

# Introduction



The 2017 Yearbook is the fourth in a series of statistical reports that are designed to help answer the question of how our regions are progressing against social, economic, environmental and governance indicators. This information will enable governments, private investors and the community to identify trends that are important for policy development, investment decisions and planning. Understanding these issues is particularly important when making decisions in relation to infrastructure needs and government services, as both are influenced by the geographic distribution of people, economic activity and natural resources. This edition builds on previous Yearbooks by updating data sources wherever possible and most notably through the inclusion of data from the 2016 Census of Population and Housing.

## The framework

The information in this Yearbook is organised according to a framework that groups indicators into domains corresponding to different aspects of socio-economic progress (Table 1). This approach builds on a framework that was originally developed by the Australian Bureau of Statistics (ABS) for the *Measures of Australia's Progress* (MAP) publication. The MAP framework has been adjusted to incorporate data sources which are available across a wide range of geographies. It has also been extended to include contextual indicators that are not related to progress, but which are nonetheless important for forming a well-rounded understanding of the characteristics of each region.

## Progress indicators

Most of the indicators in this Yearbook are based on the concept of societal progress. Progress is about improvements in the wellbeing of people and households over time. This requires looking beyond the economy of a region to include the wider range of people's experiences and living conditions.<sup>1</sup>

Internationally, measuring wellbeing and progress of societies forms part of the process of understanding countries and regions. Projects like the Commission on the Measurement of Economic Performance and Social Progress<sup>2</sup> and the Organisation for Economic Co-operation and Development (OECD) Global Project on Measuring the Progress of Societies have highlighted the importance of broader measures of economic, environmental, and social sustainability. Multilateral agencies have developed methods for comparing the progress of different nations, including the UN Human Development Index<sup>3</sup>, the OECD Better Life Index<sup>4</sup> and the related OECD Regional Well-Being initiative<sup>5</sup>.

<sup>1</sup> OECD 2013, *Measuring Well-Being and Progress*, OECD.

<sup>2</sup> Stiglitz, Sen and Fitoussi 2009, *Report of the Commission on the Measurement of Economic Performance and Social Progress*, CMEPSR.

<sup>3</sup> United Nations Development Programme (UNDP) 2014, *Human Development Report 2014: Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*, UNDP.

<sup>4</sup> OECD 2016, *Better Life Index*, OECD.

<sup>5</sup> OECD 2016, *Regional Well-Being*, OECD.

The Australian Bureau of Statistics (ABS) has measured progress at the national scale in its MAP publication.<sup>6</sup> The themes measured by MAP were selected through extensive national consultation to identify what Australians considered most important to them for national progress. In the Yearbook the MAP themes are examined at a regional scale uncovering the variation in rates of progress below the national level.

When measuring progress at a regional level, this Yearbook seeks to answer the question:

*“Is life in your region getting better?”*

Rather than make comparisons between regions, the information on progress in this Yearbook is intended to be used to look at how individual regions are doing over time, and if these changes are in line with the broader national trend.

The concept of progress is multidimensional and a range of indicators have been selected to show whether progress is being made across four domains. The Progress section of the Yearbook has been divided into four sections (Table 1), each focusing on one of the four domains of progress:

- Part P1, Society;
- Part P2, Economy;
- Part P3, Environment; and
- Part P4, Governance.

Each domain consists of a set of themes, reflecting the aspirations that Australians have for their nation. Each theme is represented by one or more **progress indicators** (Table 1), which are summary statistics that signal whether that aspect of life is moving in a ‘good’ direction (progress) or a ‘bad’ direction (regress) (Box 1).

Many of the progress indicators in this Yearbook have been adapted directly from MAP. Some indicators use the same data source as the relevant MAP indicator. For other indicators, the MAP data source could only provide information at the national or state level, and not at the more detailed geographic level required to provide acceptable regional coverage. In these cases, the MAP data source has been replaced in favour of related data sources which provide information on the same concept but at a more detailed geographic level.

In addition, some themes from MAP are based on indicators that are not available below the national or state level. These themes represent gaps in the regional evidence base. However each year, the Yearbook attempts to fill these gaps. This year, 10 new indicators have been included in the 2017 Yearbook and are outlined below in Table 2.

## Contextual indicators

The Yearbook provides an overview of how Australia’s regions are progressing over time. While the main focus is on progress, these indicators have also been supplemented with **contextual indicators** that provide background information to help interpret changes in a region.

The contextual indicators part of the Yearbook has been divided into three sections (Table 1), each focusing on one of three contextual domains:

- Part C.1, Population and Demographics;
- Part C.2, Transport and Infrastructure; and
- Part C.3, Industry and Innovation.

Like the progress indicators, each domain consists of a set of themes that are represented by one or more statistical indicators.

<sup>6</sup> ABS 2013, *Measures of Australia’s Progress*, Canberra.

Table 1 Indicator framework

Regions – Remoteness Classes, Major Urban Areas, Sub-State Regions	Progress Indicators		Contextual Indicators	
	Society	Economy	Population and Demographics	Transport and Infrastructure
	Health and wellbeing Close relationships Home Safety Learning and knowledge Community connections Fair opportunities Enriched lives	Opportunities Jobs A resilient economy Enhanced living standards Fair outcomes International economic engagement	Population Age structure Housing Social characteristics	Moving people Moving freight Communications and utilities Land use
	Environment	Governance	Industry and Innovation	
	Healthy natural environment Appreciating the environment Protecting the environment Sustaining the environment Healthy built environments	Trust Participation	Industry Business activity Innovation	

Source: Adapted from ABS 2013, *Measures of Australia's Progress*, Canberra

### Box 1 Some key terms

**Statistical indicators** are measures that provide users with a summary of the state of play with respect to a topic. For example, median income is a statistical indicator that provides an easily interpreted summary measure of the distribution of income in a region. This would otherwise be a detailed set of data items relating to the number of people in different income groups.

**Progress indicators** are a particular type of statistical indicator. Progress indicators are chosen on the basis that most people would agree that an increase (or decrease) in the indicator can be unambiguously associated with either progress or regress. For example, *life expectancy* is a commonly used indicator of progress in the theme of Health. An increase in *life expectancy* is directly related to progress in the health of people living in the region.

In comparison, *population growth* does not qualify as a progress indicator, as there is considerable disagreement as to whether population growth in a region represents progress.

Table 2 Additions to the 2017 Yearbook

Progress Indicators			Contextual Indicators
Society	Economy	Environment	Population and Demographics
Suicide rate	Youth unemployment	Solar panels	Working age population
Year 5 and 9 numeracy standards	Long term unemployment		Dwelling approvals (number)
	Labour force underutilisation		Single parent families
	Building approvals (value)		

## Geographic and regional variation

A statistical geography is a system for organising data according to location. Statistical geographies divide a large geographic area (such as a country) into smaller geographic areas. The smaller areas can then be grouped together in different combinations to represent regions of interest.

The indicators in this Yearbook are viewed through a geographic lens providing the ability to track the progress of regions at several scales. For the most part, the Yearbook uses the geographic classification in the ABS 2016 Australian Statistical Geography Standard (ASGS) to define the boundaries of the statistical regions presented.

Where available, each indicator has been compiled at the following geographic scales:

- Remoteness classes;
- Major urban areas;
- Capital city and balance of state; and
- Sub-state regions.

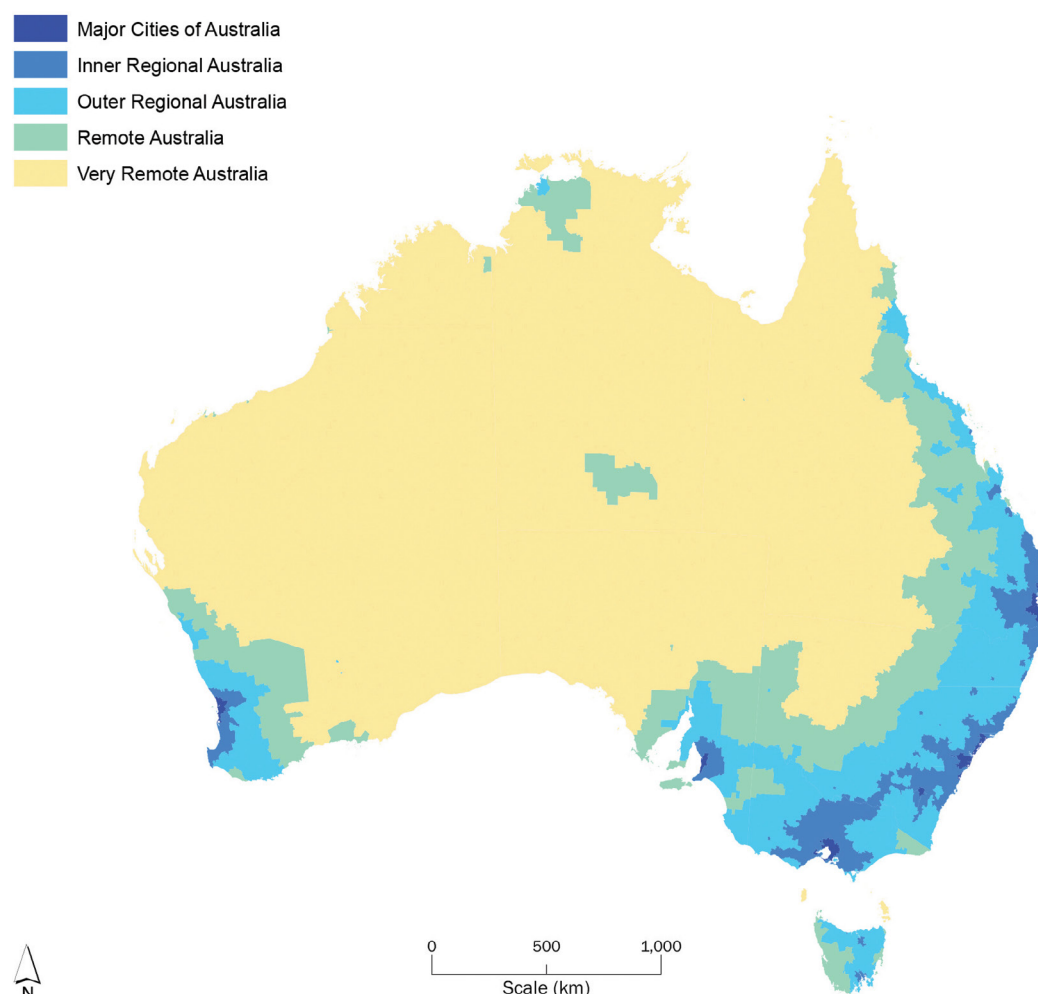
## Remoteness classes

The remoteness classes are from the 2011 ABS Remoteness Area classification, which divides Australia into five regions (Map 1). Remoteness classes provide a summary geographic classification to compare how outcomes vary between large regions that share common characteristics of remoteness. In this publication the 2011 remoteness classes are retained as the 2016 update is not yet available. These remoteness classes are:

- Major cities of Australia;
- Inner regional Australia;
- Outer regional Australia;
- Remote Australia; and
- Very remote Australia.

As this geography is based on 2011 ASGS, the sum of data in remoteness classes may not sum to the 2016 Australian total.

Figure 1 Remoteness classes, 2011 Australian Statistical Geography Standard (ASGS)



Source: ABS 2011 ASGS

## Major urban areas

The major urban areas<sup>7</sup> (MUA) of Australia are identified as the large urban cores and surrounding built-up urban areas with a population of more than 85,000 residents in 2016 (Map 2). Throughout the Yearbook the major urban areas are presented in order of population, with the most populated areas at the top of the tables and the least populated areas at the bottom. In total, Australia's 20 largest cities have been included in the Yearbook (Table 3).

Table 3 Statistical geographic areas used to define Australia's major urban areas

<b>Greater Capital City Statistical Areas (GCCSAs)</b>	<b>Significant Urban Areas (SUAs)</b>	
Greater Sydney	Gold Coast - Tweed Heads	Cairns
Greater Melbourne	Newcastle - Maitland	Toowoomba
Greater Brisbane	Canberra - Queanbeyan	Ballarat
Greater Perth	Sunshine Coast	Bendigo
Greater Adelaide	Wollongong	Albury - Wodonga
Greater Hobart	Geelong	Launceston
Greater Darwin	Townsville	

<sup>7</sup> Note that while major urban areas are not themselves an ABS geography they were developed using existing ABS geographies.

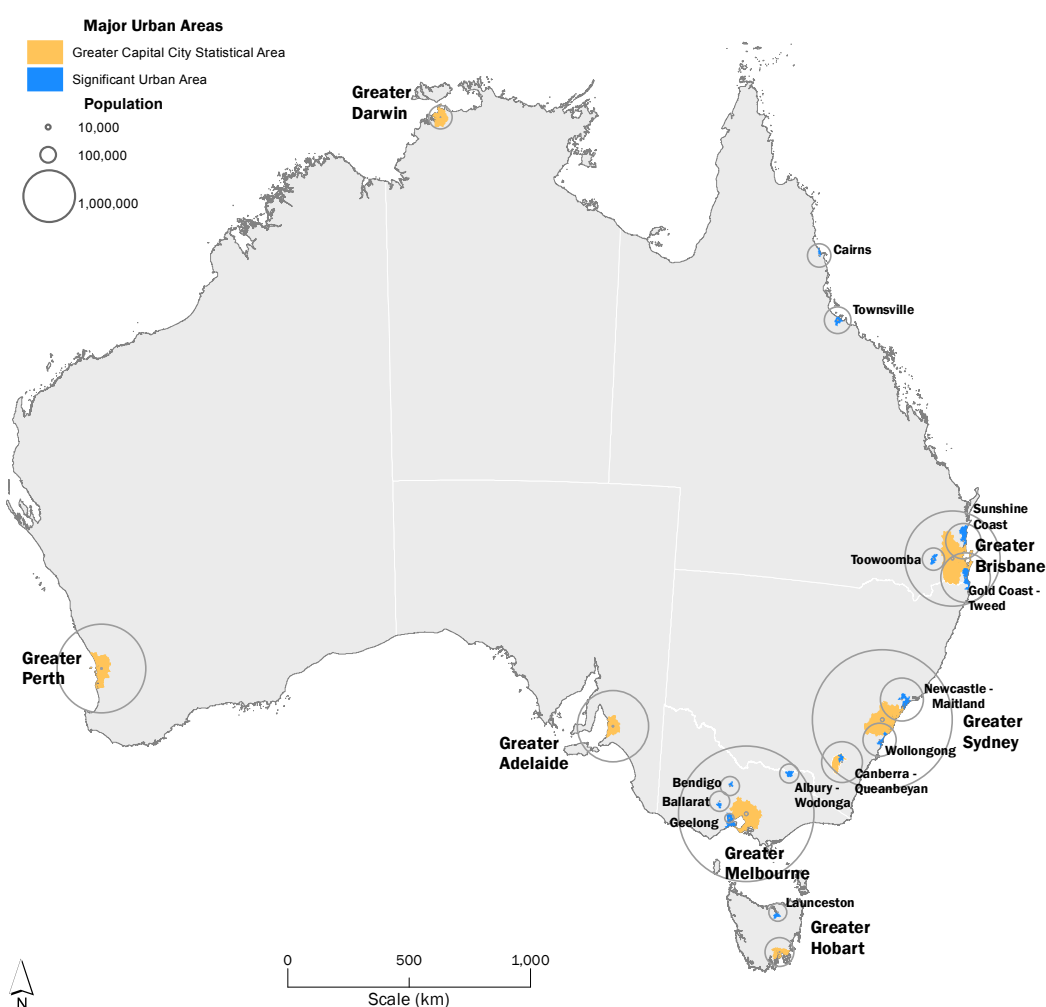
For the seven capital cities (excluding Canberra), the ABS-defined Greater Capital City Statistical Areas (GCCSAs) have been used to represent the major urban area. These regions represent the functional socio-economic extent of each of the state and territory capitals. The boundaries cover people who regularly socialise, shop or work within each city, including those who live in small towns and rural areas surrounding the city.

The remaining 13 major urban areas are based on the ABS-defined Significant Urban Areas (SUAs). SUA regions are concentrations of urban development with a population of 10,000 people or greater, which include a dense urban core and some surrounding hinterland. SUAs do not represent the functional labour market zone of a major city, as many people who live outside the urban area may still travel to work inside the urban area.

Canberra has been defined by the SUA of Canberra - Queanbeyan, which crosses the New South Wales and Australian Capital Territory border and so includes a wider urban extent than the GCCSA of the ACT. While Canberra is still a capital city, the SUA used to define the major urban area of Canberra - Queanbeyan is a better approximation of the wider urban core that crosses the state border. Similarly two other SUAs cross state boundaries: the Gold Coast - Tweed Heads SUA crosses the Queensland and New South Wales border; and the SUA of Albury-Wodonga crosses the New South Wales and Victoria border.

In some cases the names of major urban areas are the same as those for the larger sub-state regions in which they are located (see sub-state regions below). For example, the major urban area of Cairns is located within the sub-state region of the same name. In these cases the major urban area is always smaller than the wider sub-state region, which often includes a significant amount of the surrounding hinterland.

**Figure 2** Major urban areas – Greater Capital City Statistical Areas (GCCSA) and Significant Urban Areas (SUA)



Source: ABS 2016 ASGS

## Capital city and balance of state

For some of the indicators, data for remoteness classes or major urban areas is unavailable. In these cases the indicator is presented for the capital city and balance of the state (using the ABS' GCCSA geography). Each state is divided into the region which represents the socio-economic extent of each of the eight state and territory capital cities and the regions that represent the remaining area of the state or territory. These capital cities are the same geographic regions defined in the major urban areas geography (with the exception of Canberra - Queanbeyan), which are based on the GCCSA territory boundary.

## Sub-state regions

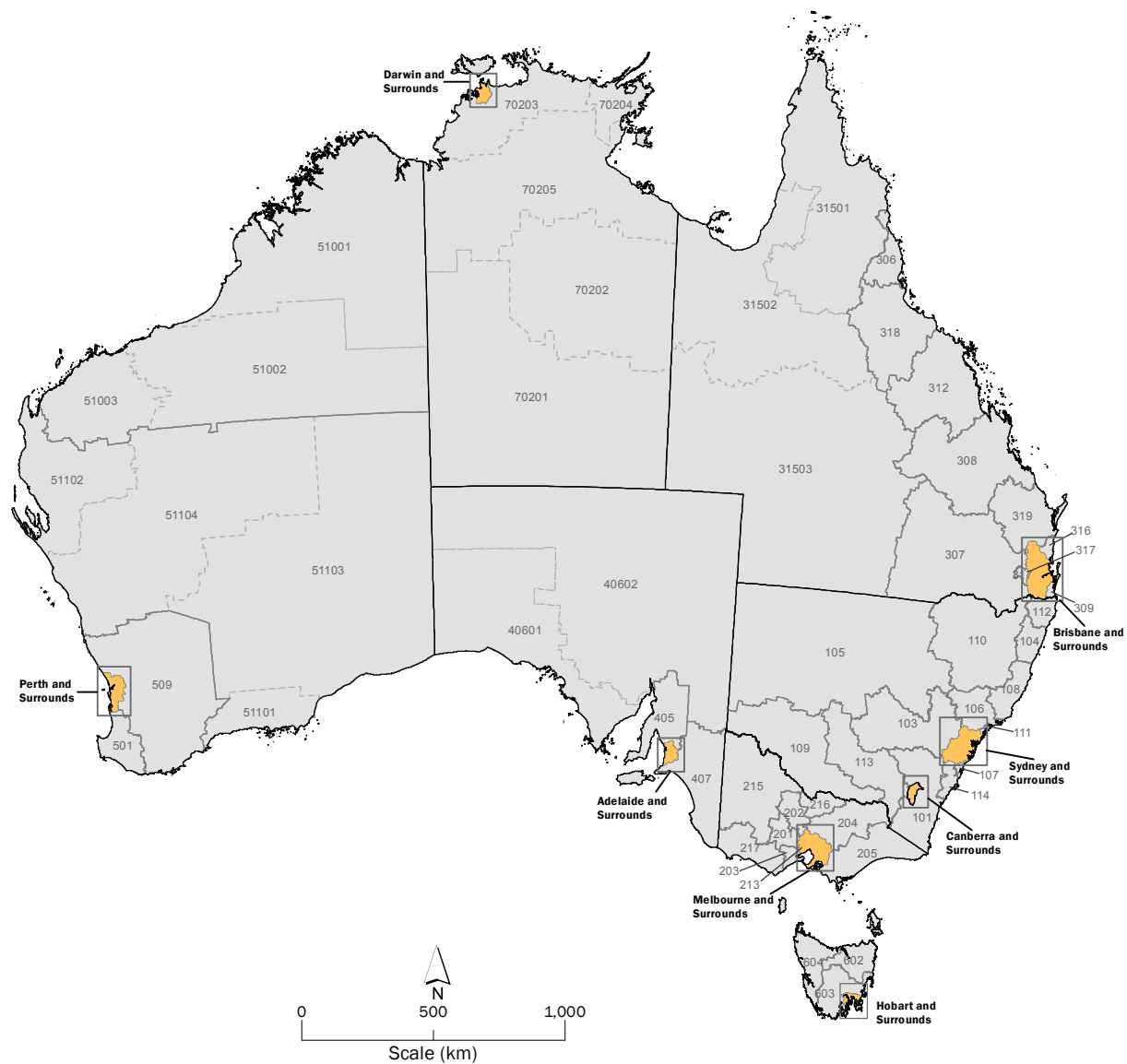
The sub-state regions in the Yearbook are geographic areas within the states and territories (Map 3, Table 4). Statistical Areas Level 4 (SA4s) are informed by labour market catchment areas, the population of the region, state and territory boundaries and sample design of the ABS Labour Force Survey.

These regions have a minimum population of 100,000, with some exceptions for sparsely populated remote areas. In regional areas, SA4s tend to have populations closer to the minimum (100,000 - 300,000). In metropolitan areas, SA4s tend to have larger populations (300,000 - 500,000).

The sub-state regions aggregate to the capital cities and the balance of the states (the GCCSA classification). For example, the GCCSA of Greater Sydney is made up of 15 SA4s and the remaining 13 SA4s in New South Wales make up the balance of the state.

In addition, based on user feedback, since 2016 the Yearbook has included data for Statistical Areas Level 3 (SA3s), where available, for outback regions in Queensland, South Australia, Western Australia and the Northern Territory within the data tables for sub-state regions.

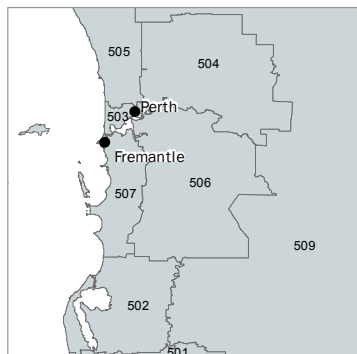
Figure 3 Sub-state regions – Greater Capital City Statistical Areas and Statistical Areas Level 3 (in Outback areas) and Level 4, 2016 ASGS



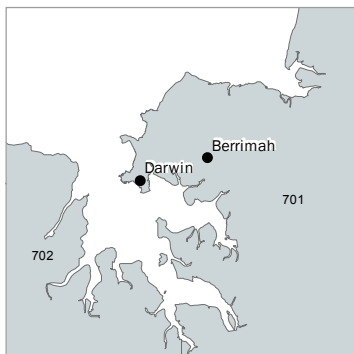


*Sub-state regions – Greater Capital City Statistical Areas and Statistical Areas Level 3 (in Outback areas) and Level 4, 2016 ASGS (continued)*

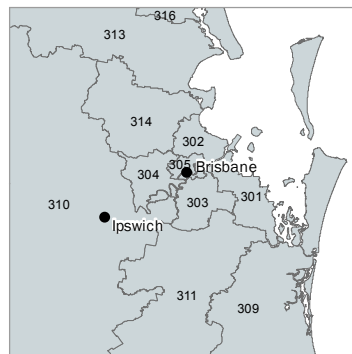
**Perth and Surrounds**



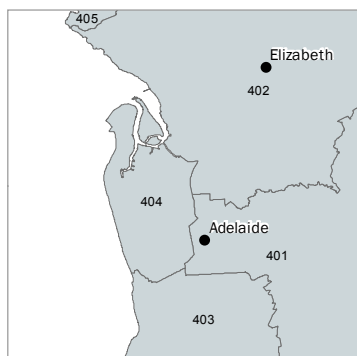
**Darwin and Surrounds**



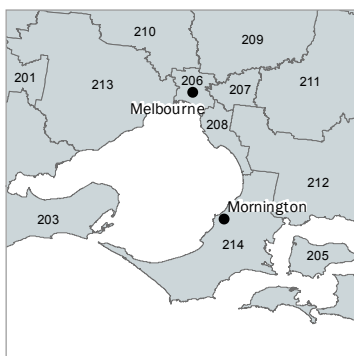
**Brisbane and Surrounds**



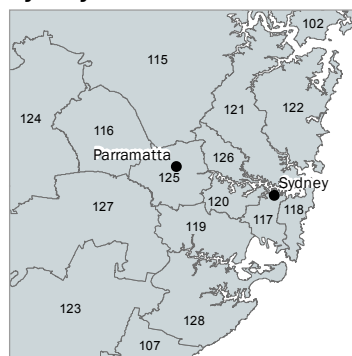
**Adelaide and Surrounds**



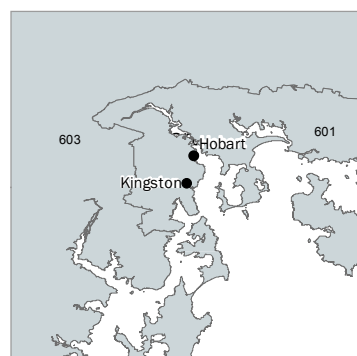
**Melbourne and Surrounds**



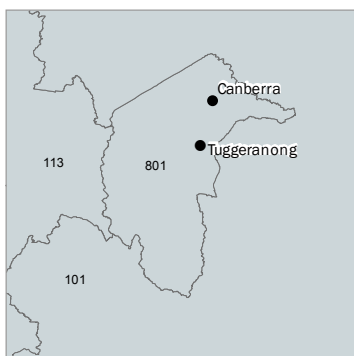
**Sydney and Surrounds**



**Hobart and Surrounds**



**Canberra and Surrounds**



Source: ABS 2016 ASGS

Table 4 List of sub-state regions based on 2016 ASGS

<b>New South Wales</b>	
<b>Greater Sydney</b>	<b>Rest of New South Wales</b>
102 Central Coast	101 Capital Region
115 Sydney - Baulkham Hills and Hawkesbury	103 Central West
116 Sydney - Blacktown	104 Coffs Harbour - Grafton
117 Sydney - City and Inner South	105 Far West and Orana
118 Sydney - Eastern Suburbs	106 Hunter Valley exc Newcastle
119 Sydney - Inner South West	107 Illawarra
120 Sydney - Inner West	108 Mid North Coast
121 Sydney - North Sydney and Hornsby	109 Murray
122 Sydney - Northern Beaches	110 New England and North West
123 Sydney - Outer South West	111 Newcastle and Lake Macquarie
124 Sydney - Outer West and Blue Mountains	112 Richmond - Tweed
125 Sydney - Parramatta	113 Riverina
126 Sydney - Ryde	114 Southern Highlands and Shoalhaven
127 Sydney - South West	
128 Sydney - Sutherland	
<b>Victoria</b>	
<b>Greater Melbourne</b>	<b>Rest of Victoria</b>
206 Melbourne - Inner	201 Ballarat
207 Melbourne - Inner East	202 Bendigo
208 Melbourne - Inner South	203 Geelong
209 Melbourne - North East	204 Hume
210 Melbourne - North West	205 Latrobe - Gippsland
211 Melbourne - Outer East	215 North West
212 Melbourne - South East	216 Shepparton
213 Melbourne - West	217 Warrnambool and South West
214 Mornington Peninsula	
<b>Queensland</b>	
<b>Greater Brisbane</b>	<b>Rest of Queensland</b>
301 Brisbane - East	306 Cairns
302 Brisbane - North	307 Darling Downs - Maranoa
303 Brisbane - South	308 Central Queensland
304 Brisbane - West	309 Gold Coast
305 Brisbane Inner City	312 Mackay - Isaac - Whitsunday
310 Ipswich	315 Queensland - Outback
311 Logan - Beaudesert	316 Sunshine Coast
313 Moreton Bay - North	317 Toowoomba
314 Moreton Bay - South	318 Townsville
	319 Wide Bay
<b>South Australia</b>	
<b>Greater Adelaide</b>	<b>Rest of South Australia</b>
401 Adelaide - Central and Hills	405 Barossa - Yorke - Mid North
402 Adelaide - North	406 South Australia - Outback
403 Adelaide - South	407 South Australia - South East
404 Adelaide - West	
<b>Western Australia</b>	
<b>Greater Perth</b>	<b>Rest of Western Australia</b>
502 Mandurah	501 Bunbury
503 Perth - Inner	509 Western Australia - Wheat Belt
504 Perth - North East	510 Western Australia - Outback (North)
505 Perth - North West	511 Western Australia - Outback (South)
506 Perth - South East	
507 Perth - South West	
<b>Tasmania</b>	
601 <b>Greater Hobart</b>	<b>Northern Territory</b>
<b>Rest of Tasmania</b>	701 <b>Greater Darwin</b>
602 Launceston and North East	<b>Rest of Northern Territory</b>
603 South East	702 Northern Territory - Outback
604 West and North West	<b>Australian Capital Territory</b>
	801 Australian Capital Territory

Source: ABS 2016 ASGS

# Reading the tables



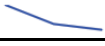
This Yearbook presents data on the changes to indicators for regions across time. These tables include both the values for the indicators as well as a visual representation of the change in the indicator and the trend over time. Table 5 provides guidance on reading Yearbook tables and an explanation of key features.

Trend lines are used to provide a visual representation of progress over time for a specific region, rather than to compare the rate of change between regions. It is important to note that the trend lines do not use a consistent scale, either within an individual table, or across different tables.

The change bars represent the change in the indicator from the first reference period to the last reference period. The size of the bar corresponds to the size of the change. The change bars use a consistent scale within a single table, however, the scales may vary between tables, including using a separate scale for a single indicator across the different geographic levels.

When this change is indicative of progress in the region, the bar is coloured blue. When the change is indicative of regression in the region, the bar is coloured pink. The colour of the bar does not always correspond to the direction of the sign of the value. For the contextual indicators, the change bars are coloured grey irrespective of the direction of the change because these changes are not related to the concepts of progress or regress.

**Table 5** Example table with guidance for interpretation

<b>Remoteness Class</b>	<b>2006 per cent</b>	<b>2011 per cent</b>	<b>2016 per cent</b>	<b>2006-2016 change percentage points</b>	<b>Trend</b>
Major Cities	53.2	54.0	55.6	2.4	
Inner Regional	*56.3	55.7	52.3	4.0	
Outer Regional and Remote <sup>^</sup>	55.4	51.9	50.8	-4.6	

**Geographic regions**

Based on the ABS Australian Statistical Geography Standard (ASGS).

**Significance test**

<sup>^</sup> The difference between the first period and last time period is not statistically significant based on 2-tail t-test at 10 per cent.

**Standard errors**

\* Indicates that the estimate has a standard error between 25 per cent and 50 per cent and should be used with caution.

**Change**

Presents the change in the indicator from the first reference period to the last reference period. The size of the bar corresponds to the size of the change. When the change is indicative of progress in the region, the bar is coloured blue. When the change is indicative of regression in the region, the bar is coloured pink. The colour of the bar does not always correspond to the direction of the sign of the value.

**Trend Line**

Presents the change in the indicator over time and is based on the three reference periods included in the table. The indicator may be available at greater frequency than included in the table, but the trend line is only based on the information in the table.

Source: BITRE analysis

# Data quality and availability

## Data quality

The indicators selected for inclusion in this Yearbook have met criteria that set a benchmark for the statistical quality of the data. These criteria are:

- Regional availability – indicators should be available for at least one, but preferably two or more geographic scales.
- Time series – progress indicators should be available as a consistent time series, with data frequency that supports assessment of medium-term trends. This also means that there should be firm plans for the data to be collected again in the short or medium term.
- Authoritative – indicators should be collected by an official or government organisation, or a private organisation with a recognised history of high quality data provision.
- Nationally consistent – indicators should be available on a nationally consistent basis. In cases where the data is collected by individual jurisdictions, it should use a consistent set of concepts and methods across regions.

However, some geographies are very small and data presented at this scale will be subject to volatility over time, particularly those presented at the Statistical Area Level 3 scale.

There will be some variations in the data from previous Yearbooks for some indicators due to:

- Changes in statistical geographies;
- ABS data perturbation that randomly adjust cell values to minimise the risk of identifying individuals in aggregate statistics; and
- Changes in methods of calculations – for example, the exclusion of Not Stated from the denominator of rates.

## Significance testing

Significance testing for trend analysis has been completed for this edition of the Yearbook for the ABS survey-based progress indicators where possible. It is based on a 2-tail t test at the 10 per cent level of significance ( $t=1.65$ ). All differences and changes mentioned have been tested for statistical significance with a 90 per cent level of confidence that there is a real difference between the two populations being tested. To determine whether there is a statistical difference between any other two estimates, significance testing should be undertaken.

A statistical significance test for a comparison between estimates can be performed to determine whether it is likely that there is a difference between the corresponding population characteristics. The standard error of the difference between two corresponding estimates ( $x$  and  $y$ ) is calculated. This standard error is then used to calculate the test statistic:

$$\left( \frac{x - y}{SE(x - y)} \right)$$

Equation:  $x$  minus  $y$  divided by the standard error of  $x$  minus  $y$ .

If the value of this test statistic is greater than 1.65 then there is good evidence, with a 90 per cent level of confidence, of a statistically significant difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence (at the 90 per cent confidence level) that there is a real difference between the populations.

## Data gaps

When developing the MAP publication, the ABS identified several progress themes that did not have any current data sources to support the measurement of progress at a national level. These themes are not represented in this Yearbook and represent current gaps in our ability to measure progress on key elements of societal progress.

## Regional data

Developing this publication has highlighted where availability of regional data is limited. Some indicators included in this publication are only available at a limited number of geographic scales, are available on geographic scales that do not allow for easy comparisons to other indicators, or must be built from alternative data sources.

Some indicators which have high quality and timely data sources at the national level cannot be disaggregated to smaller geographic regions and therefore proxy indicators have been used. These indicators may not exactly match those presented in the ABS MAP publication, but broadly capture the same concepts of progress. Care should be taken when comparing the national data included in this Yearbook with the data presented in the MAP publication.

In other cases, there is extensive information published at the national and state level by government departments and agencies. Australian Government sites which may prove particularly useful in accessing regional data are [nationalmap.gov.au](http://nationalmap.gov.au) and [data.gov.au](http://data.gov.au)

## Online access

The online datasets will provide a more detailed geographic breakdown of data, allowing users to search for their region according to Local Government Area boundaries (2017) and Statistical Areas Level 2 (SA2), where data is available. This more detailed data will provide the opportunity to develop better insights at the sub-state level.

The web data will be available from both the Australian Government data site [data.gov.au](http://data.gov.au) and the Bureau of Infrastructure, Transport and Regional Economics (BITRE) web site [bitre.gov.au](http://bitre.gov.au)

## For further development

In 2016 and 2017, a comprehensive assessment of the Indicator Framework for the Yearbook was conducted in consultation with a wide range of Commonwealth, state and territory departments and the university sector, and in partnership with the ABS. This involved reviewing existing data sources to ensure indicator quality is maintained over time and that information can continue to be presented in a consistent format, as well as seeking feedback on the usefulness and relevance of existing indicators, and potential new indicators and data sources.

As a result of this review, some improvements to the Framework have been identified, and are reflected in the inclusion of 10 new indicators (Table 2).

Another key change in this Yearbook is the availability of data from the 2016 Census. Census data underpins a significant proportion of the Yearbook and this new data enables meaningful updates to a number of indicators.

Finally, it's important to acknowledge that the existing set of indicators have some gaps. Data to be released in the next few years may help fill some of those gaps. Some examples are provided below:

- A significant number of indicators rely on data from the ABS, which is available less frequently than yearly. In the future, there may be potential to improve the frequency of available data through statistical techniques such as data pooling to provide rolling annual estimates.
- Some data is still only available for capital city and balance of state; lower level geography is currently not available but is highly desirable. In the future, there may be potential to improve the level of geographic disaggregation through small area estimation techniques that are becoming increasingly standard methods for production of data at the ABS.

Readers are encouraged to provide feedback or suggestions for further development by email to [Regional.Progress@infrastructure.gov.au](mailto:Regional.Progress@infrastructure.gov.au)