0
505021096	Wembley Downs - Churchlands - Woodlands	Stirling (C)	57910	100.0
505021097	Yokine - Coolbinia - Menora	Stirling (C)	57910	100.0
505031098	Alexander Heights - Koondoola	Wanneroo (C)	58760	100.0
505031099	Butler - Merriwa - Ridgewood	Wanneroo (C)	58760	100.0
505031100	Carramar	Wanneroo (C)	58760	100.0
505031101	Clarkson	Wanneroo (C)	58760	100.0
505031102	Girrawheen	Wanneroo (C)	58760	100.0
505031103	Madeley - Darch - Landsdale	Wanneroo (C)	58760	100.0
505031104	Marangaroo	Wanneroo (C)	58760	100.0
505031105	Mindarie - Quinns Rocks - Jindalee	Wanneroo (C)	58760	100.0
505031107	Tapping - Ashby - Sinagra	Wanneroo (C)	58760	100.0
505031108	Wanneroo	Wanneroo (C)	58760	99.8
505031109	Yanchep	Wanneroo (C)	58760	100.0
506011110	Armadale - Wungong - Brookdale	Armadale (C)	50210	100.0
506011112	Camillo - Champion Lakes	Armadale (C)	50210	100.0
506011113	Forrestdale - Harrisdale - Piara Waters	Armadale (C)	50210	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
506011114	Kelmscott	Armadale (C)	50210	100.0
506011115	Mount Nasura - Mount Richon - Bedfordale	Armadale (C)	50210	100.0
506011116	Roleystone	Armadale (C)	50210	100.0
506011117	Seville Grove	Armadale (C)	50210	100.0
506021118	Belmont - Ascot - Redcliffe	Belmont (C)	50490	100.0
506021119	East Victoria Park - Carlisle	Victoria Park (T)	58510	100.0
506021122	Rivervale - Kewdale - Cloverdale	Belmont (C)	50490	100.0
506021123	Victoria Park - Lathlain - Burswood	Victoria Park (T)	58510	100.0
506031124	Bentley - Wilson - St James	Canning (C)	51330	80.7
506031125	Canning Vale - West	Canning (C)	51330	100.0
506031127	Cannington - Queens Park	Canning (C)	51330	100.0
506031128	Parkwood - Ferndale - Lynwood	Canning (C)	51330	100.0
506031129	Riverton - Shelley - Rossmoyne	Canning (C)	51330	100.0
506031131	Willetton	Canning (C)	51330	100.0
506041132	Beckenham - Kenwick - Langford	Gosnells (C)	53780	100.0
506041133	Canning Vale - East	Gosnells (C)	53780	100.0
506041134	Gosnells	Gosnells (C)	53780	100.0
506041135	Huntingdale - Southern River	Gosnells (C)	53780	100.0
506041136	Maddington - Orange Grove - Martin	Gosnells (C)	53780	100.0
506041137	Thornlie	Gosnells (C)	53780	100.0
506051138	Forrestfield - Wattle Grove	Kalamunda (S)	54200	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
506051139	High Wycombe	Kalamunda (S)	54200	100.0
506051140	Kalamunda - Maida Vale - Gooseberry Hill	Kalamunda (S)	54200	100.0
506051141	Lesmurdie - Bickley - Carmel	Kalamunda (S)	54200	100.0
506061142	Byford	Serpentine-Jarrahdale (S)	57700	100.0
506061143	Mundijong	Serpentine-Jarrahdale (S)	57700	100.0
506061144	Serpentine - Jarrahdale	Serpentine-Jarrahdale (S)	57700	98.6
506071145	Como	South Perth (C)	57840	100.0
506071146	Manning - Waterford	South Perth (C)	57840	100.0
506071147	South Perth - Kensington	South Perth (C)	57840	99.6
507011148	Banjup	Cockburn (C)	51820	100.0
507011149	Beeliar	Cockburn (C)	51820	100.0
507011152	Coogee	Cockburn (C)	51820	100.0
507011153	Coolbellup	Cockburn (C)	51820	100.0
507011154	Hamilton Hill	Cockburn (C)	51820	100.0
507011156	Jandakot	Cockburn (C)	51820	100.0
507011158	North Coogee	Cockburn (C)	51820	100.0
507011159	South Lake - Cockburn Central	Cockburn (C)	51820	100.0
507011160	Spearwood	Cockburn (C)	51820	100.0
507011161	Success - Hammond Park	Cockburn (C)	51820	100.0
507011162	Wattleup	Cockburn (C)	51820	100.0
507011163	Yangebup	Cockburn (C)	51820	100.0
507021164	East Fremantle	East Fremantle (T)	53150	100.0
507021165	Fremantle	Fremantle (C)	53430	99.1

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
507021166	Fremantle - South	Fremantle (C)	53430	100.0
507031168	Anketell - Wandi	Kwinana (T)	54830	100.0
507031169	Bertram - Wellard (West)	Kwinana (T)	54830	100.0
507031170	Calista	Kwinana (T)	54830	100.0
507031171	Casuarina - Wellard (East)	Kwinana (T)	54830	100.0
507031174	Parmelia - Orelia	Kwinana (T)	54830	100.0
507041175	Applecross - Ardross	Melville (C)	55320	100.0
507041176	Bateman	Melville (C)	55320	100.0
507041177	Bicton - Palmyra	Melville (C)	55320	100.0
507041178	Booragoon	Melville (C)	55320	100.0
507041179	Bull Creek	Melville (C)	55320	100.0
507041180	Leeming	Melville (C)	55320	75.9
507041181	Melville	Melville (C)	55320	100.0
507041182	Murdoch - Kardinya	Melville (C)	55320	100.0
507041183	Willagee	Melville (C)	55320	100.0
507041184	Winthrop	Melville (C)	55320	100.0
507051185	Baldivis	Rockingham (C)	57490	100.0
507051186	Cooloongup	Rockingham (C)	57490	100.0
507051187	Port Kennedy	Rockingham (C)	57490	100.0
507051188	Rockingham	Rockingham (C)	57490	100.0
507051190	Safety Bay - Shoalwater	Rockingham (C)	57490	100.0
507051191	Singleton - Golden Bay - Secret Harbour	Rockingham (C)	57490	100.0
507051192	Waikiki	Rockingham (C)	57490	100.0
507051193	Warnbro	Rockingham (C)	57490	100.0
508011194	Esperance	Esperance (S)	53290	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
508011195	Esperance Region	Ravensthorpe (S)	57420	51.0
508021196	Carnarvon	Carnarvon (S)	51540	100.0
508021197	Exmouth	Exmouth (S)	53360	60.8
508031198	Boulder	Kalgoorlie/Boulder (C)	54280	100.0
508031199	Kalgoorlie	Kalgoorlie/Boulder (C)	54280	100.0
508031200	Kalgoorlie - North	Kalgoorlie/Boulder (C)	54280	100.0
508031202	Kambalda - Coolgardie - Norseman	Coolgardie (S)	51960	74.0
508031203	Leinster - Leonora	Leonora (S)	55040	45.1
508041205	Broome	Broome (S)	50980	100.0
508041206	Derby - West Kimberley	Derby-West Kimberley (S)	52800	100.0
508041207	Halls Creek	Halls Creek (S)	53920	99.8
508041208	Kununurra	Wyndham-East Kimberley (S)	59340	100.0
508041209	Roebuck	Broome (S)	50980	99.5
508051210	Geraldton	Geraldton-Greenough (C)	53520	100.0
508051211	Geraldton - East	Geraldton-Greenough (C)	53520	100.0
508051212	Geraldton - North	Geraldton-Greenough (C)	53520	92.2
508051213	Geraldton - South	Geraldton-Greenough (C)	53520	100.0
508051214	Irwin	Irwin (S)	54060	100.0
508051215	Meekatharra	Meekatharra (S)	55250	33.8
508051216	Morawa	Coorow (S)	52030	23.6
508051217	Northampton - Mullewa - Greenough	Northampton (S)	56790	55.4
508061218	Ashburton (WA)	Ashburton (S)	50250	100.0
508061219	East Pilbara	East Pilbara (S)	53220	83.6

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
508061220	Karratha	Roebourne (S)	57560	100.0
508061221	Newman	East Pilbara (S)	53220	100.0
508061222	Port Hedland	Port Hedland (T)	57280	100.0
508061223	Roebourne	Roebourne (S)	57560	100.0
508061224	South Hedland	Port Hedland (T)	57280	100.0
509011225	Albany	Albany (C)	50080	100.0
509011226	Albany Region	Albany (C)	50080	100.0
509011227	Bayonet Head - Lower King	Albany (C)	50080	100.0
509011228	Denmark	Denmark (S)	52730	100.0
509011229	Gnowangerup	Gnowangerup (S)	53640	44.8
509011230	Katanning	Katanning (S)	54340	90.9
509011231	Kojonup	Kojonup (S)	54550	47.1
509011232	Little Grove - Elleker	Albany (C)	50080	100.0
509011233	McKail - Willyung	Albany (C)	50080	100.0
509011234	Plantagenet	Plantagenet (S)	57210	100.0
509021236	Chittering	Chittering (S)	51680	100.0
509021237	Cunderdin	Cunderdin (S)	52450	33.2
509021238	Dowerin	Wongan-Ballidu (S)	59310	35.3
509021239	Gingin - Dandaragan	Gingin (S)	53570	59.5
509021240	Merredin	Merredin (S)	55460	64.8
509021241	Moora	Moora (S)	55600	53.4
509021242	Mukinbudin	Yilgarn (S)	59360	47.1
509021243	Northam	Northam (S)	56730	100.0
509021244	Toodyay	Toodyay (S)	58330	100.0
509021245	York - Beverley	York (S)	59370	68.4
509031246	Brookton	Pingelly (S)	57140	32.3

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
509031247	Kulin	Lake Grace (S)	54900	29.7
509031248	Murray	Boddington (S)	50630	76.0
509031249	Narrogin	Narrogin (T)	56520	89.2
509031250	Wagin	Wagin (S)	58610	38.0
601011001	Bridgewater - Gagebrook	Brighton (M)	60410	100.0
601011002	Brighton - Pontville	Brighton (M)	60410	100.0
601011003	Old Beach - Otago	Brighton (M)	60410	85.1
601021004	Bellerive - Rosny	Clarence (C)	61410	100.0
601021005	Cambridge	Clarence (C)	61410	100.0
601021006	Geilston Bay - Risdon	Clarence (C)	61410	100.0
601021007	Howrah - Tranmere	Clarence (C)	61410	100.0
601021008	Lindisfarne - Rose Bay	Clarence (C)	61410	100.0
601021009	Mornington - Warrane	Clarence (C)	61410	100.0
601021010	Risdon Vale	Clarence (C)	61410	100.0
601021011	Rokeby	Clarence (C)	61410	100.0
601021012	South Arm	Clarence (C)	61410	100.0
601031013	Austins Ferry - Granton	Glenorchy (C)	62610	90.4
601031014	Berriedale - Chigwell	Glenorchy (C)	62610	100.0
601031015	Claremont (Tas.)	Glenorchy (C)	62610	99.9
601031016	Derwent Park - Lutana	Glenorchy (C)	62610	100.0
601031017	Glenorchy	Glenorchy (C)	62610	100.0
601031018	Montrose - Rosetta	Glenorchy (C)	62610	100.0
601031019	Moonah	Glenorchy (C)	62610	100.0
601031020	New Norfolk	Derwent Valley (M)	61510	100.0
601031021	West Moonah	Glenorchy (C)	62610	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
601041022	Kingston - Huntingfield	Kingborough (M)	63610	99.7
601041023	Kingston Beach - Blackmans Bay	Kingborough (M)	63610	100.0
601041024	Margate - Snug	Kingborough (M)	63610	100.0
601041026	Taroona - Bonnet Hill	Kingborough (M)	63610	100.0
601051027	Hobart	Hobart (C)	62810	100.0
601051028	Lenah Valley - Mount Stuart	Hobart (C)	62810	99.3
601051029	Mount Nelson - Dynnyrne	Hobart (C)	62810	100.0
601051030	New Town	Hobart (C)	62810	99.3
601051031	Sandy Bay	Hobart (C)	62810	100.0
601051032	South Hobart - Fern Tree	Hobart (C)	62810	99.5
601051033	West Hobart	Hobart (C)	62810	100.0
601061034	Dodges Ferry - Lewisham	Sorell (M)	64810	100.0
601061035	Sorell - Richmond	Sorell (M)	64810	78.7
602011036	Invermay	Launceston (C)	64010	100.0
602011037	Kings Meadows - Punchbowl	Launceston (C)	64010	100.0
602011038	Launceston	Launceston (C)	64010	100.0
602011039	Legana	West Tamar (M)	65810	100.0
602011040	Mowbray	Launceston (C)	64010	100.0
602011041	Newnham - Mayfield	Launceston (C)	64010	100.0
602011042	Newstead	Launceston (C)	64010	100.0
602011043	Norwood (Tas.)	Launceston (C)	64010	100.0
602011044	Prospect Vale - Blackstone	Meander Valley (M)	64210	100.0
602011045	Ravenswood	Launceston (C)	64010	100.0
602011046	Riverside	West Tamar (M)	65810	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
602011047	South Launceston	Launceston (C)	64010	100.0
602011048	Summerhill - Prospect	Launceston (C)	64010	100.0
602011049	Trevallyn	West Tamar (M)	65810	59.1
602011050	Waverley - St Leonards	Launceston (C)	64010	100.0
602011051	West Launceston	Launceston (C)	64010	100.0
602011052	Youngtown - Relbia	Launceston (C)	64010	100.0
602021053	Beauty Point - Beaconsfield	West Tamar (M)	65810	100.0
602021054	Deloraine	Meander Valley (M)	64210	100.0
602021055	Grindelwald - Lanena	West Tamar (M)	65810	100.0
602021056	Hadspen - Carrick	Meander Valley (M)	64210	100.0
602021057	Westbury	Meander Valley (M)	64210	96.3
602031058	Dilston - Lilydale	Launceston (C)	64010	99.2
602031059	George Town	George Town (M)	62210	99.1
602031060	Longford	Northern Midlands (M)	64610	100.0
602031061	Northern Midlands	Northern Midlands (M)	64610	100.0
602031062	Perth - Evandale	Northern Midlands (M)	64610	100.0
602031063	Scottsdale - Bridport	Dorset (M)	61810	89.5
602031064	St Helens - Scamander	Break O'Day (M)	60210	100.0
603011065	Central Highlands	Central Highlands (M)	61010	99.9
603011066	Derwent Valley	Derwent Valley (M)	61510	97.0
603011067	Southern Midlands	Southern Midlands (M)	65010	99.6
603021069	Bruny Island - Kettering	Kingborough (M)	63610	100.0
603021070	Cygnet	Huon Valley (M)	63010	100.0
603021071	Geeveston - Dover	Huon Valley (M)	63010	100.0
603021072	Huonville - Franklin	Huon Valley (M)	63010	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
603031073	Forestier - Tasman	Tasman (M)	65210	100.0
603031074	Triabunna - Bicheno	Glamorgan/Spring Bay (M)	62410	100.0
604011075	Acton - Upper Burnie	Burnie (C)	60610	100.0
604011076	Burnie - Ulverstone Region	Central Coast (M)	60810	52.5
604011077	Burnie - Wivenhoe	Burnie (C)	60610	100.0
604011078	Parklands - Camdale	Burnie (C)	60610	100.0
604011079	Penguin - Sulphur Creek	Central Coast (M)	60810	100.0
604011080	Romaine - Havenview	Burnie (C)	60610	100.0
604011081	Somerset	Waratah/Wynyard (M)	65410	100.0
604011082	Ulverstone	Central Coast (M)	60810	100.0
604011083	West Ulverstone	Central Coast (M)	60810	100.0
604011084	Wynyard	Waratah/Wynyard (M)	65410	100.0
604021085	Devonport	Devonport (C)	61610	100.0
604021086	East Devonport	Devonport (C)	61610	99.5
604021087	Latrobe	Latrobe (M)	63810	100.0
604021088	Miandetta - Don	Devonport (C)	61610	100.0
604021089	Port Sorell	Latrobe (M)	63810	100.0
604021090	Quoiba - Spreyton	Devonport (C)	61610	80.8
604021091	Sheffield - Railton	Kentish (M)	63210	99.7
604021092	Turners Beach - Forth	Central Coast (M)	60810	87.9
604031093	King Island	King Island (M)	63410	100.0
604031094	North West	Circular Head (M)	61210	100.0
604031095	Smithton	Circular Head (M)	61210	100.0
604031096	Waratah	Waratah/Wynyard (M)	65410	100.0
604031097	West Coast (Tas.)	West Coast (M)	65610	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
701011002	Darwin City	Darwin (C)	71000	95.3
701011004	Fannie Bay - The Gardens	Darwin (C)	71000	100.0
701011005	Larrakeyah	Darwin (C)	71000	100.0
701011006	Ludmilla - The Narrows	Darwin (C)	71000	100.0
701011007	Parap	Darwin (C)	71000	100.0
701011008	Stuart Park	Darwin (C)	71000	100.0
701011009	Woolner - Bayview - Winnellie	Darwin (C)	71000	100.0
701021010	Alawa	Darwin (C)	71000	100.0
701021011	Anula	Darwin (C)	71000	100.0
701021012	Berrimah	Darwin (C)	71000	52.1
701021013	Brinkin - Nakara	Darwin (C)	71000	100.0
701021016	Coconut Grove	Darwin (C)	71000	100.0
701021018	Jingili	Darwin (C)	71000	100.0
701021019	Karama	Darwin (C)	71000	100.0
701021020	Leanyer	Darwin (C)	71000	100.0
701021021	Lyons (NT)	Darwin (C)	71000	100.0
701021022	Malak - Marrara	Darwin (C)	71000	100.0
701021023	Millner	Darwin (C)	71000	100.0
701021024	Moil	Darwin (C)	71000	100.0
701021025	Nightcliff	Darwin (C)	71000	100.0
701021026	Rapid Creek	Darwin (C)	71000	100.0
701021027	Tiwi	Darwin (C)	71000	100.0
701021028	Wagaman	Darwin (C)	71000	100.0
701021029	Wanguri	Darwin (C)	71000	100.0
701021030	Wulagi	Darwin (C)	71000	100.0
701031031	Howard Springs	Litchfield (M)	72300	98.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
701031032	Humpty Doo	Litchfield (M)	72300	100.0
701031034	Virginia	Litchfield (M)	72300	100.0
701031035	Weddell	Litchfield (M)	72300	100.0
701041036	Bakewell	Palmerston (C)	72800	100.0
701041037	Driver	Palmerston (C)	72800	100.0
701041038	Durack - Marlow Lagoon	Palmerston (C)	72800	100.0
701041039	Gray	Palmerston (C)	72800	100.0
701041040	Moulden	Palmerston (C)	72800	100.0
701041041	Palmerston - North	Palmerston (C)	72800	100.0
701041043	Rosebery - Bellamack	Palmerston (C)	72800	100.0
701041044	Woodroffe	Palmerston (C)	72800	100.0
702011045	Charles	Alice Springs (T)	70200	100.0
702011046	East Side	Alice Springs (T)	70200	100.0
702011047	Flynn (NT)	Alice Springs (T)	70200	100.0
702011048	Larapinta	Alice Springs (T)	70200	100.0
702011049	Mount Johns	Alice Springs (T)	70200	100.0
702011050	Petermann - Simpson	MacDonnell (S)	72330	59.1
702011051	Ross	Alice Springs (T)	70200	100.0
702011052	Sandover - Plenty	MacDonnell (S)	72330	56.5
702011053	Tanami	MacDonnell (S)	72330	83.7
702011054	Yuendumu - Anmatjere	Central Desert (S)	70620	100.0
702021055	Barkly	Barkly (S)	70420	100.0
702021056	Tennant Creek	Barkly (S)	70420	100.0
702031057	Alligator	West Arnhem (S)	74660	35.9
702031058	Daly	Victoria-Daly (S)	74500	91.5
702031059	Thamarrurr	Victoria-Daly (S)	74500	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
702031060	Tiwi Islands	Tiwi Islands (S)	74050	100.0
702031061	West Arnhem	West Arnhem (S)	74660	100.0
702041062	Anindilyakwa	East Arnhem (S)	71300	61.7
702041063	East Arnhem	East Arnhem (S)	71300	100.0
702041064	Nhulunbuy	Unincorporated NT	79399	100.0
702051065	Elsey	Roper Gulf (S)	73600	100.0
702051066	Gulf	Roper Gulf (S)	73600	100.0
702051067	Katherine	Katherine (T)	72200	99.7
702051068	Victoria River	Victoria-Daly (S)	74500	73.7
801011001	Aranda	Unincorporated ACT	89399	100.0
801011002	Belconnen	Unincorporated ACT	89399	100.0
801011003	Bruce	Unincorporated ACT	89399	100.0
801011004	Charnwood	Unincorporated ACT	89399	100.0
801011005	Cook	Unincorporated ACT	89399	100.0
801011006	Dunlop	Unincorporated ACT	89399	100.0
801011007	Evatt	Unincorporated ACT	89399	100.0
801011008	Florey	Unincorporated ACT	89399	100.0
801011009	Flynn (ACT)	Unincorporated ACT	89399	100.0
801011010	Fraser	Unincorporated ACT	89399	100.0
801011011	Giralang	Unincorporated ACT	89399	100.0
801011013	Hawker	Unincorporated ACT	89399	100.0
801011014	Higgins	Unincorporated ACT	89399	100.0
801011015	Holt	Unincorporated ACT	89399	100.0
801011016	Kaleen	Unincorporated ACT	89399	100.0
801011017	Latham	Unincorporated ACT	89399	100.0
801011019	Macgregor (ACT)	Unincorporated ACT	89399	100.0
801011020	Macquarie	Unincorporated ACT	89399	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
801011021	McKellar	Unincorporated ACT	89399	100.0
801011022	Melba	Unincorporated ACT	89399	100.0
801011023	Page	Unincorporated ACT	89399	100.0
801011024	Scullin	Unincorporated ACT	89399	100.0
801011025	Spence	Unincorporated ACT	89399	100.0
801011026	Weetangera	Unincorporated ACT	89399	100.0
801021027	ACT - South West	Unincorporated ACT	89399	100.0
801031030	ACT - East	Unincorporated ACT	89399	100.0
801041034	Amaroo	Unincorporated ACT	89399	100.0
801041035	Bonner	Unincorporated ACT	89399	100.0
801041036	Casey	Unincorporated ACT	89399	100.0
801041037	Crace	Unincorporated ACT	89399	100.0
801041038	Forde	Unincorporated ACT	89399	100.0
801041039	Franklin	Unincorporated ACT	89399	100.0
801041040	Gungahlin	Unincorporated ACT	89399	100.0
801041043	Hall	Unincorporated ACT	89399	100.0
801041044	Harrison	Unincorporated ACT	89399	100.0
801041046	Ngunnawal	Unincorporated ACT	89399	100.0
801041047	Nicholls	Unincorporated ACT	89399	100.0
801041048	Palmerston	Unincorporated ACT	89399	100.0
801051050	Ainslie	Unincorporated ACT	89399	100.0
801051051	Braddon	Unincorporated ACT	89399	100.0
801051052	Campbell	Unincorporated ACT	89399	100.0
801051053	Civic	Unincorporated ACT	89399	100.0
801051054	Dickson	Unincorporated ACT	89399	100.0
801051055	Downer	Unincorporated ACT	89399	100.0
801051056	Hackett	Unincorporated ACT	89399	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
801051057	Lyneham	Unincorporated ACT	89399	100.0
801051058	O'Connor (ACT)	Unincorporated ACT	89399	100.0
801051059	Reid	Unincorporated ACT	89399	100.0
801051060	Turner	Unincorporated ACT	89399	100.0
801051061	Watson	Unincorporated ACT	89399	100.0
801061062	Deakin	Unincorporated ACT	89399	100.0
801061063	Forrest	Unincorporated ACT	89399	100.0
801061064	Griffith (ACT)	Unincorporated ACT	89399	100.0
801061065	Kingston - Barton	Unincorporated ACT	89399	100.0
801061067	Narrabundah	Unincorporated ACT	89399	100.0
801061069	Red Hill (ACT)	Unincorporated ACT	89399	100.0
801061070	Yarralumla	Unincorporated ACT	89399	100.0
801071071	Banks	Unincorporated ACT	89399	100.0
801071072	Bonython	Unincorporated ACT	89399	100.0
801071073	Calwell	Unincorporated ACT	89399	100.0
801071074	Chisholm	Unincorporated ACT	89399	100.0
801071075	Conder	Unincorporated ACT	89399	100.0
801071076	Fadden	Unincorporated ACT	89399	100.0
801071077	Gilmore	Unincorporated ACT	89399	100.0
801071078	Gordon (ACT)	Unincorporated ACT	89399	100.0
801071079	Gowrie (ACT)	Unincorporated ACT	89399	100.0
801071080	Greenway	Unincorporated ACT	89399	100.0
801071081	Isabella Plains	Unincorporated ACT	89399	100.0
801071082	Kambah	Unincorporated ACT	89399	100.0
801071083	Macarthur	Unincorporated ACT	89399	100.0
801071084	Monash	Unincorporated ACT	89399	100.0
801071086	Oxley (ACT)	Unincorporated ACT	89399	100.0

Table 2.8 (cont.)

SA2 Code (2011)	SA2 Name (2011)	LGA MATCH	LGA Code (2011)	Population-weighted percentage
801071087	Richardson	Unincorporated ACT	89399	100.0
801071088	Theodore	Unincorporated ACT	89399	100.0
801071090	Wanniassa	Unincorporated ACT	89399	100.0
801081091	Chapman	Unincorporated ACT	89399	100.0
801081092	Duffy	Unincorporated ACT	89399	100.0
801081093	Fisher	Unincorporated ACT	89399	100.0
801081094	Holder	Unincorporated ACT	89399	100.0
801081095	Rivett	Unincorporated ACT	89399	100.0
801081096	Stirling	Unincorporated ACT	89399	100.0
801081097	Waramanga	Unincorporated ACT	89399	100.0
801081098	Weston	Unincorporated ACT	89399	100.0
801091099	Chifley	Unincorporated ACT	89399	100.0
801091100	Curtin	Unincorporated ACT	89399	100.0
801091101	Farrer	Unincorporated ACT	89399	100.0
801091102	Garran	Unincorporated ACT	89399	100.0
801091103	Hughes	Unincorporated ACT	89399	100.0
801091104	Isaacs	Unincorporated ACT	89399	100.0
801091105	Lyons (ACT)	Unincorporated ACT	89399	100.0
801091106	Mawson	Unincorporated ACT	89399	100.0
801091107	O'Malley	Unincorporated ACT	89399	100.0
801091108	Pearce	Unincorporated ACT	89399	100.0
801091109	Phillip	Unincorporated ACT	89399	100.0
801091110	Torrens	Unincorporated ACT	89399	100.0

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