DOTE2021

DROPPING OFF THE EDGE 2021

Persistent and multilayered disadvantage in Australia

Jesuit Social Services
Building a Just Society

Centre for JUST Places
Resilient, inclusive & regenerative communities

DOTE2021

DROPPING OFF THE EDGE 2021

Persistent and multilayered disadvantage in Australia

We acknowledge the Traditional Custodians of all the lands on which Jesuit Social Services operates and pay respect to their Elders past and present. We express our gratitude for their love and care of people, community, land and all life.

Jesuit Social Services

PO Box 271
Richmond Victoria 3121
PH: 03 9421 7600
www.jss.org.au

ISBN: 978-0-9874670-7-2

Publisher:

Jesuit Social Services

The publishers of this report would like to acknowledge Gandel Foundation and Vincent Fairfax Family Foundation for supporting this important research and the publication of its findings.

Suggested citation:

Tanton, R., Dare, L., Miranti, R., Vidyattama, Y., Yule, A. and McCabe, M. (2021), *Dropping Off the Edge 2021: Persistent and multilayered disadvantage in Australia*, Jesuit Social Services: Melbourne.

Designer:

Renae Portwine
www.colourit.com.au

CONTENTS

ACKNOWLEDGEMENTS

This report relied on a number of people and groups, including:

- The communities across Australia;
- The authors and analysts from the University of Canberra;
- The Dropping off the Edge Advisory Group comprising experts in research, policy and community practice who provided advice on the overall report and findings;
- The expert group from the University of Canberra comprising experts in in a range of areas pertinent to the study who provided advice on their area of specialty;
- Government and community service contacts in each state and territory;
- Jesuit Social Services research, policy and advocacy staff.

COMMUNITIES

We acknowledge all the communities across Australia that were the focus of this research. In gathering data and reporting on their circumstances our aim is to throw a spotlight on disadvantage and prompt Governments to make long term, wise investments that will lead to positive change.

In particular, we express our ongoing commitment to stand in solidarity with the people and communities who bear the burden of disadvantage and acknowledge their strengths and resilience. We thank the community members who spoke with us as part of the qualitative component of this research – for their generosity of spirit in sharing their experiences, insights and wisdom, and for their commitment to making their communities ones where everyone can flourish and thrive.

AUTHORS AND ANALYSTS

The lead researcher at the University of Canberra was Professor Robert Tanton. Professor Lain Dare led the qualitative analysis. Andrew Yule and Professor Marita McCabe led the team from Jesuit Social Services. Analysts at the University of Canberra were Associate Professor Riyana Miranti and Associate Professor Yogi Vidyattama. Isabella Carmody helped with the literature review and editing.

ADVISORY GROUP

The Advisory Group provided extensive advice on the report and the findings. In particular, we are grateful for the generous advice of Professor Ross Homel throughout the project. The advisory group comprised:

- Lin Hatfield Dodds
- Cassandra Goldie
- Professor Ross Homel
- Paul Jelfs
- Kym Moore
- Associate Professor Margot Rawsthorne
- Professor Peter Saunders
- Dr Geoff Woolcock

EXPERT GROUP

The expert group were academics at the University of Canberra who provided advice on the choice of indicators; the literature review; and the final report. They were:

- Associate Professor Neil Coffee
- Professor Bernd Gruber
- Professor Barbara Norman
- Associate Professor Phil Roberts
- Associate Professor Jacki Schirmer

Professor Knibbs at the Centre for Air pollution, energy and health Research shared data on Particulate Matter 2.5 used in the analysis.

STATE AND TERRITORY GOVERNMENT AND COMMUNITY SERVICE CONTACTS

A contact person in each state and territory assisted with the collection of required data for the report and commented on the final drafts. These people either rendered direct assistance or connected the researchers with others who were better placed to assist.

It is not possible to acknowledge every individual and agency who contributed to or assisted with this research. However, the following officers and Departments provided essential and sustained support for the project:

New South Wales

Dr Lina Jakob, Senior Evidence and Research Officer, FACS Insights, Analysis and Research (FACSIAR), Department of Communities and Justice

Stephanie Ramsey, Information Officer, NSW Bureau of Crime Statistics and Research

Victoria

Fiona Dowsley, Chief Statistician, Crime Statistics Agency Victoria

Melanie Millsteed, Assistant Director Research & Analytics, Crime Statistics Agency Victoria and team

Queensland

Antony Skinner, Government Statistician, Queensland Government Statistician's Office

Penny Marshall, Assistant Government Statistician, Queensland Government Statistician's Office

Claire Slater and staff at the Department of Justice and Attorney-General

Bruce Pettigrew, Department of Children, Youth Justice and Multicultural Affairs

South Australia

David Amey and staff at the South Australian Office for Correctional Services Review

Jay Mullan and staff at the South Australian Department for Child Protection

Western Australia

The project team would like to acknowledge the participation and assistance of the Western Australian Department of Justice in this research.

Joanne Penaranda and staff at the Western Australian Department of Communities

Tasmania

Richard Edwards and staff at the Tasmanian Department of Justice

Andrew Whelan and staff at Communities Tasmania

Northern Territory

Carolyn Whyte, Director, Research and Statistics, Department of the Attorney-General and Justice

Joe Yick, Deputy Director, Research and Statistics, Department of the Attorney-General and Justice

Leonie Warburton and staff at Territory Families, Housing and Communities

ACT

Alanna Davis, Domestic Violence Crisis Service

Monica Kempster, Lisa Gooley, Joanna Price-Murray and staff at the ACT Community Services Directorate

Sachind Naidu and staff at ACT Corrective Services

The authors and Jesuit Social Services wish to acknowledge the participation and/or assistance of the above-named individuals and agencies. Any errors of omission or commission are the responsibility of the authors, and material published or made publicly available through *Dropping off the Edge 2021* cannot be considered as either endorsed by the above individuals/agencies or as an expression of their views.

FOREWORD

In 1999 Jesuit Social Services published a ground breaking report looking at communities across Victoria and New South Wales to understand how disadvantage is concentrated in a small number of locations and how different forms of disadvantage overlap to limit life opportunities. This research was undertaken by Professor Tony Vinson.

The report, *Unequal in Life,* gathered data from a range of sources including government departments and peak social services organisations. It caught the attention of policy makers and challenged the established approach to solving complex social problems.

Our call to all levels of government was clear, best expressed in Tony's words in the final chapter of that report:

"Indeed, if the residents of such localities and their children are to break free from this web of disadvantage which limits their life opportunities, intensive help in the form of educational, health, family support, housing, justice and other needed community services is required, in combination with supported community-building endeavours to sustain the benefits of assistance rendered."

We were deeply saddened by Tony's death in 2017. His legacy lives on across a number of areas of inquiry and social concern, not least in the field of place-based disadvantage and its impacts on people's lives. We are honoured that Tony collaborated with Jesuit Social Services for nearly twenty years, leading a significant body of research examining this problem. That collaboration resulted in the production of a series of four reports, generally referred to as *Dropping off the Edge*, including two that investigated the issue in every state and territory across Australia.

For this fifth report, *Dropping off the Edge 2021*, we were pleased to partner with Professor Robert Tanton and his team at the University of Canberra. Throughout the project, they have shown great respect for the preceding body of work and have collaborated with Jesuit Social Services to enhance it, bringing their own insights and skills to the task.

Together, we expanded the report to include indicators of intergenerational disadvantage and environmental factors for the first time. We also included qualitative data from eight communities across six states and territories. The interviews and focus groups brought an important element to the work, reminding decision makers around the country that behind every piece of data is a real person who has hopes, dreams, strengths and challenges.

Unfortunately, this report has once again demonstrated the complex and persistent nature of disadvantage. Further, the intersection of social and environmental disadvantage has been highlighted. These realities underline the challenges that confront those seeking to address the web of disadvantage that can prevent individuals, families and entire communities from thriving.

I note that while Jesuit Social Services takes a strengths-based approach to our work, *Dropping off the Edge* focuses on disadvantage and its inequitable distribution, not the inherent strengths within communities. Our focus on this unfair burden borne by some communities provides a sound base from which we, along with affected communities, can advocate for necessary reform. I am confident that *Dropping off the Edge 2021* will be an important resource for those committed to this endeavour.

We know from our long history of working with these communities that harnessing strengths is an important element in achieving positive change, and the qualitative insights in this latest report include reflections on some such strengths. In order to build a more comprehensive understanding of this issue, we have also identified the need for validated and consistent data on community resilience and strengths.

Finally, I express my deep gratitude to Tony for his friendship with Jesuit Social Services over so many years. I am excited to see one fruit of that relationship, *Dropping of the Edge*, continue to flourish in partnership with the University of Canberra. Further, I am delighted that Jesuit Social Services has been able to build on this solid research base, together with our extensive practice in this field, to realise our long-held aspiration of establishing a national Centre for Just Places. The Centre will continue to expand and build on this body of research, collaborating with others to enhance knowledge, support communities and advocate for change to deliver effective place-based solutions to disadvantage.

Julie Edwards
CEO Jesuit Social Services

EXECUTIVE SUMMARY

For more than 20 years, Jesuit Social Services has collaborated with researchers to examine complex disadvantage in communities around the country, releasing a series of reports now generally known as *Dropping off the Edge*.

The first and ground-breaking report, Unequal in Life, was released in 1999 and detailed the web of disadvantage limiting life outcomes for communities in Victoria and New South Wales. A second report in 2004 revisited disadvantage in these two states, while the next three reports, including this latest one, expanded the scope to cover every state and territory.

Dropping off the Edge 2021, the fifth in the series, now measures as many as 37 indicators across every community in each state and territory. The report builds an unparallelled picture of where disadvantage is concentrated, how various forms of disadvantage overlap and how this multilayered disadvantage becomes difficult to escape, with some communities experiencing persistent disadvantage over many years.

This rich and detailed research has been used by Federal, State and Local Governments to inform decision making, tailor program delivery and inform interventions. It is also regularly used by individuals and communities to deepen understanding of local challenges and advocate for change.

Dropping off the Edge is unique in that it collects a broad range of data from various government agencies and directly from government departments in each state and territory and forms an index of disadvantage based on consideration of this diverse information.

For the 2021 report, a literature review was conducted to confirm the importance of the previously used 22 indicators and to expand the list to include intergenerational and environment indicators of disadvantage for the first time.

A technique called Principal Components Analysis (PCA) was used to generate the index in each state and territory, demonstrating general levels of disadvantage. To achieve a more detailed picture of the deep and multilayered nature of disadvantage present in some locations, the research then examined rankings against individual indicators.

In the three most populous states (Victoria, New South Wales and Queensland) the research also investigated which indicators were most over-represented in locations experiencing extreme disadvantage, by comparing the prevalence of each indicator in the 3% most disadvantaged locations against its prevalence in locations across the rest of the state. (In the other jurisdictions, 3% of locations comprised too small a number of communities for this analysis to be meaningful).

The outcomes of these different analyses tell us where general disadvantage is concentrated in each state and territory, which communities are experiencing particularly deep and multilayered disadvantage, and which issues are significantly restricting outcomes for individuals and families in locations experiencing the most extreme disadvantage.

For the first time, *Dropping off the Edge 2021* also includes qualitative data from focus groups and interviews with community members in eight locations across six states and territories including urban, regional and remote communities. This qualitative data offers insights into the lived experience of disadvantage at a community level and is a valuable source of information regarding the structures and resources required to nurture local leadership and improve outcomes.

FINDINGS

Dropping off the Edge 2021 shows that disadvantage is concentrated in a small and disproportionate number of communities in each state and territory. For example, in New South Wales, 13% of locations accounted for 55% of the most disadvantaged positions across all indicators. This concentration was evident in other jurisdictions too. In Queensland, 9% of locations accounted for 41% of disadvantage, and in Western Australia, 10% of locations accounted for 56% of the most disadvantaged positions. In Victoria, 5% of locations accounted for 29% of the most disadvantaged positions across all indicators.

The indexes created in 2015 and 2021 are not directly comparable due to the addition of new indicators and the introduction of domains. However the consistent identification of many of the same locations as disadvantaged in multiple reports, notwithstanding these changes, shows that disadvantage is persistent.

For example, all of the top ten most disadvantaged Victorian locations in 2021, and nine of the top ten in New South Wales, were also highly disadvantaged in 2015. Eight of the top ten in Queensland and 19 of the top 20 in South Australia were also highly disadvantaged in 2015.

When looking at where disadvantaged communities are located in each state or territory, it becomes evident that, in general, disadvantage is experienced in regional and remote areas. All of the top 10 most disadvantaged locations in the Northern Territory were outside Darwin despite only one-third of the SA2 locations (community level areas) being outside the Darwin area.

This trend was repeated to varying degrees in most other states and territories. In New South Wales only three of the top 40 most disadvantaged locations were in Greater Sydney. In Western Australia only one of the top 10 was in Perth and in Queensland only two of the top 10 most disadvantaged locations were in Greater Brisbane.

There were some similarities in the indicators most strongly associated with general levels of disadvantage across each jurisdiction, with low income, crime, family violence, poor air quality, early school leaving, a lack of post-school qualifications and no internet access having a strong influence on index results in each state and territory.

Looking at the results for each indicator in every location, the research shows many of the most disadvantaged locations are severely disadvantaged (top 5% most disadvantaged across the jurisdiction) on multiple indicators. This shows that disadvantage is often multilayered and deep. The research provides valuable insights into the particular forms of disadvantage that are prevalent in a location. These insights can be used to tailor responses that will have the greatest prospects of improving outcomes in these communities.

The research considered which indicators were over-represented at the extreme end of disadvantage, focusing on the most highly disadvantaged 3% of locations in Victoria, New South Wales and Queensland (around 15 communities in each state). Some indicators were present at three or more times the rate in these locations as in the rest of the state. Commonly overrepresented indicators of disadvantage in these locations included prison admissions, juvenile convictions, long term unemployment, households with no parent in paid work, and public housing.

It is to be expected that public housing is more common in areas of disadvantage – availability of public housing is an important support for those experiencing disadvantage. However, given that public housing often accommodates people with complex problems, a high representation against this indicator provides useful information to policy makers and community service organisations in seeking to address problems in a location.

Dropping off the Edge 2021 shows us that people in communities with high levels of public housing likely experience concurrent issues such as long-term unemployment, family violence and contact with the criminal justice system – demonstrating a complicated picture of multiple disadvantage.

The 2021 report saw the introduction of two new domains of indicators: intergenerational and environment data. The new indicators in these domains were teen pregnancy, children in households with no parent in paid work, particulate matter (poor air quality), green canopy coverage, declared nature reserves and heat vulnerability.

These and other changes increased the number of indicators from 22 to 37, and such extensive additions might have resulted in a significant shift in the locations ranked as highly disadvantaged in each state and territory. However, we continued to see consistent results in relation to where disadvantage is located across the country. This suggests that as we expand our definition of disadvantage, we also deepen our understanding of its complex and intersecting nature.

This research allows us to make significant high-level statements about where disadvantage is located and which indicators are influencing the index. However, the outstanding power of *Dropping off the Edge* is the capacity it gives us to closely consider any of more than 2,200 community level locations around the country and see a detailed picture of how they are faring against each of the 37 indicators.

This gives a much more nuanced picture of the particular make up of disadvantage in any location and a starting point first to understand the nature of disadvantage in the community and then to identify ways to address local challenges in order for people to thrive.

To understand and address disadvantage it is essential to engage with and listen to community members. For the first time, the 2021 report included focus groups and interviews in eight communities in six different states and territories.

This qualitative data is not representative of the entire community, nor indeed of other disadvantaged communities across the country, nevertheless a number of lessons can be learned from hearing those community experiences and insights.

Clear themes emerged from this qualitative research including that community members saw significant strengths but also challenges in their local communities related to leadership, social cohesion and effective service delivery.

Community members stressed the need for good community infrastructure, clear communication and coordination of resources, a diversity of providers and accessibility to those resources.

Many of the remote or regional communities raised issues regarding the quality of services, their accessibility and whether they paid adequate heed to cultural aspects and needs of a community. Education, employment and health were particular areas of concern, due to some services being available only in a limited way, or being hard to access due to distance.

A clear message from discussions with community members is that significant strengths are always present within communities, as is a desire to see their communities flourish. These strengths offer opportunities to tailor responses to address disadvantage that empower and enable community members and local leaders to support their communities to thrive.

A FINAL NOTE ON DATA

The authors are grateful for the support from authorities and agencies in every state and territory, and their assistance in providing access to the data available. *Dropping off the Edge* would not be possible without this cooperation.

Obtaining accurate data is always a sizeable hurdle in preparing *Dropping off the Edge*. In particular, data on community safety needs to be collected from each state and territory which is a lengthy process. Other data is requested from central agencies such as the Australian Bureau of Statistics or the Bureau of Meteorology.

Our work on *Dropping off the Edge 2021* also illustrated a number of gaps in available data across all states and territories. In particular, useful indicators of strengths, such as cohesion and resilience, were not available for the report. These concepts can be difficult to measure, but data such as trust in neighbours, feeling safe in the community and having financial resources in case of emergency can help provide a fuller picture, not only of the deficits but also the strengths in a community. Unfortunately, this data is not currently recorded in a consistent manner in each state and territory at a community level. Although there are other indexes that measure cohesion and resilience, there are no single indicators available across jurisdictions that can be incorporated into *Dropping off the Edge* research.

This inconsistency in available data across the country - and challenges to policy makers, community leaders and community members in obtaining the data that is available – creates hurdles to addressing disadvantage. Reliable, timely and comparable data would doubtless assist in framing responses to disadvantage and ensuring these are tailored and targeted appropriately.

CHAPTER 1

HISTORY OF DROPPING OFF THE EDGE AND SCOPE OF THIS STUDY

HISTORY OF DROPPING OFF THE EDGE AND SCOPE OF THIS STUDY

In 1999, Jesuit Social Services produced a report called *"Unequal in life"*. This report looked at the distribution of social disadvantage in New South Wales and Victoria, using a range of indicators collected at postcode level. There were three innovative aspects of this report. One was that the range of indicators was very broad, with the inclusion of low birthweight; child maltreatment; crime; and psychiatric admissions, as well as more traditional indicators of disadvantage like income; education; and unemployment. The second was that it showed results for small areas (postcodes), so people could see what disadvantage in their community looked like. The third was that it used the indicators to form an index; but then analysed the indicators and the index separately. As a result, this report showed maps of an index which combined the indicators; but also undertook analysis of postcodes ranking in the top 30 on each indicator.

This was followed in 2004 with a report called *Community adversity and resilience*. This report again focused on NSW and Victoria, used similar indicators to the 1999 report, and reported the findings at the postcode level. The method was similar to the 1999 report, which also meant comparison of the indicators could be made to the indicators from 1999.

In 2007, Jesuit Social Services partnered with Catholic Social Services Australia and produced a report called *Dropping off the Edge*. The 2007 report used similar indicators to the previous two reports but, for the first time, used data collected for all states and territories across Australia. The same title was used for the 2015 report, which again used data for all states and territories in Australia, and expanded the indicator set.

All these reports were led by Professor Tony Vinson. His extensive and tireless work in this field is acknowledged as the basis for this 2021 report. The current report extends the analysis by including indicators of intergenerational disadvantage and environment indicators for the first time as well as including qualitative analysis of eight disadvantaged communities to add to the quantitative analysis.

The unique aspect of the Dropping off the Edge report compared with other reports like the Australian Bureau of Statistics (ABS) Socio-Economic Index for Areas (SEIFA) is that it analyses the indicators separately and over time; and it uses a summary index that includes complex indicators like intergenerational disadvantage, environment, and community safety. No other Australian analysis uses this breadth of indicators to identify disadvantage as well as examining persistent disadvantage over time. This draws a unique picture of different aspects of disadvantage in diverse communities across the country.

THE AIMS OF DROPPING OFF THE EDGE

The primary aim of the Dropping off the Edge reports has been to identify concentrations of entrenched disadvantage. This concentration of entrenched disadvantage has a number of impacts on people and families in the affected communities, including reducing life opportunities for children in disadvantaged families which then entrench the disadvantage further (Darton & Strelitz, 2003; McLachlan, Gilfillan, & Gordon, 2013). Disadvantage refers to a range of difficulties that families might face which can limit their capacity to have a happy and healthy life. These difficulties are in a multitude of areas, from health to housing to incomes, but also cover more complex issues like family violence and crime.

Many of these issues are inter-related. Family breakdown and crime have an association with unemployment, although the relationship is complex (McClelland, 2000; Weatherburn, 1992). Unstable housing can be a direct result of low income (Johnson et al., 2015). The index used in this report takes into account this inter-relationship between the different indicators by using a data summary technique called Principle Components Analysis. This technique can capture in one index what all the indicators measure in common, so that locations within each state can be compared.

However, a summary index is like a litmus test in science. It can tell you where disadvantage is based on a number of indicators, but looking at each indicator facilitates more detailed analysis of what is causing disadvantage in a location. Examination of each individual indicator allows the identification of multiple disadvantage (locations with the highest number of indicators showing as disadvantaged); persistent disadvantage (locations which have the highest number of indicators demonstrating disadvantage in both 2015 and 2021); or changing locations (areas with indicators showing as disadvantaged in 2015 but not disadvantaged in 2021 or vice versa).

This 2021 report:

- expands the domains to include lifetime and environmental disadvantage;
- highlights where overall disadvantage exists using an index;
- identifies locations that have multiple disadvantage in 2021 using the number of indicators in the most disadvantaged 5% of locations;
- shows which indicators are most important in producing the index of disadvantage;
- identifies locations where disadvantage has persisted between the 2015 and 2021 reports using comparable indicators that are in the most disadvantaged 5% of locations in both years;
- identifies locations that have had indicators move out of disadvantage between 2015 and 2021 using comparable indicators that were in the most disadvantaged 5% of locations in 2015 but aren't in 2021;
- compares the average value of indicators in the 3% of most disadvantaged SA2s using the index, compared to the average values in the other 97%, highlighting the drivers of disadvantage in the most severely disadvantaged locations;
- provides insights about disadvantage using focus groups in a select number of communities.

The focus groups with people in eight communities were conducted to help identify what is needed within a community for that community to thrive. The combination of the index to identify disadvantaged communities, the indicators to identify entrenched and persistent disadvantage, and the focus groups where people in communities talked about what they need to thrive, provides both depth and breadth to this report.

THE CONTEXT OF DROPPING OFF THE EDGE

Measuring poverty and disadvantage has a long history in Australia. The Henderson Inquiry report Poverty in Australia, published in 1975, developed a poverty line for the first time in Australia based on inadequate income relative to need. The figure was $62.70 for the September quarter of 1973, which was equivalent to the basic wage with child endowment for a family of two adults and two children. Adjustments were then made for other types of households. This poverty line is adjusted for inflation each year and published by the Melbourne Institute (Melbourne Institute, 2020).

A poverty measure is an important component of disadvantage. One seminal report in Australia called Financial Disadvantage in Australia 1990 to 2000: the Persistence of Poverty in a Decade of Growth was published by The Smith Family and NATSEM in 2001 (Harding, Lloyd, & Greenwell, 2001). The Australian Council of Social Services publishes a regular report on poverty in Australia (Davidson, Bradbury, Wong, & Hill, 2020). Other reports have been conducted at the state level – for example, Josey, Boreham, Laffan, & Griffiths (2009).

There have also been a number of measures of small area poverty in Australia. These include estimates in the ACT (Tanton, Vidyattama, & Mohanty, 2015); Victoria (Tanton, Peel, & Vidyattama, 2018); and New South Wales (Vidyattama & Tanton, 2019). A recent report from Australian Council of Social Services analysed small area poverty rates after housing costs (Randolph, Liu, & Bradbury, 2020).

Recognising that poverty isn't the only indicator measuring disadvantage, the ABS first published a summary index of disadvantage using a number of indicators like housing, occupation and education. The first Socio-Economic Index for Areas was published in 1988 using data from the 1986 Census (Australian Bureau of Statistics, 1988).

This index used a data summary technique called Principal Components Analysis, the same technique used for the summary index in this report. The SEIFA index has been published for every Census since 1986.

Similar indexes of disadvantage have now been produced in Australia for children (Harding, McNamara, Daly, & Tanton, 2009), youth (Cassells, Daly, Abello, D'Souza, & Miranti, 2014), and older people (Tanton, Vidyattama, & Miranti, 2016). Other indexes of disadvantage in Australia at the national level include the Youth Development Index (Australian Youth Affairs Coalition and Numbers and People Synergy, Australian Youth Development Index 2020); and the proposed Australian National Development Index (www.andi.org.au).

HOW DROPPING OFF THE EDGE IS DONE

Locations change over time, and different aspects of disadvantage may become more important. It is therefore important for a report on disadvantage to be regularly updated. Moreover, updates allow further development of the indicators and in 2021 an intergenerational domain and an environment domain were added to the analysis for the first time. Indicators have also been updated using the 2016 Census; and administrative data provided by Commonwealth and State agencies have been updated. In addition, in this report, NATSEM's spatial microsimulation modelling has been used for some indicators.

Data for this report have been provided from the Commonwealth and all State and Territory Governments. Thanks to their efforts, for the first time, there is a nearly full set of crime data. Data are missing only where in order to ensure confidentiality they were not available at the suburb level (juvenile convictions in the ACT) or where the data couldn't be accessed (family violence in Souh Australia). Most of the data used for this report were from 2019, although all Census data used was from the 2016 Census. These were the most recent Census data available.

Adopting a Consistent Geography

Previous reports have been at a mix of geographical levels, according to what data were available. In the 2015 report, postcodes were used in New South Wales, Victoria and the Australian Capital Territory (ACT) because administrative data were available for postcodes. In Queensland, South Australia and the Northern Territory, an ABS geographical unit called the Statistical Local Area (SLA) was used. In Tasmania and Western Australia, the Local Government Area (LGA) was used.

For this report, it was decided not to use LGAs because in most states these correspond to very large areas. Postcodes also presented numerous complexities that affected their usefulness. Postcodes cover a range of suburbs in cities and can cover huge areas in regional Australia. They are not a standard geography used by the ABS and therefore Census data (which were used for many indicators in this report) are not available at the postcode level[1].

For this report, a geographical unit that was small enough to represent a community was required, and ideally it needed to be used consistently across all states and territories. The ABS has created such a unit, called a "Statistical Area Level 2" (SA2). This is the geographical unit used in the ABS Census. The ABS states that:

"SA2s are designed to reflect functional areas that represent a community that interacts together socially and economically" (Australian Bureau of Statistics, 2021).

An SA2 is normally a suburb or a few suburbs in cities. As stated above, the ABS attempted to create SA2s as areas where a community interacts. As an example, in the ACT, each suburb is an SA2; but in outer Sydney, an SA2 can consist of a few suburbs. In regional locations, SA2s tend to be towns; or there may be a number of SA2s in larger regional towns. In remote locations, SA2s will be large areas, in some cases larger than postcodes. Generally in this report when we use the term "location" we are referring to an SA2.

Much of the data in the 2021 report were received at the SA2 level. However, much of the crime data came in at postcode level, so a method was used to split or merge the postcodes into SA2s using a population weighted concordance. Each postcode was split into SA2s using the population of the SA2 and the population of the postal area from the ABS[2]. This assumes that the indicator characteristics are distributed across the SA2s in the same way that the population is distributed. This is not an ideal assumption but is the best that can be done with the data available. Using SA2s as the geographical unit made sense because many of the Census data were available at this level, and in cities (where an SA2 is a much smaller level than a postcode) SA2s provided a better representation of a community.

Where the SA2 contained a number of postcodes, as it did in many remote locations (eg, far west New South Wales), the average of data values for the relevant postcodes was used.

For this report, some indicators used NATSEM's spatial microsimulation model. This model derives a synthetic population for SA2s across Australia by combining the 2016 Census and the 2017-18 Survey of Income and Housing (SIH) data. More details are in peer reviewed journal articles (Miranti, McNamara, Tanton, & Harding, 2011; Tanton, Vidyattama, Nepal, & McNamara, 2011).

[1] The ABS geography postal area is a close representation of postcodes, but it uses SA2 boundaries to create approximations of postcodes.

[2] Note that for some of the crime data, a better concordance would have used the population aged over 18 (prison admissions) or 10 – 17 (juvenile convictions), however only a total population concordance was available from the ABS.

Incorporating a Domains Approach

In this report, the innovations seen in previous reports have continued with a new domains approach to calculating the index. A domains approach to index creation allows indicators to be placed into domains with other similar indicators. These domains are important in measuring disadvantage, based on the literature identified in Chapter 2.

A domains approach to index creation is being used internationally and in Australia. For example, the Human Development Index (HDI) uses a domains approach (called dimensions in the HDI) (UNDP, 2020); and the United Kingdom uses a domains approach for their indexes of deprivation (Noble et al., 2004). More information on the domains and indicators used, based on the literature review, is in Chapter 2, while a list of indicators and domains in the 2021 index is in Appendix 1.

At a practical level, the domains approach means the indicators can be grouped, rather than one index being derived from 37 indicators. Where a domains approach is used, each domain index might only be based on four to five indicators, so the individual indicators are more closely aligned with the domain level disadvantage.

Creating the Index

Principal Components Analysis was used first to create domain indexes, and then to create the summary index from these domain indexes.

Using Principal Components Analysis to calculate an index for each domain is an accepted technique to summarise a range of indicators and has been used in previous work in Australia (Harding et al., 2009), New Zealand (Fahy, Lee, & Milne, 2017) and the United Kingdom (Noble et al., 2004). As noted, the ABS uses Principal Components Analysis for their Socio-Economic Index for Areas (Australian Bureau of Statistics, 2018c). The technique transforms a large set of indicators into a smaller set of "components" that capture most of the information in the original set of indicators. The method is described in full in a number of peer-reviewed journal articles (Harding, McNamara, Daly, & Tanton, 2009; Tanton, Harding, Daly, McNamara, & Yap, 2010).

Not every indicator contributes to the final summary index, with the Principal Components Analysis excluding certain indicators that provided the weakest representation of the underlying dimension of disadvantage. In the 2021 report, this meant between 19 and 28 indicators (depending on the state or territory) were grouped in domains and used to create the summary index. For the 2015 index, 12 indicators were used in the index for each state. Because the 2021 index includes more indicators than the 2015 index, and uses indicators assigned to some new domains, the two indexes are not directly comparable.

Similarly, because Principal Components Analysis was conducted separately for each state, the state values aren't comparable. There are different indicators in each state and the indicators in each state have different weights. These weights affect how each indicator contributes to the index in that state. As an example, in this report the most influential indicator in the formation of the New South Wales index is the proportion of families with a low income; while in the Northern Territory it is the proportion of people with a physical disability (who need assistance).

An important point to note is that just because a location shows as disadvantaged in the index it does not mean that everyone in that location is disadvantaged. Conversely there will also be disadvantaged households in a location that is showing as not disadvantaged. Inner city public housing estates are a classic example of small locations of disadvantage within a larger location (SA2) that might have experienced gentrification and therefore no longer be disadvantaged.

Using the Indicators and Index Together

As outlined earlier, one of the innovative aspects of Dropping off the Edge is that it uses an index, as well as analysis of the indicators that feed into that index.

One set of analyses that sheds light on what is contributing to disadvantage in a state is the average value of indicators in the most disadvantaged 3% of SA2s using the index, compared to the average indicator value in the other 97%. This analysis highlights the drivers of disadvantage in the most severely disadvantaged communities.

Indicators that have a ratio of one means the average value for that indicator in the most disadvantaged 3% (according to the index) of locations in the state is the same as the value for the other 97% of SA2s. A value of five means the average value for that indicator in the most disadvantaged 3% of the state is five times the average for the other 97%. This ratio gives us a good idea of what is driving extreme disadvantage in the state. For some states with fewer SA2s, this analysis could not be conducted as it would have been based on too few SA2s to provide meaningful information.

More Insights from the Indicators – Multilayered and Persistent Disadvantage

The next analysis used the indicators only, rather than the index. Multilayered disadvantage exists where a location experiences disadvantage across a number of indicators. This multilayered disadvantage flows partly from the inter-related nature of the indicators –when unemployment is high, incomes tend to be low, for example – but also occurs across domains, indicating the interconnectedness of different types of disadvantage.

To identify multiple disadvantage, a similar method to that used in 2015 has been used. Locations with many indicators in the most disadvantaged 5% of locations across the state are experiencing multiple disadvantage, termed multilayered disadvantage in this report.

Persistent disadvantage is disadvantage that endures over time. It is measured as the number of locations where comparable indicators are in the most disadvantaged 5% in 2015 and again in 2021. The number of comparable indicators in each state is different, and a list of comparable indicators is shown in each state chapter. For some states and territories, no data were available for 2015, so no analysis could be carried out for persistent disadvantage.

There are also communities that have seen indicators move out of the most disadvantaged 5%, and these are identified in the report.

Community Commentary and Insights

While the 2021 report is still focused on the index and indicators, a qualitative element was added to gain a better understanding of the lived experience of disadvantaged communities. Focus groups and individual interviews were conducted with people from eight communities across Australia. The focus groups and interviews were used to help identify what is needed within a community for that community to thrive, and how the quantitative indicators are experienced by the community. Further information on the focus groups is provided in Chapter 3.

A NOTE ON COVID-19

The COVID-19 pandemic has posed unprecedented challenges to individuals and communities. Because of the time lag in collecting and analysing data, the data used in this report do not reflect impacts of COVID. It is likely that future data for many of the indicators will be affected by the pandemic – in particular, employment and health indicators – and will provide useful information about how disadvantage in this period was shaped. We can also anticipate some of the impacts. A lack of internet access during lockdowns, for example, may have impacted on disadvantage even more heavily than it did pre-pandemic. Closure of businesses are likely to have affected income levels, while disengagement in education could affect school attendance data. Predictions do not form part of this report, however, and a Dropping off the Edge analysis of how COVID has affected communities will not be undertaken until the next report in the series.

THE USEFULNESS OF THIS REPORT

Previous iterations of this research have been used extensively by government at all levels; academics; community services organisations and communities themselves. The Commonwealth Government has recognised it as an important resource to inform policy and service provision. The type of disadvantage measured by Dropping off the Edge is multi-dimensional, including elements of crime; mental health; and environmental degradation. The results from this report can highlight the locations that will benefit from policies aimed at improving mental health, reducing environmental degradation, and more. Internationally and in Australia, people are recognising that government policy needs to move beyond a focus on increasing economic wellbeing as measured by incomes or Gross Domestic Product, and provide a new focus on overall wellbeing (OECD, 2015; Stiglitz, Sen, & Fitoussi, 2009). The Dropping off the Edge report provides a complex, multi-dimensional approach that can help the Commonwealth Government target policies to increase wellbeing in communities.

State governments have used the report and index extensively to identify where and what type of services are required; and how policies on revenue collection, education and health might affect different locations.

For local government, which is very much focused on service provision, the index and report are an essential source of information about their local communities, in particular which ones are struggling. This knowledge can help direct resources and activities to assist with building community connections and resilience.

Over the years, community service organisations have used the index and report to identify locations of need requiring service provision and advocacy and the 2021 report will continue to serve as a valuable resource for them.

Dropping off the Edge can be used to support communities themselves to articulate local challenges, activate their community leaders and lobby government, business leaders and decision makers for the resources they need to flourish.

OVERSIGHT OF DROPPING OFF THE EDGE

An advisory group and expert group have provided high level advice, and technical expertise. These two groups had access to the list of indicators before any analysis was undertaken, as well as the results before the draft chapters were written. The two groups commented extensively on the draft chapters. Their contributions have been invaluable, and members are listed in the Acknowledgements.

CHAPTER 2

CHOOSING DOMAINS AND INDICATORS

CHOOSING DOMAINS AND INDICATORS

Chapter 1 outlined the scope of this report, and the ways in which different aspects of disadvantage were measured. This chapter outlines how the indicators were chosen, the literature used to justify their inclusion, how the ranking for each indicator was calculated, and how the index for each location was calculated. A full list of the indicators is included in Appendix 1.

FRAMEWORK FOR CHOOSING THE DOMAINS AND INDICATORS

The choice of domains and indicators to represent disadvantage in each state is an essential first step in determining the level of disadvantage in that state. The domains are fields of disadvantage, such as health or education. These domains are also used in international research on wellbeing – for example, the OECD in their Better Life index use domains of housing; income; jobs; community; education; environment; civic engagement; health; life satisfaction; safety; and work-life balance. Between one and four indicators are then selected for each of these domains.

There are many different frameworks that can be used to create an index. For example, the Socio-Economic Index for Areas from the ABS uses a socio-economic disadvantage framework, while indexes of wellbeing, like the Index of Wellbeing for Older Australians, use a framework of wellbeing that highlights capabilities (Tanton et al., 2016). The OECD's Better Life Index (OECD, 2015) also uses a framework of wellbeing which uses as indicators both positive (protective) and negative (disadvantage) aspects of a community.

One important aspect of all the above frameworks is that they go beyond measuring solely the economic aspect of people's lives. This was one of the key messages from the Fitoussi report written by Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi:

"the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's wellbeing" (Stiglitz, Sen, & Fitoussi, 2008, p. 12).

The Dropping off the Edge reports since 1999 have recognised that wellbeing goes beyond income. However, the framework for the report has always been around disadvantage rather than wellbeing, therefore it has always highlighted where disadvantage exists. This approach is continued in the current report.

An important point to be made is that the framework used in this report predominantly measures negative outcomes. There are some indicators that are positive outcomes (eg, volunteering), but each indicator is modified so that lower values represent greater disadvantage, and higher values represent less disadvantage. Indicators include low income, and low educational outcomes; but not high income and high educational outcomes. This is the same as the ABS Index of Relative Socio-Economic Disadvantage (IRSD), rather than the ABS Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). This means the index used goes from high disadvantage to low disadvantage, but it cannot be said that a location of low disadvantage is one of high advantage.

The domains chosen for the current Dropping off the Edge Report are based on the literature, international frameworks, and on previous Dropping off the Edge reports.

DROPPING OFF THE EDGE DOMAINS AND INDICATORS

The choice of domains and indicators to Each time Dropping off the Edge research is carried out, previous indicators are reconsidered, revised and added to as appropriate. For the 2021 report, an expert group and advisory group helped inform the selection of domains and indicators. To ensure consistency, most of the indicators for the 2015 report were maintained, but the 2021 report also includes new sources of information.

Previous Dropping off the Edge reports had domains of social distress; health; community safety (crime); economic; and education. New indicators were added in 2021 to these existing domains, including public housing; overcrowding; volunteering; access to services; suicide; need assistance with core activities; underemployment; young people not in Employment, Education or Training (NEET); and financial stress.

In addition, the 2021 report includes two new domains: lifetime disadvantage and an environment domain.

The lifetime disadvantage domain reflects an increasing interest in intergenerational disadvantage, that is, disadvantage that can be passed from one generation to the next. This has been highlighted in previous Dropping Off the Edge reports. The lifetime disadvantage domain comprised indicators of teenage pregnancy and jobless parents.

The environmental domain reflects the fact that environmental factors are now recognised as contributing to disadvantage in many communities. The new indicators in this domain were particulate matter; heat stress; green canopy; and nature reserves.

The final list of domains in 2021 are:

- Social Distress (used in 2015);
- Health (used in 2015);
- Community Safety (used in 2015);
- Economic (used in 2015);
- Education (used in 2015);
- Lifetime Disadvantage (new in 2021); and
- Environment (new in 2021).

Social Distress

Social distress incorporates an inability to access services, and an inability to participate in society in some way. The indicators in this domain included exclusion from society through low income; access to internet and other services; ability to participate in society through volunteering; and overcrowding. A low score on social connections is associated with disadvantage as a lack of social connections can lead to loneliness and mental health issues (McKenzie, Whitley, & Weich, 2002).

Health

Health is a significant indicator of disadvantage. Poor health includes physical and psychiatric disability as well as access to care. It is associated with lower income due to an inability to work and the cost of medicines/health care; and greater social exclusion due to an inability to leave the house (Scutella, Wilkins, & Kostenko, 2013).

Community Safety

Low levels of community safety are associated with disadvantaged locations through the links between crime and disadvantage. These associations are complex, driven by education, peers, and unemployment (Weatherburn, 2001). Youth crime is associated with a range of disadvantage indicators (Sarnecki, 1989), supporting the inclusion of juvenile convictions as an important part of the community safety domain.

One study has found that 79 per cent of the youth offender cohort in Queensland progressed to the adult corrections system and served either a community corrections order or custodial order, with nearly half of the cohort serving at least one prison term (Lynch, Buckman, & Krenske, 2003). Other indicators of disadvantage in the community safety domain include child maltreatment, prison admissions and family violence.

Economic

The economic domain appears in most wellbeing and disadvantage frameworks (OECD, 2015; Ministry of Housing Communities and Local Government, 2009). Economic disadvantage is important as without economic resources like income and wealth, families will not be able to pay for housing, food, etc. The economic domain is closely linked to the social distress domain, as many indicators in the economic domain also create social distress, eg, housing stress, unemployment, etc. The difference between the two is that the economic domain is about basic requirements for living in the community like housing; employment; etc, where lack of these requirements is associated with higher disadvantage, while the social distress domain is about not being able to participate in the community. The low income indicator, which could have been in either domain was placed in the social distress domain due to the association between low income and social exclusion. Low income was also in the social distress domain in the 2007/2014 comparative study in the 2015 report.

Education

The education domain contains indicators about levels of education in the community. There is a strong link between low education and higher disadvantage. Higher education is associated with greater employment and higher income. Educational attainment also has a significant impact on labour force participation. Research has found that having a degree or higher qualification has a significant impact on labour force participation, boosting female labour force participation by 20 percentage points and male labour force participation by nine percentage points (Laplagne, Glover, & Shomos, 2007). Further, higher wages were associated with educational attainment. Other research has found that the level of education had a significant influence on hourly wages earned in Australia (Forbes, Barker, & Turner, 2010). Similar results on the impact of higher education on lifetime salaries were found in other recent Australian research (Gong & Tanton, 2018).

Lifetime Disadvantage

Lifetime disadvantage is a new domain in 2021. Disadvantage can be passed from one generation to another. Low incomes mean wealth is not transferred to future generations; the importance of education may not be passed on to children; or working multiple jobs may mean children suffer from social isolation. There is a large amount of literature on intergenerational disadvantage. For example, research using Centrelink payment data found that young people were 1.8 times more likely to need social assistance amounting to an additional $12,000 over an eight-year period if their parents had a history of receiving social assistance (Cobb-Clark, Dahmann, Salamanca, & Zhu, 2017). The intergenerational impact was greater for those receiving disability payments, payments for those with caring responsibilities, and parenting payments for single parents. The two indicators in this domain were teenage pregnancy and unemployed parents.

Environment

The environment domain is new in 2021, and is an important addition as the impact of climate and pollution mainly affects locations of higher disadvantage. A recent study in Sydney showed that disadvantaged locations relied on public parks to reduce heat islands, whereas more advantaged locations had private green space tree cover (Lin, Meyers, & Barnett, 2015). The evidence around particulate matter, extreme heat and socio-economic status (SES) is mixed. An association between hospital admissions, extreme heat, particulate matter and SES has been identified in Perth (Patel et al., 2019) while no association was found between SES and deaths related to extreme heat and particulate matter in Sydney (Vaneckova, Beggs, & Jacobson, 2010). Reports in the media do suggest that it is hotter in Western Sydney, with the differences being more extreme in the summer months (Rachwani, 2021). An association has been identified between particulate matter, disadvantage and burden of disease (premature mortality, years of life lost, and hospital admissions for respiratory illness and cardiovascular disease) in Sydney, and other research supports this finding. This research is further described in the section on particulate matter.

INDICATORS IN EACH DOMAIN

Once the domains are decided on, the indicators to measure disadvantage under each of the domains are chosen. A challenge for researchers is that there is a wide gap between what the theory identifies as an indicator of disadvantage, and what indicators are available for communities. As an example, an ideal indicator in the health domain is self-assessed health; but this is only available from health surveys at a national and state level, not a community level. This means that a pragmatic approach was taken in selecting the best indicators from the data available for the communities of interest.

The indicators also need to be justified in terms of the impact they have on disadvantage, as shown in the literature. The final indicators that are chosen need to be reasonably accurate; available for a recent time period; and available for the geography being considered. This section identifies the indicators used under each domain, and discusses the literature that contributed to indicator selection.

It should be noted that while the decision to put an indicator under a particular domain was based on the literature, in many cases an indicator could go into a number of domains. The way this was handled in this report was to use the literature to identify where the indicator fitted best; and then to identify how well the indicator loaded onto the domain index. If the loading was high, then the data suggest that the domain was the best fit for the indicator. If the loading was low, we considered whether another domain might be appropriate based on the literature. In the end, we didn't need to move any indicators into different domains, so the choice of domain for each indicator was driven by the literature; and the statistical analysis supported the choice of domain.

As previous Dropping off the Edge reports have found, there is a strong interconnectedness between indicators. Using the example of income again, it is an identifier of disadvantage in itself; but it is also associated with low health; is part of the housing stress indicator; is associated with long-term unemployment; and is one of the criteria for receiving rent assistance. This interconnectedness is one of the reasons for using the statistical technique Principal Components Analysis, as it summarises all these associations into one summary index, which can then be used in analysis. Table 1 shows the domains, and the indicators in each of the domains, as well as how they are measured.

Table 1 List of domains and indicators

DOMAIN	INDICATORS
SOCIAL DISTRESS	
	Proportion of people living in low income households (earning less than $650 per week or $33,800 per year)
	Proportion of people who volunteer
	Proportion of people in households with internet not accessed from dwelling
	Number of grocery shops and supermarkets in the location
	Proportion of location used for recreation and culture—parks, sportsgrounds, camping grounds, swimming pools, museums, places of worship, zoos (including butterfly farms) with a primary purpose of recreation and culture
	Proportion of households without a suitable number of bedrooms (based on the Canadian National Occupancy Standard)
HEALTH	
	Proportion of people receiving a disability support pension
	Overnight admitted mental health-related separations per 10,000 population
	General Practitioners and Resident Medical Officers who work in the location per 1,000 population
	Intentional self-harm death per 1,000 population
	Proportion of people who need assistance with core activities
COMMUNITY SAFETY	
	Number of substantiated child (aged 0 – 14) maltreatment cases per 1,000 children
	Number of juvenile (age 10 – 17) convictions per 1,000 population aged 10-17
	Number of prison admission per 1,000 adult population aged 18 and over
	Number of people covered by a domestic or family violence protection order from either a criminal or civil case per 1,000 adult population aged 18 and over
ECONOMIC	
	Proportion of people working in low skilled occupations to total labour force
	Proportion of people who are working and would like to work more hours to total labour force
	Proportion of people who have been unemployed for more than 1 year to total labour force
	Proportion of young adults (18 – 24) not in employment, education, or training
	Proportion of households in bottom 2 quintiles of the income distribution (40%) paying more than 30% of their gross income on rent or mortgage (microsimulation data)
	Proportion of people living in social/public housing
	Proportion of people receiving rent assistance in location to population aged 18 and over (Centrelink data)
	Proportion of people who cannot raise $2,000 in a week for something important (microsimulation data)

DOMAIN	INDICATORS
EDUCATION	
	Proportion of Year 3 students not “At or above national minimum standard” on the numeracy assessment scale
	Proportion of Year 3 students not “At or above national minimum standard” on the reading assessment scale
	Proportion of Year 9 students not “At or above national minimum standard” on the numeracy assessment scale
	Proportion of Year 9 students not “At or above national minimum standard” on the reading assessment scale
	Proportion of full-time students in Years 1-10 whose attendance rate in Semester 1 was below 90%
	Proportion of people in location who left school before Year 10
	Proportion of people in location with no post school qualification
	Proportion of young children vulnerable on at least one domain of the Australian Early Development Census (AEDC)
LIFETIME DISADVANTAGE	
	Proportion of female youth aged 15-19 who have at least one child
	Proportion of dependent children aged 0-14 in a family where no parent is working (unemployed or not in the labour force)
ENVIRONMENT	
	Amount of particulate matter in the location greater than 2.5 microns in width
	Proportion of location with considerable wood vegetation (tree cover)
	Proportion of days above 38 degrees
	Proportion of locations in the SA2 that are declared nature reserve

1. SOCIAL DISTRESS DOMAIN

The indicators in this domain reflect aspects of social distress. This domain includes income; volunteering; access to the internet; access to shops; access to parks; and overcrowding.

Low Income

Low family income has been used in each iteration of the Dropping off the Edge report dating back to 1999.

Income is an important enabler and protector for wellbeing. Low income is associated with low health outcomes (Bosch, Palència, Malmusi, Marí-Dell'Olmo, & Borrell, 2019), low food security (Seivwright, Callis, & Flatau, 2020), low educational outcomes (Buckingham, Wheldall, & Beaman-Wheldall, 2013), and intergenerational disadvantage (Cobb-Clark et al., 2017; Vauhkonen, Kallio, Kauppinen, & Erola, 2017).

Studies have underscored the importance of low income as an indicator of social distress. While the interaction between low income and other indicators, such as low education, unemployment, and housing stress has been well understood for some time, more recently low income has been associated with a lack of access to public transport (Lucas, Mattioli, Verlinghieri, & Guzman, 2016; Ma, Kent, & Mulley, 2018) and higher levels of public housing (Australian Institute of Health Welfare, 2019a).

This research shows that low income is one of the most important indicators of disadvantage, and is associated with many of the other indicators of disadvantage. As such, low income is an essential indicator in this report.

In this study, we have taken low income to be the bottom 30% of the Australian income distribution. This is equivalent to a $650 per week income available from the 2016 Census data, with this group shown to face significant financial and social hardship (Australian Council of Social Services, 2015).

This indicator came from the 2016 Census, and is the number of people living in households earning under $650 per week divided by the number of people in the location with a valid income. This is slightly different to the 2015 report which used proportion of households earning less than $600 per week.

Volunteering

Lack of social connection is an important indicator of disadvantage and lack of cohesion within a community. Lack of social connection has not previously been included in the Dropping off the Edge Report. In this 2021 report, social connection has been included as an indicator of social distress due to its ability to capture level of loneliness, quality of relationships, ability to spend time with family and friends and connection and sense of belonging within a community (Cramm & Nieboer, 2015; Western & Tomaszewski, 2016; Zavaleta, Samuel, & Mills, 2017).

There are several studies both locally and internationally that have sought to understand how best to measure social connection and how this can impact on disadvantage. Some of these studies looked at contact time spent with friends and family (Western & Tomaszewski, 2016), feeling of belonging to own neighbourhood, community trust (Cramm & Nieboer, 2015; Zavaleta et al., 2017), proportion of people who can get support from people living outside the household (Australian Institute of Health Welfare, 2017) and reported feelings of loneliness (Sachs et al., 2020).

Some studies have shown a direct link between social connection and assessed standard of living (Saunders, 2015). Standard of living includes being able to engage in activities that are both meaningful and provide connection to a community and others (Saunders, 2015). The Australian Institute of Health and Welfare considers determinants of social engagement to include adults who volunteer, as it facilitates being involved in the community and developing meaningful connections (Australian Institute of Health Welfare, 2017).

While the level of volunteering is reducing in our time-limited world, Putnam (2000) shows it can be an important part of making connections. In this report, we have used level of volunteering as a proxy for social connection and an indicator of disadvantage.

This indicator came from the 2016 Census and is the number of people who spent time doing unpaid voluntary work through an organisation or group in the twelve months prior to Census night divided by the number of people aged 15 years and over in the location.

Access to the Internet

Access to the internet has been included in the last two versions of the Dropping off the Edge reports (2007 and 2015). Recent literature has found that lack of internet access at home can lead to both financial disadvantage and can be a form of social exclusion (Western & Tomaszewski, 2016). Not having access to the internet is considered a material disadvantage with its link to financial hardship and economic disadvantage (Neckerman, Garfinkel, Teitler, Waldfogel, & Wimer, 2016). Having access to the internet supports education, employment, and connection in the modern world. As society has changed, particularly following the COVID-19 pandemic, households that do not have access to a computer and internet connection are increasingly excluded and disadvantaged as online learning, work and social connection have become paramount.

A report completed by the University of New South Wales looking to better understand social disadvantage for school-age youth in Australia found that there are three technology items that all young people needed to participate both productively and socially in their communities and modern society- a mobile phone, a computer and access to the internet at home (Saunders, Bedford, Brown, Naidoo, & Adamson, 2018). The report found that access to the internet significantly impacted a young person's ability to both engage and participate in school. Those without access to the internet have difficulty completing their homework and assignments. However, due to the high costs of internet services, some low-income households went without and had to try and seek internet sources in other places (Saunders et al., 2018).

Research strongly supports the view that lack of internet access contributes to disadvantage in families, and as schools and work increasingly rely on internet access, this indicator will become more important in the future.

In this study, we use the proportion of dwellings with no internet connection as an indicator. This is supported through research showing that this indicator is a measure of social engagement and disadvantage (Australian Bureau of Statistics, 2018b; Sachs et al., 2020).

This indicator came from the 2016 Census and is the number of dwellings with no internet connection divided by the total number of dwellings in the location.

Access to shops

Access to shops is a new indicator for the Dropping off the Edge report. Ready access to shops provides access to essential services. It also promotes positive health outcomes through leading to walkable communities (Turrell, Haynes, Wilson, & Giles-Corti, 2013).

Access to shops depends on the individual's situation (access to a vehicle, public transport, etc) as well as the location of an individual's home (Farrington, 2007; Stanley & Stanley, 2007; Winkler, Turrell, & Patterson, 2006).

No official definition of reasonable walking distance currently exists but a Melbourne based study found that 500 metres was acceptable (Delbosc & Currie, 2011a). There have been numerous studies in the United Kingdom, United States and Australia that attempt to gain a better understanding of what constitutes accessibility. Most of these studies have taken a geographical approach like the indicator proposed for this study (Reidpath, Burns, Garrard, Mahoney, & Townsend, 2002; Rose & Richards, 2004; Turrell, Hewitt, Patterson, Oldenburg, & Gould, 2002).

When analysing access to shops, it is important to consider a number of factors, including the types of local shops available, number of shops, opening hours, proximity to public transport and parking facilities which all contribute to the degree of access (Donkin, Dowler, Stevenson, & Turner, 1999; Winkler et al., 2006).

In Australia, transport accessibility issues were more likely to be reported in outer suburbs of major cities, regional and remote locations. Higher density neighbourhoods tend to have greater access to services such as local shops, grocery stores and services (Turrell et al., 2013). A study based in Melbourne researching transport disadvantage and social exclusion found that not having access to public transport and not being within walking distance to local shops was more likely in the outer and fringe suburbs of Melbourne (Delbosc & Currie, 2011b).

A lack of access to local shops has been shown to have several detrimental impacts on an individual. There is evidence that shows individuals who are socio-economically disadvantaged are more likely to lack access to a private motor vehicle and have less disposable income to pay for alternate transport (taxis, uber, public transport) (Turrell et al., 2002). However, it is worth noting that people of low SES are also more likely to walk to access shops to purchase groceries which does have health benefits (Frank, Kerr, Sallis, Miles, & Chapman, 2008).

Several studies have also analysed the accessibility of shops to better understand low intake of fruit and vegetables among low socio-economic and disadvantaged groups. An Australian based study looked at whether access to retail outlets or shops varied according to the level of socio-economic disadvantage within a location. The study found that generally there was minimal or no socio-economic difference in retail infrastructure (Winkler et al., 2006). These findings were consistent with another Australian based study that found no considerable differences in fruit and vegetable intake dependent on SES (Turrell, Blakely, Patterson, & Oldenburg, 2004) and findings from the United Kingdom (Cummins & Macintyre, 1999).

Studies have also considered that while shops may be available in disadvantaged communities, it is important to separate the type of shops available. Smaller local shops are typically more expensive and have less available produce than larger grocery stores and without competition in the location prices can be higher (Alwitt & Donley, 1997; Coveney & O'Dwyer, 2009; Cummins & Macintyre, 1999; Kamruzzaman & Hine, 2011).

Inclusion of access to shops within the Dropping off the Edge report can help to better understand how infrastructure and environmental factors may exacerbate existing inequalities. A better understanding of how access to shops contributes to social disadvantage will assist with future planning and development of communities.

While the literature supports the inclusion of this indicator, the final specification of this indicator meant that many regional and remote locations had a 0 value; and the range of values in most states and territories was very low. It was therefore not used in the analysis for this report and needs to be reconsidered for the next report.

While this indicator was not used in the final index, an indicator was derived from Open Street Map, 1 October 2020. It was the number of shops (groceries and supermarkets) in the SA2.

Access to Parks

Access to parks is a new addition to the Dropping off the Edge report.

Access to parks has been shown to have a positive impact on physical and mental health (Jackson, Dannenberg, & Frumkin, 2013; Roemmich et al., 2006; Sallis, Floyd, Rodríguez, & Saelens, 2012; Schulz & Northridge, 2004). Access to parks is associated with positive outcomes for vulnerable groups, including reduced rates of childhood obesity and asthma (Sbihi, Tamburic, Koehoorn, & Brauer, 2015) and improved longevity and health of older people (Takano, Nakamura, & Watanabe, 2002). Parks and recreational facilities provide opportunities for social interactions and connection, while also providing a place for physical activity (Sallis et al., 2012).

Access to a park or recreational facility is influenced by physical and non-physical variables such as its design, whether it is in easy walking distance, perceptions of safety, individual resources and cost associated with using the facilities (Bedimo-Rung, Mowen, & Cohen, 2005; Wang, Brown, Zhong, Liu, & Mateo-Babiano, 2015).

A Californian study found that adolescents who lived in disadvantaged neighbourhoods lacked access to parks and got less physical activity in comparison to those living in more advantaged neighbourhoods. The study also found that living in neighbourhoods with household overcrowding, high levels of unemployment and low levels of education was a strong indicator of not having access to parks and reduced physical activity of teens in the area (Babey, Hastert, Yu, & Brown, 2008; Rigolon, 2016).

This research shows that access to parks may contribute to a community's liveability. Locations with lower levels of parks may lead to people having lower levels of exercise, worse health, fewer opportunities to develop social connections, and worse environmental outcomes though lower air quality.

This indicator comes from the Australian Land Use and Management Classification Version 8 50M raster October 2016. It is calculated as the area of parks, sportsgrounds, camping grounds, swimming pools, museums, places of worship, zoos (including butterfly farms) with a primary purpose of recreation and culture, caravan parks, tourist parks in the SA2 divided by the total area of the SA2.

Housing suitability (overcrowding)

Housing suitability, also referred to as overcrowding, is defined by the Canadian National Occupancy Standard (CNOS) as households which require three extra bedrooms (Australian Institute of Health Welfare, 2020a; Exeter, Zhao, Crengle, Lee, & Browne, 2017). Overcrowding is associated with irregular sleeping arrangements in a household. The consequences of these arrangements are not limited to disrupted sleep. They can also increase emotional distress, contributing to anxiety, depression and stress while also negatively impacting on family relationships (Australian Institute of Health Welfare, 2020a). Overcrowding also has an impact on the school performance of children due to lack of sleep, no adequate place to study and complete homework combined with noise levels.

A New Zealand study was designed to use available datasets to measure area level disadvantage. The study developed seven domains to measure disadvantage, including the housing domain. The study found that overcrowding was closely related to disadvantage and was more significant as a measure of disadvantage than percentage of people living in rented accommodation (Exeter et al., 2017).

This research shows that that overcrowding may contribute to a person's level of disadvantage. Since the data for this indicator are also readily available for all locations in Australia from the ABS Census, it has been included as a new indicator in the report.

This indicator uses the 2016 Census data using the number of households without a suitable number of bedrooms (using the CNOS criteria) divided by the total number of households (occupied private dwellings) in location.

2. HEALTH DOMAIN

The indicators in this domain reflect aspects of health in the community, and include measures of disability; psychiatric admissions; suicide; and need for assistance.

Disability

Disability has been included as an indicator of health in the Dropping off the Edge Reports of 2007 and 2015. The link between people with disabilities, socio-economic disadvantage and poorer health outcomes has been studied extensively.

An Australian based study sought to better understand socio-economic and health disadvantage by type of disability and gender. The study used the ABS Survey of Disability, Aging and Carers which is a large survey that includes many socio-economic indicators to measure disadvantage. The study found that women with disabilities were more disadvantaged than men with the same impairment types. Australians with intellectual and psychological impairments and acquired brain injuries were found to be those with the highest levels of disadvantage. The results of the study highlight the benefit of more comprehensively analysing disability and gender to better understand patterns of disadvantage (Kavanagh et al., 2015).

Disability and health outcomes have been strongly linked to socio-economic disadvantage. Income from a national Swedish study was found to be a strong indicator of mobility issues and psychological distress later in life (Darin-Mattsson, Fors, & Kåreholt, 2017).

An Australian-based qualitative study found that overall life satisfaction was lower among school-aged youth with disabilities compared to their peers. This qualitative survey also found that young people with a disability were more likely to report clothing and food disadvantage, which is strongly linked with reduced engagement at school (Redmond et al., 2016).

This Australian and international research shows that those with a disability are more likely to suffer disadvantage, and it should continue to be included in the report. In this report, disability that seriously affects a person's ability to work is used. When a person is receiving a disability support pension from the Department of Social Security, the disability is so serious that the person cannot work, and their earning capacity is affected.

This indicator uses Department of Social Security disability support pension data from December 2019. The indicator is the number of people receiving disability support pension divided by the total number of people aged 16 – 65. Those people with a disability aged over 65 move onto the age pension.

Psychiatric Admissions

The link between mental ill health and disadvantage is well established in the literature, and as a result has been included in each iteration of the Dropping off the Edge reports since 1999. Mental ill health and psychological distress has been found to be directly linked to income inequalities among people of low SES.

An Australian-based study using the Kessler Psychological Distress Scale (K10) concluded that 1 in 4 people in the poorest one fifth of Australians had high/very high psychological distress compared to 1 in 20 in the richest one fifth of Australians. The study recommended further research on the development of mental health inequality indicators along with regular national data collection to better understand and assess the impact of social policy on addressing mental ill health (Isaacs, Enticott, Meadows, & Inder, 2018).

This research shows that mental health may be an important element in disadvantage, and it should continue to be included in the report.

This indicator used data from the Australian Institute of Health and Welfare (Australian Institute of Health Welfare, 2020b) on mental health related separations in 2017/18. The data were for overnight admitted mental health related separations for all age groups, but the majority (95%) of admissions across Australia were for people aged 18 and over. The rate was calculated as the number of admissions per 10,000 population. The data were provided at SA3 level, and every SA2 in an SA3 received the same proportion of separations.

Suicide

The measurement of rates of suicide within Australia is a new indicator in the Dropping off the Edge report.

According to the literature there are several individual determinants that may increase the risk of suicide apart from the presence of mental illness (Kõlves, Potts, & De Leo, 2015), including occupation or unemployment (A. Milner, San Too, & Spittal, 2018; A. Milner, Smith, & LaMontagne, 2015; Page, Sperandei, Spittal, Milner, & Pirkis, 2020), level of formal education attainment (Snowdon et al., 2017), and SES (Cairns, Graham, & Bambra, 2017).

The measurement of suicide in the literature has evolved over previous decades to not only consider individual determinants that influence suicide rates but also the importance of environmental factors. The neighbourhood or communities that individuals live in are important influences on suicide rates (Exeter & Boyle, 2007; Wray, Colen, & Pescosolido, 2011). The socio-economic characteristics of neighbourhoods and communities have been shown to influence the risk level of suicide (Exeter & Boyle, 2007).

In the United Kingdom, research has found that people who live in locations of socio-economic disadvantage and who are also individually socio-economically disadvantaged experience a higher risk of suicide than those who live in less disadvantaged locations (Chandler, 2020). An Australian-based study that examined the suicide rates of people in Queensland found that remote and regional locations – which typically have reduced access to services and an increased exposure to natural disasters - had significantly higher suicide rates (Kõlves et al., 2015).

Historically there is strong research interest on the influence of major economic changes (recessions or downturns) on suicide rates (Berk, Dodd, & Henry, 2006; Hong, Knapp, & McGuire, 2011). There are several potential reasons why economic changes may influence suicide rates, such as the increase in social inequality and economic disadvantage (Blakely, Tobias, & Atkinson, 2008; Mackenbach et al., 2003).

Suicide rates have also been shown to be associated with changes in social and economic welfare policies (Barr, Taylor-Robinson, Scott-Samuel, McKee, & Stuckler, 2012) and rises in job insecurity during economic recessions or downturns (Astell-Burt & Feng, 2013). Recent research has looked at how suicide rates changed as a result of the Global Financial Crisis (GFC) which occurred between 2007- 2010 (Barr et al., 2012; Milner et al., 2014). These studies found that unemployment generally increased suicide, with a 10% increase in the number of unemployed men being significantly associated with a 1.4% increase in male suicides. However, only two fifths of the increase in suicides among men during the 2007 - 2010 recession could be attributed to rising unemployment due to the GFC. The rest were due to other factors associated with the GFC outside the impact of unemployment.

Changes in unemployment can partly explain suicide increases, however a study in Australia highlights the important impact recessions have on suicide rates on the employed as well as unemployed (Milner, Niven, & LaMontagne, 2015). The study analysed suicides in Australia between 2001-2010 and found that there was an increase in suicide risk during the GFC. The occupational groups with the highest suicide risk were labourers, farmers, machine operators and technical and trade workers, with an increase in class disparities in suicide rates by occupational class, particularly among males (Milner et al., 2015).

Suicide rates will be an important indicator of social disadvantage following the most recent and ongoing economic impacts of the COVID-19 pandemic for Australia, making the addition of suicide valuable for the Dropping off the Edge report.

This indicator uses the rate of intentional self-harm per 1,000 population in the SA2. It comes from the National Coronial Information System.

Need for Assistance

The need for assistance is a new indicator in the 2021 Dropping off the Edge report. It measures an individual's need for assistance with core activities, also known within the literature as activities of daily living. Need for assistance with core activities can result from reduced mobility or disability, and is prevalent within the older population (Brown & Flood, 2013).

Core activities can encompass personal grooming, dressing, toileting, mobility and eating (Mlinac & Feng, 2016). The reliance on support to complete core activities is associated with a decrease in the quality of life (Millán-Calenti et al., 2010), increase in health care costs, mortality risk (Mlinac & Feng, 2016) and being admitted to institutionalised based care (Gaugler, Duval, Anderson, & Kane, 2007).

Difficulties with core activities such as getting dressed, personal grooming, eating and mobility, have been associated with higher levels of loneliness among older people (Perissinotto, Cenzer, & Covinsky, 2012). A United Kingdom-based study showed an increase in the difficulty of completing or managing of core activities over a 6-year period, independent of depression and other health related factors (Shankar, McMunn, Demakakos, Hamer, & Steptoe, 2017).

SES has also been shown to be associated with greater disability (Shankar et al., 2017), and there are findings to suggest that social relationships increase resilience and can reduce the negative effects of low SES and the subsequent impacts of physical functioning (Schöllgen, Huxhold, Schüz, & Tesch-Römer, 2011; Shankar et al., 2017).

It is clear that the literature supports the association of the need for assistance with disadvantage, and is a useful addition to the 2021 report.

The need for assistance indicator is the proportion of people who need assistance with core activities. It comes from the 2016 Census at the SA2 level.

Number of General Practitioners available

The number of General Practitioners (GPs) available in a location, measured as the number of people who identify themselves as a GP in the Australian census, is a new indicator for the *Dropping off the Edge 2021* report. GP practitioners in Australia can choose where they locate their surgeries and dictate the hours and type of service available (Hyndman & Holman, 2001). The Australian government through Medicare covers most of the costs for an individual to see a GP. However, there is no ability to dictate the spatial distribution of GP surgeries (Hyndman & Holman, 2001). There is evidence to support the proposal that the demand for GPs is related to high levels of social disadvantage (Anderson & Armstead, 1995; Balarajan, Yuen, & Machin, 1992; Ben-Shlomo, White, & McKeigue, 1992; Raleigh & Balarajan, 1992).

Individuals will not always attend a GP practice closest to their place of residence. This is an important consideration for disadvantaged people who do not have the means to travel long distances (Hyndman, Holman, & Pritchard, 2003; Hyndman & Holman, 2001). More GP options available nearby increases the benefit for individuals, reducing distance needed to travel, wait time and available appointment (Hyndman et al., 2003).

One study found that 24% of participants said that distance was important when considering a GP practice (Hays, Kearns, & Moran, 1990). GPs are typically the main providers of healthcare. Being able to access a GP is important for people of experiencing social disadvantage as they are more likely to experience poorer health outcomes (Hyndman et al., 2003).

There are several factors that can improve GP accessibility, including distance to the nearest GP practice, outside business hours services, availability of bulk billing and there being both male and female GPs available (Hyndman et al., 2003). An Australian-based study in Perth found that in more disadvantaged locations there were more GPs available working longer hours. However, in terms of accessibility it was more difficult for people living in disadvantaged locations to book an appointment with short notice and have access to a female GP (Hyndman et al., 2003).

It is clear from this research that lack of access to a GP is an important measure of disadvantage.

This indicator is the number of people who recorded their occupation in the 2016 Census as a GP or resident medical officer in the SA2 where they work. It is the rate per 1,000 population.

3. COMMUNITY SAFETY

The indicators in this domain reflect aspects of safety in the community, and include child maltreatment; juvenile convictions; prison admissions; and family violence.

Child Maltreatment

Child maltreatment has been included as an indicator of social disadvantage since the Dropping off the Edge 1999 report. Child maltreatment negatively impacts the development outcomes of children due to the traumatic and difficult events they experience. Children who are exposed to maltreatment are at significant risk of developing mental ill health in young adulthood, particularly children who experience more than one type of maltreatment (Kisely et al., 2018). Child maltreatment includes emotional neglect, physical neglect, physical abuse, and sexual abuse (Doidge et al., 2017; Handley, Rogosch, Guild, & Cicchetti, 2015).

Children who are from low socio-economic backgrounds experience a wide range of disadvantage in the areas of physical and mental health and academic achievement, and also have a higher risk of experiencing maltreatment (Doidge et al., 2017; Handley et al., 2015; Lefebvre, Fallon, Van Wert, & Filippelli, 2017). Addressing economic hardship by providing secure housing and financial support can reduce child maltreatment (Handley et al., 2015; Lefebvre et al., 2017).

A study based in Canada researched the link between SES and child maltreatment. The study utilised secondary data that measured the incidence of child maltreatment and child and family characteristics including SES. The study found that a significant number of investigations by Canadian authorities into child maltreatment (most commonly neglect) involved families experiencing financial hardship (Lefebvre et al., 2017).

An Australian study looked at the impact of socio-economic disadvantage on child maltreatment. The study utilised secondary data from the Australian Temperament Project, which collects data on parent and family economic and social factors, mental health, substance abuse and child health. The findings of the study concluded that poverty was a strong predictor for child maltreatment except for sexual abuse (Doidge et al., 2017).

The research above suggests that child maltreatment is associated with disadvantage, and is an important indicator. It is also important to recognise the multiple environmental risk factors that are commonly associated with child maltreatment and that are measured in other indicators in Dropping off the Edge, such as poverty, unemployment levels, and inadequate housing (Doidge et al., 2017).

This indicator came from each State and was for 2019. It was defined as the number of substantiated child (age 0 – 14) maltreatment cases divided by the number of children aged 0 – 14 in the location.

Juvenile convictions

Juvenile convictions have previously been included in the Dropping off the Edge 2015 Report, due to evidence suggesting juvenile convictions have significant consequences for the life outcomes of individuals with an increased risk of a negative impact on employment, financial wellbeing and education (Australian Institute of Health and Welfare, 2019b; Malvaso & Delfabbro, 2015; Malvaso, Delfabbro, & Day, 2017).

There is also evidence that juvenile offenders are from more socially disadvantaged backgrounds compared to juveniles who are not offenders. Youth who have a history of juvenile convictions are more likely to come from family backgrounds that include parental imprisonment, substance misuse, domestic violence, homelessness or inadequate housing (Malvaso & Delfabbro, 2015; Malvaso et al., 2017).

An Australian study sought to understand the factors that contributed to juvenile convictions, particularly the role of engagement in Australia's out-of-home care system. The study confirmed that young people in Australia with disadvantaged backgrounds and problematic behaviour were more likely to offend. However, analysis of secondary data found that four determinants were associated with offending: older age, damaging property, substance abuse and conduct problems. The study found that young people who were placed in residential care, placed in care due to reasons not including physical abuse, being of Aboriginal and Torres Strait Islander descent and poor social adjustment were also marginally associated with offending (Malvaso & Delfabbro, 2015).

In previous Dropping off the Edge reports, this indicator has used the place of residence of the offender when convicted. In many cases, this was a remand centre. Ideally, the place of residence of offenders when they committed the crime is required for this indicator. In this 2021 report, this information was available for Victoria and the Northern Territory, which have linked offender data between Police and court records. All other states used the place of residence of the offender when convicted, which was available from the courts, as used in previous reports.

This indicator came from each state and territory for 2019. It is the number of offenders aged 10 to 17 convicted of crime (in the NT, it was 'found guilty') divided by the total number of people aged 10 to 17 in the location.

Prison Admissions

Prison admissions has been included as an indicator of disadvantage in each iteration of the Dropping off the Edge Report dating back to 1999. Dominant theoretical frameworks used to try to understand criminal behaviours and prison admissions examine how disadvantage influences the likelihood of imprisonment (Hohl, Cote-Lussier, & David, 2020). There is an over representation of disadvantaged individuals in prisons, indicating higher arrest, charging and guilty sentencing for those experiencing social disadvantage (Reiman & Leighton, 2015).

When attempting to understand crime rates and prison admission, research has looked to inequality within communities and neighbourhoods (Chamberlain & Hipp, 2015; Cochran, Mears, Bales, & Stewart, 2016). Disadvantage within a neighbourhood and nearby neighbourhoods and cities has been shown to negatively impact the level of crime (Cochran et al., 2016). Individuals who are admitted to prison from disadvantaged neighbourhoods are also less likely to remain socially connected to the outside world (Chamberlain & Hipp, 2015).

A Finnish study researched the link between social disadvantage and prison admission based on the severity of different types of violent crime. The results partially supported the hypothesis that more disadvantaged offenders were associated with more serious crimes, with the exception of the offence of homicide (Suonpää, Kivivuori, & Aaltonen, 2018).

Disadvantage and crime can be measured by prison admission, crime rates, and arrest rates. However, arrest rates tend to be under recorded (Hohl et al., 2020). Crime rates are frequently higher in disadvantaged communities with areas of poverty and unemployment. However, individuals living in disadvantaged locations are also more likely to be stopped, searched, and arrested, which can cause an increase in recorded crime (Chamberlain & Hipp, 2015). Therefore, the higher crime rate is not due to more crime per se, rather a greater effort to identify and reduce crime.

Similar to the juvenile convictions data in previous reports, this indicator used the place of residence of the offender when sentenced. In many cases, this was a remand centre. Ideally, the place of residence of the offender when they committed the crime is required for this indicator. In this 2021 report, this information was available for Victoria, which linked offender data between Police, court and prison records. All other states used the place of residence of the offender when sentenced, which was available from the prisons, as used in previous reports.

This indicator uses adult prison admissions (offenders aged 18 and over) for the 2019 calendar year collected from each Australian state and territory divided by the total number of people aged 18 and over. This is slightly different to the previous Dropping off the Edge indicator, which used people aged 18 – 49.

Family Violence

Family violence has been included as an indicator in each of the Dropping off the Edge Reports dating back to 2007.

Family violence is both a health and welfare issue that can negatively impact the life outcomes of victims and perpetrators (Australian Institute of Health and Welfare, 2019a). Although definitions can differ, typically family violence encompasses physical abuse, sexual abuse, psychological abuse, and economic violence (withholding access to money, forbidding participation in employment or education) (Australian Institute of Health and Welfare, 2019a; Choenni, Hammink, & van de Mheen, 2017).

Within Australia some groups have been found to be more vulnerable to family violence including children, young women, older people, people with disability, people from culturally and linguistically diverse backgrounds, LGBTIQA+ people, people in rural and remote locations, people from socio-economically disadvantaged locations and Indigenous Australians (Australian Institute of Health and Welfare, 2019a).

Risk factors for family violence include insecure and unsafe housing, limited financial resources, lack of access to services, and poor physical or mental health (Copp, Kuhl, Giordano, Longmore, & Manning, 2015; Keane, Magee, & Kelly, 2016).

Family violence has short- and long-term consequences for the victims, most commonly women and children (Mersky, Janczewski, & Topitzes, 2016). Some of these consequences include mental health problems, sexual health problems and physical health problems (Choenni et al., 2017). Family violence has also been found to have high rates of revictimization, that is, repeatedly being a victim of family violence, and an intergenerational abuse cycle (Choenni et al., 2017; Keane et al., 2016).

The research above shows that family violence is an important indicator in a measure of disadvantage as it contributes negatively to mental and physical health, income, secure housing, and many other indicators of disadvantage. It is therefore an important part of this report.

Because family violence commonly occurs behind closed doors and is often concealed and denied by perpetrators, and at times victims themselves, it is difficult to measure its extent. Data collected only ever depict incidents of family violence that have been recorded and reported to relevant authorities by people involved (Australian Institute of Health and Welfare, 2019a).

This indicator was the number of people covered by a domestic or family violence protection order from either a criminal or civil case in 2019 collected from each state or territory divided by the number of people aged 18 and over in the location. This is slightly different to previous Dropping off the Edge reports which used the population aged 18 – 64 years as the denominator.

4. ECONOMIC

The indicators in this domain reflect aspects of economic security, and include low skill occupations; underemployment; long-term unemployment; unengaged young adults; housing stress; social housing; and receiving rent assistance.

Unskilled Workers

The proportion of unskilled workers indicator has been in previous Dropping off the Edge reports since 1999.

The rise of knowledge-based economies has altered the employment opportunities available for unskilled workers. Technology advances have rendered some office jobs obsolete such as those in the typing pool, mail room and print room. This has reduced the opportunities for low skilled workers. Automation has also reduced the need for low skilled factory workers.

An international study by Abrassart (2015) showed that low skilled workers in 19 OECD countries across Europe as well as Australia, New Zealand and the United States were not better off as a result of the creation of low skill jobs as they had little to no impact on employment outcomes for low skilled workers (Abrassart, 2015). The study concluded that employment issues for unskilled workers are not easily resolved and relied heavily on economic conditions to determine employment opportunities.

Other studies have found that unskilled workers are more likely to have limited financial resources which then has a negative impact on their physical health (Heap, Fors, & Lennartsson, 2017). The pay gap between skilled and unskilled workers is also a cause of greater disadvantage for unskilled workers in Australia (Coelli & Borland, 2016).

It is clear that unskilled workers are more likely to be disadvantaged, through impacts on income, job tenure, and health. This is an important indicator in this Dropping off the Edge report.

This indicator uses data from the 2016 Census with unskilled occupations being the low skilled occupations used by the Australian Bureau of Statistics (ABS) in their Socio-Economic Index For Areas (SEIFA) being "Labourers" and "Machinery Operators and Drivers". The SEIFA index added a low skill classification to two other occupations ("Sales" and "Community and Personal Service Workers"), which couldn't be done without access to unit record Census data, so these occupations have been excluded from this indicator. The denominator for the indicator was the total number of people in the labour force.

Unemployment

Unemployment is a measure of economic hardship, with the negative impacts of unemployment impacting on an individual's health and social wellbeing (Korpi, 2001). It has been included in previous reports, but for this report unemployment has been replaced by underemployment and long-term unemployment (Carney & Stanford, 2018) given the rise of insecure work; the fact that people can be unemployed between jobs; and the fact that to be measured by the ABS as employed (ie, not unemployed) a person only has to work one hour per week.

Underemployment

Underemployment has not been included in any previous Dropping off the Edge reports.

Underemployment is growing globally and continues to be a challenge for modern economies (Lacmanović, Burić, & Tijanić, 2016).

Underemployment measures unused potential which comes with significant social and economic costs. This unused potential can be hidden in current employment rates because to be considered as employed by the ABS, a person need only have one hour's work a week.

The increase in underemployment is a complex phenomenon and has many causes, including slow job growth, technological change and industry changes (Lacmanović et al., 2016).

The Australia Institute and the Centre for Future Work explored the dimensions of insecure work in Australia and found underemployment was an important indicator of job insecurity (Carney & Stanford, 2018). The report found that underemployment was linked to growth in part-time work, with 27 percent of part time workers wanting to work more hours. The growth in part-time work was driven by the lack of full-time opportunities rather than workers' preference (Carney & Stanford, 2018).

Underemployment is an indicator that is associated with disadvantage through lower income and higher job insecurity. It is therefore an important indicator to include in this report as underemployment becomes a bigger problem in Australia. This is likely to be exacerbated as the economy recovers post COVID-19.

Underemployment can be measured as an individual being employed less than their desired hours, or having higher skills than needed for the job (Lacmanović et al., 2016). Measuring underemployment in terms of skill level is far more difficult and there is no consensus on the best indicator.

This indicator is the number of people aged 15 and over who are working and would like to work more hours divided by the total number of labour force. This is available from the 2019 (February) ABS Labour Force Survey at the SA4 level, and this has then been recoded to SA2 level using a pro-rata method and 2016 Census unemployment data at the SA2 level. This assumes that the distribution of underemployment among those who are working part time within an SA4 follows the distribution of unemployment in 2016 at the SA2 level.

Long-term unemployment

Long-term unemployment is commonly defined as a period of 12 months or more of unemployment. It has been included in Dropping off the Edge reports since 1999.

Potential causes of long-term unemployment include changes in the labour market, discrimination, and systemic barriers to gaining employment (Laliberte Rudman & Aldrich, 2016). Women, older workers, and people with disabilities experience higher rates of long-term unemployment compared to other people not in these groups (Abraham, Haltiwanger, Sandusky, & Spletzer, 2019). Long-term unemployment can become more prevalent during a recession, economic downturn, and changes to industry, indicating ongoing importance for the Dropping off the Edge report following COVID-19 (Gokce & Ofer, 2017).

The emotional burden of long-term unemployment contributes to loss of self-esteem and confidence. The longer a person is unemployed, the greater the levels of exhaustion and the higher the level of disadvantage (Gokce & Ofer, 2017). Literature has associated long-term unemployment with higher risks of poverty, social withdrawal, poor physical and mental health, suicide, domestic violence, and divorce (Brand, 2015).

A study based in the United States sought to better understand the consequences of long-term unemployment. The study tested the premise that people who are long-term unemployed are permanently removed from the labour market. The study combined a survey with available administrative data and confirmed that duration of unemployment has a strong impact on being able to return to the labour market and subsequent employment (Abraham et al., 2019).

It is clear from the research that long-term unemployment is significantly correlated with disadvantage, through lower incomes; worse mental and physical health; and other social outcomes. While it is difficult to tell the direction of this correlation (whether low health causes long-term unemployment or vice versa), the association is clear, and it is an important indicator in Dropping off the Edge.

This indicator is the number of people aged 15 and over who were unemployed for 52 weeks (one year) or more between February 2018 and 2019. This was available at the SA4 level from the ABS Labour Force Survey, and was recoded to SA2 level using a pro-rata method and 2016 Census unemployment data at the SA2 level. This assumes that the distribution of long-term unemployment within an SA4 will follow the distribution of unemployment at the SA2 level. The denominator for this indicator was the total number of people in the labour force.

Unengaged young adults (Not in Education, Employment or Training - NEET)

Unengaged youth is a recent addition to the Dropping off the Edge Report having been introduced in 2015.

Young people who are not engaged in employment, education or training have increased risk of negative outcomes for future unemployment, lower incomes, higher levels of employment insecurity and potential development of mental ill health (Rodwell et al., 2018).

It is clear from this research that unengaged young adults are associated with a number of outcomes that contribute to disadvantage, including lower incomes and unemployment.

This indicator used 2016 Census data on the number of youth aged 18 to 24 not engaged in employment, education, or training divided by the total number of youth aged 18 to 24 in the location. Using Census data is a standard way of calculating NEET (Australian Institute of Health and Welfare, 2015; OECD, 2019).

Housing Stress

Housing affordability has been included as an indicator of disadvantage in the last two iterations of the Dropping off the Edge Report (2007 and 2015).

Access to affordable housing is fundamental to an individual's wellbeing. Good quality and affordable housing have been shown to help reduce poverty and improve social inclusion and mobility (OECD, 2018). Affordability of housing is important for housing security, with many factors influencing the cost of housing, including a growing population placing additional demand on the current housing stock (Australian Institute of Health Welfare, 2019b).

The term 'housing stress' refers to the ability to pay housing costs (including mortgage repayments, rent, rates, etc) given a certain income (Thomas & Hall, 2016). A household is in housing stress if its housing costs are more than 30% of gross income, and are in the bottom 40% of the equivalised disposable household income. This is called the "30/40" rule (Nepal, Tanton, & Harding, 2010). Recent Australian studies have underscored the impact of housing stress on an individual's wellbeing, finding unaffordable housing was positively associated with feeling unsafe, community dissatisfaction, and poorer self-rated health (Badland et al., 2017).

The severity of housing stress experienced by Australians because of COVID-19 is not yet fully realised in high quality nationally representative data. However, a small study by the Australian National University captured the level of housing stress by analysing the May 2020 ANU poll which collected data from a representative sample of the Australian population (Biddle, Edwards, Gray, & Sollis, 2020). The study found that there was an increase of 6.9 per cent to 15.1 percent of Australians not being able to pay their rent or mortgage on time. These rates of housing stress were felt by both mortgage holders and renters, but were substantially higher for people renting, young people, low income groups, those who lived in socio-economically disadvantaged neighbourhoods and those who were not Australian citizens (Biddle et al., 2020).

Housing stress is an important indicator of disadvantage in a location, and will continue to be post-COVID. It has therefore been included in this report.

This indicator uses the widely accepted 30/40 rule. The data come from NATSEM's spatial microsimulation model which uses 2016 Census and 2017-18 Survey of Income and Housing data, and is the proportion of households in the bottom 2 quintiles of the household disposable equivalised income distribution (40%) paying more than 30% of their gross income on rent or mortgage.

Financial Stress

Financial stress is a new indicator for the Dropping off the Edge report. Financial stress can have an impact on a person's level of happiness, life satisfaction and security, with no access to emergency funds being a contributor towards financial stress (Bridges & Disney, 2010; McColl, Pietsch, & Gatenby, 2002; Worthington, 2004).

Having access to emergency funds for unexpected circumstances, such as unemployment, health problems, household expenses, or vehicle and housing repairs all impact on financial stress (Hatcher, 2000). Having access to emergency funds prevents the need to use credit cards or obtain short term loans, which can make a person vulnerable to difficulties with repayments (Castellani & DeVaney, 2001).

An Australian study investigated the role of demographic and socio-economic characteristics in the ability to access emergency funds for Australian households. The findings concluded that the ability to raise emergency funds within Australian households is related to demographic characteristics. These demographic characteristics included the presence of children, number of dependents, age and sex of primary adults and whether they were born in Australia. The ability to access emergency funds decreased when a household was dependent on government pensions or benefits, and when a person was renting or buying a home, with homeowners more likely to have disposable income (Worthington, 2004).

In Australia, consumer credit and mortgage debt comparative to income are at record highs. The rise in debt for vulnerable populations is of particular concern because their limited savings means they are vulnerable to financial shocks, unemployment, and reduced income (Brown & Gray, 2016; Worthington, 2004).

It is clear that financial stress is strongly associated with disadvantage, and is an important addition to the set of indicators used in this report.

This indicator is the proportion of people who cannot raise $2,000 in a week for something important. It is calculated from NATSEM's spatial microsimulation model using 2016 Census and 2017-18 Survey of Income and Housing data.

Social/public housing

Social/public housing is a new addition to the Dropping off the Edge Report in 2021.

Social/public housing is rental housing that government or non-government organisations provide to assist people who are unable to access or afford alternative suitable housing options. Such housing is designed to provide affordable, flexible, appropriate, and diverse housing for the most disadvantaged in the community and as a social safety net to avoid homelessness.

Adequate and secure housing has been shown to help maintain employment, proper health and nutrition, and is associated with improvements in education (Australian Institute of Health Welfare, 2018). There are numerous factors that determine a need for housing assistance, including housing affordability, family breakdown, domestic violence, loss of employment or reduction of income and ill health (Australian Institute of Health Welfare, 2018). The need for social and public housing can also be an indicator that a critical life event has led to some form of social or economic disadvantage.

While such housing provides a secure environment to live, it has also been shown to be directly linked with stigma, poor housing conditions, and poor perceived safety (Bentley, Baker, Simons, Simpson, & Blakely, 2018). An Australian based study of people who had long periods in social housing showed that they had worse mental health on average than people who lived in other residences (Bentley et al., 2018). Social housing residents who had to make transitions between different houses had even worse outcomes than those who were able to remain in one location, due to the instability caused by moving house (Bentley et al., 2018).

This indicator is included in this report as the research above has shown it is strongly associated with disadvantage.

This indicator is the number of people living in social and public housing from the 2016 Census divided by the total number of people in the location.

Rent assistance

Rent assistance was included as an indicator of disadvantage in the 2007 and 2015 Dropping off the Edge reports.

Housing affordability is a significant issue for low income households in receipt of social security payments in Australia (Department of Parliamentary Services, 2016). Not being able to pay rent or paying late because an individual cannot afford the payment is a significant financial hardship for an individual and family (Karpman & Acs, 2020).

The cost of rent is often a major expense for lower income earners in Australia, and as a result rent assistance is seen as an important safety net to avoid further social disadvantage and distress (Australian Institute of Health Welfare, 2019a; Cheshire, & Wadley, 2016). The rising cost of rent in Australia has also led to increasing numbers of people seeking assistance to pay rent in order to avoid housing stress and further economic disadvantage (Australian Institute of Health Welfare, 2019a).

Recent research by Anglicare highlighted the dearth of affordable private rental properties in capital cities in Australia. Out of 74,266 listings across Australia in March 2021, there were only three that were affordable for a single person on the Job Seeker payment, and there were no listings that were affordable for a person on Youth Allowance anywhere in the country (Anglicare, 2021). This shows the importance of rent assistance and social housing for low income people.

Financial assistance for housing is part of the broader provision of housing assistance offered in various forms by the Australian Government. Rent assistance is a form of financial support to assist people on lower incomes meet their housing costs. Commonwealth Rental Assistance (CRA) is the primary form of rental assistance in Australia. The government payment has been designed for families and individuals who pay or are liable to pay rent over a specified threshold (depending on family situation and other considerations).

Given the research on the negative impacts of high rent relative to income; and the Commonwealth's Government's provision of rent assistance which recognises the importance of housing in reducing disadvantage, this indicator is an important indicator in Dropping off the Edge.

This indicator is the number of people aged 18 years and over receiving rent assistance in December 2019, published by the Department of Social Security (DSS) for each location, divided by the total number of people aged 18 and over in the location.

5. EDUCATION

The indicators in this domain reflect the education of people in the location including results from Year 3 and Year 9 National Assessment Program - Literacy and Numeracy and Reading; not attending school; leaving school before Year 10; post school qualifications; and Australian Early Development Census (AEDC) developmental vulnerability.

NAPLAN Performance

The Australian National Assessment Program Literacy and Numeracy (NAPLAN) was first used in Dropping off the Edge in the 2015 report.

Educational outcomes play a significant role in determining social and economic disadvantage. Recent studies have shown Australian children from low-socio-economic backgrounds are at risk of poor educational outcomes from their first year of school, with the risk increasing as they move through school (The Smith Family, 2018).

Standardised testing provides an insight into the educational achievements of students. While the merits and impact of standardised testing continues to be contested (Adams, Hancock, & Taylor, 2020; Mayes & Howell, 2018), it does provide valuable insights into the association between educational attainment and socio-economic disadvantage (Gable & Lingard, 2016).

Australia administers annual standardised testing of students through the National Assessment Program - Literacy and Numeracy (NAPLAN). NAPLAN is an annual assessment for all students in Years 3, 5, 7 and 9, testing basic and essential skills such as reading, writing, spelling, grammar and punctuation, and numeracy. Both Gonski Reports from the federal government (2012, 2018) have sought to address issues of inequity for disadvantaged children by recommending educational funding to locations where it is most needed. NAPLAN results have been a valuable measure of the ongoing outcomes of the needs-based funding model.

A study based in New South Wales looked at social inequality in the state's Senior Secondary Curriculum Hierarchy and found that early school students' achievements from Year 3 NAPLAN results were strong indicators of the subjects they took in Year 12. Those who achieved scores in the lowest 20% of Year 3 NAPLAN chose subjects that were low in the subject hierarchy such as applied academic disciplines or vocational subjects. Students who studied subjects that were considered higher in the hierarchy of subjects had greater available options post schooling. The study concluded that the education system, while good at maintaining the academic performance of high achievers on the NAPLAN Year 3 test, did not support students at the lower end of achievement to improve (Roberts, Dean & Lommatsch, 2019).

In this report we use literacy and numeracy results for Year 3 and 9 students in Australia. Achievement in Year 9 is a strong predictor of future success in study and work post schooling (Goss, Sonnemann, Chisholm, & Nelson, 2016), while Year 3 results are important as they are at the start of a child's learning journey. Research has found that learning gaps are growing for children from disadvantaged families, particularly students attending disadvantaged schools compared to advantaged schools (Goss et al., 2016). The NAPLAN results have been found to be strongly linked to SES of the child's family and with disadvantaged non-metropolitan or rural locations (Roberts et al., 2019).

This research suggests that the NAPLAN results in literacy and numeracy for Year 3 and Year 9 students are the best indicators to use as these are representative of current and potential disadvantage in a location.

The indicators were purchased from the Australian Curriculum, Assessment and Reporting Authority (ACARA) with 2018 data used rather than 2019 data due to the use of online testing in 2019. Results from online testing were not provided by ACARA, and this affected the ACT results in 2018, and all States in 2019. The data provided were the proportion of students failing to attain the 'minimum standard' on the literacy and numeracy assessment scales for Year 3 and Year 9 for schools within the SA2. Where an SA2 had no school in it, then the closest school in the SA3 was used.

Not attending school

This is a new indicator in this Dropping off the Edge report.

School attendance is particularly important for the development of disadvantaged children as they are more likely to have parents with lower levels of education. Attending school removes some of the impacts of social disadvantage, as it provides an opportunity to reduce inequalities. A study utilising data from the Early Childhood Longitudinal Study in the United Kingdom found that formal schooling has a larger impact on the academic development of disadvantaged children compared to less disadvantaged children, but it was dependent on school attendance rates. The study found that during summer break the differences in the academic capabilities of children from advantaged and disadvantaged families widened (Ready, 2010).

There can be a range of contributing factors that impact school attendance, but research has found that while attendance can impact a child's academic performance, it has a more negative impact on children from disadvantaged backgrounds (Ready, 2010). Children from low SES families are more likely to experience health problems, with reported health complaints being a major contributor to not attending school (Havik, Bru, & Ertesvåg, 2015; Ready, 2010).

This literature shows that school attendance is an important contributor to disadvantage in families, and therefore has been added as a new indicator to the Dropping Off the Edge report.

The measure of school attendance is the proportion of full-time students in Years 1-10 whose attendance rate in Semester 1 2019 was below 90%. The data were from the Australian Curriculum, Assessment and Reporting Authority (ACARA).

Early school leavers

A measure of early school leavers has been in the Dropping off the Edge reports since the first report in 1999.

Research has shown children from disadvantaged families have a high risk of leaving school early. Early school dropout is associated with higher risks of social and economic disadvantage, and unemployment (Lavrijsen & Nicaise, 2015).

A European study looked to better understand the relationship between leaving school early and disadvantage using data from a Labour Force Survey (Lavrijsen & Nicaise, 2015). The study found that children from low educated parents and from families experiencing financial hardship had a higher likelihood of leaving school early. It showed that leaving school early was not just due to the education system but was also due to intergenerational socio-economic inequalities (Kallio, Kauppinen, & Erola, 2016; Lavrijsen & Nicaise, 2015).

A study based in Finland sought to use multiple measures of inter-generational disadvantage, measuring parental disadvantage and child outcomes. The indicators used were dropping out of school after completing compulsory education, unemployment, and receipt of social assistance. The study was based on the assumption that indicators of disadvantage are inherited and accumulate through generations. The study had access to high quality data from Finland, and concluded that dropping out of school after compulsory education and social assistance were stronger indicators of accumulated disadvantage than unemployment (Vauhkonen et al., 2017).

Given this research, this indicator continues to be used in this Dropping off the Edge report.

This indicator uses data from the 2016 Census. It is the number of people who left school before Year 10 as a proportion of the total population not at school. This is a standard measure used elsewhere (Australian Institute of Health Welfare, 2020a; Kuusipalo & Alastalo, 2020).

Post-school qualifications

This indicator has been in the Dropping off the Edge reports since the first report in 1999.

Post-school qualifications play a significant role in improving an individual's ability to compete in the labour market and have been shown to be an important predictor of improved social outcomes such as self-reported health, volunteering and interpersonal trust (OECD, 2020). In addition, highly educated individuals are less likely to be unemployed. As a result, post-school qualifications provide a valuable indication as to whether an individual is at risk of disadvantage (Skattebol & Redmond, 2019)

A study based in Christchurch, New Zealand, researched the mental health implications of having no post-school qualifications. Poor mental health of people with no post-school qualifications may be explained by an increased risk of financial hardship, limited social support, and higher exposure to life course stressors such as unemployment. Using a birth cohort study of over a thousand participants measuring self-reported mental health of 18, 21, 25 and 30-year olds, the study concluded that there was no causal relationship between mental health and post school qualifications. Instead, it found the social and contextual factors that are a higher risk for individuals with no post-school qualifications are the contributors to poor mental health for people aged under 30 (Fergusson, McLeod, & Horwood, 2015). This study demonstrated the complexity of the relationship between post-school qualifications and disadvantage.

While it is recognised that this relationship is complex and not everyone without a post-school qualification is disadvantaged, the research has generally highlighted the correlation between having no post-school qualifications and experiencing a higher risk of disadvantage through lower income and unemployment.

This indicator uses the 2016 Census data on the number of people with no post school qualifications divided by the number of people not at school or doing post-school qualifications.

Early Childhood Development

Early childhood development was included in the Dropping off the Edge 2015 report as "Readiness for schooling".

A lack of adequate economic resources for families with children has been shown to compromise the physical, emotional, and cognitive growth of the child. Compromised early childhood development in an individual's infancy through adolescence has compounding impacts on educational attainment in school and post-school (Duncan & Le Menestrel, 2019; Moore, McDonald, Carlon, & O'Rourke, 2015; Pianta et al., 2017).

A cross-comparison study between Melbourne, Australia, and Montreal, Canada, helped to separate out the influence of location on early childhood development. Children living in Melbourne experienced better outcomes than children in Montreal. However, inequity gaps in Melbourne were greater for children in disadvantaged locations. This study reflects the influence of both environment, policy, and services on population health and health inequity (Dea, Gauvin, Fournier, & Goldfeld, 2019).

The Australian Early Development Census (Australian Early Development Census, 2019) provides data on early childhood development at the time children commence their first year of full-time school. The AEDC measures five domains of early childhood development:

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based)
- communication skills and general knowledge.

This research has shown that early childhood development is an important indicator of potential disadvantage in a location, and is an indicator that should be included in Dropping off the Edge.

This study uses the proportion of students developmentally vulnerable on a least one of the above AEDC domains in the 2018 data collection, in line with the Australian Institute of Health and Welfare (Australian Institute of Health Welfare, 2020a). A tighter definition, also used in the AIHW report and other reports, is the proportion of students developmentally vulnerable on 2 or more domains; however, for this report where we are looking at broad disadvantage, we decided to use the at least one domain criteria.

6. LIFETIME DISADVANTAGE

While this domain is new in 2021, lifetime disadvantage has been highlighted in previous Dropping off the Edge reports. That thinking has been operationalised in this domain in two new indicators which measure how disadvantage can be passed from one generation to the next. The two indicators are teenage pregnancy and neither parent in the household working.

Teenage pregnancy

Teenage pregnancy is a new addition to the Dropping off the Edge report under the new lifetime disadvantage domain.

Teenage pregnancy has been found to increase the risk of depression and repeat pregnancy for the mother. Children from a teenage pregnancy are also more likely to be teenage parents themselves (Marino, Lewis, Bateson, Hickey, & Skinner, 2016), reinforcing the intergenerational disadvantage.

Those who live in communities experiencing poverty have been shown to have an increased risk of teenage pregnancy, with birth rates approximately eight times those of the most advantaged locations (Marino et al., 2016).

An Australian study showed that the social and health risks associated with teenage pregnancies included increased risk of being exposed to domestic violence, mental ill health, substance use, and economic disadvantage including homelessness (Mann, Bateson, & Black, 2020).

From this literature, it is clear that teenage pregnancy is associated with disadvantage and that it is intergenerational.

This indicator is the number of females aged 15-19 in the 2016 Census who have at least one child divided by the total number of females aged 15 - 19.

Neither parent in the household working

Neither parent in the household working is another new addition to the Dropping off the Edge report in the new intergenerational disadvantage domain.

Unemployment is a significant economic stress on families and is a key factor in creating ongoing intergenerational disadvantage. With a lack of financial resources available, the child's diminished access to material resources negatively impacts development of social skills (Karhula, Lehti, & Erola, 2017; Vera-Toscano, 2020). Children from households with no parent employed have been found to be significantly more at risk of future joblessness than children with only one parent unemployed (Vera-Toscano, 2020).

A study based in Finland compared the SES status of children who experienced parental unemployment in adolescence with children who did not (Karhula et al., 2017). The study also sought to determine whether parental unemployment has a negative effect during a significant economic recession. The study concluded that parental unemployment does have a negative impact on children's socio-economic outcomes even in welfare states, such as in Nordic countries that have a high level of services. It also concluded that parental unemployment had a negative impact on children's outcomes even in periods of economic downturn when stigma of unemployment may not be as high (Karhula et al., 2017).

An Australian study assessed the influence of parental joblessness on youth transitioning to work post school and whether a university degree can improve employment outcomes (Curry, Mooi-Reci, & Wooden, 2019). Using available data from the Household, Income and Labour Dynamics of Australia (HILDA) Survey, the study found that having no parent employed was associated with a slower transition from school to work but these negative effects can be mitigated through attainment of a University degree. These results were compared to a study in the United States that found a similar result, with a university degree improving the outcomes of children with both parents unemployed. (Curry et al., 2019).

This indicator was the number of dependent children aged 0-14 in a family where no parent is working (unemployed or not in the labour force) from the 2016 Census.

7. ENVIRONMENT

The indicators in this domain reflect the environment of the location. This is an important new domain in the 2021 report, which will become more important as the impacts of climate change in disadvantaged communities are felt. It includes particulate matter; location of nature reserves; green canopy; and heat vulnerability. Indicators that were considered but not included due to lack of data were biodiversity and water quality.

Particulate Matter

Particulate matter is a new addition to the Dropping off the Edge Report as part of the new environment domain.

According to the World Health Organisation, particulate matter is associated with significant health risks and is a major cause of death and disease worldwide. Health risks associated with particulate matter include its entering the lung passageways and entering the blood stream with impacts on cardiovascular, cerebrovascular, and respiratory systems (World Health Organisation, 2018). Considering the increasing severity and duration of bushfires and dust storms within Australia, particulate matter will be an important indicator of disadvantage in the future and thus has been included as a new indicator in this Dropping off Edge report (Johnston, Hanigan, Henderson, Morgan, & Bowman, 2011).

Particulate matter can be defined in a number of ways, but the aerodynamic diameter is the main way to identify the ability of particles to move in the atmosphere and be inhaled (Esworthy, 2013). The size of the particles is linked to their potential to cause health problems with small particles having a diameter of 2.5 to 10 µm and fine particles being smaller than 2.5 µm (PM2.5). Particulate matter is a portion of air pollution that is made up of extremely small particles and liquid droplets containing acids, organic chemicals, metals and soil or dust particles (Anderson, Thundiyil, & Stolbach, 2012). These dust particles can be caused by wind-blown dust, sea salt, organic aerosols, landscape fires, transport and industrial processes such as mining and power generation, and residential wood heaters (Hanigan et al., 2021). In Sydney, residential wood heaters accounted for 19% of anthropogenic PM2.5 emissions and 24% of PM2.5 concentrations in Sydney during 2010 and 2011 (Broome, Powell, Cope, & Morgan, 2020).

The literature on the health impacts of particulate matter demonstrates that it negatively impacts on respiratory systems and reduces lung function particularly in susceptible populations. It is associated with an increase in medication use, an increase in accessing health care services and an increase in mortality (Anderson et al., 2012).

An Australian-based study sought to determine whether extreme air pollution from bushfires and dust storms between 1994-2007 increased mortality in Sydney. There were 52 event days identified with 48 caused by bushfires, six from dust storms and two from both. Smoke events were shown to increase non-accidental mortality by 5% at a lag of one day, and dust events were associated with a 15% increase with a three-day lag. However, the increased temperature during bushfires also contributed to increased mortality and should be a consideration in research (Johnston et al., 2011). The findings from this study were further confirmed in an Australian study looking at hospital admission in Darwin because of air pollution caused by smoke (Johnston, Bailie, Pilotto, & Hanigan, 2007).

Other research internationally and in Sydney has found that exposure to PM2.5 has a differential impact on people from socially disadvantaged backgrounds. A study based in Toronto in Canada showed that of those exposed to air pollution, adults and children from low SES groups had higher rates of physician visits as a result of the air pollution (Burra, Moineddin, Agha, & Glazier, 2009).

Research based on Australia-wide data showed that low SES groups were exposed to higher levels of PM2.5 and NO2 compared to higher SES groups (Cooper, Green, & Knibbs, 2019). Research undertaken in Sydney has suggested that locations with the lowest SES had 50% more years of life lost attributable to PM2.5 compared to locations with the highest SES.

This literature shows the importance of PM2.5 as a measure of disadvantage now and into the future. The impact on disadvantaged locations in Australia is going to be large, as locations with low SES continue to be in closer proximity to areas of industry and pollution.

The indicator used in this report is a standard definition of the number of particles greater that 2.5 micron in the air (population weighted averages of PM2.5 (in µgm-3)). It was requested from the Centre for Air pollution, energy and health Research at the University of Sydney and applies to data gathered in 2019 (Knibbs, 2020).

Area of declared nature reserves

The area of reserves has been included as a new indicator for this report as part of the environment domain. Urban sprawl and development can significantly degrade biodiversity and access to natural habitat (Kirkpatrick, Daniels, & Zagorski, 2007). This indicator attempts to measure conservation in a location using the size of declared nature reserves. These nature reserves are strictly protected areas set aside to protect biodiversity and geological/geomorphological features. Human visitation, use and impacts are strictly controlled and limited to ensure protection of conservation values.

The social inequality of access to environmental resources has been found to be a complex issue (Pedlowski, Da Silva, Adell, & Heynen, 2002). A study by Kuras et al. (2020) compared 84 studies from 34 cities assessing the relationship between SES and biodiversity. The majority of studies found that locations with higher SES experienced higher levels of biodiversity (Kuras et al., 2020).

Researchers are increasingly interested in social, economic, and cultural drivers of biodiversity with concerns about environmental justice related to environmental quality and distribution of biodiversity (Gerrish & Watkins, 2018; Leong, Dunn, & Trautwein, 2018). SES is a common measure used to better understand the complexities of environmental injustice (Aronson et al., 2016). A common explanation for higher biodiversity in locations of higher SES is that individuals with more resources have more choice about where they live (Clarke & Jenerette, 2015; Kendal, Williams, & Williams, 2012). Locations of low biodiversity tend to be associated with locations of low SES (Cohen, Baudoin, Palibrk, Persyn, & Rhein, 2012; Gerrish & Watkins, 2018; Kuras et al., 2020).

Measurement of this indicator resulted in most locations in Australia recording a value of 0, while others had very low values. These results were not particularly informative and the indicator was therefore not used in most of the analysis in this report. It should be reconsidered for the next report with a revised specification.

This indicator is calculated using the Australian Land Use and Management Classification Version 8 50M raster from October 2016. It is the area of nature reserves in the SA2 divided by the total area of the SA2. Nature reserves are strictly protected areas set aside to protect biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of conservation values.

Green Canopy

This is a new indicator in this report within the new environment domain.

Green canopy is important for the environment and the liveability of cities and communities. Green canopy has been shown to assist with modulating temperatures (Alexandri & Jones, 2008; Hamada & Ohta, 2010), reducing the risk of flooding, reducing carbon, particulate matter and noise pollution (Jim, Lo, & Byrne, 2015; Tiwary et al., 2016) and promotion of biological diversity (Tzoulas et al., 2007). These environmental benefits have been shown to have social and public health benefits (Wolch, Byrne, & Newell, 2014) such as reduced energy consumption (Akbari, Pomerantz, & Taha, 2001), enhanced economic productivity (Matthews, Lo, & Byrne, 2015) and improved neighbourhood amenity (Watkins, Palmer, & Kolokotroni, 2007). Maintaining and expanding the green canopy is viewed as an important strategy to tackle the threat of climate change to build sustainable communities and natural community assets (Greene, Robinson, & Millward, 2018).

Residential areas that lack a green canopy are more vulnerable to health impacts of climate change (Astell-Burt, Navakatikyan, & Feng, 2020; Kabisch, van den Bosch, & Lafortezza, 2017). Those who are particularly vulnerable to the impact of the lack of tree canopy are children and the elderly (Forum, 2009; Parmes et al., 2020). If children grow up in poor environmental and economic conditions, they are at increased risk of experiencing poorer health over their lifetime (Keller et al., 2015). This has been shown to be particularly true of youth that live near traffic, industry, or locations with low levels of green canopy and vegetation (Wolch et al., 2014).

Green canopy and green space are seen as having positive health impacts for all population groups by creating healthy, resilient and sustainable environments to combat climate change (Kabisch et al., 2017). There has been some research that suggests urban green canopy may assist with slowing down the cognitive decline of neurodegenerative diseases (Astell-Burt et al., 2020; de Keijzer, Gascon, Nieuwenhuijsen, & Dadvand, 2016), while other research findings within the United States and Canada (Astell-Burt et al., 2020) found no connection between green space and cognition (Clarke et al., 2012; Hystad, Payette, Noisel, & Boileau, 2019). A study in California found that increased green canopy was associated with better overall health, such as less type 2 diabetes, high blood pressure and asthma, suggesting the value of green canopy for public health (Ulmer et al., 2016).

Population growth alongside urbanisation has placed increased pressure on green canopy in residential areas. This has resulted in greater levels of vulnerability to climate change (Moser, 2010). Research has found promising results about the potential for green canopy to decrease temperatures (Abhijith et al., 2017; Onishi, Cao, Ito, Shi, & Imura, 2010). Some studies have shown that an increase in green canopy by five per cent can reduce temperatures by as much as 2.3 degrees Celsius (Hall, Handley, & Ennos, 2012; Hamada & Ohta, 2010). The use of green walls and roofs within areas has the potential to cool built environments by up to eight degrees (Alexandri & Jones, 2008). Green canopy also reduces the need for air conditioning within homes and buildings, subsequently reducing the demand for electricity (Greene et al., 2018), which reduces energy costs for individuals (Akbari, 2002).

Green canopy and cover are also important contributors to reducing the negative impact that flooding has on infrastructure and human health (Liu, Chen, & Peng, 2014). There is an expectation that increased precipitation events will get worse due to climate change (Ciscar et al., 2011). Research has also considered the negative effects of green canopy, such as pollen allergies, traffic hazards, damage to buildings, fire risk, wildlife behaviours as well as public liability concerns (Davison & Kirkpatrick, 2014; Roy, Byrne, & Pickering, 2012).

As a result of the importance of green canopy for social and health outcomes in a community, ecological and economic research has looked at whether green canopy is distributed equitably (Ambrey et al., 2017; Greene et al., 2018). There is a growing focus in the literature on whether vulnerable communities lack access to green canopy and as such are at greater risk of experiencing the impacts of climate change (Ambrey et al., 2017). There are relatively consistent findings internationally that there is an inequitable distribution of green canopy among socio-economic groups (Wolch et al., 2014).

In Australia, residential areas have experienced greater urban consolidation, which has resulted in reduced tree canopy (Ambrey et al., 2017). The literature has found this has partly contributed to the urban heat island effects within Australia, increasing the risk of these communities experiencing higher associated health risks (Lin et al., 2015).

The research shows clear benefits of green canopy in terms of health outcomes and temperature reductions. However, it also shows a clear socio-economic gradient, with more disadvantaged locations having less green canopy.

This indicator uses the NCI National Research Data Collection from 5 May 2017. The locations with considerable wood vegetation on a 200m grid as a proportion of the total area of the SA2 is used.

Heat Vulnerability

Heat vulnerability is a new indicator in this report within the new environment domain.

Heatwaves globally, and particularly in Australia, are getting hotter, longer and more frequent (Rachwani, 2021; Trancoso et al., 2020). Heatwaves and high temperatures are leading to an increasing number of deaths and adverse health impacts (Martiello & Giacchi, 2010). The impacts of heatwaves are not felt equally across society, with some groups at higher risk such as lower socio-economic communities, the elderly and people with pre-existing health conditions (Loughnan, Nicholls, & Tapper, 2010).

Heat vulnerability refers to the impacts of heat waves on disadvantaged groups. Heatwaves and high temperatures impact lower socio-economic communities in several ways due to, for example, poorly designed dwellings, lack of access to community greenspace and increased likelihood of triggering pre-existing health conditions (Loughnan, Nicholls, Tapper, & Chandra, 2011; Loughnan et al., 2010).

As Australia continues to get hotter due to climate change, and heat waves become longer and more frequent, heat vulnerability will become an increasingly important indicator of disadvantage. Heat vulnerability has been adopted in this study as an indicator of environmental disadvantage.

The heat vulnerability indicator is measured as the proportion of days in 2019 where the temperature in the location was above 38 degree Celsius. The data was sourced from the Bureau of Meteorology. The heat vulnerability indicator is measured as the proportion of days in 2019 where the temperature in the location was above 38 degree Celsius. The data was sourced from the Bureau of Meteorology.

Calculating an index

As detailed in Chapter 1, the index in 2021 uses a domains approach. To calculate the overall index, an index for each domain is calculated using Principal Components Analysis (PCA). This technique summarises a large number of indicators into a number of indexes, which then provide more manageable data to determine the final summary index. Essentially, PCA uses statistical calculations to identify which of the indicators provide the strongest representation of the underlying dimension of disadvantage.

In some cases, an indicator may not load strongly onto the first domain index (ie the indicator does not provide a strong representation of overall disadvantage), and is therefore removed from the index as it is not adding any information to the final index. To create the domain indexes for this report, indicators with a loading less than 0.3 were removed. This is the same cut-off used by the ABS for their socio-economic index for areas. The failed indicators are shown in Appendix 1 as those not included in each state summary index. It is important to note that the choice of indicators was driven by the theory, but the measurement of them was limited by what data were available. Therefore, an indicator may not load strongly because of measurement issues rather than not being important to the domain from a theoretical perspective.

A domain index was then calculated using indicators with loading above 0.3. In some cases, a domain only had two indicators, in which case an average of the two indicators was used.

The domain indexes were then converted to a normal distribution using a log transformation so that the indexes can be added. The log transformation has been used for all NATSEM's summary indexes (child social exclusion, index of wellbeing for older Australians), and was developed for the United Kingdom and Scottish indexes of deprivation (Noble et al., 2003; M Noble et al., 2004) .

A list of all the indicators, and the state where the indicator was used in the final index, is shown in Appendix 1. In each state chapter we identify the indicators that contributed most strongly to that index – this is a reflection of how strongly it loaded, or provided a representation of the underlying dimension of disadvantage. This is not the same as contributing directly to disadvantage itself, and we separately discuss what these indicators appear to be.

CHAPTER 3

METHODOLOGY: QUALITATIVE INVESTIGATION

METHODOLOGY: QUALITATIVE INVESTIGATION

For the first time, the 2021 Dropping off the Edge report includes a qualitative component to provide insights from community members in select case study locations. While quantitative analysis is still the main focus of the report, the inclusion of qualitative data from some communities with a high level of disadvantage, as measured by the quantitative indicators, is provided to better understand the subjective experience of living with that disadvantage. In addition, this analysis provides a better understanding of the factors contributing to the high level of disadvantage, as well as steps that could be taken to improve outcomes for people in the community.

In conducting this qualitative exploration, we explicitly sought insights from community members into what services, resources or activities support positive change to address disadvantage across the range of indicators included in Dropping off the Edge, and alternatively, what hinders positive change.

Qualitative data were collected in eight selected case study communities across six states and territories through thirteen focus groups with community members and 36 key informant interviews with local leaders or community service providers. A total of 129 community members and service providers contributed their thoughts. This project was approved by the University of Canberra Human Research Ethics Committee [7072].

This chapter provides an overview of the qualitative approach used in this research, including a brief outline of the potential benefits and limitations of qualitative research for the Dropping off the Edge report, the methodology used for data collection and analysis and an overview of how the case study locations were selected.

BENEFITS AND LIMITATIONS OF A QUALITATIVE APPROACH FOR DROPPING OFF THE EDGE

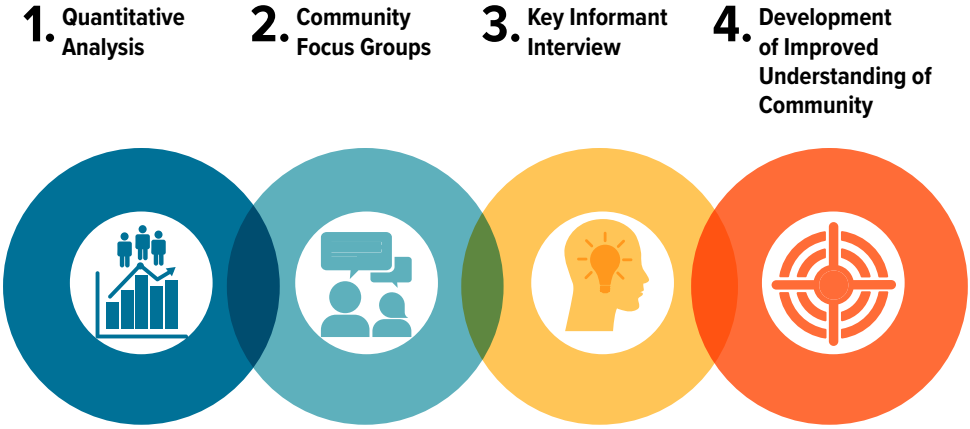
Inclusion of a qualitative approach provides an opportunity to gain a rich understanding of the case study communities, from the multiple perspectives of the study participants. Through group and individual conversations, study participants shared and explored experiences of their community, including which aspects of the community help it to thrive and which challenge positive future outcomes. This contextual information assists in interpreting the meaning and implications of the quantitative indicators and index, and helps build a better understanding of the indicator outcomes. It also provides information on current or potential resources to address challenges and support community strengths.

However, a qualitative approach has limitations. For *Dropping off the Edge 2021*, the qualitative work was completed for eight case studies only. Therefore, the data cannot be generalised for the whole state or other communities. While many similarities were found across the case study communities (eg lack of mental health services, issues of stigma, importance of community connections, the role of local leadership and governance), care must be taken not to assume that these findings will be replicated in all similar communities. Equally, the views expressed by participants in a particular community do not necessarily represent the views of all community members.

THE QUALITATIVE APPROACH

The qualitative approach used for the *Dropping off the Edge 2021* report included two data collection methods which combined to provide a rich and broad understanding of the lived experience in select case study communities as described in Figure 1.

Figure 1. Qualitative approach within the *Dropping off the Edge 2021* report



The first step of the quantitative analysis was to develop the indicators and calculate the Dropping off the Edge index for each state and territory. The index and indicator rankings (including any rank movements since 2015) were then used to inform the selection of the case study communities, as described in the section below. Each of the indicators from the index and how they compared to the national average, along with the ABS Socio-Economic Index for Areas, were used in each chosen community, to provide context for the qualitative component. A ratio of the location indicator value to the national average was used to inform the selection of the communities. The graphs of these ratios for each chosen community are shown in Appendix 3.

Two focus groups were then held in each case study community (except for the Indigenous community of Atitjere (Harts Range) and only one focus group was held in Montrose-Rosetta– see next section on focus groups). These focus groups were followed by between two and five interviews with local community leaders or community service providers to provide a more in-depth understanding of the case study communities' resources and programs. The final phase was the examination of the information provided by the qualitative and quantitative data, and incorporation of key findings in this report. These methods are discussed in further detail below.

Qualitative field work was conducted from April to June 2021 with final participant numbers provided in Table 2.

Table 2 Number of qualitative participants for each method

TYPE	CHARACTERISTIC	PARTICIPANTS
FOCUS GROUPS	13 focus groups were conducted, two in each of the case study communities except for Atitjere (Harts Range) where single person interviews were conducted and Montrose/Rosetta where only one focus group was conducted due to low participant numbers	93
KEY INFORMANT INTERVIEWS	Semi-structured interviews were conducted with local leaders and community service providers in all case study communities. Interviews with community members were conducted in Atitjere (Harts Range) and Montrose-Rosetta.	36
TOTAL PARTICIPANTS		129

FOCUS GROUPS

Focus groups were undertaken to enable an in-depth exploration of community members' lived experiences in the case study communities. Focus group information provided a rich and nuanced understanding of participants' perspectives on their community, with the focus group discussions designed to capture the commonalities and differences in participants' experience. General themes were identified, as well as themes that provide a better understanding of the particular forms of disadvantage that were identified from the quantitative data for that community. In particular, the focus groups aimed to identify:

- How participants envisage what a strong and vibrant community looks like, and what helps/hinders their community in achieving that outcome;
- What community services exist within their communities, including gaps in services and challenges they perceive that services face in supporting the community;
- What community resources are valuable and effective in supporting positive outcomes;
- An understanding of how each supporting domain (ie health, education, community safety, mental health, social distress, lifetime disadvantage, environment) influences community outcomes across a diversity of communities.

Focus group questions were based on exploratory themes around the case study community, including its strengths, challenges, resources, and key priorities. The facilitator also used follow-up 'probes' to pursue interesting lines of inquiry and further explore local community perceptions and experiences (see Appendix 2 for a full list of focus group discussion themes). The focus groups were introduced by the moderator as being an opportunity for local communities to participate in the 2021 Dropping off the Edge report, by sharing their experiences of living in the community and identifying what is needed to enable the community to thrive. Groups were advised that their participation helped to understand the lived experience of the statistical indicators (where relevant), and to identify pathways for addressing community disadvantage.

Two 90-minute focus groups were held in each community, except for Atitjere (Harts Range) and Montrose-Rosetta. Atitjere (Harts Range) is an Indigenous community and it was determined that individual and small group interviews were a more appropriate approach for this community. In Montrose-Rosetta, participant recruitment was difficult with very low numbers attending focus groups. The second focus group included only one participant, so it was conducted as a key informant interview due to the participant's background and role in the local area. Between three and 12 participants attended each group discussion, to ensure that the experiences of a range of community members were captured. Focus group participants received $75 payment in recognition of their time and contributions to the research. All focus groups were audio recorded and transcribed for analytical purposes.

Participant recruitment for the focus groups was undertaken through established local and community service networks. A flyer for the focus group was distributed to identified service providers, for further distribution amongst their community networks. Snowball sampling procedures were used, with participants encouraged to share the flyer to their networks and encourage others to attend. In some communities the local service providers and community networks were very proactive in distributing the information and there was significant interest and attendance, while in other communities it was more difficult to recruit.

INTERVIEWS

Semi-structured key informant interviews were used to capture the views and experiences of local leaders and service providers. See Appendix 2 for the list of questions. Between two and five interviews were conducted in each community. Interviews were undertaken with 36 key informants, including representatives of service providers, faith-based organisations, local business sector, local government, and educational institutions.

Interviews were undertaken either face to face, by telephone or online using Zoom, and were typically 30-60 minutes in duration. Where permission was granted, interviews were audio recorded and transcribed, with 80% of interview participants allowing audio recording.

Participant recruitment for the interviews was undertaken through direct recruitment. Local organisations were identified and contacted by telephone and email to invite them to participate in the research. Snowball sampling was also used to encourage participants to identify further potential interviewees from their networks and encourage others to participate. Efforts were made to ensure a broad range of perspectives were included, particularly given the low number of interviews being undertaken.

QUALITATIVE ANALYSIS

The qualitative data were analysed using a thematic coding approach in NVivo12. Codes were developed based on the focus group or interview questions and core Dropping off the Edge indicators, enabling the ready capture and interrogation of the data. Where new relevant themes were identified, new codes were made to ensure a comprehensive capture of the data and its nuances. Comparisons of experiences within communities were made to identify key similarities and differences and how they related to the Dropping off the Edge indicators. Key insights are integrated into the analysis provided in the state-based chapters presented in this report and in Chapter 12.

LIMITATIONS OF THE METHODOLOGY

Qualitative research is resource intensive, requiring considerable time and hence funding to recruit participants, complete the data collection, clean and then analyse data. For a large-scale national project, these costs can quickly become substantial. The qualitative approach used in this report is limited, with a small number of case studies (limited to eight across the country). While two focus groups are sufficient for a single case study, recruitment was limited to traditional networks and snowball sampling which was problematic in some locations where there were weaker social connections. More traditional advertising (ie local media) and contemporary advertising (ie social media) could have been used to improve recruitment, however there was little time in the fieldwork schedule for this to occur. The use of professional recruitment organisations is becoming more common in qualitative research due to 'research fatigue' and the declining interest of community members to participate in research. This was not an option for this research due to funding constraints.

Three to five interviews is a low number for qualitative research and hence is a limitation of this aspect of the report. While efforts were made to interview a good cross-section of available representative groups, the information provided by the interview participants can best be understood as providing insights. A number of participants did not have a comprehensive understanding of the different groups within the community or the resources available to the community, and this was reflected in their comments.

Future qualitative approaches should include more interviews to gain a more comprehensive understanding of the views of not only service providers and local leaders, but also community members.

CASE STUDY SELECTION

The purpose of the qualitative work is to explore how disadvantage is experienced by community members, including gaining insights into the drivers of disadvantage and potential programs or other mitigation strategies to help reduce disadvantage and/or impacts. Understanding that disadvantage varies across (and within) communities, eight case study communities were chosen based on a range of selection criteria as described further below.

Case study communities for the *Dropping off the Edge 2021* report are:

1. Beenleigh, Queensland
2. Atitjere (Harts Range) (Sandover-Plenty SA2), Northern Territory
3. Melton, Victoria
4. Montrose-Rosetta, Tasmania
5. Narrogin, Western Australia
6. Seaham-Woodville, New South Wales
7. Swan Hill, Victoria
8. Willmot (Bidwill / Hebersham / Emerton SA2), New South Wales

OVERALL CRITERIA FOR LOCATION SELECTION

Case studies were selected based on a number of factors including their level of disadvantage as identified by the Dropping off the Edge index, and changes in the indicators between Dropping off the Edge 2015 and *Dropping off the Edge 2021*. The criteria for the Dropping off the Edge 2015 and *Dropping off the Edge 2021* indicators were temporal consistency and temporal change, ie there needed to be some communities where comparable indicators hadn't changed from 2015 to 2021, and some locations where they had improved.

The temporal change and temporal consistency criteria used a cut-off of the top 20% of disadvantage for each indicator. This was much broader than the top 5% used in the indicator analysis of persistent disadvantage. This higher cut-off was used to increase the number of communities to select from. The persistent disadvantage indicator analysis, presented in later chapters, aimed to identify the most disadvantaged communities, therefore a 5% cut-off was appropriate. This difference can be seen in a location like Beenleigh, a case study community. Beenleigh identifies five temporally diverse indicators using the 20% cut-off, but only one indicator in the analysis of persistent disadvantage, which used a 5% cut-off.

Selection also focused on obtaining a diversity of case study communities, based on the following characteristics:

- Cultural diversity – there may be different priorities for different groups of people in the community;
- Demographic diversity – different age groups may have different ideas about what resources are valuable and what a strong and vibrant community looks like;
- Locational diversity – cities and regional areas have different priorities for resources, and residents may have different ideas of what a strong and vibrant community is – there may also be different ideas for different parts of Australia.

To identify diversity in communities, and help ensure we have a mix of communities, data listed in Table 3 were collated for each location in the Dropping off the Edge index. First, a short list of 27 communities was identified based on the index, temporal consistency and temporal diversity criterion; once this criterion was met the cultural, demographic and locational diversity criteria were applied. While all the communities in the short list fulfilled the temporal consistency or temporal diversity criteria, only some fulfilled the other criteria. Note that for Atitjere (Harts Range) in the Northern Territory, there were no indicators provided in 2015, so the temporal analysis of the indicators could not be conducted.

This location was chosen because it was disadvantaged, was identified by Jesuit Social Services as a location of interest, and there was a contact who could support qualitative data collection with the Indigenous communities. Finally, advice was sought from the Dropping off the Edge Advisory Group and Jesuit Social Services to inform the final selection of the eight locations for the qualitative aspect of the 2021 Dropping off the Edge report.

Table 3. Data used to help identify communities for the Dropping Off the Edge qualitative work

DATA TYPE	SPECIFIC VARIABLE	DATA SOURCE	WHAT WE ARE LOOKING FOR
DISADVANTAGE/ NOT DISADVANTAGED	Dropping off the Edge index	*Dropping off the Edge 2021*	Disadvantaged communities (top 20%)
	Indicator temporal consistency	Dropping off the Edge 2015 and 2021	Number of indicators identified as disadvantaged (top 20%) in both 2015 and 2021 report
	Indicator temporal diversity	Dropping off the Edge 2015 and 2021	Number of indicators disadvantaged in 2015 (top 20%) but not in 2021
CULTURAL DIVERSITY	% Indigenous in area / national average	2016 Census	At least one community with a high Indigenous population
	% born overseas in area / national average	2016 Census	At least one community with a high % born overseas
	% low fluency in English in area / national average	2016 Census	At least one community with a high % low English fluency (may overlap with % born overseas)
DEMOGRAPHIC DIVERSITY	Average age in area	2016 Census	At least one community with a low average age and one with a high average age.
LOCATIONAL DIVERSITY	Cities and regional locations	2016 Census geographies	A spread of locations cities, regional, remote
	North/South/East/ West		Mix of communities in north, south, east and west Australia
	States		2 from larger States (NSW, Vic) and one each from Qld, WA, Tas, NT

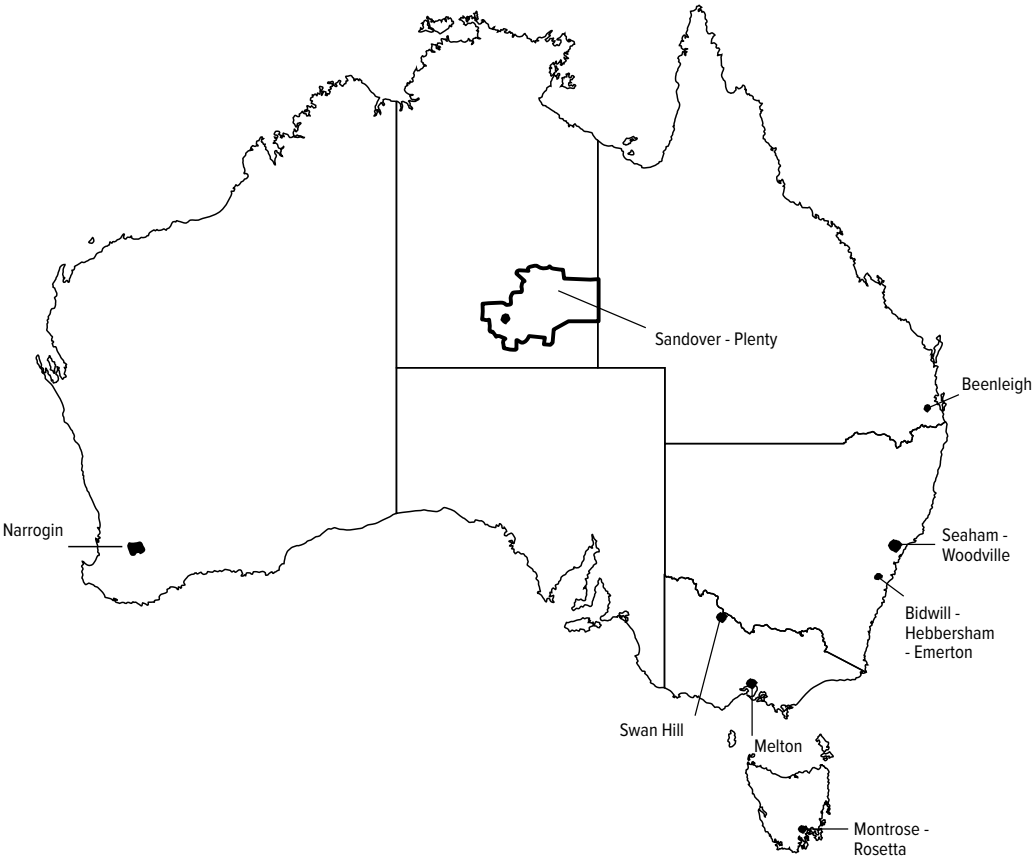
The data collected for each of these locations are shown in Table 4. The demographic data show the indicator as a ratio of the Australian average, so a value of 1.34 in Willmot for age 0 – 14 means the proportion of people aged 0 – 14 in this location was 34 per cent higher than the national average.

A map of where the focus groups were held is shown in Figure 2. The geographic spread across Australia was reasonable, given the limitation of eight communities across Australia. There was also a mix of four urban, three regional and one remote location.

Table 4: Data used for each selected community

COMMUNITY	2021 INDEX QUINTILE	TEMPORAL CONSISTENCY	TEMPORAL DIVERSITY (NOT DISADVANTAGED TO DISADVANTAGED)	TEMPORAL DIVERSITY (DISADVANTAGED TO NOT DISADVANTAGED)	AGE 0 - 14	AGE 15 - 24	AGE 25 - 64	AGE 65+	SPEAKS ENGLISH NOT WELL OR NOT AT ALL	INDIGENOUS	URBAN / REGIONAL / REMOTE	REASON
Willmot (Bidwill – Hebersham – Emerton SA2)	1	10	0	7	1.34	1.11	0.95	0.67	2.43	1.36	Urban	High number stayed disadvantaged, low fluency in English, relatively high Indigenous, high age 0 – 14
Seaham-Woodville	4	0	0	10	1.08	1.11	1.00	0.84	0.09	1.19	Regional	Indicators moved out of disadvantage, low level of low English fluency, not most disadvantaged quintile in 2021
Melton	1	5	3	3	1.13	1.02	0.99	0.85	0.77	0.64	Urban fringe	Just outside Melbourne, mix of indicators getting better, worse and staying stable
Swan Hill	1	3	3	1	1.01	0.99	0.91	1.30	0.70	1.37	Regional	Regional Victoria, mix of changed and constant indicators, high age 65+
Beenleigh	1	7	0	5	1.03	1.16	0.98	0.92	0.46	1.94	Urban	Brisbane, 7 indicators not changed, 5 changed out of disadvantage, high Indigenous
Narrogin	1	0	3	5	1.12	1.03	0.90	1.18	0.16	2.67	Regional	Regional WA, 5 indicators changed to better and 3 to worse, high Indigenous
Atitjere (Harts Range (Sandover-Plenty SA2)	1	-	-	-	1.27	1.58	0.98	0.31	2.40	30.21	Remote	Very high Indigenous population; contacts available to organise focus groups
Montrose-Rosetta	3	1	0	14	0.86	0.91	0.96	1.38	0.39	1.68	Urban	Large number of changed indicators out of disadvantage, known renewal area in Hobart, high age 65+

Figure 2: Map of focus group locations



CHAPTER 4

NEW SOUTH WALES (NSW)

NEW SOUTH WALES (NSW)

In New South Wales, 13% of the total number of SA2s (73 SA2s[3]) accounted for 55% of the most disadvantaged positions across all indicators. Seven locations (1%) accounted for 11% of the most disadvantaged positions. This highlights the concentrated nature of disadvantage, which is a key focus of this report.

The index of disadvantage created for this report shows that most of the disadvantage in New South Wales is located outside Greater Sydney. Only three of the 40 most disadvantaged locations were in Greater Sydney, despite over half of all SA2s being located within the Greater Sydney boundary. Only one location in Greater Sydney was in the top 10 list of most disadvantaged locations.

The indicators that contributed most to the index in New South Wales were low income and poor air quality (particulate matter). The fact that they loaded most strongly on the index means they gave the strongest representation of the underlying dimension of disadvantage in New South Wales.

In the 2021 report, a number of new environmental indicators were added. For many states with remote locations and industrial locations in large cities, particulate matter was a large contributor to the index. In New South Wales, this was the same – particulate matter was the second highest contributor to the index.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains, but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

When looking at the full list of individual indicators, it was apparent that multilayered and persistent disadvantage was experienced outside Greater Sydney, particularly in the north and the west of the State. In multiply-disadvantaged locations in New South Wales, common problematic forms of severe disadvantage included jobless parents, family violence, and young people leaving school early and not engaged in subsequent employment or learning.

WHAT DATA WERE INCLUDED IN NEW SOUTH WALES

Data were available in New South Wales for all 37 indicators. Most data were collected in a consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other states record the offender's address at the time of sentencing. In New South Wales, the data recorded the residential address of the offender when sentenced[4].

The data for nature reserves in the environment domain, a new domain included in the 2021 report, were unreliable for New South Wales, so were not used in the indicator analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report and there were problems with it in many states. This indicator will be reconsidered for the next report.

[3] There are 578 SA2s across NSW, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 561 SA2s in total. There were 302 in Greater Sydney and 259 outside Greater Sydney. A map of the SA2s in Greater Sydney and NSW is shown in Figure 3. Areas that are stippled in this map were not included in the index because there were less than 30 people or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

[4] Juvenile and Adult crime data in NSW came from the NSW Bureau of Crime Statistics and Research

The data for access to shops were also unreliable for New South Wales, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was 18, so over the 578 locations in New South Wales, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

The list of indicators and domains available for New South Wales are shown in Table 5. Indicators in bold are those that were included in the index, while unbolded indicators were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for New South Wales due to problems with the data.

In the 2021 report, a number of new environment indicators were added. For many states with remote locations and industrial locations in large cities, particulate matter was a large contributor to the index, meaning this indicator provided a strong indication of the underlying dimension of disadvantage – in Queensland, South Australia and Western Australia, particulate matter was the highest or second-highest contributor. In New South Wales, this was the same – particulate matter was the second highest contributor to the index.

Table 5 List of domains and indicators for New South Wales

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENT	LIFETIME DISADVANTAGE
Low Income	**Receiving Disability Support Pension**	**Child maltreatment**	**Low skilled occupations**	Year 3 NAPLAN Numeracy	**Particulate matter**	**Teenage childbearing**
Volunteering	Psychiatric admissions	**Juvenile convictions**	Underemployment	Year 3 NAPLAN Literacy	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Prison admissions**	**Long-term unemployment**	Year 9 NAPLAN Numeracy	**Heat stress**	
Access To Shops	Suicide rates	**Family violence**	**Young adults not in Employment, Education or Training**	Year 9 NAPLAN Literacy	*Nature reserves*	
Access To Culture And Recreation Facilities	**Need assistance with core activities**		Housing stress	**School attendance**		
Overcrowding			**Public housing**	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	Young child Development (AEDC)		

WHERE DISADVANTAGE IS LOCATED IN NEW SOUTH WALES

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. The index number will be lower[5] for locations that experience multilayered disadvantage – disadvantage that occurs across several indicators. The index is a useful summary to quickly identify disadvantage, but a limitation is that the detail of individual indicators is lost. Analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 40 most disadvantaged locations in New South Wales can be identified. These locations are shown in Table 6, which shows disadvantage in four bands of 10 locations. As with all lists of places in this report, they are listed in alphabetical order within each band, rather than in order of disadvantage.

Most of the locations of highest disadvantage (the top 10) using this approach are outside Greater Sydney. This is different to Victoria, where there was a balance between the Melbourne locations and those outside Melbourne in the most disadvantaged locations using the index.

Table 6 also shows whether the location was in the 2015 and 2007 most disadvantaged 40 locations. Note that these different indexes are not directly comparable, as several new indicators were added in 2021. Further, geographic classification changes mean we have had to align the postcodes used in 2015 and 2007 with the SA2s used in 2021. This has been done using a Postal Area to SA2 concordance from the ABS.

Despite these disclaimers, the comparison between the 2021 and previous indexes gives an indication of persistent disadvantage. It can be seen that most of the locations in the top ten were also considered highly disadvantaged in 2015 and 2007. Despite changes to the index, the locations identified by the index are consistent over the three reports.

Figure 3 shows a map of the index for New South Wales and Greater Sydney. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index scores. In New South Wales, there are about 115 SA2s in each quintile. This is the same approach used by the ABS to group the SEIFA indexes.

The map highlights that most of the least disadvantaged locations (Q5) were in Greater Sydney. Much of the disadvantage in New South Wales (Q1) was outside Greater Sydney, and in the north and west of the state. There was some disadvantage -south-west of Greater Sydney, with a few locations in the most disadvantaged quintile.

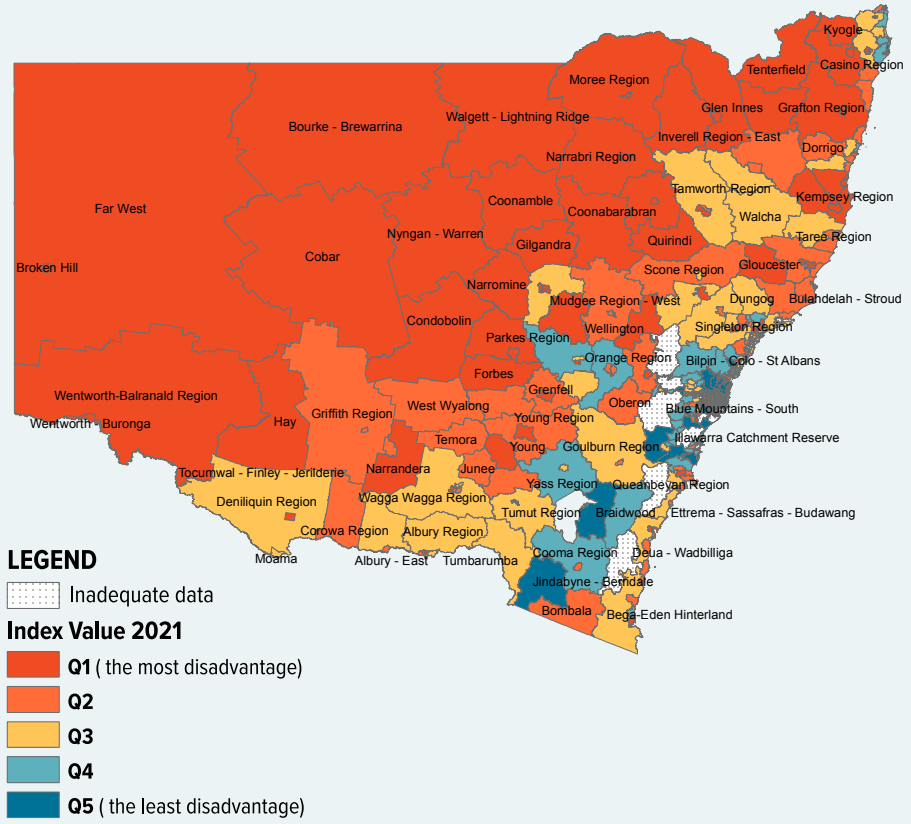
To better understand the nature of disadvantage and to describe the subjective experience of disadvantage as it relates to the quantitative data, a qualitative component was added to Dropping off the Edge in this report (see Chapter 3). In New South Wales, qualitative data were gathered in two locations, Willmot and Seaham-Woodville. The qualitative results shown in this chapter represent the comments of those involved in the focus groups and interviews in these communities.

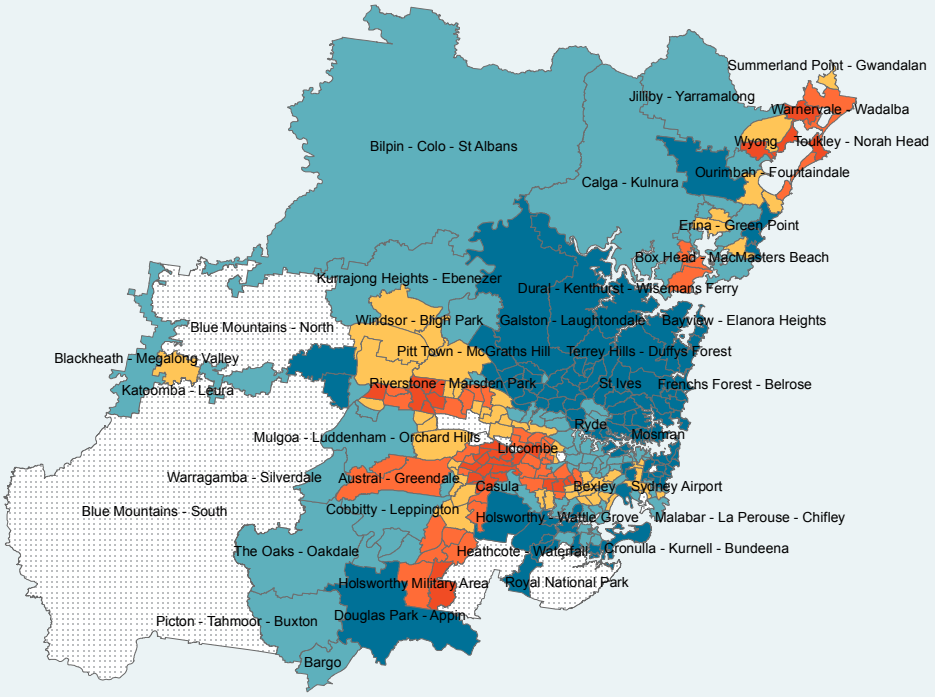
[5] Similar to previous reports, lower numbers signify greater disadvantage.

Willmot is a suburb within Blacktown City Council captured as part of the Lethbridge Park-Tregear SA2. Quantitative data used to both select and explore Willmot are based on the broader Lethbridge Park-Tregear data, however the qualitative data are restricted to Willmot only. Willmot was chosen due to the high number of indicators on which it is disadvantaged, as well as its demographic characteristics. Willmot has a high proportion of children aged 0 to 14 and a low proportion of people aged 65+, a high proportion of Indigenous people and a high proportion of people who do not speak English well or in some cases at all. Additionally, Jesuit Social Services works with the community in Willmot and hence was able to support data collection.

Seaham-Woodville is a rural SA2 located in the Hunter region. Seaham lies in the Port Stephens local government area, while Woodville is shared between Port Stephen and Maitland local governments. While all other case study locations were selected because they were disadvantaged in 2021, Seaham-Woodville was selected because it was not disadvantaged in 2021, having encouragingly had a number of indicators move out of the bottom 20% of disadvantage between the 2015 and 2021 reports. These improved indicators included juvenile convictions; prison admissions; family violence; unskilled workers; youth not in education, employment or training; NAPLAN scores; no post-school qualifications; and the Australian Early Development Census indicator.

Figure 3 Map of index for NSW and Greater Sydney





LEGEND

Inadequate data

Index Value 2021

Q1 (the most disadvantage)

Q2

Q3

Q4

Q5 (the least disadvantage)

Table 6 List of 40 most disadvantaged locations in NSW and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007 LIST	IN 2015 LIST
Most Disadvantaged Locations – listed alphabetically within bands					
1	Bidwill - Hebersham - Emerton[6]	18,781	Greater Sydney	Y	Y
	Bourke - Brewarrina	3,968	Rest of NSW	Y	Y
	Coonamble	4,069	Rest of NSW		Y
	Far West [7]	2,387	Rest of NSW	Y	Y
	Kempsey	15,373	Rest of NSW	Y	Y
	Nambucca Heads	6,841	Rest of NSW	Y	Y
	Port Kembla - Warrawong	10,068	Rest of NSW	Y	Y
	Tamworth - West	5,865	Rest of NSW		
	Tuncurry[8]	6,352	Rest of NSW	Y	Y
	Walgett - Lightning Ridge	6,145	Rest of NSW	Y	Y
2	Beresfield - Hexham	8,416	Rest of NSW		
	Broken Hill	17,269	Rest of NSW	Y	Y
	Casino	12,528	Rest of NSW	Y	
	Condobolin	6,455	Rest of NSW		
	Lethbridge Park - Tregear [9]	22,665	Greater Sydney	Y	Y
	Moree	8,176	Rest of NSW		Y
	Moree Region[10]	5,435	Rest of NSW		Y
	Mount Hutton - Windale[11]	9,192	Rest of NSW	Y	Y
	Taree	20,909	Rest of NSW	Y	Y
	Warilla	20,832	Rest of NSW		
3	Berkeley - Lake Heights - Cringila [12]	14,803	Rest of NSW	Y	Y
	Cessnock	23,875	Rest of NSW		
	Gilgandra	4,390	Rest of NSW		Y
	Grafton	19,019	Rest of NSW		
	Inverell	11,865	Rest of NSW	Y	Y
	Inverell Region - East[13]	5,208	Rest of NSW	Y	Y
	Mount Druitt - Whalan	23,748	Greater Sydney	Y	Y
	Tweed Heads South	8,444	Rest of NSW	Y	
	Wellington	9,413	Rest of NSW	Y	
	Wingham	5,471	Rest of NSW		

[6] Part of Postcode 2770 – Mt Druitt in 2015 report
[7] Part of the 2836 and 2840 postcodes in 2015 and the 2879 postcode in 2007
[8] Part of postcode 2428 – Forster postcode in 2015 report
[9] Part of postcode 2770 – Mt Druitt in 2015 report
[10] Part of postcode 2400 – Moree in 2015 report
[11] Part of postcode 2306 – Windale in 2007 and 2015 reports
[12] Part of postcode 2502 – Warrawong in 2007 and 2015
[13] Part of postcode 2360 - Inverell

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007 LIST	IN 2015 LIST
4	Cowra	9,280	Rest of NSW		
	Glen Innes	8,873	Rest of NSW		
	Lavington	15,208	Rest of NSW		
	Muswellbrook	12,364	Rest of NSW		
	Narrabri	7,340	Rest of NSW		
	Narrandera	6,048	Rest of NSW		
	Narromine	6,533	Rest of NSW		
	Raymond Terrace	13,995	Rest of NSW		
	Tenterfield[14]	6,470	Rest of NSW	Y	Y
	Windang - Primbee[15]	4,346	Rest of NSW	Y	Y
Least Disadvantaged Locations[16]					
	Balgowlah - Clontarf - Seaforth	21,614	Greater Sydney		
	Berowra - Brooklyn - Cowan	12,077	Greater Sydney		
	Cremorne - Cammeray	20,797	Greater Sydney		
	Lilli Pilli - Port Hacking - Dolans Bay	3,272	Greater Sydney		
	Lindfield - Roseville	25,691	Greater Sydney		
	Pymble	17,731	Greater Sydney		
	St Ives	22,042	Greater Sydney		
	Wahroonga (East) - Warrawee	18,498	Greater Sydney		
	Willoughby - Castle Cove - Northbridge	27,219	Greater Sydney		
	Woronora Heights	3,517	Greater Sydney		

[14] Part of postcode 2469 – Northern Rivers MSC in 2015 report
[15] Part of postcode 2502 – Warrawong in 2007 and 2015 reports
[16] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN NEW SOUTH WALES

This analysis moves beyond the index, which identifies overall disadvantage in a location using numerous indicators, to identifying locations of particularly deep disadvantage, where a location is disadvantaged on multiple indicators. Examination at the indicator level provides a more detailed picture than the summary index can.

For each of the 35 available indicators, we considered which locations were severely disadvantaged against that indicator. A location was considered severely disadvantaged on an indicator where it ranked in the top 5% most disadvantaged.

Table 7 records the number of locations that were ranked in the top 5% most disadvantaged against five or more separate indicators. In total, 73 locations experienced severe disadvantage across more than five indicators, together accounting for 55% of all top indicator positions.

We then took the analysis a step further, focusing on locations which were severely disadvantaged (ie top 5%) on at least eight indicators, and these are identified in Table 8. These 26 locations (4.6% of all locations) accounted for 29% of the most disadvantaged positions across New South Wales.

As identified in Table 7, seven locations in New South Wales had between 14 and 20 of the 35 indicators ranked in the top 5% most disadvantaged across the State. These locations are listed in Band 1 in Table 8, along with the next 19 locations in bands 2 to 5. Band 4 includes SA2 Lethbridge Park-Tregear where the case study community Willmot is located.

This analysis provides useful information regarding which indicators most frequently form part of the web of disadvantage in severely disadvantaged locations. The most common forms of severe disadvantage in locations ranking highly on at least eight indicators were jobless parents; family violence; youth not in employment, education or training; and leaving school before Year 10.

Most of the locations in Band 1 are also identified as in the most disadvantaged 10 locations using the index. This suggests that these two measures are identifying similar aspects of disadvantage. Whether we are using the index and looking at locations that score high on the overall index of disadvantage, or identifying locations that score in the top 5% on eight or more indicators, we arrive at a similar list of communities.

Table 7 Multilayered disadvantage – Number of locations with five or more indicators in the most disadvantaged 5% across NSW

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS[17]
5	25	125
6	11	66
7	11	77
8	6	48
9	3	27
10	4	40
11	3	33
12	1	12
13	2	26
14	3	42
15	1	15
18	2	36
20	1	20
Total (including locations not shown in table)	561	1,029

[17] Number of Positions is the number of indicators multiplied by number of locations

Table 8 List of locations with eight or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	Ashcroft - Busby - Miller	18,325	Greater Sydney
	Bidwill - Hebersham - Emerton	18,781	Greater Sydney
	Bourke - Brewarrina	3,968	Rest of NSW
	Coonamble	4,069	Rest of NSW
	Far West	2,387	Rest of NSW
	Moree Region	5,435	Rest of NSW
	Walgett - Lightning Ridge	6,145	Rest of NSW
2	Fairfield	19,151	Greater Sydney
	Kempsey	15,373	Rest of NSW
	Lurnea - Cartwright	12,644	Greater Sydney
	Moree	8,176	Rest of NSW
	Tamworth – West	5,865	Rest of NSW
3	Cabramatta - Lansvale	25,768	Greater Sydney
	Fairfield – East	16,532	Greater Sydney
	Nambucca Heads	6,841	Rest of NSW
	Port Kembla - Warrawong	10,068	Rest of NSW
	Taree	20,909	Rest of NSW
4	Fairfield – West	20,796	Greater Sydney
	Guildford - South Granville	23,937	Greater Sydney
	Lethbridge Park - Tregear	22,665	Greater Sydney
	Mount Hutton - Windale	9,192	Rest of NSW
	Windang - Primbee	4,346	Rest of NSW
5	Cobar	4,520	Rest of NSW
	Condobolin	6,455	Rest of NSW
	Tuncurry	6,352	Rest of NSW
	Warwick Farm	6,783	Greater Sydney

PERSISTENT DISADVANTAGE IN NEW SOUTH WALES

Persistent disadvantage is disadvantage that exists over time.

There are issues with comparing the summary index over time, due to different weights and indicators in each report, so we also analyse rankings over time on specific indicators that were directly comparable. The research identified situations where locations were disadvantaged against an indicator in both the 2015 and 2021 reports. The list of comparable indicators for New South Wales is shown in Table 9.

Table 9 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Juvenile offending	Juvenile convictions
Domestic violence	Domestic violence
Prison admissions	Prison admissions
Psychiatric admissions	Psychiatric admissions

The results showing the *number of locations* with indicators that stayed in the most disadvantaged 5% from 2015 to 2021, and the *number of indicators* that stayed in the top 5% in both reports, is shown in Table 10. Most locations in New South Wales do not have persistent disadvantage, with 509 locations having no indicator against which they ranked in the top 5% for both reports. However, a small number of locations do show persistent disadvantage at the indicator level. A total of 52 locations had at least one indicator in the most disadvantaged 5% in both the 2015 data and 2021 data. Seven of these showed persistent disadvantage against four or more indicators - these locations are listed in Table 11.

All of the locations in Table 11 are also identified in Table 8 as currently grappling with multilayered disadvantage, in either Band 1 or 2. And, further confirming their challenges, six of the seven are included in the list of most disadvantaged locations according to the index in both this and the 2015 report (Far West; Bourke-Brewarrina; Coonamble; Moree; Walgett-Lightning Ridge; and Fairfield in Greater Sydney). Clearly, these locations are facing disadvantage on multiple fronts, and have done so over a long period.

Table 10 Numbers of locations in New South Wales with persistent disadvantage

NUMBER OF INDICATORS IN TOP 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	509
1	31
2	8
3	6
4	1
5	2
6	3
7	1

Table 11 NSW Locations with persistent disadvantage

SA2 NAME	PERSISTENT DISADVANTAGE	POPULATION	REGION
Bourke – Brewarrina	Y (Band 1)	3,968	Rest of NSW
Coonamble	Y (Band 1)	4,069	Rest of NSW
Fairfield	Y (Band 2)	19,151	Greater Sydney
Far West	Y (Band 1)	2,387	Rest of NSW
Moree[18]	Y (Band 2)	8,176	Rest of NSW
Moree Region	Y (Band 1)	5,435	Rest of NSW
Walgett - Lightning Ridge	Y (Band 1)	6,145	Rest of NSW

[18] In the ABS geography used, Moree is the town of Moree; and Moree Region is the area around Moree

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN NEW SOUTH WALES

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact on where a location stands in the rankings (ie key drivers of the index). The indicators identified in this process, in turn, signal broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations. The analysis therefore moves to considering the 3% most disadvantaged locations in New South Wales, and the level of overrepresentation of certain forms of disadvantage in those locations relative to the rest of the state.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 12.

It can be seen that low income contributed most to the index in New South Wales. Low income was also identified as important for the ABS Socio-Economic Index for Areas (SEIFA) national index, and has been identified as a key driver in many of the other states.

In New South Wales, particulate matter was also a large contributor to the final index. This indicator is also in industrial and mining locations. The large disadvantaged locations in western New South Wales would also be affected by sand blown in from the desert, which is a source of particulate matter. Particulate matter has also presented as a strong contributor to the index in many other States.

Table 12 Indicators that contributed most to the index in NSW

DOMAIN	INDICATOR	LOADING
SOCIAL DISTRESS	% with low family Income (<$650 per week)	0.7
ENVIRONMENT	Particulate matter	0.62
EDUCATION	% who left school before Year 10	0.62
SOCIAL DISTRESS	% with no Internet at home	0.61

Influences in Severely Disadvantaged Locations – the 3%:97% ratio

Addressing challenges in the state's locations experiencing extreme disadvantage should be a priority. Dropping off the Edge helps identify what these challenges are. To do this, the report looks at the average value for indicators in the most disadvantaged locations (the top 3% on the index) compared to all other locations (the 97%). While the 3% is picking up the extremes of disadvantage (16 locations across New South Wales), the indicators help to identify what to focus on to have an impact on moving these locations out of disadvantage.

As an example, in Table 13 it can be seen that the value for percentage of people living in public housing in the top 3% of locations according to the index is 13.2%, while in all other locations in New South Wales it is 3%. This gives a ratio of 4.4.

The results from the 3%:97% analysis are shown in Table 13. In New South Wales, the indicator that was highest in the most disadvantaged locations compared to other locations was the public housing indicator. In the most disadvantaged locations, this was 4.4 times what it was everywhere else. It is to be expected that public housing is more common in areas of disadvantage - availability of public housing is an important social support for those facing disadvantage. However, given that public housing often houses people with complex problems, the high representation against this indicator provides useful information to policy makers and community service organisations in seeking to address issues in an area.

Community safety data were also important, with indicators for prison admissions; juvenile convictions; and family violence having ratios above 3.

Comparing these to the indicators that drove the index, it can be seen that they are quite different. Low family income and particulate matter are generally associated with locations of disadvantage across New South Wales; while those locations in extreme disadvantage have higher public housing, family violence, juvenile convictions and prison admissions.

These results are consistent with the results in other states where this analysis could be completed, which shows community safety factors and living in public housing are common in these very disadvantaged locations. While these indicators were used in the index (see Table 5), other indicators in the index contributed more strongly to a measure of general disadvantage. It appears that locations facing extreme disadvantage are dealing with particular challenges that may not be the major concerns in locations that are experiencing disadvantage but not at the extreme end.

Table 13 Multipliers for indicators in most disadvantaged 3% of NSW locations

INDICATOR	VALUE FOR TOP 3%	VALUE FOR OTHER 97%	RATIO
% people in public housing	13.2%	3.0%	4.4
Family violence per 1,000 population	23.3	5.7	4.1
Juvenile convictions per 1,000 population	24.4	6.2	4.0
Prison admissions per 1,000 population	4.6	1.4	3.3
Heat vulnerability	26.8	9.3	2.9
% families with jobless parents	33.5%	12.2%	2.7
% child maltreatment	2.6%	1.0%	2.7
% aged under 24 and not in Education, Employment or Training (NEET)	24.2%	10.0%	2.4
% receiving Disability Support Pension	12.2%	5.1%	2.4
% experiencing long-term (>1 year) unemployment	3.3%	1.5%	2.3

Indicators identified as disadvantaged in Lethbridge Park – Tregear – where the case study location Willmot is found - are similar to those in Table 13, including public housing which was over seven times the New South Wales average. The level of public housing is not surprising given the development history of Willmot as a location of government housing, although many residents now own their houses:

> **"There's not too many [government houses]. I think it's 15% or 20% of houses now as commission houses. But when we walked in into Willmot in 1972, we bought our houses from housing and it's all ours. Our house is ours now." (Willmot focus group participant)**

Disadvantaged indicators in Lethbridge Park – Tregear also included prison admissions, juvenile convictions and family violence – all of which were more than 2.5 times the New South Wales average. While study participants spoke at length about crime across Willmot, both real and perceived, they did not comment explicitly on adult prison admissions, juvenile convictions or family violence. Instead, much of the focus was on the prevalence of both drug use and 'hoons', including the impact of such behaviours on their life within the community. When asked if they feel safe walking at night, one focus group, with most group participants having young children or grandchildren, all indicated they did not feel safe at night:

> **"You just don't know who's going to come out of the trees at night. … You don't know who's, sorry to say, shooting up around the corner and they become aggressive. … You don't know if it's safe to cross that road with your children. If there's a hoon coming up on a motor bike without a helmet doing a wheelie." (Willmot focus group participants)**

However, not everyone felt unsafe, with one participant in the other focus group who had lived in Willmot for several decades feeling safe in her local surrounds:

> **"I do feel safe when I walk. We talk to each other. I have good neighbours and good surroundings. Not only my street but the surrounding [streets], they are all good neighbours." (Willmot focus group participant)**

Concern regarding antisocial behaviour affected some young families, who were not willing to use local recreation facilities due to drug paraphernalia and hooning:

> **"I don't feel comfortable bringing my daughter up here to shoot hoops at the basketball hoop or play on the equipment, because … I'm going to have to scale the whole area for needles … before I let her go play. And then I've got to stop and keep an eye out for the idiots that are going to want to come and a) have a shot while I am there, or b) go hooning through." (Willmot focus group participant)**

Several focus group participants thought that an increased police presence would help to mitigate these behaviours:

> **"A lot of that could be handled with increased the police patrol. We very rarely have any police going around. This is like a little bit of a cul-de-sac and because Willmot is so isolated, it's so easily forgotten." (Willmot focus group participant)**

SIGNS OF IMPROVEMENT IN NEW SOUTH WALES

The focus in this report has been on disadvantaged locations and multilayered and persistent disadvantage. However, Dropping off the Edge research also points to locations where improvements have been made, including where locations have moved out of the most disadvantaged 5% against some indicators. This might be due to government or community programs, instances of urban renewal and gentrification, or a range of other reasons such as strong leadership or increased job opportunities. While we can identify these locations based on indicator movement, further research would be needed to consider the reasons and magnitude of improvements.

For this analysis, the indicators that were comparable over time were used. The list of 20 comparable indicators was also used for the analysis of persistent disadvantage, and is shown in Table 9. The analysis focuses on the 102 locations in New South Wales that had one or more indicators in the top 5% in 2015, and considers whether the locations have shifted disadvantage on any of those indicators such that they are no longer in the top 5% in 2021. The number of locations with indicators moving out of disadvantage in New South Wales is shown in Table 14. (The 368 locations that recorded no indicator rankings in the top 5% in 2015 are not examined in this analysis).

Table 14 Number of locations in NSW with indicators improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVED	NUMBER OF LOCATIONS
0	91
1	71
2	17
3	11
4	1
5	2

It is clear that the number of indicators moving out of the most disadvantaged 5% is very small. However, we can see that two locations managed this improvement on five different indicators, while a single location improved on four. Including those locations, a total of 14 locations had 3 or more indicators moving out of the top 5% of disadvantage. These 14 are shown in Table 15.

Table 15 Locations with three or more indicators moving out of highest disadvantage in 2021 compared to 2015

BAND	SA2 NAME	POPULATION	REGION
1	Far West	2,387	Rest of NSW
	Guildford West - Merrylands West	22,863	Greater Sydney
	Mount Druitt - Whalan	23,748	Greater Sydney
	Mudgee Region - East	3,454	Rest of NSW
	Walgett - Lightning Ridge	6,145	Rest of NSW
2	Bourke - Brewarrina	3,968	Rest of NSW
	Brunswick Heads - Ocean Shores	9,003	Rest of NSW
	Fairfield - East	16,532	Greater Sydney
	Guildford - South Granville	23,937	Greater Sydney
	Inverell Region - West	6,143	Rest of NSW
3	Byron Bay	10,890	Rest of NSW
	Kempsey Region	9,205	Rest of NSW
	Pagewood - Hillsdale - Daceyville	13,205	Greater Sydney
	Parkes Region	3,346	Rest of NSW

Drilling down further, we can look for any commonalities in the indicators against which communities managed improvements. For six of these 14 locations, for example, long-term unemployment improved. Ten of them shifted out of the most disadvantaged cohort on NAPLAN results. Additional research would be needed to determine whether specific programs were contributing to these improvements.

INSIGHTS FROM THE QUALITATIVE RESEARCH

As shown above, Willmot experiences multilayered and persistent disadvantage and the community understands this. Study participants, while not representative of the whole community, were engaged with their community and seemingly ready to drive the changes needed to 'break the cycle' and address the root causes of disadvantage they see as a priority, particularly relating to challenges with young people:

> **"Take responsibility for your own community. Start with the youth for a better community, something has to be done for the youth. The cycle needs to be broken." (Willmot focus group participant)**

The focus group in Lethbridge Park-Tregear confirmed that public housing and crime were an issue, with some respondents also highlighting substance abuse.

Focus group participants from Seaham-Woodville felt that some underlying community disadvantage, including around child maltreatment and mental health concerns, was largely being overlooked due to broader community challenges which consume much of the community's resources:

> **"I've been recently made aware of a family that's going through child protection issues and people would have no idea that those things are going on in this lovely little area." (Seaham-Woodville focus group participant)**

> **"I think [mental health concerns] have really increased too. There's a lot of fatigue…that the people that have tried to make change or have positivity in the community have been squashed down….It's disillusioning and … takes the heart from the community out." (Seaham-Woodville focus group participant)**

Concerns were also raised as to the local availability of services for people affected by mental health or domestic violence following an experience in trying to help a young women impacted by domestic violence:

> **"I mean, where does someone go? Someone that's got mental health [issues]. They'd want to connect, even if it's just to connect and talk to someone who's a little bit skilled and understands mental health first aid, [but] we don't really have that." (Seaham-Woodville focus group participant)**

> **"I could not find that woman a place to stay for the night. … I spent about three hours trying to find a place for that woman to go, in the end I took it to Raymond Terrace police station. … but I couldn't find her a place to stay. There's nothing if you can't go into [women's shelter where you have to book]." (Seaham-Woodville focus group participant)**

This lack of available services in Seaham-Woodville was supported by conversations with service providers located in Maitland and Raymond Terrace, an additional 10-20 minute drive away, who indicated that there are no service providers consistently active in Seaham-Woodville, and they had little information about what services were available. The expectation is that residents needed to go to either Maitland, Raymond Terrace or Newcastle to access services.

Further detail on participants' perceptions of what is needed for their communities to improve and thrive is provided in Chapter 12.

CONCLUSIONS

Disadvantage is concentrated in a small number of locations in New South Wales, with seven areas, or 1% of locations, accounting for 11% of the most disadvantaged rank positions across all indicators.

The results for New South Wales show the largest number of disadvantaged locations were outside Greater Sydney. Similar to other states, many of the locations of high disadvantage on the index also experienced multilayered and persistent disadvantage when the indicators were used.

At the extreme end of disadvantage, locations are disproportionately affected by family violence and engagement with the criminal justice system. There are high levels of public housing in these communities and heat vulnerability is a problem.

At a more general level, low income was most strongly associated with disadvantage across the state, having the strongest impact on the summary index.

The study area of Seaham-Woodville was an interesting one for this research, as it was the only location studied that was not in the most disadvantaged quintile of the index. However, many of the participants still felt that Seaham-Woodville was disadvantaged in several domains, and this was not getting the attention needed. Participants also felt that service provision in Seaham-Woodville was lacking, and this would affect how people perceived the area.

Overall, New South Wales shows as a state with locations of multilayered and persistent disadvantage both in Greater Sydney and outside Greater Sydney. Public housing and crime were prominent in highly disadvantaged locations on the indicator analysis, while low income was prominent in the index.

CHAPTER 5
VICTORIA

VICTORIA

In Victoria, disadvantage is disproportionately borne by a small number of locations, many of which are facing challenges in multiple areas. The research found that 5% of the total locations (24 SA2s[19]) accounted for 29% of the most disadvantaged positions across all indicators. Five locations, about 1% of all communities, accounted for 9% of the most disadvantaged positions.

The index shows that most of the disadvantage in Victoria was outside Greater Melbourne. Twenty-five of the 40 most disadvantaged locations were outside Greater Melbourne, even though only one third of all SA2 locations were outside Greater Melbourne. However, six of the 10 most disadvantaged locations were in Greater Melbourne, which is consistent with two thirds of all SA2 locations being within Greater Melbourne.

As such, some of the locations with very high levels of disadvantage are in Greater Melbourne; but generally disadvantage is over-represented outside Greater Melbourne. A similar result was found for poverty rates in Victoria – while there were more locations of poverty outside Melbourne, the locations of extreme poverty (high and low) were in Melbourne (Tanton et al., 2018).

The indicators that contributed most to the index in Victoria were: low income; low levels of education; family violence and prison admissions. The fact that they loaded most strongly on the index means they gave the strongest representation of the underlying dimension of disadvantage in Victoria.

In the 2021 report, a number of new environment indicators were added. For many states, these indicators were a large contributor to the index – in New South Wales, Queensland and Western Australia particulate matter was the highest or second highest contributor. In Victoria, particulate matter was not ranked as highly as in other states, nevertheless its loading on the index was still quite high (0.64).

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

When a location is disadvantaged against a number of individual indicators, we call this multilayered disadvantage. When looking at this analysis, seven of the top ten locations with multilayered disadvantage are in Greater Melbourne (see Table 18). This metro focus is not seen to the same extent in New South Wales (four in the top 12 are in Sydney) and Queensland (two in the top 10 in Brisbane).

[19] There are 462 SA2s across Victoria, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 454 SA2s in total. There were 305 in Greater Melbourne and 149 outside Greater Melbourne. A map of the SA2s in Greater Melbourne and Victoria is shown in Figure 3. Areas that are stippled in this map were not included in the index because there were less than 30 people or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

WHAT DATA WERE INCLUDED IN VICTORIA

Data were available in Victoria for all 37 indicators. As addressed in other chapters, most data were collected in a consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other jurisdictions record the offender's address at the time of sentencing. The residential address of the offender at the time of the crime was recorded in Victoria. This was possible because courts and police data were linked, and offences could therefore be tracked back to the police report.

The data for nature reserves in the environment domain were unreliable for Victoria, so were not used in the indicator analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report, and it did not work particularly well in any of the states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for Victoria, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was 25, so over the 454 locations in Victoria, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

The list of indicators and domains available for Victoria are shown in Table 16. Indicators in bold are those that were included in the index, while indicators not in bold type were dropped from the index because they did not contribute strongly enough. Indicators in italics were not included in the indicator analysis for Victoria due to problems with the data.

Table 16 List of domains and indicators for Victoria

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENT	LIFETIME DISADVANTAGE
Low Family Income	**Receiving Disability Support Pension**	Confirmed Child maltreatment	**Unskilled workers**	Year 3 NAPLAN Numeracy	**Particulate matter**	**Teenage childbearing**
Volunteering	Psychiatric admissions	**Juvenile convictions**	Underemployment	Year 3 NAPLAN Literacy	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Prison admissions**	**Long-term unemployment**	Year 9 NAPLAN Numeracy	**Heat stress**	
Access to shops	Suicide rates	**Domestic violence**	**Young adults not in Employment, Education or Training**	Year 9 NAPLAN Literacy	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		Housing stress	**School attendance**		
Overcrowding			Public housing	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	Young childhood Development (AEDC)		

WHERE DISADVANTAGE IS LOCATED IN VICTORIA

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This summary index number will be lower for locations that experience multilayered disadvantage – disadvantage that occurs across several indicators. The index is a useful summary to identify disadvantage, but a limitation is that the detail of individual indicators is lost. In the next sections of this report this analysis of individual indicators occurs, in order to drill down further into the disadvantage experienced across a range of domains: economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 40 most disadvantaged locations in Victoria can be identified. These locations are shown in Table 17, which shows disadvantage in four bands of 10 locations. As with all lists of places in this report, they are listed in alphabetical order within each band, rather than in order of disadvantage. Six of the 10 locations of highest disadvantage are in the Greater Melbourne area, with the remainder being in regional Victoria. This could be because there is a greater range of diversity in cities, so they tend to have the most disadvantaged, and least disadvantaged locations. It could also be because there are more SA2s in Greater Melbourne compared to regional areas in Victoria (two thirds of the SA2s are in Greater Melbourne). Further investigation would be required to determine the reason for this result.

All of the least disadvantaged locations in Victoria were in Greater Melbourne. Many of the disadvantaged locations in Greater Melbourne had larger populations compared to the least disadvantaged locations.

Table 17 also shows whether the location was in the most disadvantaged 40 locations in 2015 or 2007. Note that these different indexes are not comparable, as several new indicators were added in 2021. Further, geographic boundary changes mean we have had to align the postcodes used in 2015 and 2007 with the SA2s used in 2021. This has been done using a Postal Area to SA2 concordance from the ABS. Despite these disclaimers, the comparison between the 2021 and previous indexes gives an indication of persistent disadvantage.

Most of the locations (31 out of 40) were in the top 40 disadvantaged locations in 2015. Many of them were also in the same band – six of the top ten in 2021 were also in Band 1 in 2015. Five of them were in the most disadvantaged 40 in both 2007 and 2015, with three in Band 1 in all three reports. Of those in the top 10 in 2021, all of them were in the 2015 list of 40 most disadvantaged locations. This suggests considerable persistence in disadvantage, despite the changes in the indicators that feed into the index in different reports.

Figure 4 shows a map of the index for Victoria and Greater Melbourne. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index scores. In Victoria, there are about 90 SA2s in each quintile. This is the same approach used by the ABS to group the SEIFA indexes.

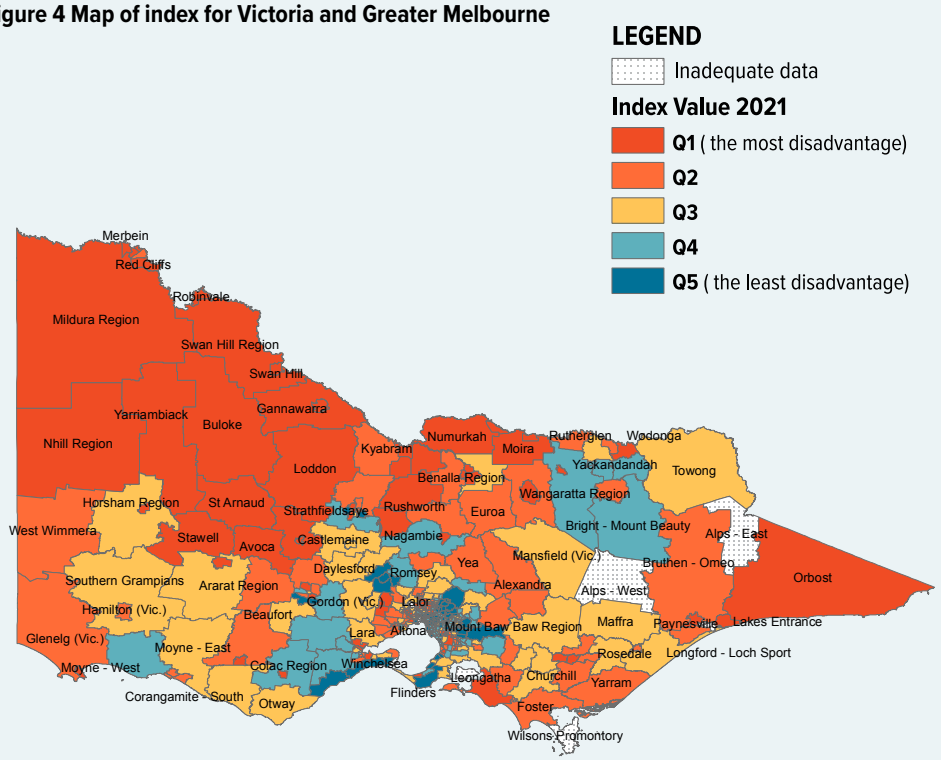
The map highlights that most of the least disadvantaged locations (Q5) were in Greater Melbourne. Many of the disadvantaged locations in Victoria (Q1) were outside Greater Melbourne, and in the far north-west of the state.

To better understand the nature of disadvantage and to provide some subjective experience of disadvantage as it relates to the quantitative data, a qualitative methodology was added to Dropping off the Edge in 2021 (see Chapter 3). In Victoria we gathered qualitative data from two locations, Swan Hill and the broader Melton region which includes three SA2 locations. The qualitative results shown in this chapter represent the comments of those involved in the focus groups and interviews in these communities.

Located on the Murray River in the north of the state, Swan Hill is a regional town within the broader Rural City of Swan Hill Local Government Area. In terms of level of disadvantage, it was ranked in quintile 1 - most disadvantaged 20% of locations. Swan Hill was selected due to its location, its mix of temporally consistent and temporally diverse indicators and its ageing population.

Melton is an urban location on the western fringe of Greater Melbourne. Located in a key growth corridor, Melton has seen considerable change over recent decades and was also selected due to the mix of indicators staying the same and moving over time. Melton includes three SA2 locations and study participants were recruited from across all of them. In terms of level of disadvantage, Melton, Melton South and Melton West were all in the most disadvantaged quintile in Victoria. Each location has slightly different indicators of interest and each of these will be identified where applicable.

Figure 4 Map of index for Victoria and Greater Melbourne



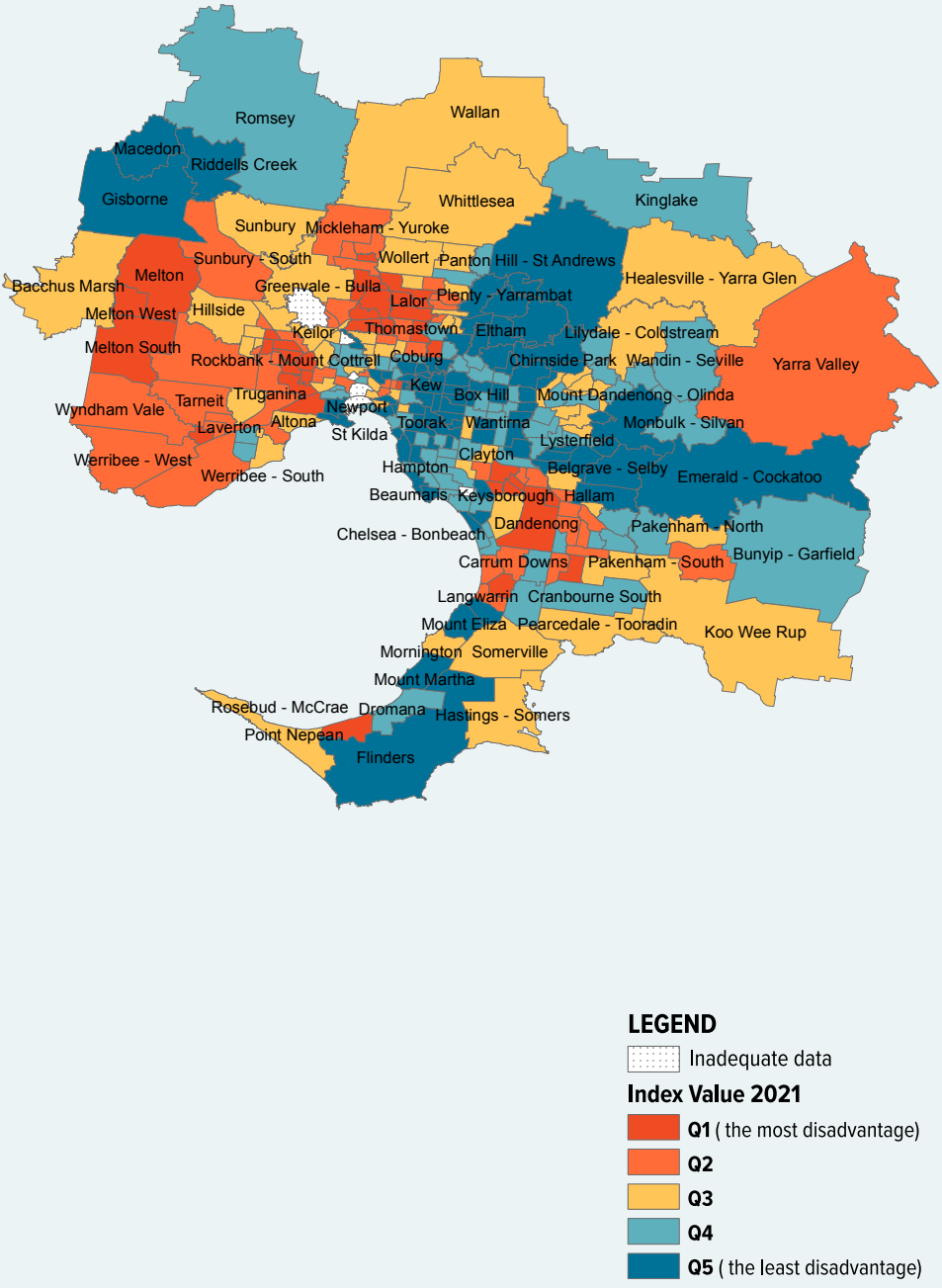

Romsey
Wallan
Macedon
Riddells Creek
Gisborne
Whittlesea
Kinglake
Sunbury
Mickleham - Yuroke
Sunbury - South
Wollert
Panton Hill - St Andrews
Melton
Bacchus Marsh
Greenvale - Bulla
Plenty - Yarrambat
Healesville - Yarra Glen
Lalor
Melton West
Hillside
Keilor
Thomastown
Eltham
Lilydale - Coldstream
Melton South
Rockbank - Mount Cottrell
Coburg
Chirnside Park
Wandin - Seville
Yarra Valley
Kew
Box Hill
Mount Dandenong - Olinda
Truganina
Tarneit
Wyndham Vale
Newport
Toorak
Wantirna
Monbulk - Silvan
Laverton
Altona
St Kilda
Lysterfield
Clayton
Werribee - West
Hampton
Belgrave - Selby
Emerald - Cockatoo
Werribee - South
Beaumaris
Keysborough
Hallam
Dandenong
Pakenham - North
Chelsea - Bonbeach
Bunyip - Garfield
Carrum Downs
Pakenham - South
Langwarrin
Cranbourne South
Mount Eliza
Pearcedale - Tooradin
Koo Wee Rup
Mornington
Somerville
Mount Martha
Rosebud - McCrae
Dromana
Hastings - Somers
Point Nepean
Flinders
LEGEND
Inadequate data
Index Value 2021
Q1 (the most disadvantage)
Q2
Q3
Q4
Q5 (the least disadvantage)

Table 17 List of 40 most disadvantaged locations in Victoria and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	LOCATION	IN LIST IN 2007	IN LIST IN 2015
Most Disadvantaged Locations – listed alphabetically within bands					
1	Broadmeadows	14,512	Greater Melbourne	Y	Y
	Campbellfield - Coolaroo[20]	16,989	Greater Melbourne	Y	Y
	Corio - Norlane	27,622	Rest of Vic.	Y	Y
	Dandenong	34,199	Greater Melbourne		Y
	Doveton	12,433	Greater Melbourne	Y	Y
	Maryborough (Vic.)	8,006	Rest of Vic.	Y	Y
	Meadow Heights[21]	15,732	Greater Melbourne		Y
	Mildura - North	18,690	Rest of Vic.		Y
	Morwell	14,004	Rest of Vic.		Y
	St Albans - North	21,624	Greater Melbourne		Y
2	Bendigo	14,703	Rest of Vic.		
	Cobram	6,426	Rest of Vic.		
	Kings Park (Vic.)[22]	14,550	Greater Melbourne		Y
	Moe - Newborough	16,844	Rest of Vic.		Y
	Mooroopna	8,137	Rest of Vic.		Y
	Robinvale	3,302	Rest of Vic.	Y	Y
	Seymour	6,439	Rest of Vic.		Y
	Shepparton - South	24,829	Rest of Vic.		Y
	St Albans - South	18,403	Greater Melbourne		Y
	Thomastown	21,510	Greater Melbourne		Y
3	Benalla	10,492	Rest of Vic.	Y	Y
	California Gully - Eaglehawk	13,252	Rest of Vic.	Y	Y
	Lalor	25,249	Greater Melbourne		Y
	Mildura - South	15,229	Rest of Vic.		Y
	Red Cliffs	5,991	Rest of Vic.		Y
	Roxburgh Park - Somerton	25,372	Greater Melbourne		
	Sunshine North[23]	12,525	Greater Melbourne		Y
	Sunshine West	20,207	Greater Melbourne		Y
	Wendouree - Miners Rest	15,173	Rest of Vic.		Y
	Yarriambiack	6,536	Rest of Vic.		

[20] 60% of Broadmeadows and 40% of Campbellfield-Coolaroo are in postcode 3047 – Broadmeadows in the 2015 report
[21] 82% of Meadow Heights SA2 is within postcode 3048 – Coolaroo in the 2015 report
[22] This was part of postcode 3021 – St Albans in the 2015 report
[23] Sunshine North and Sunshine West are part of the postcode 3020 – Albion in the 2015 report

Table 17 List of 40 most disadvantaged locations in Victoria and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	LOCATION	IN LIST IN 2007	IN LIST IN 2015
4	Frankston North	19,894	Greater Melbourne		Y
	Kerang	3,815	Rest of Vic.		
	Loddon	7,003	Rest of Vic.		Y
	Maryborough Region	5,323	Rest of Vic.	Y	Y
	Merbein	4,854	Rest of Vic.		Y
	Newcomb - Moolap	15,089	Rest of Vic.		
	Noble Park - West	20,153	Greater Melbourne		
	Orbost	6,461	Rest of Vic.	Y	Y
	Rushworth	4,057	Rest of Vic.		
	Yarrawonga	8,504	Rest of Vic.		
Least Disadvantaged Locations [24]					
	Beaumaris	14,927	Greater Melbourne		
	Eltham	24,296	Greater Melbourne		
	Glen Iris - East	17,658	Greater Melbourne		
	Ivanhoe East - Eaglemont	8,202	Greater Melbourne		
	Lysterfield	6,990	Greater Melbourne		
	Macedon	3,639	Greater Melbourne		
	Mount Eliza	19,235	Greater Melbourne		
	Research - North Warrandyte	7,107	Greater Melbourne		
	Surrey Hills (East) - Mont Albert	10,625	Greater Melbourne		
	Warrandyte - Wonga Park	10,547	Greater Melbourne		

[24] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN VICTORIA

This analysis moves beyond the index, which identifies overall disadvantage in a location using numerous indicators, to identify locations of particularly deep disadvantage using 35 separate indicators. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged – in this instance, the top 5% most disadvantaged. Examination at the indicator level provides a more detailed picture than the summary index can.

The results for this analysis are shown in Table 18. This table shows locations that were ranked in the top 5% most disadvantaged on five or more separate indicators. There were 61 in total.

This was similar to the results in 2015, which used larger geographies (postcodes) and found that 27 postcodes (4% of the total postcodes) accounted for 28% of the top rank positions. The results in 2007 were similar – 44 postcodes (7% of the total) accounted for 35% of the top positions.

We then took the analysis a step further, focusing on areas which were severely disadvantaged (ie top 5%) on *at least eight indicators*, and these are identified in Table 19. This analysis shows that 24 locations in Victoria had showed severe disadvantage on eight or more indicators, suggesting that disadvantage is deep in these locations. Five locations in Victoria had between 14 and 20 indicators ranked in the top 5%. These locations are listed in Band 1 along with the next 19 locations in Bands 2 to 4.

The locations in Band 1 are also listed in the 10 most disadvantaged locations using the index. This suggests the two measures are identifying similar aspects of disadvantage.

Fourteen of the 24 locations listed in Table 19 are in Greater Melbourne, with three of the top five in Greater Melbourne. This reinforces the point that most of the extreme disadvantage is in Greater Melbourne. This is only slightly different to the summary index, which showed that nine of the top 20; and six of the top 10 most disadvantaged locations were in Greater Melbourne. This concentration of extreme disadvantage in Greater Melbourne was also found in an analysis of poverty rates in Victoria (Tanton et al., 2018). However, it is important to note that two thirds of the SA2 locations are located in Greater Melbourne (305 of 454 SA2 locations) and therefore a correspondingly high number of disadvantaged locations could be expected.

Analysis at the indicator level provides useful information regarding which indicators most frequently form part of the web of disadvantage in severely disadvantaged locations. The most common forms of severe disadvantage in locations ranking highly on at least eight indicators were jobless parents; low income; youth not in employment, education or training; and leaving school before Year 10.

Case study communities of Swan Hill and Melton both experience disadvantage on a number of indicators, although on different indicators. Swan Hill is disadvantaged (ie top 5% most disadvantaged) across four indicators - the proportion of reported child maltreatment (which is 4.4 times the national average) and three environment indicators.

Although child maltreatment was not acknowledged directly, study participants talked about existing intergenerational challenges which are difficult to effectively address:

> **"We do have a lot of generational poverty within Swan Hill…We're trying to have community programs that try and combat that, but we seem to never be on the front foot of that. We're always trying to play catch up." (Swan Hill interview participant 1)**

All three Melton SA2 areas (Melton, Melton South and Melton West) had multiple indicators in the top 5% disadvantaged. Melton is disadvantaged on two indicators - prison admissions per 1000 population and proportion of people under 24 not in education, employment or training. Melton South was disadvantaged on five indicators - proportion of people under 24 not in education, employment or training; proportion of reported child maltreatment; juvenile convictions per 1000 population; proportion of children whose school attendance rate is at least 90% and proportion of households receiving rent assistance. Like Melton South, Melton West was identified as being disadvantaged on juvenile convictions per 1000 population as well as the proportion of children failing to attain minimum standards in the NAPLAN Year 3 numeracy test.

While there are seven different indicators in the top 5% of disadvantage across the broader Melton community, some of these are potentially interrelated. For example, repeated truancy substantially increases the risk of juvenile criminal activity[25] , with community participants identifying the challenges of engaging young people in the local community:

> **"I think an underlying problem is the level of disengagement of the young teens. We're not talking about the young children, it's the 13 to 18 year-olds. They feel like they need something to do, so if there's nothing there it's obvious that they're going to be looking for something to do whether it's joining a gang… our kids are being influenced by so many things." (Melton focus group)**

Many participants commented on the lack of tertiary education opportunities within the Melton community, with students having to travel to Sunshine or into Melbourne for TAFE and/or university education. This is problematic due to poor access to transport, and may be contributing to the high levels of young adults not in employment, education or training:

> **"And why did they get rid of the TAFE? I mean, why on earth get rid of a perfectly usable TAFE where kids could have done apprenticeships and things like that. Because they want everyone going into the city. But kids doing apprenticeships? We need a base here for kids that they can actually work through." (Melton focus group)**

[25] See for example https://www.alrc.gov.au/publication/seen-and-heard-priority-for-children-in-the-legal-process-alrc-report-84/10-children-in-education/truancy/

Table 18 Multilayered disadvantage – Number of locations with five or more indicators in the most disadvantaged 5% across Victoria

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS[26]
5	24	120
6	8	48
7	5	35
8	10	80
9	1	9
10	2	20
11	2	22
12	3	36
13	1	13
14	1	14
16	2	32
19	1	19
20	1	20
Total (including locations not shown in table)	454	946

[26] Number of Positions is the number of indicators multiplied by number of locations

Table 19 Multilayered disadvantage - List of locations with eight or more indicators in the top 5%

BAND	SA2 NAME	POPULATION	REGION
1	Broadmeadows	14,512	Greater Melbourne
	Campbellfield - Coolaroo	16,989	Greater Melbourne
	Corio – Norlane	27,622	Rest of Vic.
	Meadow Heights	15,732	Greater Melbourne
	Morwell	14,004	Rest of Vic.
2	Dandenong	34,199	Greater Melbourne
	Doveton	12,433	Greater Melbourne
	Kings Park (Vic.)	14,550	Greater Melbourne
	Maryborough (Vic.)	8,006	Rest of Vic.
	St Albans – South	18,403	Greater Melbourne
3	Delahey	8,747	Greater Melbourne
	Mildura – North	18,690	Rest of Vic.
	Moe – Newborough	16,844	Rest of Vic.
	Seymour	6,439	Rest of Vic.
	St Albans – North	21,624	Greater Melbourne
4	California Gully - Eaglehawk	13,252	Rest of Vic.
	Collingwood	11,529	Greater Melbourne
	Robinvale	3,302	Rest of Vic.
	Springvale	23,882	Greater Melbourne
	Sunshine North	12,525	Greater Melbourne
5	Newcomb – Moolap	15,089	Rest of Vic.
	Roxburgh Park - Somerton	25,372	Greater Melbourne
	Thomastown	21,510	Greater Melbourne
	Wendouree - Miners Rest	15,173	Rest of Vic.

PERSISTENT DISADVANTAGE IN VICTORIA

Persistent disadvantage is disadvantage that exists over time.

There are some problems with comparing the summary index over time, due to different weights and indicators in each report, so this analysis considers rankings over time on specific indicators that were directly comparable. The research identified situations where locations were disadvantaged against an indicator in both the 2015 and 2021 reports. The list of comparable indicators for Victoria is shown in Table 20.

Table 20 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Juvenile offending	Juvenile convictions
Domestic violence	Domestic violence
Prison admissions	Prison admissions

This list is a mix of locations in Greater Melbourne and regional Victoria. Five of the six are also in the list of locations with multilayered disadvantage, with high levels of disadvantage on at least 8 indicators (see Table 19). Indeed, four of the six were in Band 1 of the list of multilayered disadvantage, while Maryborough[27] was in Band 2.

It is clear that in Victoria, locations that experience multilayered disadvantage also generally experience persistent disadvantage whether in Greater Melbourne or outside Greater Melbourne.

Table 21 Numbers of locations in Victoria with persistent disadvantage

NUMBER OF INDICATORS IN TOP 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	404
1	33
2	11
3	2
4	2
5	1
6	1

Table 22 Victorian Locations with persistent disadvantage

SA2 NAME	PERSISTENT DISADVANTAGE	POPULATION	REGION
Broadmeadows	Y (Band 1)	14,512	Greater Melbourne
Campbellfield - Coolaroo	Y (Band 1)	16,989	Greater Melbourne
Corio – Norlane	Y (Band 1)	27,622	Rest of Vic.
Maryborough (Vic.)	Y (Band 2)	8,006	Rest of Vic.
Maryborough Region	N	5,323	Rest of Vic.
Meadow Heights	Y (Band 1)	15,732	Greater Melbourne

[27] Note that the ABS has a "Maryborough Region" and "Maryborough (Vic)" SA2. The Maryborough region is the area surrounding the town of Maryborough.

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN VICTORIA

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact on where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations. The analysis therefore moves to considering the 3% most disadvantaged areas in Victoria, and the level of overrepresentation of certain forms of disadvantage in those areas relative to the rest of the state.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index of disadvantage, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 23.

The indicator that contributed most to the index in Victoria was low income. Education is also a high contributor to the index in Victoria, particularly those leaving school before Year 10. Some of the community safety indicators were also high on the list of contributors to the index.

These results are similar to the results from the ABS Socio-Economic Index for Areas (SEIFA) national index, where low income is the most important indicator. No internet was also important in the SEIFA index, ranking as the 5th most important indicator for Victoria.

One of the environment indicators (particulate matter) also had a loading above 0.6, confirming that environment indicators contribute to the index and that this domain was an important addition in this report. Particulate matter has also been identified as an important indicator in other state indexes. In Victoria, it was possibly driven by the closeness of disadvantaged locations to industrial and mining locations, including power stations. For example, Morwell and Moe – Newbourough were in the list of most disadvantaged locations in Victoria, and are close to Yallourn power station and an open cut mine, as well as Loy Yang power station. The literature on the link between disadvantaged locations and particulate matter is outlined in Chapter 2.

Table 23 Indicators that contributed most to the index in Victoria

DOMAIN	INDICATOR	LOADING
SOCIAL DISTRESS	% with low family Income (<$650 per week)	0.70
EDUCATION	% who left school before Year 10	0.66
COMMUNITY SAFETY	Family violence per 1,000 population	0.65
COMMUNITY SAFETY	Prison admissions per 1,000 population	0.64
SOCIAL DISTRESS	% with no Internet at home	0.64
ENVIRONMENTAL	Particulate matter	0.64
EDUCATION	% adults with no post-school qualification	0.63

Influences in Severely Disadvantaged Areas – the 3%:97% ratio

Addressing challenges in the state's locations experiencing extreme disadvantaged should be a priority. Dropping off the Edge helps identify what these challenges are. To do this, the report looks at the average value for indicators in the most disadvantaged locations (the top 3% most disadvantaged on the index) compared to all other locations (the remaining 97%). While the 3% is picking up the extremes of disadvantage (13 locations across Victoria), the indicators help to identify what to focus on to have an impact on moving these locations out of disadvantage.

As an example, in Table 24 it can be seen that the value for the percentage of people living in public housing in the top 3% of locations according to the index is 6.2%, while in all other locations in Victoria it is 2%. This gives a ratio of 3.1.

It appears that locations facing extreme disadvantage are dealing with particular challenges that may not be the major concerns in areas that are experiencing disadvantage but not at the extreme end.

The results from the 3%:97% analysis are shown in Table 24. In Victoria, the indicator that was highest in the most disadvantaged locations compared to other locations was the public housing indicator. In the most disadvantaged locations, this was 3.1 times what it was everywhere else. It is to be expected that public housing is more common in areas of disadvantage - availability of public housing is an important social support for those facing disadvantage. However, given that public housing often houses people with complex problems, the high representation against this indicator provides useful information to policy makers and community service organisations in seeking to address issues in an area.

Community safety data were also important, with prison admissions; child maltreatment; and family violence having ratios above 2. Two of these indicators were also major contributors to the index (family violence and prison admissions), confirming the importance of these two indicators in identifying disadvantage generally across Victoria.

The results from the 3%:97% analysis were similar to those seen in New South Wales and Queensland, where public housing, family violence, child maltreatment and prison admissions had the highest weights, suggesting there is some consistency in the prominence of these indicators in the most disadvantaged locations.

Many of the economic indicators were also represented, including public housing; jobless parents; disability support pension; rent assistance; and the NEET (not in education, training or employment) indicator.

Table 24 Multipliers for indicators in most disadvantaged 3% of Victorian locations

DOMAIN	INDICATOR	VALUE FOR TOP 3%	VALUE FOR OTHER 97%	RATIO
ECONOMIC	% people in public housing	6.2%	2.0%	3.1
COMMUNITY SAFETY	Prison admissions per 1,000 population	6.7	2.3	2.9
ECONOMIC	% families with jobless parents	30.6%	10.6%	2.9
COMMUNITY SAFETY	% child maltreatment	4.8%	1.8%	2.7
SOCIAL DISTRESS	% experiencing overcrowding	6.7%	2.7%	2.5
COMMUNITY SAFETY	Family violence per 1,000 population	6.6	2.7	2.4
HEALTH	% receiving Disability Support Pension	10.6%	4.5%	2.3
ECONOMIC	% household receiving rent assistance	9.2%	4.1%	2.3
ECONOMIC	% aged under 24 and not in Education, Employment or Training (NEET)	18.3%	8.7%	2.1

Comparing these to the indicators that drove the index, it can be seen that there are clear differences. Low family income and leaving school before year 10 have the strongest association with locations of disadvantage across Victoria; while locations in extreme disadvantage have higher public housing, and a greater proportion of families with jobless parents.

There are also similarities however, with both methods highlighting the relevance of family violence and community safety.

SIGNS OF IMPROVEMENT IN VICTORIA

The focus in this report has been on disadvantaged locations and multilayered and persistent disadvantage. However, Dropping off the Edge research also points to areas where improvements have been made, including where locations have moved out of the most disadvantaged 5% against some indicators. This might be due to government or community programs, instances of urban renewal and gentrification, or a range of other reasons such as strong leadership or increased job opportunities. While we can identify these locations based on indicator movement, further research would be needed to consider the reasons and magnitude of improvements.

Only the indicators that were comparable over time were used for this analysis. The list of 20 comparable indicators was also used for the analysis of persistent disadvantage, and is shown in Table 20. The analysis focuses on the 98 locations in Victoria that had one or more indicators in the top 5% in 2015, and considers whether the locations have shifted disadvantage on any of those indicators such that they are no longer in the top 5% in 2021.

The number of locations with indicators moving out of disadvantage in Victoria is shown in Table 25. (The 245 locations that recorded no indicator rankings in the top 5% in 2015 are not examined in this analysis). We can see from Table 25 that the number of indicators moving out of the most disadvantaged 5% is very small. There are 20 comparable indicators in Victoria. There are only 35 locations of the 209 in this analysis (17%) that have had between 2 and 4 indicators move out of the most disadvantaged 5%. This does not represent major improvement, particularly given they may not have moved far beyond the top 5%. Only one location has managed improvement on four indicators that were in the top 5% of disadvantage in 2015, but we do not have information on the level of improvement that was made and whether or not other indicators were now showing high levels of disadvantage.

Table 25 Number of locations in Victoria with indicators improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVED	NUMBER OF LOCATIONS
0	111
1	63
2	27
3	7
4	1

The list of eight locations with three or more indicators moving out of the top 5% of disadvantage is shown in Table 26. It can be seen that six of the eight locations with three or more indicators moving out of the top 5% most disadvantaged are in Greater Melbourne.

Drilling down further, we can look at any commonalities in the indicators against which communities managed improvements. Four locations managed to improve on the long-term employment indicator and three locations recorded improvements on juvenile convictions.

Table 26 Locations with three or more indicators that were in top 5% in 2015 and have moved out of top 5% in 2021

BAND	SA2 NAME	POPULATION	REGION
1	Collingwood	11,529	Greater Melbourne
	Dandenong North	23,667	Greater Melbourne
	Lakes Entrance	10,580	Rest of Vic.
	Parkville	8,741	Greater Melbourne
	Rushworth	4,057	Rest of Vic.
2	Braybrook	20,914	Greater Melbourne
	Doveton	12,433	Greater Melbourne
	St Albans - North	21,624	Greater Melbourne

INSIGHTS FROM QUALITATIVE RESEARCH

While the two case studies of Melton and Swan Hill were geographically and demographically different, their underlying challenges were similar in that both face multilayered intergenerational disadvantage and lack of ready access to some services.

Study participants from both locations identified critical challenges in the community associated with youth crime, a perceived increase in crime and drug use, and lack of access to appropriate medical services, with long wait times required for many services, including publicly funded health services, unless people travel to Melbourne:

> **"You'd have to wait at least four to five months before getting an appointment with family services for Melton Council. But then if you haven't got money to pay, to go to a private provider, just don't go. And if you're waiting on the public system, five to six months." (Melton focus group)**

> **"A lot of people have to go down on the train … if they don't drive. I suppose it's just the time factor, and then you might wait weeks and weeks to get the specialist up here. And then there might be 50 people in front of you. My brother, he might wait six hours to get the appointment, to get in to actually see them because they have booked so many appointments." (Swan Hill focus group)**

Reflecting the indicators of early school leaving, family violence and prison admissions, Swan Hill participants spoke of the learned "hopelessness" passed from struggling parents to their children, and of the difficulties in seeking and accessing support to 'break the cycle', despite the opportunities that are available:

> **''… you see these teenagers, then they are just 'What's the point? What's the point of trying? What's the point because I've been labelled because my dad did this.' You hear that all the time. … 'What's the point because I'm never going to get a job anyway, because the jobs only go to the people who they already know.' So that hopelessness, 'I'm stuck …. No one wants to help me. No one cares. Whatever'. But it's finding those services. I've been lucky enough to find the services I've needed and been linked. There are a lot of people who aren't and don't know that the services are there.'' (Swan Hill focus group)**

One Swan Hill participant noted how the broader environment including parental choices can limit an individual's ability to take up new opportunities, highlighting the need to support young people to gain confidence:

> **''There's opportunities there, but it's the deeper issues like their mental health and their family environments and low socio and things like that, that impact on them being able to take those opportunities. A lot of my one-on-one work is with young people that are brilliant and have so much to offer, but it's their wider environment, the things that happen around them, that have a negative impact on them and their self-belief and their ability to take on those opportunities. I think the big thing to look at is the support that we offer them in accepting those opportunities, feeling confident enough to take them on.'' (Swan Hill focus group)**

Swan Hill has a high proportion of houses with no internet at home - more than 1.5 times the national average. This is identified as a major contributor to disadvantage across many Victorian locations, impacting on people's access to access services that are typically provided online. COVID-19 is likely to have exacerbated this situation.

> **''[Impacts of poor internet access] got amplified with COVID when we resorted [to] video conferences and telephones, but we couldn't reach a lot of the young people in [regional areas… as they just don't have internet.'' (Swan Hill focus group)**

Particulate matter was also identified as contributing to disadvantage in Swan Hill, although one participant thought this problem was improving:

> **"There are less dust storms [than before] due to changes in farming practices. These days farmers don't plough their soil as much and use drill planting which reduces the dust." (Swan Hill 2)**

In both Melton and Swan Hill, intergenerational challenges including education and employment were identified as major contributors to disadvantage.

These multi-faceted challenges highlight the complex web of disadvantage experienced by individuals and communities and the associated need for holistic mitigation approaches. Some study participants expressed the view that efforts towards this are being made through service clusters, networks and hubs.

CONCLUSIONS

This analysis has shown that Victoria has locations of multilayered and persistent disadvantage.

The analysis of multilayered disadvantage showed that just 5% of locations in Victoria (24 SA2s) accounted for 29% of positions in the top 5% of indicators.

Six locations of the 454 across Victoria had three or more indicators in the top 5% in both 2015 and 2021, suggesting there is persistent disadvantage in those areas; however, eight locations had three indicators or more that moved out of the top 5% in 2021 – these are encouraging shifts that warrant further analysis.

At the extreme end of disadvantage, locations have disproportionate levels of public housing and families with jobless parents.

At a more general level, low family income and leaving school before year 10 have the greatest association with locations of disadvantage, having the strongest impact on the summary index.

Family violence and community safety were also a significant influence on the index in Victoria, while the two focus groups referred to persistent inter-generational disadvantage and a lack of services making improvements difficult.

Disadvantage in Victoria tends to be in regional locations, but the extremes of disadvantage tend to be in Greater Melbourne. While 25 of the 40 most disadvantaged locations according to the index were in regional Victoria, six of the top ten most disadvantaged locations were in Greater Melbourne.

Analysis at the indicator level suggests most of the locations of multilayered disadvantage tend to be in Greater Melbourne; but the locations of persistent disadvantage tend to be outside Greater Melbourne.

CHAPTER 6
QUEENSLAND

QUEENSLAND

In Queensland, 45 SA2s (9% of the total number of SA2s[28]) accounted for 41% of the most disadvantaged positions across all indicators. Five locations (1% of all locations) accounted for 11% of the most disadvantaged positions. The burden of disadvantage is disproportionately borne by a small number of communities.

The summary index created for this report shows that most of the disadvantaged locations in Queensland were outside Greater Brisbane. Just ten of the 40 most disadvantaged locations were in Greater Brisbane, despite almost half of all locations being within Greater Brisbane.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains, but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

In terms of the most disadvantaged locations in Queensland (the top 3%), public housing, family violence, long-term unemployment and prison admissions were much more prevalent in these locations compared to other locations.

When focusing on which indicators had the strongest impact on the overall index, we can see that particulate matter, low income and internet access were particularly influential in Queensland. Particulate matter can be high in remote desert locations as well as industrial and mining locations in Queensland. It was a new addition to the 2021 report and has been important in many of the larger states.

WHAT DATA WERE INCLUDED IN QUEENSLAND

Data were available in Queensland for all 37 indicators. As addressed in other chapters, most data were collected in a consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other jurisdictions record the offender's address at the time of sentencing. In Queensland, the residential address of the offender when convicted was used.

The data for nature reserves in the environment domain were unreliable for Queensland, so were not used in the analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report and there were problems with it in many states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for Queensland, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was 11, so there wasn't much range. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

The list of indicators and domains available for Queensland are shown in Table 27. Indicators in bold are those that were included in the index, while unbolded indicators were dropped from the index because they did not contribute strongly enough. Indicators in italics were not included in the indicator analysis for Queensland due to problems with the data.

[28] There are 530 SA2s across Queensland, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 513 SA2s in total. There were 229 in Greater Brisbane 284 outside Greater Brisbane. A map of the SA2s in Greater Brisbane and Queensland is shown in is shown in Figure 3. Speckled areas in this map are those with low population and no analysis. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

Table 27 List of domains and indicators for Queensland

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENT	LIFETIME DISADVANTAGE
Low Income	**Receiving Disability Support Pension**	**Child maltreatment**	**Low skilled occupations**	**Year 3 NAPLAN Numeracy**	**Particulate matter**	**Teenage childbearing**
Volunteering	Psychiatric admissions	**Juvenile convictions**	Underemployment	**Year 3 NAPLAN Literacy**	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Prison admissions**	**Long-term unemployment**	Year 9 NAPLAN Numeracy	**Heat stress**	
Access to Shops	Suicide rates	**Family violence**	**Young adults not in Employment, Education or Training**	Year 9 NAPLAN Literacy	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		Housing stress	**School attendance**		
Overcrowding			**Public housing**	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	**Young childhood Development (AEDC)**		

WHERE DISADVANTAGE IS LOCATED IN QUEENSLAND

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This summary index number will be lower for locations that experience multilayered disadvantage – disadvantage that occurs across several indicators. The index is a useful summary to identify disadvantage, but it is limited because it loses the detail of analysing individual indicators. This is done in the next sections of this report to drill down further into disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 40 most disadvantaged locations in Queensland can be identified. These locations are shown in Table 28, which shows disadvantage in four bands of 10 locations. As with all lists of places in this report, these are alphabetical within each band, rather than in order of disadvantage.

Most of the locations of highest disadvantage (the top 10) are outside Greater Brisbane.

Table 28 also shows whether the location was in the most disadvantaged 40 locations in 2015 or 2007. Note that these different indexes are not directly comparable, as several new indicators were added in 2021. Further, geographic classification changes mean we have had to align the SLAs used in 2015 and 2007 with the SA2s used in 2021. This has been done using an SLA to SA2 concordance from the ABS.

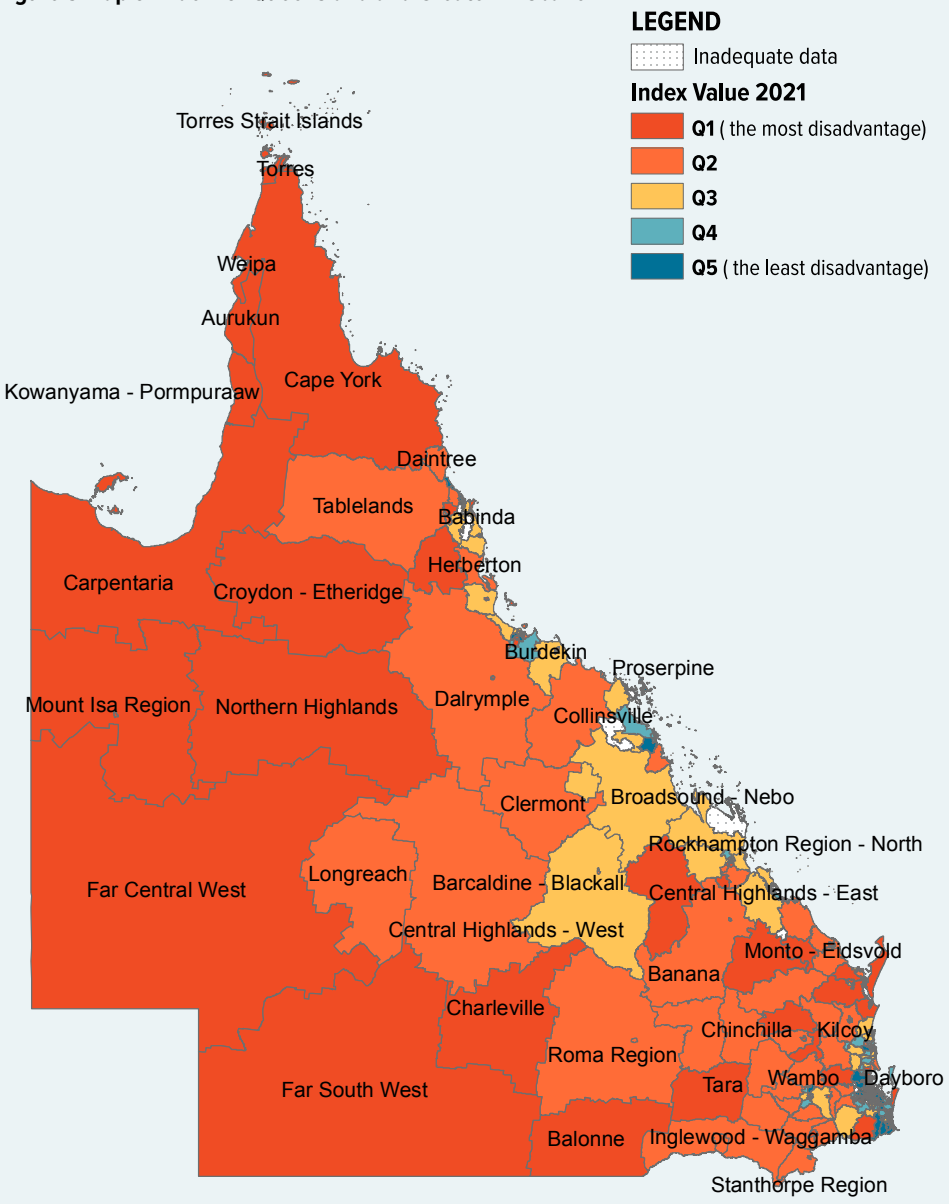
Despite these disclaimers, the comparison gives an indication of persistent disadvantage. Many of the locations identified as disadvantaged in 2021 report were also disadvantaged in the 2015 report. Of those in the top 10 in 2021, eight were also in the list of 40 most disadvantaged in 2015; and three were listed as disadvantaged in 2007 and 2015. Notwithstanding the significant changes in indicators, domains and method of calculation, the index is showing very similar results. This consistency in the index over time suggests that the index is a valid measure of disadvantage in a location.

Figure 5 shows a map of the index for Queensland and Greater Brisbane. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index scores. In Queensland, there are about 103 SA2s in each quintile. This is the same approach used by the ABS to group the SEIFA indexes.

The map highlights that most of the least disadvantaged locations (Q5) were in Greater Brisbane. Much of the disadvantage (Q1) in Queensland was outside Greater Brisbane, in the far north and west of the state.

To better understand the nature of disadvantage and to describe the subjective experience of disadvantage as it relates to our quantitative data, we also applied qualitative methodology (see Chapter 3). In Queensland we gathered qualitative data in Beenleigh, a suburb within the Logan City Council. Identified as being in Quintile 1 of the 2021 Dropping off the Edge index and having a higher than average proportion of Indigenous residents, Beenleigh has multiple indicators showing disadvantage, as shown in Appendix 3. The qualitative results shown in this chapter represent the comments of those involved in the focus groups and interviews in this community.

Figure 5 Map of index for Queensland and Greater Brisbane



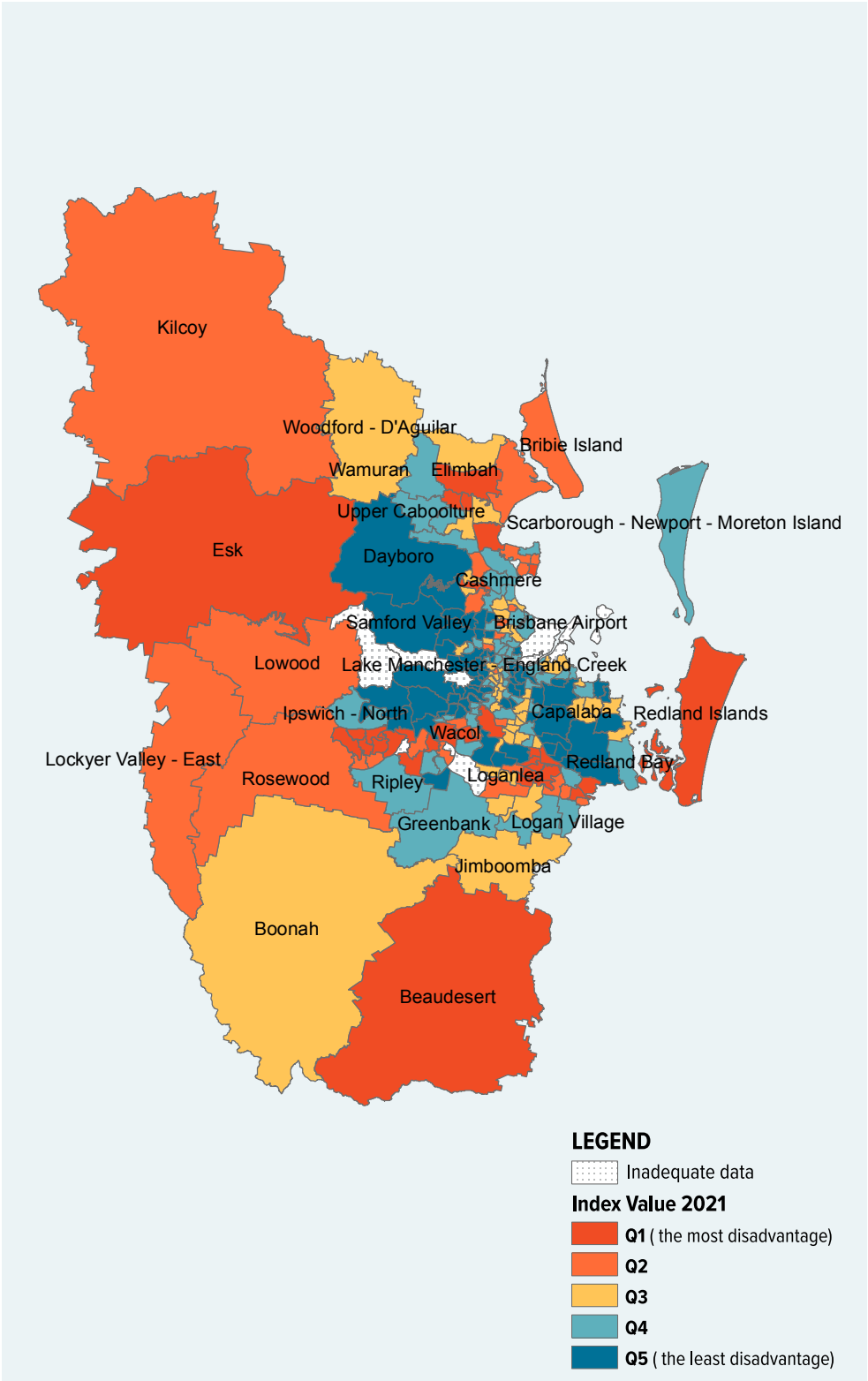

Kilcoy
Woodford - D'Aguilar
Bribie Island
Wamuran
Elimbah
Upper Caboolture
Scarborough - Newport - Moreton Island
Esk
Dayboro
Cashmere
Samford Valley
Brisbane Airport
Lowood
Lake Manchester - England Creek
Ipswich - North
Capalaba
Redland Islands
Wacol
Lockyer Valley - East
Redland Bay
Rosewood
Ripley
Loganlea
Greenbank
Logan Village
Jimboomba
Boonah
Beaudesert
LEGEND
Inadequate data
Index Value 2021
Q1 (the most disadvantage)
Q2
Q3
Q4
Q5 (the least disadvantage)

Table 28 List of 40 most disadvantaged locations in Queensland and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007	IN 2015
Most Disadvantaged Locations – listed alphabetically within bands					
1	Aurukun	1,370	Rest of Qld		Y
	Carpentaria	5,124	Rest of Qld	Y	Y
	Kingaroy Region - North[29]	9,700	Rest of Qld		Y
	Kowanyama - Pormpuraaw	1,859	Rest of Qld		Y
	Logan Central [30]	6,278	Greater Brisbane	Y	Y
	Mount Morgan[31]	2,957	Rest of Qld	Y	Y
	Palm Island	2,684	Rest of Qld		Y
	Riverview [32]	3,002	Greater Brisbane		
	Rockhampton City	3,093	Rest of Qld		
	Yarrabah	2,933	Rest of Qld		Y
2	Bundaberg	6,123	Rest of Qld		Y
	Cape York[33]	8,489	Rest of Qld		Y
	Far South West[34]	2,647	Rest of Qld		
	Heatley	4,105	Rest of Qld		
	Inala - Richlands	20,094	Greater Brisbane	Y	Y
	Kingston (Qld.)	10,544	Greater Brisbane	Y	
	Northern Peninsula	3,224	Rest of Qld		
	Tara	4,031	Rest of Qld		
	Torres Strait Islands	5,178	Rest of Qld		
	Woodridge	12,530	Greater Brisbane	Y	Y

[29] Kingaroy Region – North SA2 was the Cherbourg SLA in the 2015 report
[30] Most of the Logan Central SA2 was the Woodridge SLA in the 2015 report
[31] This was the Rockhampton – Mount Morgan SLA in the 2015 report
[32] Riverview SA2 was the Ipswich Central SLA in the 2015 report
[33] Cape York SA2 was the Cook SLA
[34] Far South West SA2 was the Bulloo SLA in the 2015 report

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007	IN 2015
3	Charleville[35]	4,220	Rest of Qld		
	Cooloola	6,622	Rest of Qld	Y	
	Eagleby	14,593	Greater Brisbane	Y	Y
	Gin Gin[36]	5,127	Rest of Qld		Y
	Granville	3,197	Rest of Qld		
	Leichhardt - One Mile	8,885	Greater Brisbane		
	Manoora[37]	6,442	Rest of Qld		Y
	Maryborough (Qld)	18,377	Rest of Qld	Y	Y
	Nanango	9,861	Rest of Qld		Y
	Redland Islands[38]	10,202	Greater Brisbane	Y	Y
4	Berserker	6,699	Rest of Qld		
	Far Central West[39]	2,105	Rest of Qld		
	Goodna	11,453	Greater Brisbane		
	Gympie - North[40]	14,778	Rest of Qld	Y	
	Herberton	5,608	Rest of Qld		
	Ingham	4,211	Rest of Qld		
	Ipswich - East	18,900	Greater Brisbane		
	Manunda[41]	5,539	Rest of Qld		Y
	Mount Isa	18,334	Rest of Qld		
	Westcourt - Bungalow[42]	6,452	Rest of Qld		Y
Least Disadvantaged Locations[43]					
	Ashgrove	14,402	Greater Brisbane		
	Bardon	10,730	Greater Brisbane		
	Brookfield - Kenmore Hills	6,971	Greater Brisbane		
	Chapel Hill	10,860	Greater Brisbane		
	Eatons Hill	8,235	Greater Brisbane		
	Fig Tree Pocket	4,430	Greater Brisbane		
	Mackay Harbour	565	Rest of Qld		
	Pinjarra Hills - Pullenvale	5,564	Greater Brisbane		
	Samford Valley	12,512	Greater Brisbane		
	The Gap	17,334	Greater Brisbane		

[35] Charleville SA2 was Murweh SLA in the 2015 report
[36] Gin Gin SA2 was Bundaberg - Kolan SLA in the 2015 report
[37] Most of Manoora SA2 was part of Cairns – Central Suburbs SLA in the 2015 report
[38] Redland Islands SA2 was part of the Redland – Balance SLA in the 2015 report
[39] Far Central West SA2 was the Barcoo, Boulia, Diamantina and Winton SLA's in the 2015 report
[40] Gympie – North SA2 is mainly the Gympie – Gympie SLA. The Gympie – Kilkivan SLA is now the Kilkivan SA2
[41] Manunda SA2 is part of the Cairns – Central Suburbs SLA in the 2015 report
[42] Westcourt-Bungalow SA2 was part of the Cairns – Central Suburbs SLA in the 2015 report
[43] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN QUEENSLAND

This analysis moves beyond the index, which identifies overall disadvantage in a location using numerous indicators, to identifying locations of particularly deep disadvantage, where a location is disadvantaged on multiple indicators. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged – in this instance, the top 5% most disadvantaged. Examination at the indicator level provides a more detailed picture than the summary index can. Table 29 records locations that were ranked in the top 5% most disadvantaged against five or more separate indicators. In total, 53 locations (10% of all locations) in Queensland experienced severe disadvantage across five or more indicators, together accounting for 45% of the disadvantaged positions across the state.

We then took the analysis a step further, focusing on locations which were severely disadvantaged (ie top 5%) on at least eight indicators, and these are identified in Table 30. A total of 29 locations showed severe disadvantage on eight or more indicators, suggesting that disadvantage is deep in these locations. Ten locations had at least 15 (and as many as 24) of the 35 indicators in the most disadvantaged 5% of values across the state. The list of the top five locations is shown in Band 1 in Table 30, along with the next 24 ranks in bands 2 to 5.

All five locations in Band 1 are also in Band 1 (ie among the most disadvantaged 10 locations) using the index. This consistency confirms these locations face particular challenges.

While seven of the 29 locations listed are in Greater Brisbane, only one of these is in Band 1. This reinforces that most of Queensland's extreme disadvantage is found outside Greater Brisbane. Much of it is in remote locations in the north and west of the state.

This analysis also provides useful information regarding which indicators most frequently form part of the web of disadvantage in severely disadvantaged locations. The most common forms of severe disadvantage in locations ranking highly on at least eight indicators were jobless parents; young people not in employment, education or training; and low income.

Table 29 Multilayered disadvantage – Number of locations with fiveor more indicators in the most disadvantaged 5% across Queensland

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS [44]
5	8	40
6	11	66
7	5	35
8	4	32
9	2	18
10	2	20
11	4	44
12	3	36
13	1	13
14	3	42
15	1	15
16	3	48
17	1	17
18	1	18
19	1	19
20	1	20
23	1	23
24	1	24
Total (including locations not shown in table)	513	952

[44] Number of Positions is the number of indicators multiplied by number of locations

Table 30 Multilayered disadvantage - List of locations with eight or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	Aurukun	1,370	Rest of Qld
	Carpentaria	5,124	Rest of Qld
	Kingaroy Region – North	9,700	Rest of Qld
	Kowanyama - Pormpuraaw	1,859	Rest of Qld
	Logan Central	6,278	Greater Brisbane
2	Cape York	8,489	Rest of Qld
	Northern Peninsula	3,224	Rest of Qld
	Palm Island	2,684	Rest of Qld
	Riverview	3,002	Greater Brisbane
	Yarrabah	2,933	Rest of Qld
3	Manoora	6,442	Rest of Qld
	Rockhampton City	3,093	Rest of Qld
	Torres Strait Islands	5,178	Rest of Qld
	Wacol	5,982	Greater Brisbane
	Woodridge	12,530	Greater Brisbane
4	Far South West	2,647	Rest of Qld
	Inala – Richlands	20,094	Greater Brisbane
	Leichhardt - One Mile	8,885	Greater Brisbane
	Mount Morgan	2,957	Rest of Qld
	Torres	3,924	Rest of Qld
5	Far Central West	2,105	Rest of Qld
	Gin Gin	5,127	Rest of Qld
	Herberton	5,608	Rest of Qld
	Kingston (Qld.)	10,544	Greater Brisbane
	Manunda	5,539	Rest of Qld
6	Bundaberg	6,123	Rest of Qld
	Croydon – Etheridge	1,079	Rest of Qld
	Mount Isa Region	3,213	Rest of Qld
	Westcourt – Bungalow	6,452	Rest of Qld

PERSISTENT DISADVANTAGE IN QUEENSLAND

Persistent disadvantage is disadvantage that exists over time. There are some problems with comparing the full index over time due to different weights and indicators, so the analysis also considered rankings over time on specific indicators that were directly comparable, and identified situations where locations were disadvantaged in both the 2015 and 2021 reports. The list of 20 comparable indicators for Queensland is shown in Table 31.

Table 31 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Juvenile offending	Juvenile convictions
Domestic violence	Domestic violence
Prison admissions	Prison admissions
Psychiatric admissions	Psychiatric admissions

The results showing the *number of locations* with indicators that stayed in the most disadvantaged 5% from 2015 to 2021, and the *number of indicators* that stayed in the top 5% in both reports, is shown in Table 32. Most locations in Queensland do not have persistent disadvantage, with 454 locations having no indicator against which they ranked in the top 5% for both reports. However, a small number of locations do show persistent disadvantage at the indicator level. A total of 59 locations had at least one indicator in the most disadvantaged 5% in both the 2015 data and 2021 data. Four of these showed persistent disadvantage against eight or more indicators in both reports. These locations are listed in Table 33.

All of the locations in Table 33 are regional locations, and were also identified in Table 30 (in Band 1 or 2) as currently grappling with multilayered disadvantage. Further, the locations listed in Table 33 were included in the top 10 most disadvantaged using the index. This consistency across measures of disadvantage was also found in most other states, and is useful in helping to direct resources where they are needed.

Table 32 Numbers of locations in Queensland with persistent disadvantage

NUMBER OF INDICATORS IN TOP 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	454
1	37
2	11
3	3
4	1
5	2
7	1
8	2
11	2

Table 33 Queensland locations with eight or more indicators in persistent disadvantage

SA2 NAME	PERSISTENT DISADVANTAGE	POPULATION	REGION
Aurukun	Y (Band 1)	1,370	Rest of Qld
Carpentaria	Y (Band 1)	5,124	Rest of Qld
Kowanyama - Pormpuraaw	Y (Band 1)	1,859	Rest of Qld
Yarrabah	Y (Band 2)	2,933	Rest of Qld

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN QUEENSLAND

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have a major impact of where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations. The analysis therefore moves to considering the 3% most disadvantaged locations in Queensland, and the level of overrepresentation of certain forms of disadvantage in those locations relative to the rest of the state.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 34.

It can be seen that the greatest contributor to the index in Queensland is particulate matter. This will mainly be due to the closeness of disadvantaged locations to industrial and mining locations. In Queensland, it may also be due to the large, remote and sandy locations that are disadvantaged in the north and the west of the state. Dust storms in these locations contribute to high levels of particulate matter. The literature on the link between disadvantaged locations and particulate matter is outlined in Chapter 2.

The second highest contributor to the index was low income. Finally, internet access was a significant contributor to the index in Queensland, possibly reflecting the remote, disadvantaged locations in the north and west of the state.

These results are similar to the results from the ABS Socio-Economic Index for Areas (SEIFA) national index, which doesn't include environment indicators. However, low income was identified as the most important indicator. No internet was also identified as important in the SEIFA index, which ranked third for the Queensland Index.

Table 34 Indicators that contributed most to the index in Queensland

DOMAIN	INDICATOR	LOADING
Environmental	Particulate matter	0.63
Social Distress	% with low family Income (<$650 per week)	0.62
Social Distress	% with no Internet at home	0.61

Influences in Severely Disadvantaged Locations – the 3%:97% ratio

Addressing challenges in the state's locations experiencing extreme disadvantaged should be a priority. Dropping off the Edge helps identify what these challenges are. To do this, the report looks at the average value for indicators in the most disadvantaged locations (the top 3% on the index) compared to all other locations (the 97%). While the 3% is picking up the extremes of disadvantage (15 locations across Queensland), the indicators help to identify what to focus on to get an impact on moving these locations out of disadvantage.

As an example, in Table 35 it can be seen that the value for the percentage of people living in public housing in the top 3% of locations according to the index is 9%, while in all other locations in Queensland it is 3%. This gives a ratio of 3.

The results from the 3%:97% analysis are shown in Table 35. In Queensland, family violence and public housing were three times higher in the most disadvantaged locations. Both of these indicators were also identified as the top two in New South Wales. It is to be expected that public housing is more common in areas of disadvantage - availability of public housing is an important social support for those facing disadvantage. However, given that public housing often houses people with complex problems, the high representation against this indicator provides useful information to policy makers and community service organisations in seeking to address issues in an area.

Comparing these to the indicators that drove the index, it can be seen that there are clear differences. Particulate matter, low family income and lack of internet access have the strongest association with locations of disadvantage across Queensland; while locations in extreme disadvantage have higher public housing, instances of family violence, long-term unemployment and prison admissions. While the indicators in Table 35 were part of the overall index (see Table 27), the indicators in Table 34 contributed more to a measure of general disadvantage. It appears that locations facing extreme disadvantage are dealing with particular challenges that may not be the major concerns in locations that are experiencing disadvantage but not at the extreme end.

Table 35 Multipliers for indicators in most disadvantaged 3% of Queensland locations

INDICATOR	VALUE FOR TOP 3%	VALUE FOR OTHER 97%	RATIO
Family violence per 1,000 population	17.1	5.7	3.0
% people in public housing	9.0%	3.0%	3.0
% experiencing long-term (>1 year) unemployment	7.5%	2.6%	2.9
Prison admissions per 1,000 population	8.2	3.0	2.7
Juvenile convictions per 1,000 population	19.3	9.0	2.1

The indicators listed in Table 35, which were indicators that were high in the most disadvantaged 3% of Queensland locations, were also commonly discussed in Beenleigh, reinforcing that these indicators are associated with locations of very high disadvantage.

Crime was a concern for participants, and supported by the local data with adult prison admissions nearly 2.5 times the national average, and family violence over twice the national average. The proportion of people in public housing is high in Beenleigh, nearly three times the national average, with associated indicators also high including the proportion of people receiving rent assistance (over 2.4 times the national average), and the proportion of people receiving disability support is nearly 2.5 times the national average. There are concerns in the area about quality and accessibility of public housing:

> **"There are many new 2 bedroom housing commission units being built but are poorly finished and not disability friendly." (Beenleigh focus group participant)**

SIGNS OF IMPROVEMENT IN QUEENSLAND

The focus in this report has been on disadvantaged locations and multilayered and persistent disadvantage. However, Dropping off the Edge research also points to locations where improvements have been made, including where locations have moved out of the most disadvantaged 5% against some indicators. This might be due to government or community programs, instances of urban renewal and gentrification, or a range of other reasons such as strong leadership or increased job opportunities. While we can identify these locations based on indicator movement, further research would be needed to consider the reasons and magnitude of improvements.

For this analysis, the indicators that were comparable over time were used. The 20 indicators that are comparable over time have already been used for the analysis of persistent disadvantage and are shown in Table 31.

The analysis focuses on the 94 locations in Queensland that had one or more indicators in the top 5% in 2015, and considers whether the locations have shifted disadvantage on any of those indicators such that they are no longer in the top 5% in 2021. The number of locations with the number of indicators moving out of severe disadvantage in Queensland is shown in Table 36.

(The 258 locations that recorded no indicator rankings in the top 5% in 2015, just over half the total in the state, are not examined in this analysis).

Table 36 Number of locations in Queensland with indicators improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVING	NUMBER OF LOCATIONS
0	161
1	69
2	20
3	1
4	3
5	1

It is clear that the number of indicators moving out of the most disadvantaged 5% is very small. However, we can see that one community managed this improvement on five indicators, another three improved on four indicators, and one location improved on a single indicator. The list of five locations with three or more indicators moving out of disadvantage is shown in Table 37.

Table 37 Locations with three or more indicators moving out of highest disadvantage in 2021 compared to 2015

BAND	SA2 NAME	POPULATION	REGION
1	Croydon - Etheridge	1,079	Rest of Qld
	Kanimbla - Mooroobool	10,689	Rest of Qld
	Kingston (Qld.)	10,544	Greater Brisbane
	Palm Island	2,684	Rest of Qld
	Townsville - South	4,525	Rest of Qld

Most of the locations where indicators moved out of the top 5% were outside Greater Brisbane.

Looking at the indicators further, for three of the five locations, a drop in long-term unemployment was the main indicator that changed.

INSIGHTS FROM THE QUALITATIVE RESEARCH

In this section we provide insights from the qualitative case study in Beenleigh. It is important to acknowledge that this is only one Queensland community, and that any insights are not necessarily true for other locations in Queensland, or elsewhere in Australia.

Beenleigh is a community under transition, with study participants identifying considerable change to the community culture and cohesion over recent decades.

Participants were less inclined to talk about statistically derived forms of disadvantage as identified in this chapter, and instead focused on the more intangible drivers of disadvantage including issues of social cohesion and leadership (see Chapter 12 for more detail).

Despite the disadvantage and associated adversity faced by the Beenleigh community, study participants were confident that Beenleigh can overcome its challenges. However it needs strong leadership which is not currently being offered:

> **"There no one today in Beenleigh standing up. There's no leadership at all…[no] direction of where you're going. Until someone decides that's where we're going [changes wont be made]." (Beenleigh focus group participant)**

The qualitative study highlights the frequent disparity between the important drivers of disadvantage identified statistically, and the drivers identified by the community. While there is some overlap in terms of key topics around education, financial stress and housing, the qualitative study in Beenleigh quickly moved past these descriptive accounts of disadvantage to focus on a holistic understanding of the community, and the impacts of disadvantage on community futures. Study participants commonly spoke of positive programs (eg. school based programs, volunteer-based support) or events (eg. the historical Cane festival) raising the importance of social cohesion and leadership to renew Beenleigh and overcome issues of stigma and disadvantage. Direct programs or ideas were not discussed as part of the focus groups or interviews.

CONCLUSIONS

Disadvantage is concentrated in a small number of locations in Queensland, with 45 areas, or 9% of locations, accounting for 41% of the most disadvantaged rank positions across all indicators.

Queensland has shown very similar results to New South Wales in terms of the location of disadvantage, with most locations of high disadvantage being outside the capital. In Queensland it is to the far north and the west. Similar to other states, many of the locations of high disadvantage on the index also experienced multilayered and persistent disadvantage at the indicator level.

At the extreme end of disadvantage, locations are disproportionately affected by engagement with the criminal justice system. There are high levels of public housing in these communities.

At a more general level, low income, particulate matter and lack of internet availability at home were most strongly associated with disadvantage across the state, having the strongest impact on the summary index.

In terms of the qualitative analysis, strong leadership was identified as something that was important for the disadvantaged community of Beenleigh. Social cohesion was also identified as something that was important in a community. These are analysed further in Chapter 12.

Strong business leadership in a location could also help to resolve the issue of low income and unemployment identified in the quantitative analysis and in the focus groups in Beenleigh.

CHAPTER 7

SOUTH AUSTRALIA (SA)

SOUTH AUSTRALIA (SA)

In South Australia, 10% of the total number of SA2s (17 SA2s[45]) accounted for 57% of the most disadvantaged positions across all indicators. Four locations (2% of total locations) accounted for 24% of the most disadvantaged positions. This highlights that disadvantage is concentrated in a small number of areas, many of which are grappling with challenges on multiple fronts.

The index of disadvantage created for this report shows that, of the top 20 most disadvantaged locations in South Australia, eight were in Greater Adelaide and 12 were outside Greater Adelaide – this is despite the fact that almost two thirds of the total number of locations are within Greater Adelaide.

The indicators that contributed most to the index were no internet, air quality (particulate matter) and prison admissions per 1000 population. The first two of these could be partly due to the remoteness of the disadvantaged locations in South Australia.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains, but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

When looking at the separate indicators, Greater Adelaide is home to some locations of multiple disadvantage, with five capital-city locations in the state's top ten locations recording high disadvantage on multiple indicators (see Table 41).

WHAT DATA WERE INCLUDED IN SOUTH AUSTRALIA

Data were available for 36 indicators in South Australia. The only data available for other states that were not available for South Australia was juvenile convictions. Attempts were made to obtain this data from the State Government but it was not able to be provided for this report due to technical difficulties.

The data for nature reserves in the environment domain were unreliable for South Australia, so were not used in the indicator analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report and there were problems with it in many states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for South Australia, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was 10, so over the 172 locations in SA, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

[45] There are 172 SA2s across South Australia, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 165 SA2s in total. For the index, a further exclusion occurred where there was missing data. This affected APY Lands and Western in SA. In total there were 104 SA2s in Greater Adelaide and 61 outside Greater Adelaide. A map of the SA2s in Greater Adelaide and South Australia is shown in Figure 3. Areas that are stippled in this map were not included in this analysis because there were less than 30 people or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

As addressed in other chapters, most data were collected in as consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other states record the offenders address at the time of sentencing. In South Australia, the address of the offender when they were sentenced was used for the crime data.

The list of indicators and domains available for South Australia are shown in Table 38. Indicators in bold type are those that were included in the index, while indicators not in bold type were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for South Australia due to problems with the data or the data not being available.

Table 38 List of domains and indicators for South Australia

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENTAL	LIFETIME DISADVANTAGE
Low Family Income	**Receiving Disability Support Pension**	**Confirmed Child maltreatment**	**Unskilled workers**	**Year 3 NAPLAN Numeracy**	**Particulate matter**	**Teenage childbearing**
Volunteering	Psychiatric admissions	**Prison admissions**	Underemployment	**Year 3 NAPLAN Literacy**	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Domestic violence**	**Long-term unemployment**	Year 9 NAPLAN Numeracy	**Heat stress**	
Access to Shops	Suicide rates	*Juvenile Convictions*	**Young adults not in Employment, Education or Training**	Year 9 NAPLAN Literacy	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		Housing stress	**School attendance**		
Overcrowding			**Public housing**	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	**Young childhood Development (AEDC)**		

WHERE DISADVANTAGE IS LOCATED IN SA

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This summary index will be lower for locations that experience disadvantage across several indicators. It is a useful summary to quickly identify disadvantage, but a limitation is that the detail of individual indicators is lost. Analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains: economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the index, the 20 most disadvantaged locations in South Australia can be identified. These locations are shown in Table 39, which shows disadvantage in two bands of 10 locations. As with all lists of places in this report, they are listed in alphabetical order within each band, rather than in order of disadvantage.

Four of the 10 most disadvantaged locations are in Greater Adelaide. In many other states, the most disadvantaged locations were outside the capital city. Victoria is another state that had a high number of disadvantaged locations in the capital city. This could be due to the distribution of SA2s in the capital city and regional locations, but further investigation would be required to determine the reason for this result.

All of the least disadvantaged locations were in Greater Adelaide. This concentration of the least disadvantaged areas in capital cities is consistent with other states.

Table 39 also shows whether the location was listed in the most disadvantaged locations in 2015 or 2007. Note that these different indexes are not comparable, as several new indicators were added in 2021. Further, geographic classification changes mean we have had to align the Statistical Local Areas (SLAs) used in 2015 and 2007 with the SA2s used in 2021. This has been done using an SLA-to-SA2 concordance from the ABS. Despite these disclaimers, the comparison gives an indication of persistent disadvantage.

When looking at the locations that were also disadvantaged in 2015 and 2007, 19 of the top 20 locations listed in 2021 were also in the disadvantaged list in 2015; and half of these (10) were also disadvantaged in 2007.

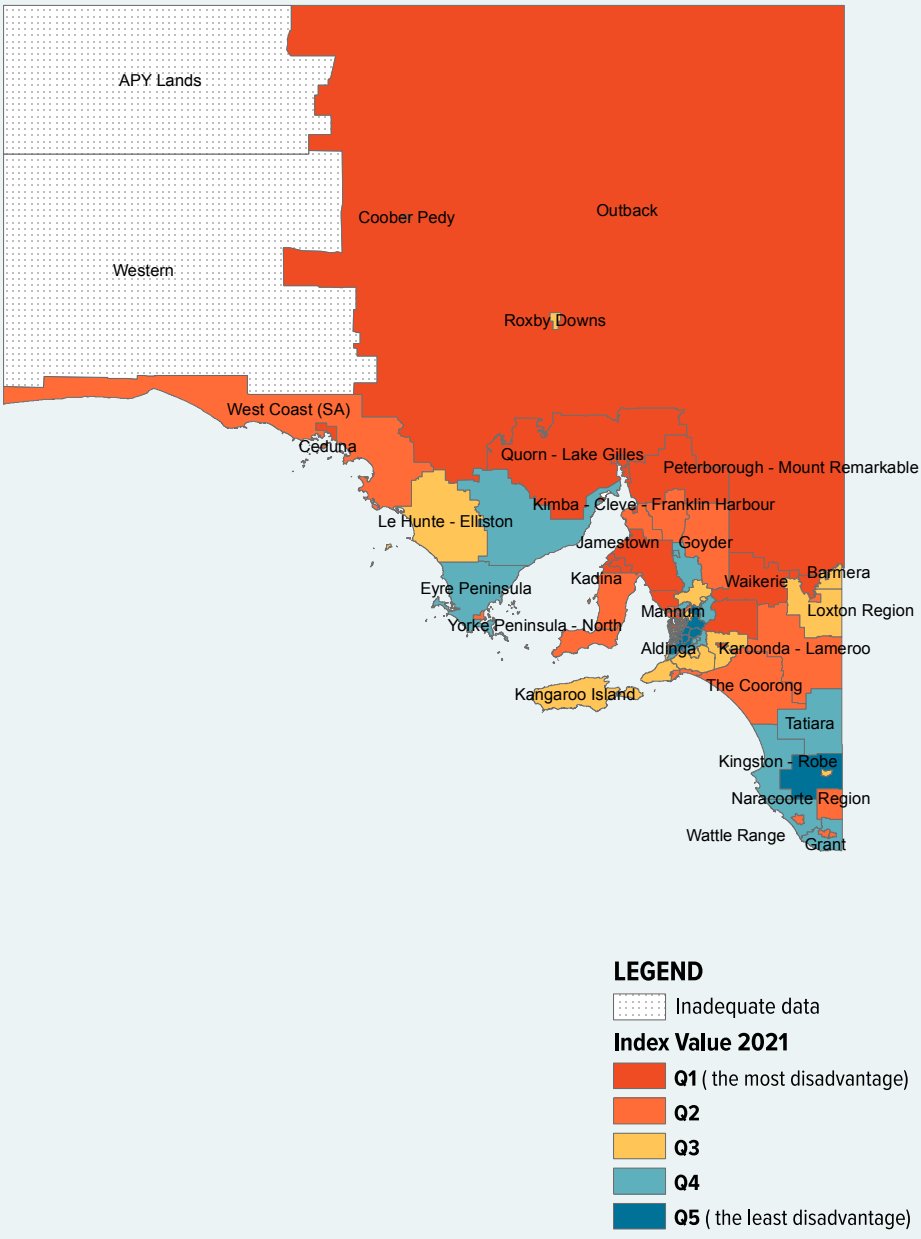
It is clear that the index is consistent over time when identifying the most disadvantaged locations, despite all the changes made to it in 2021 (new indicators, domains, and method).

The analysis of the individual indicators later in this chapter will show a clearer picture of change over time, as the indicators analysed are the same in 2015 and 2021.

Figure 6 shows a map of the index for South Australia and Greater Adelaide. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index score. In South Australia, there are about 33 SA2s in each quintile. This is the same approach used by the ABS to group the Socio-Economic Index for Areas.

The map shows large areas of disadvantage in South Australia outside Greater Adelaide, including in the north of the state. However, it needs to be remembered that SA2s in this region are huge areas but sparsely populated. There were also some of the most disadvantaged locations in Greater Adelaide, around Salisbury and Hackham-Onkaparinga Hills. All of the least disadvantaged locations were within the capital city

Figure 6 Map of index for South Australia and Greater Adelaide



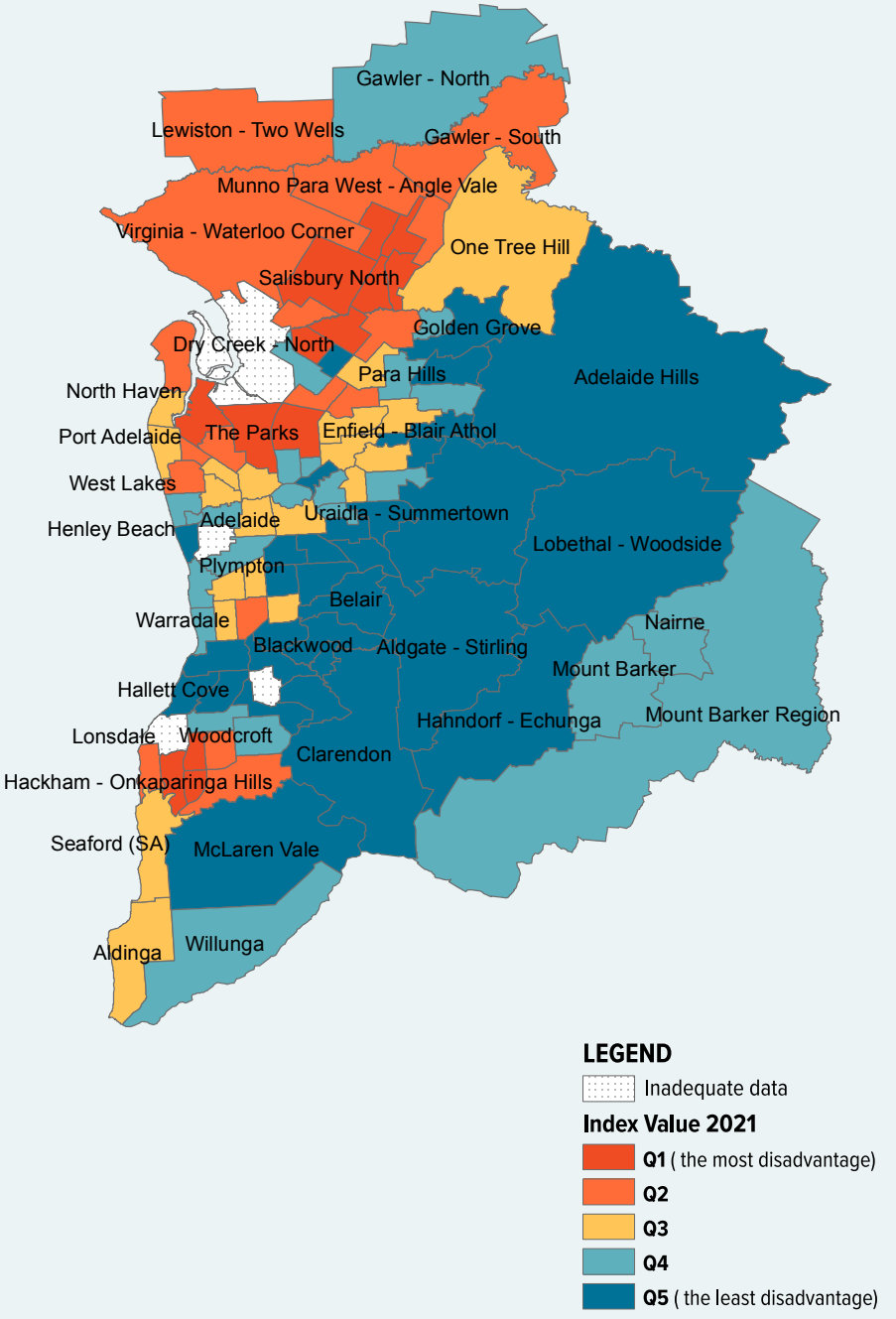

Gawler - North
Lewiston - Two Wells
Gawler - South
Munno Para West - Angle Vale
Virginia - Waterloo Corner
One Tree Hill
Salisbury North
Golden Grove
Dry Creek - North
Para Hills
Adelaide Hills
North Haven
Port Adelaide
The Parks
Enfield - Blair Athol
West Lakes
Henley Beach
Adelaide
Uraidla - Summertown
Lobethal - Woodside
Plympton
Belair
Warradale
Nairne
Blackwood
Aldgate - Stirling
Mount Barker
Hallett Cove
Hahndorf - Echunga
Mount Barker Region
Lonsdale
Woodcroft
Clarendon
Hackham - Onkaparinga Hills
Seaford (SA)
McLaren Vale
Aldinga
Willunga
LEGEND
Inadequate data
Index Value 2021
Q1 (the most disadvantage)
Q2
Q3
Q4
Q5 (the least disadvantage)

Table 39 List of 20 most disadvantaged locations in South Australia and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007	IN 2015
Most Disadvantaged Locations – listed alphabetically within bands					
1	Christie Downs [46]	9,758	Greater Adelaide	Y	Y
	Coober Pedy	1,820	Rest of SA	Y	Y
	Davoren Park [47]	18,291	Greater Adelaide	Y	Y
	Hackham West - Huntfield Heights[48]	7,674	Greater Adelaide	Y	Y
	Murray Bridge	19,414	Rest of SA		Y
	Port Augusta	13,397	Rest of SA	Y	Y
	Port Pirie	14,086	Rest of SA	Y	Y
	Renmark	4,806	Rest of SA		Y
	Salisbury	18,579	Greater Adelaide		Y
	Wallaroo [49]	4,301	Rest of SA		Y
2	Berri	4,230	Rest of SA		Y
	Ceduna	2,550	Rest of SA	Y	Y
	Elizabeth East [50]	13,449	Greater Adelaide	Y	Y
	Enfield - Blair Athol[51]	24,758	Greater Adelaide	Y	Y
	Mannum[52]	6,529	Rest of SA		Y
	Moonta [53]	5,194	Rest of SA		Y
	Outback	2,484	Rest of SA		
	Salisbury North	18,149	Greater Adelaide		Y
	The Parks [54]	19,341	Greater Adelaide		Y
	Whyalla	21,478	Rest of SA	Y	Y

[46] This was called Onkaparinga – North Coast in the 2007 and 2015 reports
[47] This was called Playford – West Central in the 2007 and 2015 reports
[48] This was called Onkaparinga – Hackham in the 2007 and 2015 reports
[49] This was called Copper Coast in the 2007 and 2015 reports
[50] This was called Playford – Elizabeth in the 2007 and 2015 reports
[51] This was called Port Adel. Enfield (C) – Inner in the 2007 and 2015 reports
[52] This was called Mid-Murray in the 2007 and 2015 reports
[53] This was called Copper Coast in the 2007 and 2015 reports
[54] This was called Port Adel. Enfield (C) – Park in the 2007 and 2015 reports

BAND	SA2 NAME	POPULATION	LOCATION	IN 2007	IN 2015
Least Disadvantaged Locations[55]					
	Aldgate - Stirling	18,064	Greater Adelaide		
	Belair	4,665	Greater Adelaide		
	Blackwood	12,885	Greater Adelaide		
	Burnside - Wattle Park	19,415	Greater Adelaide		
	Clarendon	2,754	Greater Adelaide		
	Coromandel Valley	4,490	Greater Adelaide		
	Flagstaff Hill	10,884	Greater Adelaide		
	Glenside - Beaumont	10,187	Greater Adelaide		
	Mitcham (SA)	16,638	Greater Adelaide		
	Uraidla - Summertown	5,745	Greater Adelaide		

[55] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN SOUTH AUSTRALIA

This analysis moves beyond the index, which identifies overall disadvantage in a location, to identifying locations of particularly deep disadvantage in South Australia, where a location is disadvantaged on multiple indicators. Examination at the indicator level provides a more detailed picture than the summary index can.

Table 40 shows locations that were ranked in the top 5% most disadvantaged on five or more of the 34 separate indicators. In total, 17 locations (10% of all locations) across South Australia experienced severe disadvantage across five or more indicators, together accounting for 57% of the indicator positions.

Table 40 shows that eight locations in South Australia had more than 10 of the 34 indicators ranked in the top 5% most disadvantaged, suggesting that disadvantage is particularly deep in these locations. Table 41 shows all locations where five or more indicators were in the top 5%. This list of 17 locations is very similar to the list of most disadvantaged locations from the index (see Table 39). This was the case in all other states also – the most disadvantaged from the summary index were also those locations with multilayered disadvantage. The index couldn't be calculated for APY Lands due to missing data, but the indicators showed that this location experienced multilayered disadvantage.

One of the interesting results from Table 41 is that three of the top five locations were in Greater Adelaide. In most other states except Victoria, the majority of the top five were outside the capital city. However, it is important to note that in both Greater Adelaide and Melbourne two thirds of all SA2 locations are located within these capital cities.

Table 40 Multilayered disadvantage – Number of locations with five or more indicators in the most disadvantaged 5% across SA

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS[56]
5	2	10
6	3	18
7	2	14
8	2	16
9	1	9
10	2	20
11	1	11
13	1	13
14	1	14
21	1	21
24	1	24
Total (including locations not shown in table)	165	299

[56] Number of Positions is the number of indicators multiplied by number of locations

Table 41 List of locations with five or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	APY Lands	2,552	Rest of SA
	Coober Pedy	1,820	Rest of SA
	Davoren Park	18,291	Greater Adelaide
	Elizabeth	10,626	Greater Adelaide
	Smithfield - Elizabeth North	12,269	Greater Adelaide
2	Ceduna	2,550	Rest of SA
	Christie Downs	9,758	Greater Adelaide
	Hackham West - Huntfield Heights	7,674	Greater Adelaide
	Outback	2,484	Rest of SA
	Port Augusta	13,397	Rest of SA
3	Renmark	4,806	Rest of SA
	Roxby Downs	3,925	Rest of SA
	Salisbury	18,579	Greater Adelaide
	The Parks	19,341	Greater Adelaide
	Wallaroo	4,301	Rest of SA
4	Berri	4,230	Rest of SA
	Elizabeth East	13,449	Greater Adelaide

PERSISTENT DISADVANTAGE IN SA

Persistent disadvantage is disadvantage that exists over time. There are problems with comparing the summary index over time, due to different weights and indicators in each report, so the following analysis considers rankings over time on specific indicators that were directly comparable. The analysis identified situations where locations were disadvantaged against an indicator in both the 2015 and 2021 reports. The list of 19 comparable indicators for South Australia is shown in Table 42.

Table 42 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Domestic violence	Domestic violence
Prison admissions	Prison admissions
Psychiatric admissions	Psychiatric admissions

The *number of locations* with indicators that stayed in the most disadvantaged 5% from 2015 to 2021, and the *number of indicators* involved, is shown in Table 43. Most locations in South Australia do not have persistent disadvantage.

Nevertheless, there are examples of locations that are struggling to move out of certain forms of disadvantage. A total of 23 locations had at least one indicator in the most disadvantaged 5% in both reports. Five locations had six or more indicators in the top 5% in the 2015 report and 2021 report, and these locations, which are clearly facing persistent disadvantage, are listed in Table 44.

Most of the locations with persistent disadvantage were also identified by the index as disadvantaged (noting that APY Lands had no index due to missing data).

Although the numbers are small, the majority of locations experiencing persistent disadvantage were in Greater Adelaide.

Table 43 Numbers of locations in South Australia with persistent disadvantage

NUMBER OF INDICATORS IN TOP 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	142
1	15
2	1
3	2
6	1
7	1
8	2
10	1

Table 44 South Australia Locations with persistent disadvantage

SA2 NAME	PERSISTENT DISADVANTAGE	POPULATION	REGION
APY Lands	Y (Band 1)	2,552	Rest of SA
Coober Pedy	Y (Band 1)	1,820	Rest of SA
Davoren Park	Y (Band 1)	18,291	Greater Adelaide
Elizabeth	Y (Band 1)	10,626	Greater Adelaide
Smithfield - Elizabeth North	Y (Band 1)	12,269	Greater Adelaide

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN SOUTH AUSTRALIA

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact of where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations.

In states with a larger data set and more SA2s, we were able to consider the 3% most disadvantaged locations, and the level of overrepresentation of certain forms of disadvantage in those locations relative to the rest of the state. Unfortunately, in South Australia the most disadvantaged 3% of locations comprised only four locations. The results were therefore unstable, and have not been published in this report.

The key drivers of the index can serve as a proxy insight into disadvantage, but may not reflect what is occurring in locations of extreme disadvantage. More research would be worthwhile in this field.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 45.

No internet at home was the greatest contributor to the index in South Australia, while particulate matter was the second greatest, followed by prison admissions per 1000 population.

In the 2021 report, a number of new environment indicators were added including particulate matter, which is a measure of air pollution. Particulate matter has been important in many other states as a strong contributor to the index (including New South Wales, Queensland, and Western Australia) , and the link between disadvantaged locations and particulate matter is highlighted in Chapter 2. Generally, disadvantaged locations are more likely to be close to industrial locations like mines, power stations, and industry compared to locations that are not disadvantaged.Given South Australia has a number of such areas, it makes sense that particulate matter was a strong contributor to the index and accorded the second highest weight.

No internet at home has been identified in all other states except the ACT in the list of important factors in the index, but South Australia is the only state where it has presented as the primary contributor to the index. The latest ABS data on household access to the internet, from 2016-17, shows that South Australia had the lowest proportion of households with internet access, at 82.5% compared to a national average of 86.1%. Further, low income households had less access to the internet, at 67.4% for the lowest income quintile and 96.9% for the highest (Australian Bureau of Statistics, 2018a).

This suggests that internet access may be a particular issue in South Australia. The literature review in Chapter 2 identified a strong link between internet access and family level disadvantage, in particular education. It is clear that in South Australia, the combination of this link between internet access and disadvantage, and the accessibility issues identified in the ABS survey, have meant that this indicator has come to prominence in the South Australia index.

Finally, one of the community safety indicators was identified as the third most important indicator in the index. This is consistent with other states, where prison admissions has proven to be an important indicator.

Table 45 Indicators that contributed most to the index in SA

DOMAIN	INDICATOR	LOADING
Social Distress	% with no Internet at home	0.67
Environment	Particulate matter	0.62
Community Safety	Prison admissions per 1,000 population	0.61

SIGNS OF IMPROVEMENT IN SOUTH AUSTRALIA

The focus in this report has been on disadvantaged locations and multilayered and persistent disadvantage. However, Dropping off the Edge research also points to locations where improvements have been made since 2015, including where locations have moved out of top 5% most disadvantaged against some indicators. This might be due to government programs or community programs, instances of urban renewal and gentrification, or a range of other reasons such as strong leadership or increased job opportunities. While we can identify these locations based on indicator movement, further research would be needed to consider the reasons and magnitude of improvements.

For this analysis, the indicators that were comparable over time were used. The list of 19 comparable indicators was also used for the analysis of persistent disadvantage, and is shown in Table 42.The analysis focuses on the 51 locations in South Australia that had one or more indicators in the top 5% in 2015, and considers whether the locations have shifted disadvantage on any of those indicators such that they are no longer in the top 5% in 2021. The number of locations with indicators moving out of disadvantage in South Australia is shown in Table 46. (The 113 locations that recorded no indicator rankings in the top 5% in 2015 are not examined in this analysis).

A total of 29 locations had at least one indicator moving out of the most disadvantaged 5%, and 22 locations had indicators in the most disadvantaged 5% in 2015 but had no indicators move out in 2021.

Table 46 Number of locations in South Australia improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVING	NUMBER OF LOCATIONS
0	22
1	19
2	7
4	2
8	1

It is clear that the number of indicators moving out of the most disadvantaged 5% is very small. However, we can see that one community managed this improvement against 8 indicators between the 2015 and 2021 reports. A further two locations improved against four different indicators.

The list of three locations with four or more indicators moving out of disadvantage is shown in Table 47. Coober Pedy was also listed in the last section as a location that had a number of indicators staying disadvantaged. Only four of the 19 indicators moved out of disadvantage in Coober Pedy, while eight stayed severely disadvantaged.

Due to the small number of locations (the top 5% on any indicator comprises just eight locations in South Australia), no analysis of any commonality in moving indicators has been done.

Table 47 Locations with four or more indicators moving out of highest disadvantage in 2021 compared to 2015

BAND	SA2 NAME	POPULATION	REGION
1	Ceduna	2,550	Rest of SA
	Coober Pedy	1,820	Rest of SA
	Elizabeth East	13,449	Greater Adelaide

One additional SA2 was removed from this table due to low population.

CONCLUSIONS

Disadvantage is concentrated in a small number of areas in South Australia, with one tenth of locations accounting for more than half of the most disadvantaged rank positions across all indicators.

The summary index in South Australia has shown that Greater Adelaide has a number of the extremely disadvantaged locations. However, the majority of most disadvantaged locations are in regional South Australia. The locations with multilayered disadvantage were also the locations with persistent disadvantage. Some of these locations were also in the list of most disadvantaged locations using the index.

Greater Adelaide has all the least disadvantaged locations. This is consistent with other states.

The largest contributor to the index in South Australia was internet access. This was not identified in any other state or territory, and this suggests that it is a particular issue associated with disadvantaged locations in South Australia. ABS surveys have also identified internet access as an issue in South Australia, and have identified internet access as an issue for low income households.

The internet is becoming increasingly important as a way of accessing a range of government and education services as well as information and support, and it is likely communities with inadequate access will continue to be constrained.

Particulate matter was also high in disadvantaged locations, which has been identified in many other states and territories. As outlined in Chapter 2, high levels of particulate matter have an impact on long-term health. As for other states, prison admissions was also a strong contributor to the index of disadvantage.

CHAPTER 8

WESTERN AUSTRALIA (WA)

WESTERN AUSTRALIA (WA)

In Western Australia, 10% of the total number of SA2s (24 SA2s[57]) accounted for 56% of the most disadvantaged positions across all indicators. Five SA2s, or 2% of locations, accounted for 22% of the most disadvantaged positions. This highlights the concentrated nature of disadvantage, which is a key focus of this report.

The index shows that most of the disadvantage in Western Australia was outside Perth. In total, 14 of the 40 most disadvantaged locations (one third) were in Perth, although Perth included two thirds of the total SA2 locations in Western Australia.

The indicators that contributed most to the index in Western Australia were the proportion of young people not in employment, education or training; with air quality (particulate matter) being a close second. Particulate matter can be high in remote desert areas as well as other areas that may have high levels of pollution due to industry and mining. This was a new addition to the 2021 report, and has been found to be a significant contributor to the index in many of the larger states.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains, but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

When looking at the separate indicators in WA, many inland locations of the State experience multilayered disadvantage.

WHAT DATA WERE INCLUDED IN WA

Data were available in Western Australia for all 37 indicators. As addressed in other chapters, most data were collected in as consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other states record the offenders address at the time of sentencing. In Western Australia, the crime data referred to the residential address of the offender when sentenced. The project team would like to acknowledge the participation and assistance of the WA Department of Justice in this research.

The data for nature reserves in the environment domain were unreliable for Western Australia, so were not used in the indicator analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report and there were some problems with its reliability in all states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for Western Australia, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was 25, so over the 252 locations across Western Australia, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

[57] There are 252 SA2s across WA, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 228 SA2s in total. There were 153 in Perth and 75 outside Perth. A map of the SA2s in Perth and Western Australia is shown in Figure 3. Locations that are stippled in this map were not included in this analysis because there were less than 30 people or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

The list of indicators and domains available for Western Australia are shown in Table 48. Indicators in bold are those that were included in the index, while indicators not in bold type were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for Western Australia due to issues with the data.

In the 2021 report, a number of new environmental indicators were added. For many states with remote locations and industrial locations in large cities, particulate matter was a large contributor to the index, meaning this indicator provided a strong indication of the underlying dimension of disadvantage. This was also true of Western Australia, where particulate matter had the second-strongest weighting in determining the index.

Table 48 List of domains and indicators for WA

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENTAL	LIFETIME DISADVANTAGE
Low Family Income	**Receiving Disability Support Pension**	**Confirmed Child maltreatment**	**Unskilled workers**	**Year 3 NAPLAN Numeracy**	**Particulate matter**	**Teenage childbearing**
Volunteering	Psychiatric admissions	**Juvenile convictions**	**Underemployment**	**Year 3 NAPLAN Literacy**	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Prison admissions**	Long-term unemployment	**Year 9 NAPLAN Numeracy**	**Heat stress**	
Access to Shops	Suicide rates	Domestic violence	**Young adults not in Employment, Education or Training**	**Year 9 NAPLAN Literacy**	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		Housing stress	School attendance		
Overcrowding			**Public housing**	Left school before Year 10		
			Rent assistance	No post school qualification		
			Financial Stress	Young childhood Development (AEDC)		

WHERE DISADVANTAGE IS LOCATED IN WA

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This index number will be lower for locations that experience disadvantage that occurs across several indicators. The index is a useful summary to quickly identify disadvantage, but a limitation is that the detail of individual indicators is lost. Analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 40 most disadvantaged locations in Western Australia can be identified. These locations are shown in Table 49, which shows disadvantage in four bands of 10 locations. As with all lists of places in this report, these are alphabetical within each band, rather than in order of disadvantage.

Most of the disadvantaged locations in Western Australia are in the remote areas in the north and east of the State. There are a few disadvantaged locations in Perth, including Mandurah in the list of the top 10 most disadvantaged. Of the top 40, there were 14 in Perth. There was one location outside Perth in the list of least disadvantaged locations, being Busselton Region.

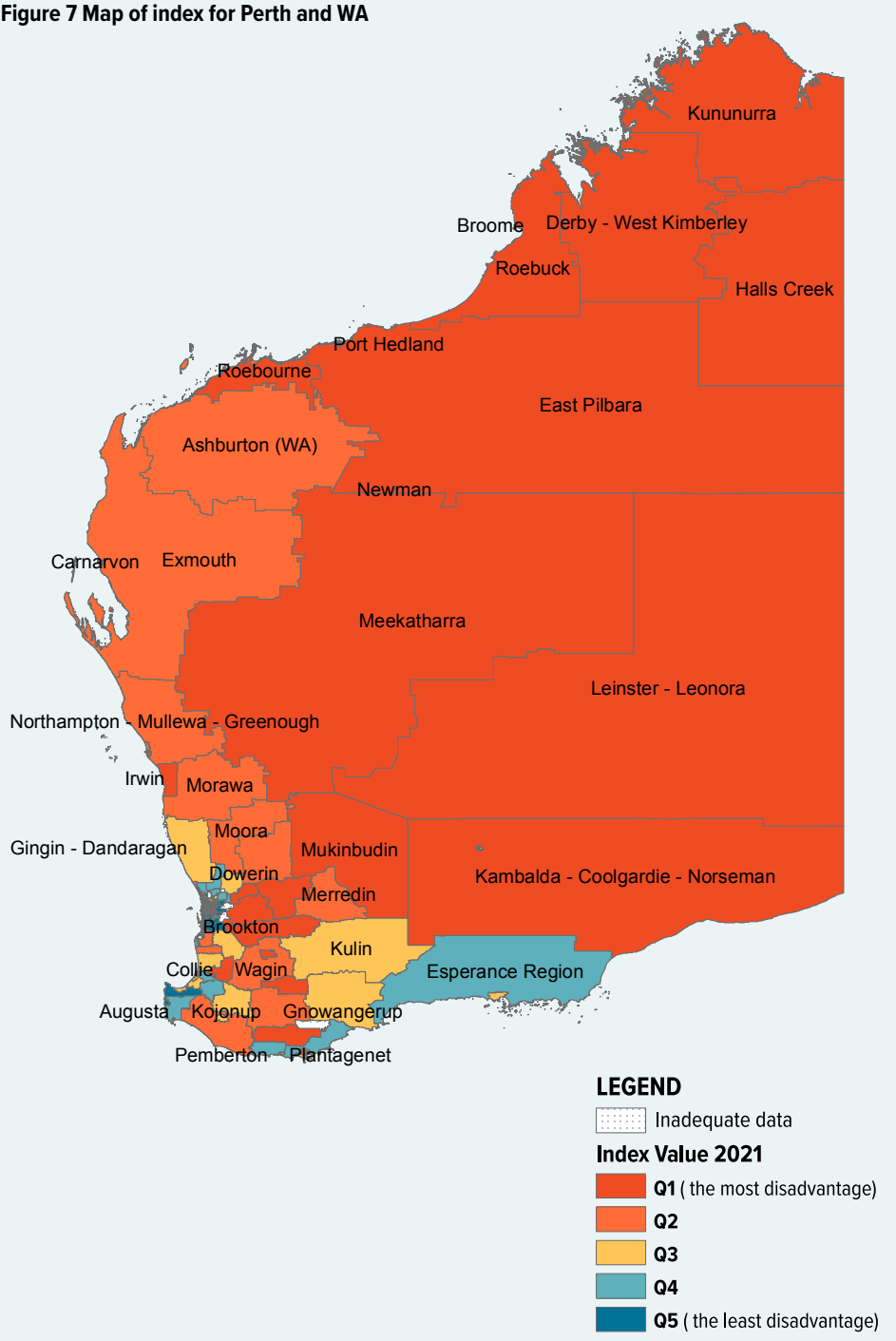
For Western Australia, there was no index in the 2015 report, so it is not possible to compare the index between 2015 and 2021.

Figure 7 shows a map of the index for Western Australia and Perth. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index scores. In Western Australia, there are about 46 SA2s in each quintile. This is the same approach used by the ABS to group the SEIFA indexes.

The map confirms what Table 49 shows, which is that most of the disadvantaged locations were outside Perth. Having said this, caution needs to be exercised in looking at the map, as the SA2 areas in the north and east of the state are huge geographical areas. It is important to note that although this looks like a massive level of disadvantage outside Perth, the locations are generally sparsely populated.

To better understand the nature of disadvantage and to describe the subjective experience of disadvantage as it relates to our quantitative data, a qualitative component was added to Dropping off the Edge in this report (see Chapter 3). In Western Australia we gathered qualitative data in Narrogin, a rural shire located 200km South-East of Perth. Ranked in the top 40 most disadvantaged SA2s, Narrogin was identified as having two indicators moving out of the top 20% disadvantaged (no internet and left school before Year 10) and four moving into the top 20% disadvantaged (NAPLAN and post-school qualifications). It also has a high proportion of Indigenous people. Narrogin was chosen due to a mix of changes in indicator rankings in the location and the high proportion of Indigenous people. The qualitative results shown in this chapter represent the comments of those involved in the focus groups and interviews in these communities.

Figure 7 Map of index for Perth and WA



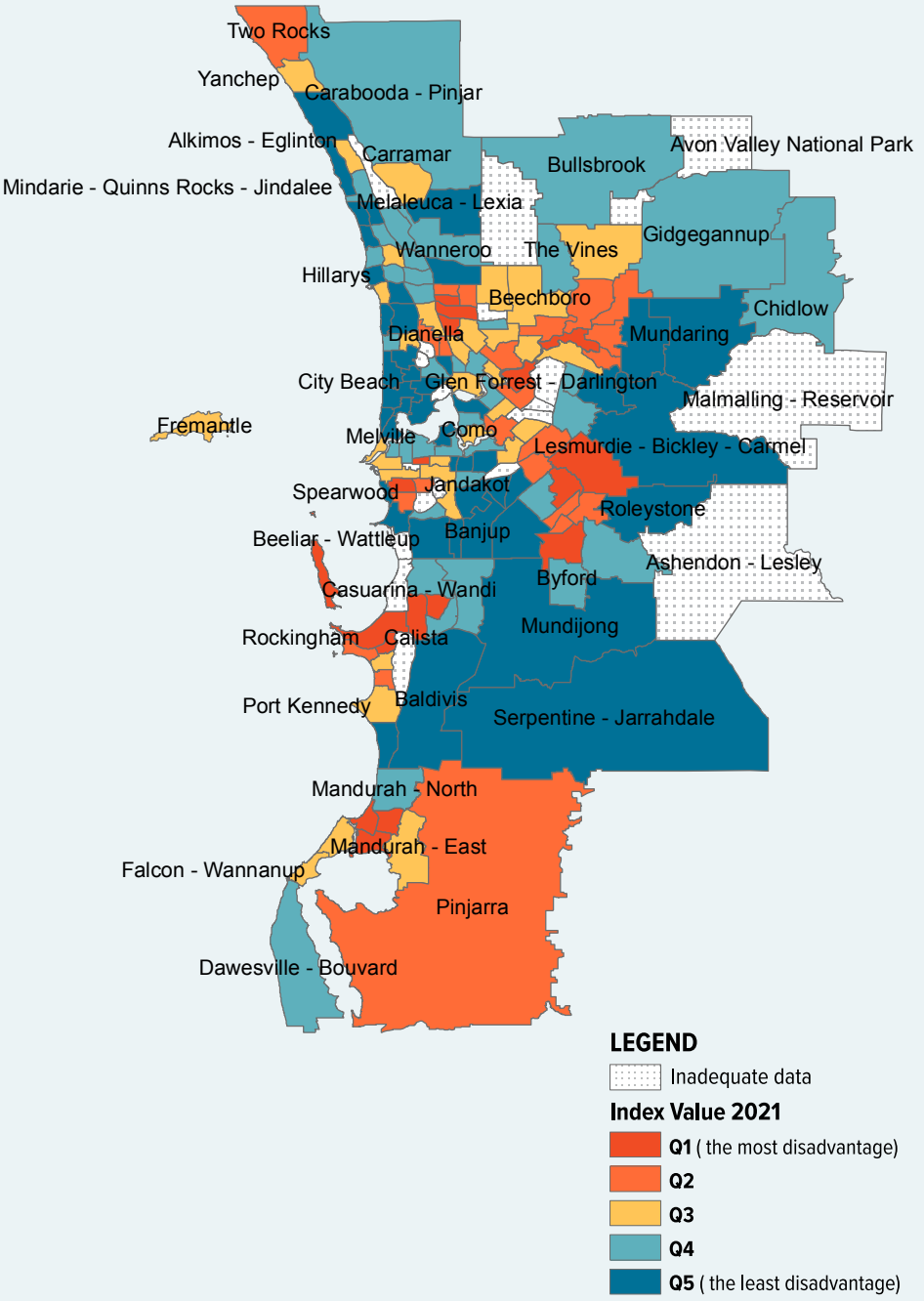

Two Rocks
Yanchep
Carabooda - Pinjar
Alkimos - Eglinton
Carramar
Bullsbrook
Avon Valley National Park
Mindarie - Quinns Rocks - Jindalee
Melaleuca - Lexia
Gidgegannup
Wanneroo
The Vines
Hillarys
Beechboro
Chidlow
Dianella
Mundaring
City Beach
Glen Forrest - Darlington
Malmalling - Reservoir
Fremantle
Melville
Como
Lesmurdie - Bickley - Carmel
Spearwood
Jandakot
Roleystone
Banjup
Beeliar - Wattleup
Ashendon - Lesley
Byford
Casuarina - Wandi
Mundijong
Rockingham
Calista
Port Kennedy
Baldivis
Serpentine - Jarrahdale
Mandurah - North
Mandurah - East
Falcon - Wannanup
Pinjarra
Dawesville - Bouvard
LEGEND
Inadequate data
Index Value 2021
Q1 (the most disadvantage)
Q2
Q3
Q4
Q5 (the least disadvantage)

Table 49 List of 40 most disadvantaged locations in Western Australia and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	REGION
Most Disadvantaged Locations – listed alphabetically within bands			
1	Carnarvon	4,758	Rest of WA
	Derby - West Kimberley	8,233	Rest of WA
	East Pilbara	6,537	Rest of WA
	Halls Creek	3,537	Rest of WA
	Kununurra	7,303	Rest of WA
	Leinster – Leonora	5,056	Rest of WA
	Mandurah	8,832	Greater Perth
	Meekatharra	2,833	Rest of WA
	Roebuck	2,578	Rest of WA
	Withers – Usher	4,976	Rest of WA
2	Armadale - Wungong - Brookdale	22,390	Greater Perth
	Balga – Mirrabooka	20,887	Greater Perth
	Boulder	6,965	Rest of WA
	Calista	7,565	Greater Perth
	College Grove - Carey Park	6,843	Rest of WA
	Geraldton	10,682	Rest of WA
	Geraldton – East	7,961	Rest of WA
	Katanning	4,476	Rest of WA
	South Hedland	10,298	Rest of WA
	York – Beverley	5,391	Rest of WA
3	Collie	8,601	Rest of WA
	Cooloongup	8,689	Greater Perth
	Cunderdin	3,974	Rest of WA
	Girrawheen	8,572	Greater Perth
	Gosnells	20,742	Greater Perth
	Irwin	3,594	Rest of WA
	Mandurah – South	10,600	Greater Perth
	Northam	11,013	Rest of WA
	Parmelia – Orelia	11,394	Greater Perth
	Willagee	5,146	Greater Perth

BAND	SA2 NAME	POPULATION	REGION
4	Brookton	3,665	Rest of WA
	Broome	14,403	Rest of WA
	Greenfields	9,860	Greater Perth
	Hamilton Hill	11,343	Greater Perth
	Kambalda - Coolgardie - Norseman	4,203	Rest of WA
	Midland - Guildford	10,765	Greater Perth
	Narrogin	4,457	Rest of WA
	Nollamara - Westminster	19,393	Greater Perth
	Plantagenet	5,262	Rest of WA
	Roebourne	5,737	Rest of WA

Least Disadvantaged Locations[58]

	Busselton Region	11,919	Rest of WA
	City Beach	6,909	Greater Perth
	Cottesloe	8,109	Greater Perth
	Duncraig	15,635	Greater Perth
	Glen Forrest - Darlington	7,290	Greater Perth
	Karrinyup - Gwelup - Carine	22,012	Greater Perth
	Lesmurdie - Bickley - Carmel	11,972	Greater Perth
	Nedlands - Dalkeith - Crawley	19,678	Greater Perth
	Swanbourne - Mount Claremont	9,942	Greater Perth
	Wembley Downs - Churchlands - Woodlands	14,905	Greater Perth

[58] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that a location of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN WA

This analysis moves beyond the index to identifying locations of multilayered disadvantage in Western Australia using 35 separate indicators. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged – in this instance, the top 5% most disadvantaged. Examination at the indicator level provides a more detailed analysis than can be provided by the summary index.

Table 50 records locations that were ranked in the top 5% most disadvantaged against five or more separate indicators. There were 24 locations (10% of all locations) across Western Australia with five or more indicators ranked in the top 5% most disadvantaged. These locations accounted for 56% of the most disadvantaged positions across all indicators.

Looking at the indicators that presented in these locations, the three most consistent were low income; youth not in employment, education or training; and jobless parents.

Similar to other states, the list of locations experiencing multilayered disadvantage (shown in Table 51) is similar to the list of locations most disadvantaged using the index. Those in the top 10 in Table 51 are also in the top 10 in Table 49. They include locations in the north and east of the state, as well as Mandurah in Perth.

Table 50 Multilayered disadvantage – Number of locations with five or more indicators in the most disadvantaged 5% across WA

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS [59]
5	5	25
6	6	36
7	2	14
9	2	18
11	1	11
12	1	12
13	1	13
15	1	15
17	3	51
18	1	18
23	1	23
Total (including locations not shown in table)	228	236

[59] Number of Positions is the number of indicators multiplied by number of locations

Table 51 List of locations with five or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	Derby - West Kimberley	8,233	Rest of WA
	Halls Creek	3,537	Rest of WA
	Leinster – Leonora	5,056	Rest of WA
	Meekatharra	2,833	Rest of WA
	Roebuck	2,578	Rest of WA
2	East Pilbara	6,537	Rest of WA
	Kununurra	7,303	Rest of WA
	Mandurah	8,832	Greater Perth
	South Hedland	10,298	Rest of WA
	Withers – Usher	4,976	Rest of WA
3	Ashburton (WA)	13,385	Rest of WA
	Balga – Mirrabooka	20,887	Greater Perth
	Calista	7,565	Greater Perth
	Carnarvon	4,758	Rest of WA
	Greenfields	9,860	Greater Perth
4	College Grove - Carey Park	6,843	Rest of WA
	Geraldton	10,682	Rest of WA
	Girrawheen	8,572	Greater Perth
	Hope Valley - Postans	27	Greater Perth
	Newman	4,865	Rest of WA
5	Armadale - Wungong - Brookdale	22,390	Greater Perth
	Boulder	6,965	Rest of WA
	Mandurah – South	10,600	Greater Perth
	Port Hedland	4,506	Rest of WA
	Roebourne	5,737	Rest of WA
6	Brookton	3,665	Rest of WA
	Broome	14,403	Rest of WA
	Exmouth	4,535	Rest of WA
	Willagee	5,146	Greater Perth

PERSISTENT DISADVANTAGE IN WA

Persistent disadvantage is disadvantage that exists over time. This analysis compares the 2015 indicators with the 2021 indicators to show locations that have been disadvantaged in both reports.

For this analysis, the indicators that were comparable over time were used. The list of 18 comparable indicators for Western Australia is shown in Table 52. The indicators juvenile justice and domestic violence were not available for Western Australia in 2015.

Table 52 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Prison admissions	Prison admissions
Psychiatric admissions	Psychiatric admissions

The results showing the *number of locations* with indicators that stayed in the most disadvantaged 5% from 2015 to 2021, and the *number of indicators* that stayed in the top 5%, is shown in Table 53. Most locations in Western Australia do not have persistent disadvantage, with 208 locations having no indicator against which they ranked in the top 5% for both reports. However, a small number of locations do show persistent disadvantage at the indicator level. A total of 20 locations had at least one indicator in the most disadvantaged 5% in both reports, and three locations showed persistent disadvantage on five or more. These three locations are listed in Table 54.

All locations experiencing persistent disadvantage on five or more indicators were outside Perth, and all were locations also present in the list of multilayered disadvantage as well as being classified as disadvantaged according to the index. This result has also been found in all other states.

Table 53 Numbers of locations in Western Australia with persistent disadvantage

NUMBER OF INDICATORS IN TOP 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	208
1	15
2	1
3	1
5	1
9	1
10	1

Table 54 Western Australia locations with three or more indicators indicating persistent disadvantage

SA2 NAME	PERSISTENT DISADVANTAGE	POPULATION	REGION
Derby - West Kimberley	Y (Band 1)	8,233	Rest of WA
Halls Creek	Y (Band 1)	3,537	Rest of WA
Leinster – Leonora	Y (Band 1)	5,056	Rest of WA

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN WA

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact of where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations.

In states with a larger data set and more SA2s, we were able to consider the 3% most disadvantaged areas, and the level of overrepresentation of certain forms of disadvantage in those areas relative to the rest of the state. Unfortunately, in Western Australia the most disadvantaged 3% of locations comprised only six locations. The results were therefore unstable, and have not been published in this report.

The key drivers of the index can serve as a proxy insight into disadvantage, but may not reflect what is occurring in areas of extreme disadvantage. More research would be worthwhile in this field.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 55.

The indicator that contributed most to the index in Western Australia was youth not engaged in education, employment or training. This is a departure from the other states where low income was the main contributor to the index. In Western Australia, low income still had a loading above 0.6, but it was the fourth highest in the index, rather than the highest or second highest that it has been for many of the other states.

The environment indicator of particulate matter had the second highest loading. As highlighted in Chapter 2, particulate matter is much higher in disadvantaged locations due to the use of wood fires; and closeness to industrial and mining areas. The large disadvantaged areas in remote Western Australia may also be affected by blown in sand from the desert, which is a source of particulate matter. This was a new indicator in the 2021 report and has been a key element of the index.

The third variable contributing to the index was prison admissions per 1,000 population. When discussed in the Narrogin case study community this surprised many study participants. Despite having three times the national average for prison admissions, they typically felt that their community was safe.

Table 55 Indicators that contributed most to the index in WA

DOMAIN	INDICATOR	LOADING
Economic	% Aged under 24 and not in Education, Employment or Training (NEET)	0.67
Environment	Particulate matter	0.64
Community Safety	Prison admissions per 1,000 population	0.61
Social Distress	% with low family Income (<$650 per week)	0.6

SIGNS OF IMPROVEMENT IN WESTERN AUSTRALIA

The focus in this report so far has been on disadvantaged locations and multilayered and persistent disadvantage. However, there are also some preliminary signs of progress from the analyses. This includes locations that have seen some indicators move from the top 5% most disadvantaged over the past five years. This might be due to government programs or community programs, instances of urban renewal and gentrification, or a range of other reasons such as strong leadership or increased job opportunities. While we can identify these locations based on indicator movement, further research would be needed to consider the reasons and magnitude of improvements.

For this analysis, the indicators that were comparable over time were used. The list of 18 comparable indicators was also used for the analysis of persistent disadvantage, and are shown in Table 52.

The analysis focuses on the 72 locations in Western Australia that had one or more indicators in the top 5% in 2015, and considers whether the locations have shifted out of disadvantage on any of those indicators such that they are no longer in the top 5% in 2021. The number of locations with indicators moving out of disadvantage in Western Australia is shown in Table 56. (The 113 locations that recorded no indicator rankings in the top 5% in 2015 are not examined in this analysis).

Table 56 Number of locations in Western Australia with indicators improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVING	NUMBER OF LOCATIONS
0	43
1	61
2	4
3	1
4	2
5	3
6	1

It is clear that the number of indicators moving out of the most disadvantaged 5% is very small. However, we can see that one location managed this improvement on six different indicators, while a further six locations improved on between three and five indicators. The list of seven locations with three or more indicators moving out of disadvantage is shown in Table 57.

Interestingly, all the locations with persistent disadvantage (Table 54) are also on this list, so they display a mix of indicators improving and others stubbornly hard to shift. The indicator that was moving out in most of these locations was long-term unemployment (six of the seven locations).

Table 57 Locations moving out of highest disadvantage in 2021 compared to 2015

BAND	SA2 NAME	POPULATION	REGION
1	Carnarvon	4,758	Rest of WA
	Derby - West Kimberley	8,233	Rest of WA
	Halls Creek	3,537	Rest of WA
	Kununurra	7,303	Rest of WA
	Leinster – Leonora	5,056	Rest of WA
2	Meekatharra	2,833	Rest of WA
	Wagin	4,908	Rest of WA

INSIGHTS FROM THE QUALITATIVE RESEARCH

It is important to acknowledge that there is only one Western Australian community involved in the focus groups and interviews, and any insights are not necessarily applicable to other locations in Western Australia, or elsewhere in Australia.

The qualitative case study in Narrogin emphasised the complexity and contextuality of disadvantage and its lived experience. While statistically disadvantaged on only a few indicators, the lived experience was more comprehensive and highlighted the interconnected web of factors that drive disadvantage within cohorts of the community. Described further in Chapter 12, social cohesion issues, youth engagement, crime and the lack of employment opportunities combine to further embed disadvantage in Narrogin, with one participant perceiving that social housing policies are further fuelling the economic, community safety and social distress problems:

> **"There's no jobs in Narrogin, and they're importing people to fill houses who don't have jobs, who don't have prospects. So … you just decrease the coherence of the positives of the town, because if people are tossed into an area and they don't have prospects, that's when you get crime." (Narrogin Focus Group Participant)**

While several good programs were being run in the area, including free financial counselling, a Holyoake drug support program and various community activities, no significant 'improvement' driver was identified by study participants for Narrogin.

Despite the importance of youth engagement, one of the participants indicated that Western Australia does not have a youth strategy to help support youth development.:

> **"For three years we've kind of been back and forth about when this youth strategy was going to be complete, and then [government representative] finally sent me an email not so long ago saying 'we never did the youth strategy. We've got a youth action plan, but not a strategy.' And I just thought it was a whole watered down thing. So I think even at the state level there's lots of this, the research that's been done says we need a strategy, but then nothing happens. And I think there's no focus at all [on youth] at the state level." (Narrogin interview participant 4)**

CONCLUSIONS

Disadvantage is concentrated in a small number of areas in Western Australia, with 24 areas, or 10% of locations, accounting for 56% of the most disadvantaged rank positions across all indicators.

The analysis of Western Australia has identified that most of the disadvantage is outside Perth, with large areas in the remote north and east of the state experiencing disadvantage.

Like other states, there is overlap between the index, multilayered disadvantage and persistent disadvantage with many of the locations identified by the index also experiencing multilayered and persistent disadvantage.

The difference in Western Australia was that the main indicator contributing to the index was youth not in employment, education or training. In most other states, low income was the main contributor to the index.

Particulate matter was also a strong contributor to the index, as it was for other large and remote states.

There were only seven locations that saw at least three indicators improve out of the highest level of disadvantage between 2015 and 2021, but six of these seven had improvements in long-term unemployment. This was also seen in some other states, which suggests that long-term employment is critical in these locations. All of these locations were large, remote locations in Western Australia.

The qualitative analysis highlighted youth issues as important, with focus group members highlighting the lack of a youth strategy. This was also reflected in the importance of youth not in employment, education and training in the index.

CHAPTER 9
TASMANIA

TASMANIA

In Tasmania, 6% of the total number of SA2s (6 SA2s[59]) accounted for 36% of the most disadvantaged positions across all indicators. Two locations accounted for 23% of the most disadvantaged positions. While the location numbers are small, the message is clear – disadvantage in Tasmania is concentrated rather than shared evenly across the state.

The index shows that six of the 10 most disadvantaged locations were in Greater Hobart, although only one third of all SA2s are located within Greater Hobart.

The indicators that contributed most to the index in Tasmania were low income and crime. The low income and crime indicators have consistently presented as important in each state index.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

When looking at the separate indicators, Tasmania displays locations of multilayered disadvantage with two locations having 19 indicators in the top 5% of disadvantage.

In the 2021 report, a number of new environment indicators were added. For many states, these indicators made a strong contribution to the index – in New South Wales, Queensland and Western Australia particulate matter was the highest or second highest contributor. In Tasmania, particulate matter was still a contributor to the index but it wasn't as high as seen in the other states.

WHAT DATA WERE INCLUDED IN TASMANIA

Data were available in Tasmania for all 37 indicators. As addressed in other chapters, most data were collected in a consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other jurisdictions record the offenders address at the time of sentencing. In Tasmania, the place of residence of the offender when sentenced was used for the crime data.

The data for nature reserves in the environment domain were unreliable for Tasmania, so were not used in the indicator analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule across all SA2s in the state. This was the first time this measure of biodiversity was used in the report and there were problems with it in many states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for Tasmania, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was seven, so over the 99 locations in Tasmania, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

[60] There are 99 SA2s across Tasmania, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 96 SA2s in total. There were 34 in Hobart and 62 outside Hobart. A map of the SA2s in Hobart and Tasmania is shown in Figure 1. Areas that are stippled in this map were not included in this analysis because there were less than 30 people or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

The data for psychiatric admissions were collected at the SA3 level and applied to all SA2s. As there were only 15 SA3s in Tasmania, the allocation to 96 SA2s was very broad, and was unusable in the final indicator analysis. This indicator was initially included in the index, but did not have a high enough loading to be kept.

The list of indicators and domains available for Tasmania are shown in Table 58. Indicators in bold are those that were included in the Tasmanian index, while indicators not in bold type were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for Tasmania due to problems with the data.

Table 58 List of domains and indicators for Tasmania

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENTAL	LIFETIME DISADVANTAGE
Low Family Income	**Receiving Disability Support Pension**	**Confirmed Child maltreatment**	**Unskilled workers**	**Year 3 NAPLAN Numeracy**	**Particulate matter**	**Teenage childbearing**
Volunteering	*Psychiatric admissions*	**Juvenile convictions**	Underemployment	Year 3 NAPLAN Literacy	**Tree cover**	**Children where no parent in family working**
No Internet	Number of GPs working in the area	**Prison admissions**	**Long-term unemployment**	**Year 9 NAPLAN Numeracy**	Heat stress	
Access to Shops	Suicide rates	**Domestic violence**	**Young adults not in Employment, Education or Training**	**Year 9 NAPLAN Literacy**	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		**Housing stress**	**School attendance**		
Overcrowding			**Public housing**	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	**Young childhood Development (AEDC)**		

WHERE DISADVANTAGE IS LOCATED IN TASMANIA

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This index number will be lower for locations that experience multilayered disadvantage – disadvantage that occurs across several indicators. The index is a useful summary to quickly identify disadvantage, but a limitation is that the detail of individual indicators is lost. Analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 10 most disadvantaged and least disadvantaged locations in Tasmania can be identified. These locations are shown in Table 59. As with all lists of places in this report, these are alphabetical within each band, rather than in order of disadvantage.

Sixty per cent of the locations of highest disadvantage are in Greater Hobart. Unfortunately, the 2015 report did not use an index for Tasmania, so a 2015 and 2007 comparison of the index cannot be made.

Figure 8 shows a map of the index for Tasmania and Greater Hobart. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index number. In Tasmania, there are about 20 SA2s in each quintile. This is the same approach used by the ABS to group the Socio-Economic Index for Areas.

An index value could not be calculated for Wilderness West or Wilderness East. These locations had insufficient population for calculations to be meaningful. The two locations cover a large area in the south-west of the state.

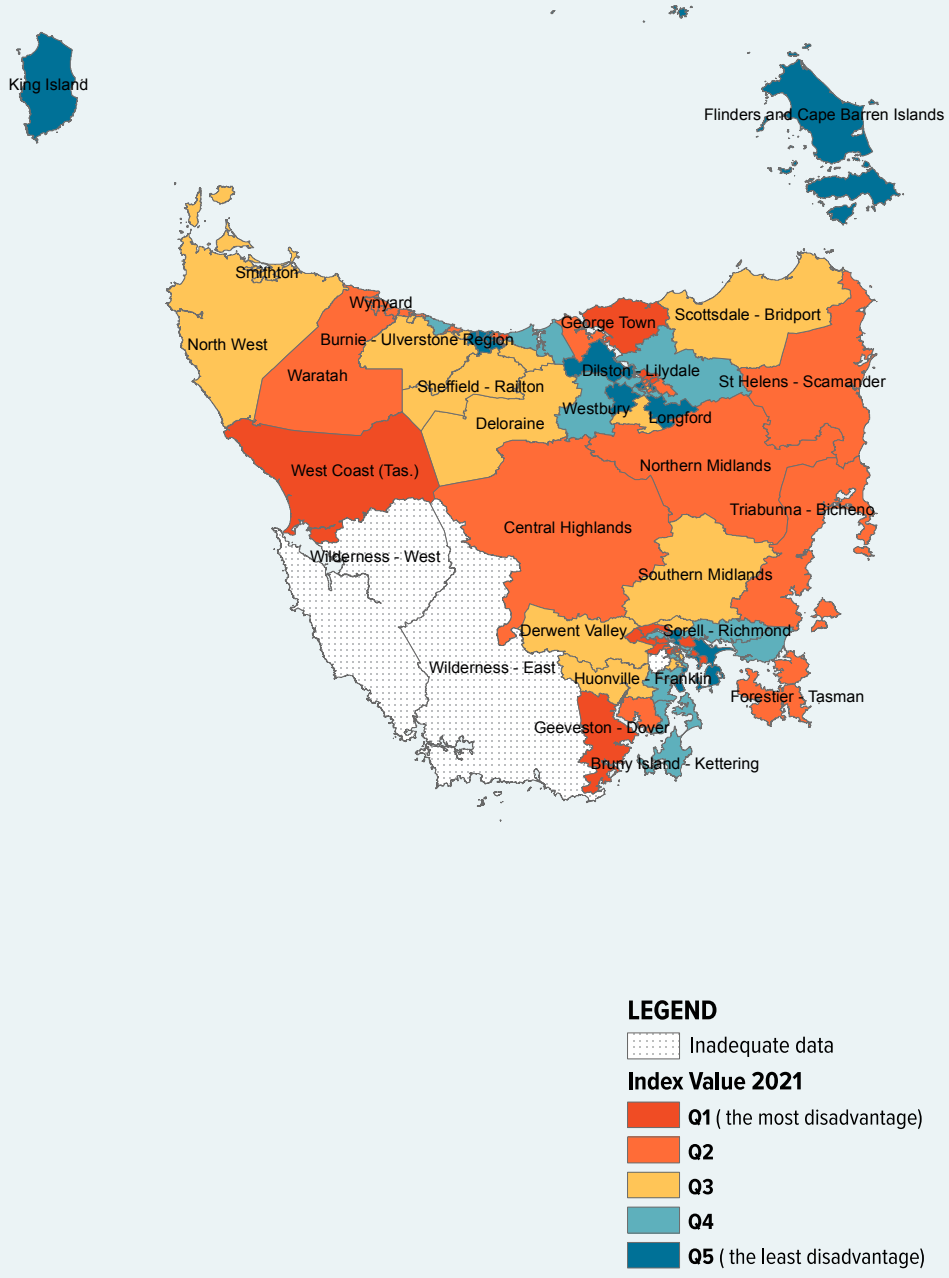
In Greater Hobart, disadvantaged locations seemed to be in the northern suburbs, while less disadvantaged locations seemed to be in the south-east of the city. Six of the ten most disadvantaged locations in Tasmania were in Greater Hobart; and six of the ten least most disadvantaged locations were in Greater Hobart. This wasn't due to the distribution of SA2s in Tasmania, as the majority (two thirds) of the SA2s were outside Greater Hobart.

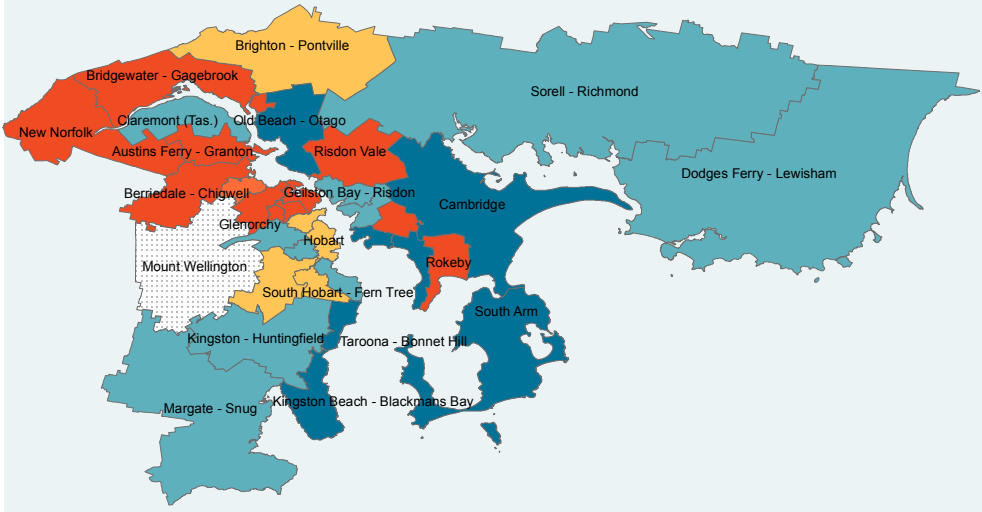
To better understand the nature of disadvantage and to describe the subjective experience of disadvantage as it relates to our quantitative data, a qualitative component was added to Dropping off the Edge in this report (see Chapter 3). In Tasmania, we gathered qualitative data in Montrose-Rosetta, which is part of the Glenorchy City Council.

Unlike many of the other qualitative case study locations, Montrose-Rosetta is not identified as being highly disadvantaged and is in Quintile 3 of the 2021 Index, where Quintile 1 is the most disadvantaged and Quintile 5 is the least disadvantaged. There is a high proportion of Indigenous residents compared to the national average, a higher proportion of people aged 65 and over and lower proportion of people aged 0-14. The qualitative results shown in this chapter represent the comments of those involved in the focus groups and interviews in these communities.

Montrose-Rosetta was selected due to the number of indicators which moved from disadvantaged in 2015 to not-disadvantaged in 2021, with 14 indicators identified as moving out of the most disadvantaged 20% between the 2015 and 2021 reports.

Figure 8 Map of index for Greater Hobart and Tasmania





LEGEND

Inadequate data

Index Value 2021

Q1 (the most disadvantage)

Q2

Q3

Q4

Q5 (the least disadvantage)

Table 59 List of 10 most disadvantaged locations in Tasmania and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	REGION
Most Disadvantaged Locations – listed alphabetically within bands			
1	Acton - Upper Burnie	3,379	Rest of Tas.
	Bridgewater - Gagebrook	7,543	Greater Hobart
	East Devonport	4,816	Rest of Tas.
	Glenorchy	11,646	Greater Hobart
	Mornington - Warrane	4,812	Greater Hobart
	New Norfolk	6,949	Greater Hobart
	Newnham - Mayfield	10,038	Rest of Tas.
	Ravenswood	3,560	Rest of Tas.
	Risdon Vale	3,432	Greater Hobart
	Rokeby	6,971	Greater Hobart
Least Disadvantaged Locations[61]			
	Bellerive - Rosny	6,092	Greater Hobart
	Cambridge	8,367	Greater Hobart
	Hadspen - Carrick	3,560	Rest of Tas.
	Howrah - Tranmere	11,295	Greater Hobart
	Legana	4,491	Rest of Tas.
	Sandy Bay	12,905	Greater Hobart
	South Arm	4,570	Greater Hobart
	Trevallyn	4,729	Rest of Tas.
	Turners Beach - Forth	3,365	Rest of Tas.
	West Hobart	6,320	Greater Hobart

[61] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN TASMANIA

This analysis moves beyond the index, which identifies overall disadvantage in a location using numerous indicators, to identifying locations of multilayered disadvantage in Tasmania using the separate indicators. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged. A location was considered severely disadvantaged on an indicator where it ranked in the top 5% most disadvantaged. Examination at the indicator level provides a more detailed picture than the summary index can.

Table 60 records locations that were ranked in the top 5% most disadvantaged against five or more separate indicators. In total, six locations (6% of all locations) across Tasmania met this criterion, and these locations accounted for 36% of the most disadvantaged indicator positions.

These locations are shown in Table 61. All of these locations are also identified as in the most disadvantaged 10 locations using the index. This suggests that the two measures are identifying similar aspects of disadvantage.

The qualitative case study community Montrose-Rosetta identified that students were not attending school as often as other students in locations across Australia. Several study participants identified challenges being experienced by one of the local schools, suggesting that these data may have worsened in recent years rather than improved:

> **"A school in [Montrose-Rosetta] at the moment, it's in utter turmoil … the school is really struggling … we can see very quickly when a school starts to get wobbly and that school over the last two years has got very unstable. They're struggling with a lot of behavioural issues and talking about issues relating to behaviour…[and] incredible attendance issues." (Montrose-Rosetta interview participant 1)**

> **"I would have said that there were a lot more issues, particularly for younger people in the Montrose area that we're seeing, and that we're working with in terms of our local schools, in terms of family violence, increased drug and alcohol intake, really risky types of behaviour with young people." (Montrose-Rosetta focus group)**

As found in other case study locations, these challenges have only been exacerbated by COVID which has placed additional pressure on students' education experience:

> **"A few of the things that we know is that post COVID, students who were engaging well before then have gone back in and engaging, while students who weren't engaged or were at risk of disengagement, COVID just sealed the deal for them. They've dropped out earlier. Their attendance is just, rather than there being anything gradual that people could track and deal with, they've just disappeared.'' (Montrose-Rosetta interview participant 1)**

Table 60 Multilayered disadvantage – Number of locations with five or more indicators in the most disadvantaged 5% across Tasmania

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS [62]
5	2	10
6	2	12
19	2	38
Total (including locations not shown in table)	96	166

Table 61 List of locations with five or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	Bridgewater - Gagebrook	7,543	Greater Hobart
	East Devonport	4,816	Rest of Tas.
	Mornington - Warrane	4,812	Greater Hobart
	Newnham - Mayfield	10,038	Rest of Tas.
	Ravenswood	3,560	Rest of Tas.
	Rokeby	6,971	Greater Hobart

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN TASMANIA

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact of where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signal broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations.

In states with a larger data set and more SA2s, we were able to consider the 3% most disadvantaged locations, and the level of overrepresentation of certain forms of disadvantage in those locations relative to the rest of the state. Unfortunately, in Tasmania the most disadvantaged 3% of locations comprised only three SA2s. The results were therefore unstable, and have not been published in this report.

The key drivers of the index can serve as a proxy insight into disadvantage, but may not reflect what is occurring in locations of extreme disadvantage. More research would be worthwhile in this field.

[62] Number of Positions is the number of indicators multiplied by number of locations

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.5 are the ones that contribute most to the index of disadvantage in Tasmania, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 64.

Similar to other states, low family income, family violence, prison admissions and no internet at home were the main contributors to the index. Although particulate matter is a contributor in the more industrial states and states with large, remote areas, it wasn't a strong contributor to the index in Tasmania.

Table 64 Indicators that contributed most to the index in Tasmania

DOMAIN	INDICATOR	LOADING
Social Distress	% with low family Income (<$650 per week)	0.56
Community Safety	Family violence per 1,000 population	0.55
Community Safety	Prison admissions per 1,000 population	0.55
Social Distress	% with no Internet at home	0.54

For the Tasmanian qualitative case study Montrose-Rosetta, the typical contributing indicators were a higher-than-average proportion of households with low family income, and the proportion of houses with no internet at home at 1.5 times the national average.

The high number of houses with no internet at home is concerning for the positive future for Montrose-Rosetta. Digital exclusion is becoming increasingly problematic, with many government services being delivered online, especially post COVID. One study participant identified:

"What we've seen over the COVID period is an acceleration of digitisation of basic services and which has left families even further behind. And so I think there's a new form of exclusion that's happening for those people. I know that the over 65 are in terms of the Australian digital inclusion index, you know, you're over 65s, unemployed people, single parents, … that's a reasonable proportion of the people in Montrose." (Montrose-Rosetta interview participant 1)

PERSISTENT DISADVANTAGE IN TASMANIA

Persistent disadvantage is disadvantage that exists over time. This analysis compares the 2015 indicators with the 2021 indicators to show locations that have been disadvantaged in both reports.

For this analysis, the indicators that were comparable over time were used. Comparison of the index over time was not possible as the full index was not calculated for Tasmania in 2015. The list of 19 comparable indicators for Tasmania is shown in Table 62.

Table 62 List of comparable indicators between 2015 and 2021 reports

2015 INDICATOR	2021 INDICATOR
Internet access	Internet access
Housing stress	Housing stress
Family income	Low family income
Overall education	Left school before Year 10
Post-school qualifications	No post school qualifications
Unskilled workers	Unskilled workers
Unengaged young adults	Young adults not engaged
School readiness	Young childhood development
Disability support	Receiving disability support pension
Long-term unemployment	Long-term unemployment
Rent assistance	Rent assistance
Year 3 Numeracy	Year 3 NAPLAN Numeracy
Year 3 Reading	Year 3 NAPLAN Literacy
Year 9 Numeracy	Year 9 NAPLAN Numeracy
Year 9 Reading	Year 9 NAPLAN Literacy
Confirmed child maltreatment	Confirmed child maltreatment
Juvenile offending	Juvenile convictions
Domestic violence	Domestic violence
Prison admissions	Prison admissions

The results showing the *number of locations* with indicators that stayed in the most disadvantaged 5% from 2015 to 2021, and the *number of indicators* that stayed in the top 5% in both reports, is shown in Table 63. Most locations in Tasmania do not have persistent disadvantage, with 86 locations having no indicator against which they ranked in the top 5% for both reports. However, a small number of locations do show persistent disadvantage at the indicator level. A total of 10 locations had at least one indicator in the most disadvantaged 5% in both 2015 and 2021. One community had five or more indicators in the top 5% in the 2015 report and 2021 report. It should be noted that this community only had five indicators in the top 5% out of a total of 19 indicators in both 2015 and 2021.

Part of the reason for this low number of locations with persistent disadvantage is that with only 99 SA2s across Tasmania, the bottom 5% translates to just five locations, so it is not surprising that not many had indicators which stayed in the bottom 5%. The numbers being dealt with are very small, and difficult to generalise from.

Table 63 Numbers of locations in Tasmania with persistent disadvantage

NUMBER OF INDICATORS IN LOWEST 5% IN 2015 AND 2021 REPORTS	NUMBER OF LOCATIONS
0	86
1	8
2	1
5	1

SIGNS OF IMPROVEMENT IN TASMANIA

The focus in this report has been on disadvantaged locations and multilayered and persistent disadvantage. However, there are also some preliminary signs of progress from this analysis. This includes locations that have seen indicators move from the top 5% most disadvantaged over the past five years. This might be due to government programs or local programs. This final section identifies these locations in Tasmania.

For this analysis, the indicators that were comparable across time were used. This is because the index was not calculated for Tasmania in 2015. The list of comparable indicators was also used for the analysis of persistent disadvantage, and is shown in Table 62.

The number of locations where indicators moved out of the most disadvantaged 5% in Tasmania is shown in Table 65. A total of 52 locations had no indicators in the top 5% in 2015, two locations had no indicators move out of the top 5% between 2015 and 2021, and a total of 42 locations had indicators moving out of the top 5%.

It is clear that the number of indicators moving out of the most disadvantaged 5% is small. There are 19 comparable indicators in Tasmania. In two locations, seven indicators that were in the top 5% of disadvantage in 2015 moved out of the top 5% in 2021.

Table 65 Number of locations in Tasmania with indicators improving from 2015 to 2021

NUMBER OF INDICATORS IMPROVING	NUMBER OF LOCATIONS
0	2
1	21
2	4
3	2
4	9
5	3
6	1
7	2

Table 66 Locations with five or more indicators moving out of highest disadvantage in 2021 compared to 2015

BAND	SA2 NAME	POPULATION	REGION
1	Brighton – Pontville	6,213	Greater Hobart
	Central Highlands	2,068	Rest of Tas.
	Forestier – Tasman	2,476	Rest of Tas.
	George Town	7,183	Rest of Tas.
	Old Beach – Otago	4,975	Greater Hobart
	St Helens - Scamander	6,327	Rest of Tas.

INSIGHTS FROM THE QUALITATIVE RESEARCH

Montrose-Rosetta is undergoing a period of change, a slow gentrification associated with increased migration and the housing boom. With increased house and rental prices over recent years, low income residents are being pushed further north, with working families coming into the community.

While this shift is slow, the level of disadvantage has already decreased, with reduced crime and increased financial resources available in households, although challenges associated with COVID may affect some households with reduced income and perceived increased drug use, behavioural challenges and absenteeism. Study participants identified this gentrification and other changes as potential factors in reducing disadvantage, with housing pressures and recent immigration potentially resulting in a shift of socio-demographic characteristics:

"Gentrification, movement, so that kind of stratification, like it's moved further [North]. There's been a kind of a push.... I do know that the Montrose area, at least I believe to be one of the areas where we've seen quite a bit of settlement of families, who've come through resettlement programs or have come through different areas... but I do believe it's probably mainly gentrification." (Montrose-Rosetta interview participant 1)

"One of the reasons we think that the community is improving is the ... very slow gentrification, which is an impact of housing affordability issues, which are people pushing people further and further, in the Hobart case north, into some of these suburbs where they might've been in Newtown [previously]." (Montrose-Rosetta focus group)

Reasonable house prices and availability of services also make Rosetta an attractive place to live, which can lead to a reduction in the factors related to high disadvantage:

> **"I just wonder if it's employment. I do know that prior to the real estate boom, I guess homes in Rosetta were reasonably priced, and Rosetta is the kind of place that people come to be because it's kind of viewed as okay. It's kind of better than maybe Chigwell or it's better than other places. … And I guess because it's relatively, well it is only nine and a half kilometres out of town. Not that I thought of town much, but people seem to think that's important. How far away your house is away from the city. And it's close to services and things, transport's relatively good. So I guess that helps people to get to work without needing to take their car." (Montrose-Rosetta interview participant 4)**

With new and proposed housing and park developments in Montrose-Rosetta, ongoing migration and the continuation of the housing boom, the area is likely to continue to change, presenting new opportunities for positive community outcomes.

CONCLUSIONS

Disadvantage is concentrated in a small number of locations in Tasmania, with six areas, or 6% of locations, accounting for 36% of the most disadvantaged rank positions across all indicators.

Disadvantaged locations in Tasmania were over-represented in Greater Hobart. The least disadvantaged SA2s were also more likely to be in Greater Hobart, suggesting that Greater Hobart experienced the extremes of high and low disadvantage.

In Tasmania, indicators strongly associated with disadvantage included low income, crime (family violence and prison admissions) and no internet. Low income has been identified in many other states as a major contributor to the index, and no internet was also identified in South Australia. Access to the internet is particularly important for disadvantaged families and children, as many Centrelink services are now provided through the internet; and during the COVID shutdowns, school classes were often provided over the internet. Children in families that don't have access are at risk of falling further behind students in less disadvantaged families, risking dropping out of school and further entrenchment of disadvantage. Digital exclusion was also highlighted in the case study community.

No conclusions could be made from the analysis of persistent disadvantage, because there was only one community which had five indicators in the top 5% between the 2015 and 2021 reports.

The case study location did provide some interesting insights around gentrification and movement away from the inner city pushing up house prices and incomes. Low income households are then pushed further out of the city, increasing transport costs and accessibility issues for them. These are issues facing Australia's largest cities like Sydney and Melbourne, so it is interesting to see a case study where the impact of gentrification is being seen in one of Australia's smaller capital cities.

CHAPTER 10

NORTHERN TERRITORY (NT)

NORTHERN TERRITORY (NT)

In the Northern Territory, 13% of the total number of SA2s (8 SA2s[63]) accounted for 46% of the most disadvantaged positions across all indicators. Three locations (5%) accounted for 25% of the most disadvantaged positions. This highlights the concentrated nature of disadvantage, which is a key focus of this report.

The index shows that all of the top 10 disadvantaged locations in the Northern Territory were outside Darwin, despite only one third of all SA2s being located outside Greater Darwin. The indicator that contributed most to the index in the Northern Territory related to physical disability (need assistance with core activities). The community safety data (prison admissions and family violence) were also important.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains but then also analyses each individual indicator in every location. This provides both a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

WHAT DATA WERE INCLUDED IN THE NORTHERN TERRITORY

Data were available in the Northern Territory for all 37 indicators, although not all data for the Northern Territory were reliable, as outlined below.

As addressed in other chapters, most data were collected in a consistent manner across all states and territories. The exceptions to this are the crime data. Some states record the residential address of the offender at the time of the crime while other states record the offender's address at the time of sentencing. In the Northern Territory, the location of the offence, rather than the residential address of the offender was the location used for the crime data. Further, the NT provided juveniles found guilty, not just convicted.

The data for nature reserves in the environment domain were unreliable for the Northern Territory, so were not used in the analysis. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero across all SA2s in the Territory. This was the first time this measure of biodiversity was used in the report and there were problems with it in many states. This indicator will be reconsidered for the next report.

The data for access to shops were also unreliable for the Northern Territory, so were not used in the analysis of indicators. For many locations, this number was zero, while the maximum was five, so over the 68 locations in the NT, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

The data for psychiatric admissions at the SA3 level was unusable in the Northern Territory as there are only nine SA3s, and some very large SA3s which had one number applied to all the SA2s within them. The variation in psychiatric admissions across the SA2s was therefore limited. In one SA3, all 18 SA2s were given the one value. This means the values applied were unrepresentative of the SA2. This indicator was used in the index, but not the detailed indicator analysis.

[63] There are 68 SA2s across the NT, but in this analysis SA2s with less than 30 people were removed, leaving 62 SA2s in total. Of these, 38 were in Darwin and 24 were outside Darwin. A map of the SA2s in the Northern Territory and Darwin is shown in Figure 3. Areas that are stippled in this map were not included in this analysis because there were less than 30 people, or the data were unreliable. It can be seen that the rural SA2s in the Northern Territory are very large. Two of the areas in remote Northern Territory had no index value due to inadequate data.

A similar issue was found with child maltreatment. The way the data were provided meant that six values were applied to all SA2s in this jurisdiction. This indicator was therefore used in the index, but not the detailed indicator analysis.

The list of indicators and domains available for the Northern Territory are shown in Table 67. Indicators in bold are those that were included in the index, while indicators not in bold type were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for the Northern Territory due to issues with the data.

Table 67 List of domains and indicators for the Northern Territory

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENTAL	LIFETIME DISADVANTAGE
Low Family Income	**Receiving Disability Support Pension**	***Confirmed Child maltreatment***	Unskilled workers	**Year 3 NAPLAN Numeracy**	**Particulate matter**	**Teenage childbearing**
Volunteering	***Psychiatric admissions***	**Juvenile found guilty**	Underemployment	**Year 3 NAPLAN Literacy**	**Tree cover**	**Children where no parent in family working**
No Internet	**Number of GPs working in the area**	**Prison admissions**	**Long-term unemployment**	**Year 9 NAPLAN Numeracy**	Heat stress	
Access to Shops	Suicide rates	**Domestic violence**	**Young adults not in Employment, Education or Training**	**Year 9 NAPLAN Literacy**	*Nature reserves*	
Access to culture and recreation facilities	**Need assistance with core activities**		**Housing stress**	**School attendance**		
Overcrowding			**Public housing**	**Left school before Year 10**		
			Rent assistance	**No post school qualification**		
			Financial Stress	Young childhood Development (AEDC)		

WHERE DISADVANTAGE IS LOCATED IN THE NORTHERN TERRITORY

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This index number will be lower for locations that experience multilayered disadvantage – disadvantage that occurs across several indicators. The index is a useful summary to quickly identify disadvantage, but a limitation is that the detail of individual indicators is lost. Analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 10 most disadvantaged locations in the NT can be identified. These locations are shown in Table 68. As with all lists of places in this report, these are alphabetical within each band, rather than in order of disadvantage.

A comparison with the 2015 index cannot be made, as there was no index calculated for the Northern Territory in 2015.

All of the locations of highest disadvantage are outside Darwin, while all the locations with the lowest disadvantage are in Darwin.

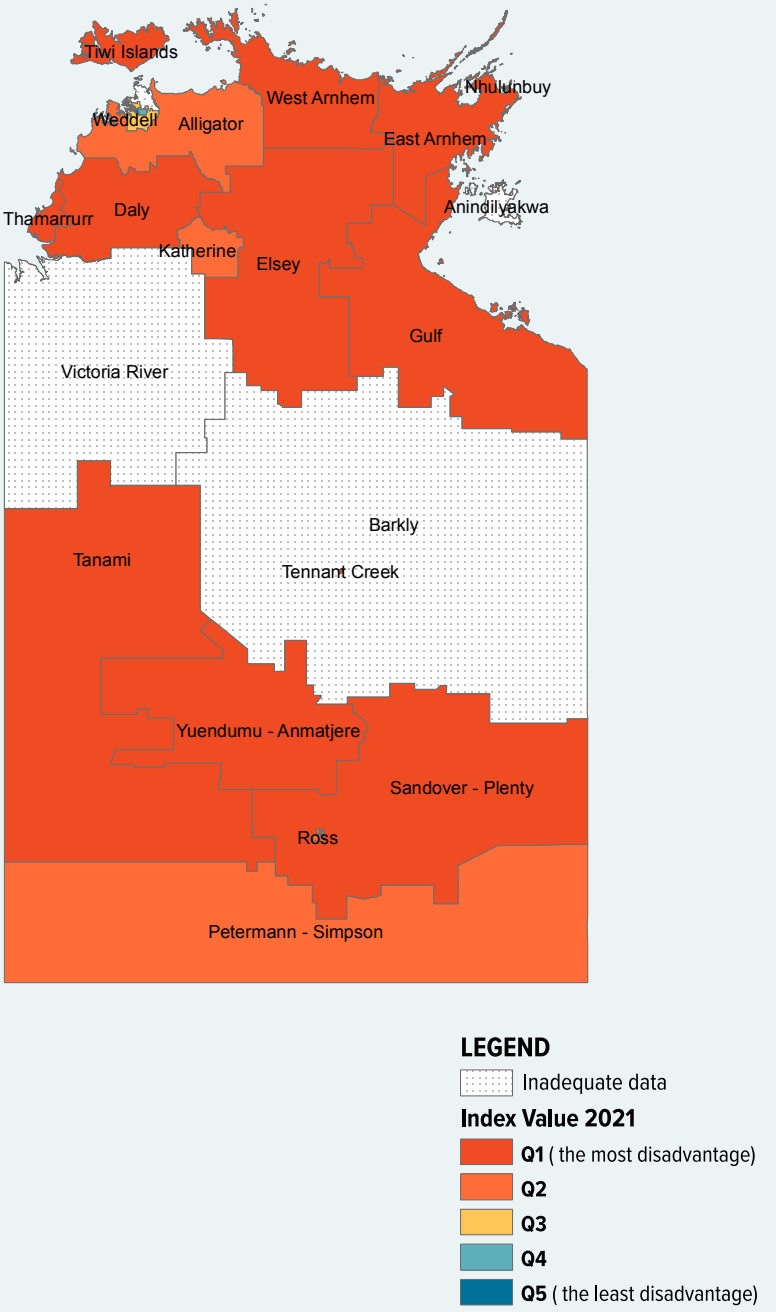
Figure 9 shows a map of the index for the Northern Territory and Darwin. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index values. In the Northern Territory, there are about 14 SA2s in each quintile. This is the same approach used by the ABS to group the Socio-Economic Index for Areas.

Locations where estimates couldn't be calculated due to low population or missing data are shown in grey on the map. There were large remote locations across Northern Territory where estimates couldn't be derived due to low population; and locations in Darwin which had missing data.

It can be seen that the most disadvantaged locations in the Northern Territory are in the regional and remote locations outside Darwin. There are no locations in Darwin in the highest quintile of disadvantage. All of the least disadvantaged locations are in Darwin (see Table 68).

To better understand the nature of disadvantage and to describe the subjective experience of disadvantage as it relates to our quantitative data, a qualitative component was added to Dropping off the Edge in this report (see Chapter 3). In the Northern Territory we gathered qualitative data in Atitjere (Harts Range), an Indigenous community located 215 km north-east of Alice Springs on the Plenty Highway. Atitjere (Harts Range) was identified in the index as Quintile 1, most disadvantaged, and was selected due to this disadvantage and Jesuit Social Services' existing connections with the community. Indicators identified within the index for the case study in Atitjere (Harts Range) highlight the diversity of contributors of disadvantage, with a large number of indicators recording disadvantage well above the national average (see Appendix 3). Due to the size of Atitjere, index and indicator data were used from the Sandover-Plenty SA2 region. The qualitative results shown in this chapter represent the comments of those involved in the interviews in this community.

Figure 9 Map of index for the NT and Greater Darwin



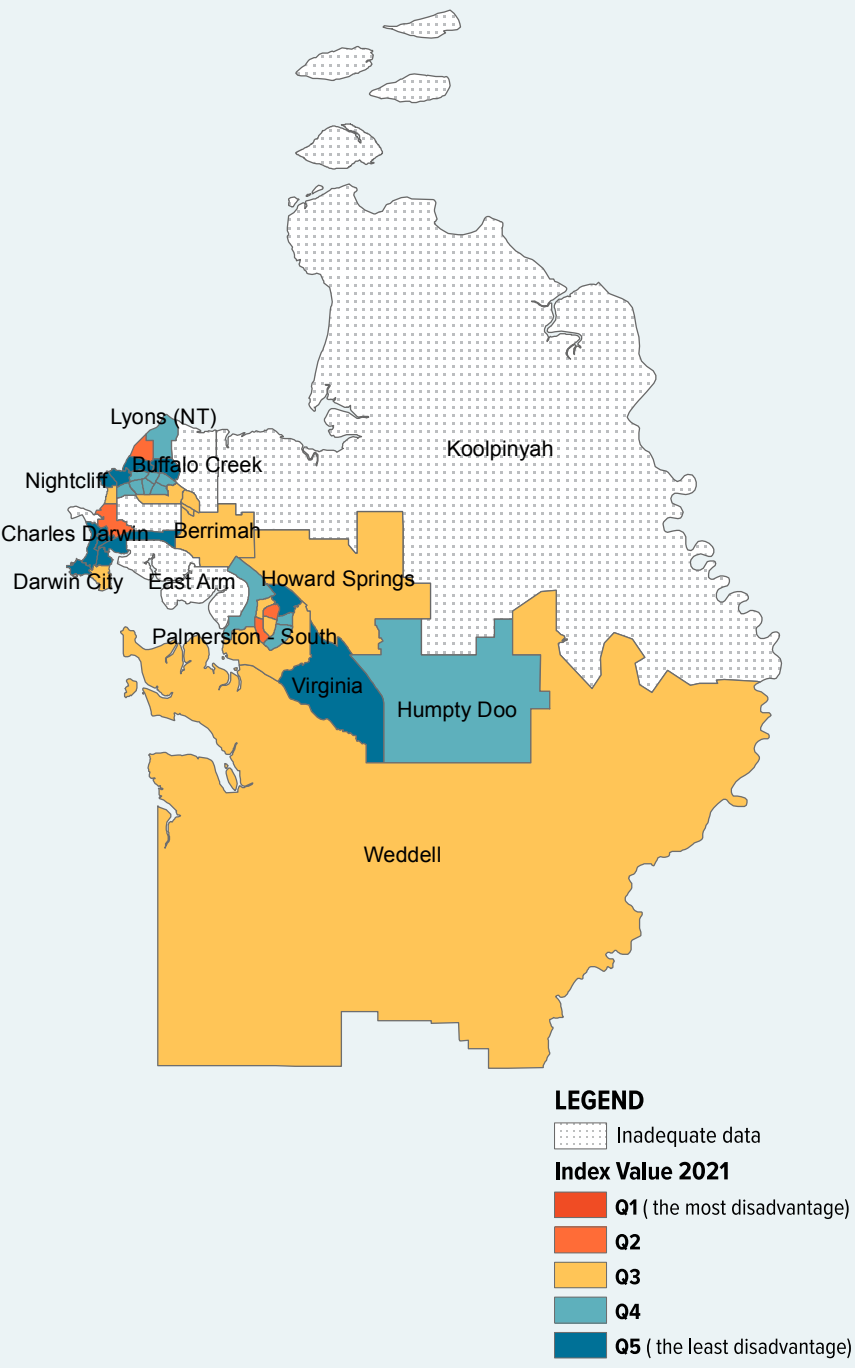

Lyons (NT)
Buffalo Creek
Nightcliff
Charles Darwin
Berrimah
Darwin City
East Arm
Howard Springs
Palmerston
South
Virginia
Humpty Doo
Koolpinyah
Weddell
LEGEND
Inadequate data
Index Value 2021
Q1 (the most disadvantage)
Q2
Q3
Q4
Q5 (the least disadvantage)

Table 68 List of 10 most disadvantaged locations in the Northern Territory and 10 least disadvantaged locations

BAND	SA2 NAME	POPULATION	REGION
Most Disadvantaged Locations – listed alphabetically within bands			
1	East Arnhem	8,559	Rest of NT
	Elsey	2,650	Rest of NT
	Gulf	4,731	Rest of NT
	Sandover - Plenty	4,553	Rest of NT
	Tanami	3,265	Rest of NT
	Tennant Creek	3,302	Rest of NT
	Thamarrurr	2,912	Rest of NT
	Tiwi Islands	2,743	Rest of NT
	West Arnhem	5,508	Rest of NT
Least Disadvantaged Locations[64]			
	Brinkin - Nakara	3,335	Greater Darwin
	Fannie Bay - The Gardens	3,737	Greater Darwin
	Larrakeyah	3,983	Greater Darwin
	Leanyer	4,527	Greater Darwin
	Nightcliff	3,812	Greater Darwin
	Parap	2,910	Greater Darwin
	Rapid Creek	3,441	Greater Darwin
	Stuart Park	4,363	Greater Darwin
	Virginia	3,557	Greater Darwin
	Woolner - Bayview - Winnellie	2,749	Greater Darwin

[64] Note that as outlined in Chapter 2, this is an index of disadvantage. None of our indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN THE NORTHERN TERRITORY

This analysis moves beyond the index, which identifies overall disadvantage in a location using multiple indicators, to identifying locations of multilayered disadvantage in the Northern Territory using 33 separate indicators. Nature reserves, access to shops, psychiatric admissions and child maltreatment were not used in the indicator analysis due to unreliable data. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged – in this instance, the top 5% most disadvantaged. This section provides a more detailed analysis than can be provided by the summary index.

A cautionary note is that the top 5% of locations in the Northern Territory is equal to just three SA2s across each indicator.

The results for this analysis are shown in Table 69. This table shows the number of locations where five or more indicators were in the top 5% of locations. There were 8 locations in total across the Northern Territory with indicators in the top 5% of disadvantage, and these locations accounted for 46% of all 'most disadvantaged' indicator ranks.

Two locations in the Northern Territory had 11 or more indicators in the highest 5% across the Territory.

The list of locations with five or more indicators in the top 5% is shown in Table 70. All the locations in the top five positions were also in the top 10 most disadvantaged locations from the index.

Table 69 Multilayered disadvantage – Number of locations with 5 or more indicators in the most disadvantaged 5% across the Northern Territory

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS [65]
5	2	10
6	2	12
7	1	7
8	1	8
11	1	11
15	1	15
Total (including locations not shown in table)	62	137

Table 70 List of locations with five or more indicators in top 5%

BAND	SA2 NAME	POPULATION	REGION
1	East Arnhem	8,559	Rest of NT
	Thamarrurr	2,912	Rest of NT
	Tiwi Islands	2,743	Rest of NT
	West Arnhem	5,508	Rest of NT
	Yuendumu - Anmatjere	2,407	Rest of NT
2	Tanami	3,265	Rest of NT
	Tennant Creek	3,302	Rest of NT
	Victoria River	2,814	Rest of NT

[65] Number of Positions is the number of indicators multiplied by number of locations

PERSISTENT DISADVANTAGE IN THE NORTHERN TERRITORY

Unfortunately in 2015, the ranks for the Northern Territory indicators were not available. Therefore, this analysis cannot be made for the Northern Territory.

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN THE NORTHERN TERRITORY

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact of where a location stands in the rankings (ie key drivers of the index). The identification of these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, those that are hardest to shift, we must look at the indicators that show up most often in those highly disadvantaged locations.

In states with a larger data set and more SA2s, we were able to consider the 3% most disadvantaged areas, and the level of overrepresentation of certain forms of disadvantage in those areas relative to the rest of the state. Unfortunately, in the Northern Territory the most disadvantaged 3% of locations is equivalent to just one location. The results were therefore not meaningful, and have not been published in this report.

The key drivers of the index can serve as a proxy insight into disadvantage, but may not reflect what is occurring in areas of extreme disadvantage. More research would be worthwhile in this field.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. In the Northern Territory, those indicators with a loading above 0.5 are the ones that contribute most to the index of disadvantage, meaning they provide the strongest representation of the underlying dimension of disadvantage. They are shown in Table 71.

The indicator that contributed most to the index in the Northern Territory was the measure of disability – specifically, this recorded the prevalence of those who need assistance with core activities. The next most important indicators in the index were two of the community safety indicators, prison admissions and family violence. Low family income, which has been an important contributor to the index in other states, was the next most prominent indicator. Interestingly, particulate matter, an important indicator for the other large states, did contribute to the index, but with a loading below 0.5.

While needing assistance with core activities was the main indicator in the index across all locations in the Northern Territory, it was not identified as a concern in Atitjere (Harts Range), and the percentage of people receiving Disability Support Pension was lower than the national average (Appendix 3).

The community safety indicator data were not available in Atitjere (Harts Range). However, of the indicators that were identified as contributing the most to the index, low family income was recorded at 2.5 times the national average, the proportion of homes with no internet at home was 3.8 times the national average, the proportion of people experiencing overcrowding was 7.2 times the national average (see Appendix 3). These high values for three of the seven most important indicators contributing to the index indicates that the qualitative information from the Harts Range case study will provide some insights into the lived experience of community disadvantage in the Northern Territory, but these insights cannot be generalized to all disadvantaged locations.

Table 71 Indicators that contributed most to the index in the NT

DOMAIN	INDICATOR	LOADING
Health	% who need assistance with core activities	0.60
Community Safety	Prison admissions per 1,000 population	0.55
Community Safety	Family violence per 1,000 population	0.54
Social Distress	% with low family Income (<$650 per week)	0.53
Social Distress	% with no Internet at home	0.51
Social Distress	% experiencing overcrowding	0.51
Health	% receiving Disability Support Pension	0.51

SIGNS OF IMPROVEMENT IN THE NT

This analysis was not available for the Northern Territory as the indicators for 2015 were not available.

INSIGHTS FROM THE QUALITATIVE RESEARCH

Atitjere (Harts Range) is a small community on the traditional lands of the Eastern Arrernte people, approximately 200 km north east of Alice Springs. The community looks out for each other but is facing significant disadvantage reflected in a number of factors including unemployment, low engagement with education, insufficient and poor quality housing and poor access to transport, amongst others.

Disadvantage is multilayered due to the lack of employment opportunities in remote communities which affects household income. For Atitjere (Harts Range) this is compounded by the community's experience of poor functionality of the local Community Development Program (CDP) which is not providing the support and activities community members expect:

> **''There's just no help and support. Like we've got this [CDP] here, it's meant to be an employment service. I don't know what they do, but they don't go out and support anybody on the outstations. They have to come in and do activity hours here when they [are] meant to be doing it outreach.'' (Atitjere interview participant 3)**

> **[CDP] is not good, no good activities, no clean-up of town. There has been no activities for the past 18 months.'' (Atitjere interview participant 5)**

Introduced in 2015, the Community Development Program (CDP) is the Federal Government's remote employment and community development program. Strong criticism of the CDP program and advocacy over a number of years has seen the Federal Government commit in 2021 to replace the program with a new remote jobs program by 2023.

This community's experience of a lack of CDP activities not only affects employment opportunities, but local connections and pride. Participants noted that in the absence of activities usually run through CDP, many residents stay home.

Coupled with the concerns about the lack of training and employment pathways for adults, children's educational opportunities were also a strong concern identified by study participants in Atitjere. The local school only goes to year 8 after which students need to attend boarding school to complete their education in Alice Springs (or elsewhere), which is difficult for many students. Interviews suggested engagement was also a challenge. The community expressed concern about the limitations this places on their children's futures:

> **''My three children were failed by this school here. Yeah. We have a lot of our teenagers in this communities that don't have any goals.'' (Atitjere interview participant 3)**

> **''There's about 20 young fellas here between the age of 14 and 17. They do nothing because there's nothing here. The school doesn't provide any sort of education. We used to have school of the air …[when at boarding school] they see their family walking uptown and they run away from the school. Try to get back to home. …it is loneliness at times. They've never been away from home.'' (Atitjere interview participant 3)**

> **''If you go inside those houses there are young people lying around all day, playing game boy all night. They come to town they get angry. They get angry because what's the future for them?'' (Atitjere interview participant 1)**

These poor educational outcomes are also evidenced by the index indicators, with the proportion of children across Sandover-Plenty SA2 failing to attain a range of minimum educational standards three to five times higher than the national average.

The cumulative impacts of disadvantage are felt deeply within the community by some study participants, who were concerned with the lack of jobs and poor quality, overcrowded housing:

> **''This community needs that hope and maybe a clean-up. Everybody's frustrated. A lot of people don't have jobs. A lot of people are out of credit [for electricity] in houses. I'm living in a two bedroom kit home that my grandfather put there for me. Now I have three kids of my own. I've got two grandchildren and my partner, we all cramped in the one little house.'' (Atitjere interview participant 3)**

Despite the challenges created by the under-resourcing of the community, other community members highlighted the positive things they enjoy about living in Atitjere:

> **''It is nice and quiet here, people don't drink here like in Alice Springs or Mt Isa. The people are nice and I can yarn with people.'' (Atitjere interview participant 4)**

These comments support some of the findings identified in the quantitative analysis of multilayered disadvantage, with interview participants talking about the impacts of low income and crowded housing conditions on individuals and families. However, the interview participants also talked about other drivers of disadvantage and the short and long term impacts of such drivers on their community, including challenges in educational access and engagement, the community's experience of poor support for employment and training through CDP, and the resulting impact of both on community morale and future aspirations. These local insights highlight the limitations of only using quantitative data when exploring disadvantage, which inadvertently hides contextual nuances and may result in the provision of inappropriate, or non-priority, resources to mitigate disadvantage.

CONCLUSIONS

Overall, the analysis that could be undertaken with the Northern Territory data was limited, due to the low populations in each location affecting the current indicators, and the lack of data in 2015.

In this report, there are more consistent data, which can be used in a longitudinal comparison in the future.

The results from the current report indicate that all the most disadvantaged locations according to the index were outside Darwin. Further, an analysis of the separate indicators highlighted that locations of multilayered disadvantage were also outside Darwin.

Similar to other states, those locations with multilayered disadvantage were also locations with the highest levels of disadvantage, as measured by the index.

In terms of the contributors to disadvantage in the Northern Territory, the need for assistance and some of the community safety indicators were important.

The qualitative research in Atitjere (Harts Range) identified unemployment, education, and youth not in education, employment or training (NEET) as particular issues in the area. Housing was also raised as a concern and it should be noted that overcrowding in Atitjere is 7.2 times the national average.

Education seems to be a priority issue for Northern Territory communities, reflected in the qualitative analysis. While it was not identified in the list of indicators in the index, this is possibly because the index uses an average which includes locations in Darwin, where education may not be such a problem.

CHAPTER 11

AUSTRALIAN CAPITAL TERRITORY (ACT)

AUSTRALIAN CAPITAL TERRITORY (ACT)

Most people would consider the ACT a rich territory with little disadvantage. However, there is still disadvantage in the ACT. In the ACT, 7% of the total number of SA2s (7 in total[66]) accounted for 34% of the most disadvantaged positions across all indicators. Three locations had seven or more indicators in the top 5% of disadvantage.

In terms of the summary index used in this report, the indicators that contributed to the index most were low income and proportion of people working in low skilled occupations.

As described in Chapter 1, one of the innovative features of the Dropping off the Edge analysis is that it uses a summary index with the indicators in domains, but then also analyses each individual indicator in every location. This provides a broad-brush analysis with the index, and then a more detailed analysis with the indicators.

In the 2021 report, a number of new environment indicators were added. For many states, these indicators were a large contributor to the index – in New South Wales, Queensland, and Western Australia particulate matter was the highest or second highest contributor. In the ACT, some of these environment indicators contributed to the index (green canopy and nature reserves). However, particulate matter did not contribute to the index in the ACT.

WHAT DATA WERE INCLUDED IN THE ACT

Much of the data were collected for the ACT, but there were a number of indicators that couldn't be used in the indicator analysis.

As addressed in other chapters, most data were collected in a consistent manner across all states and territories. The exception to this is the crime data. Some states record the residential address of the offender at the time of the crime while other jurisdictions record the offenders address at the time of sentencing.

In the ACT, the crime data used the residential address of the offender when they were sentenced. Juvenile justice data were not available due to small numbers.

The NAPLAN data for the ACT were unusable for the index and indicator analysis as most of the testing in the ACT was online, and the online results were excluded from the data provided by the Australian Curriculum, Assessment and Reporting Authority (ACARA). This means most SA2s in the ACT had unreliable data for the NAPLAN results.

The data for nature reserves in the environment domain were not used in the indicator analysis, but were included in the index. The proportion of an SA2 dedicated to nature reserves (as defined for this report) was zero or miniscule for most SA2s in the Territory. This meant that it was difficult to use as an indicator, as the bottom 66% were 0 and the indicator analysis used the bottom 5%. The data could be incorporated into the index however as 44% of locations had values that the index could use.

[66] There are 131 SA2s across the ACT, but in this analysis SA2s with less than 30 people or where some data were missing were removed, leaving 101 SA2s in total. A map of the SA2s in the ACT is shown in Figure 3. Areas that are stippled in this map were not included in the index because there were less than 30 people, or some data were missing. It should be noted that if an area does not have an index value due to missing data, analysis of the separate indicators can still be done. No analysis of the index or indicators was done on areas with less than 30 people.

This was the first time this measure of biodiversity was used in the report, and it did not work particularly well in any of the states. This indicator will be reconsidered for the next report.

The measure of heat vulnerability (heat stress) was also unusable for the indicator analysis in the ACT because there were only two values across all SA2s in the ACT. There was therefore not enough variability to allow analysis of this indicator. However, it was used in the index as the index method can still use the information from this indicator where the detailed indicator analysis could not.

The data for access to shops were also unreliable for the ACT, so were not used in the analysis of indicators. It was included in the index, but was not a significant contributor to the index. For many locations, this number was zero, while the maximum was five, so over the 131 locations in the ACT, many locations had the same rank. This was the first time this indicator has been used in the report, and it did not work well in any of the states. This indicator will be reconsidered for the next report.

The estimates for psychiatric admissions were provided at the SA3 level, and then allocated to all SA2s in each SA3. There are only eight SA3s in the ACT, so allocating this indicator to the 101 SA2s meant that many SA2s received the same value, and the result wasn't representative of the SA2. This indicator was therefore not used for the ACT indicator analysis, but was used in the index.

The number of GPs in the area was also not relevant for the ACT, which is a small territory. In many SA2s, there was no GP working there, but in the ACT there will always be one nearby. This was not the case in larger states. This indicator was used in the index, but not the indicator analysis.

The teenage childbearing indicator was also unusable for the ACT, as there were only seven SA2s that had any, so there was no variability across the ACT. The index included this indicator, but not the indicator analysis.

Finally, the ACT does not have an urban and rural classification, as used in this report for other states. All of the ACT is considered urban.

The list of indicators and domains available for the ACT is shown in Table 72. Indicators in bold are those that were included in the index, while indicators not in bold type were dropped from the index because they did not contribute enough. Indicators in italics were not included in the indicator analysis for the ACT due to issues with the data, as described above.

Table 72 List of domains and indicators for the ACT

SOCIAL DISTRESS	HEALTH	COMMUNITY SAFETY	ECONOMIC	EDUCATION	ENVIRONMENTAL	LIFETIME DISADVANTAGE
Low Family Income	Receiving Disability Support Pension	**Confirmed Child maltreatment**	**Unskilled workers**	**School attendance**	Particulate matter	***Teenage childbearing***
Volunteering	***Psychiatric admissions***	**Prison admissions**	Underemployment	**Left school before Year 10**	**Tree cover**	**Children where no parent in family working**
No Internet	***Number of GPs working in the area***	Domestic violence	Long-term unemployment	**No post school qualification**	***Heat stress***	
Access to Shops	Suicide rates	*Juvenile Convictions*	Young adults not in Employment, Education or Training	Young childhood Development (AEDC)	***Nature reserves***	
Access to culture and recreation facilities	Need assistance with core activities		Housing stress	*Year 3 NAPLAN Numeracy*		
Overcrowding			**Public housing**	*Year 3 NAPLAN Literacy*		
			Rent assistance	*Year 9 NAPLAN Numeracy*		
			Financial Stress	*Year 9 NAPLAN Literacy*		

WHERE DISADVANTAGE IS LOCATED IN THE ACT

The index of disadvantage calculated for this report (described in Chapter 2) summarises a number of indicators into one index. This index will be lower for locations that experience disadvantage that occurs across several indicators. The index is a useful summary to identify disadvantage, but a limitation is that the detail of individual indicators is lost. This analysis of individual indicators occurs in the next sections of this report in order to drill down further into the disadvantage experienced across a range of domains including economic, health, education, social distress, community safety, intergenerational and environment indicators.

Using the summary index, the 10 most disadvantaged locations in the ACT can be identified. These locations are shown in Table 73. As with all lists of places in this report, they are listed in alphabetical order, rather than in order of disadvantage.

The most disadvantaged suburbs are in Belconnen (the town centre; Charnwood; Florey and Holt), while many of the least disadvantaged suburbs are in Gungahlin (Amaroo, Casey, Nicholls) and in the inner-city locations (Barton, Curtin, Forrest, Yarralumla).

Figure 10 shows a map of the index for the ACT. This map shows groups of disadvantaged locations using five quintiles. A quintile is a grouping of SA2s with similar levels of disadvantage, judged on their summary index number. In the ACT, there are about 20 SA2s in each quintile. This is the same approach used by the ABS to group the Socio-Economic Index for Areas.

The map shows that many of the disadvantaged locations in the ACT are in the north-west and the south of the ACT. These are the districts of Belconnen and Tuggeranong. The newer suburbs in Gungahlin and some of the older inner north suburbs are the least disadvantaged.

Figure 10 Map of index for the ACT

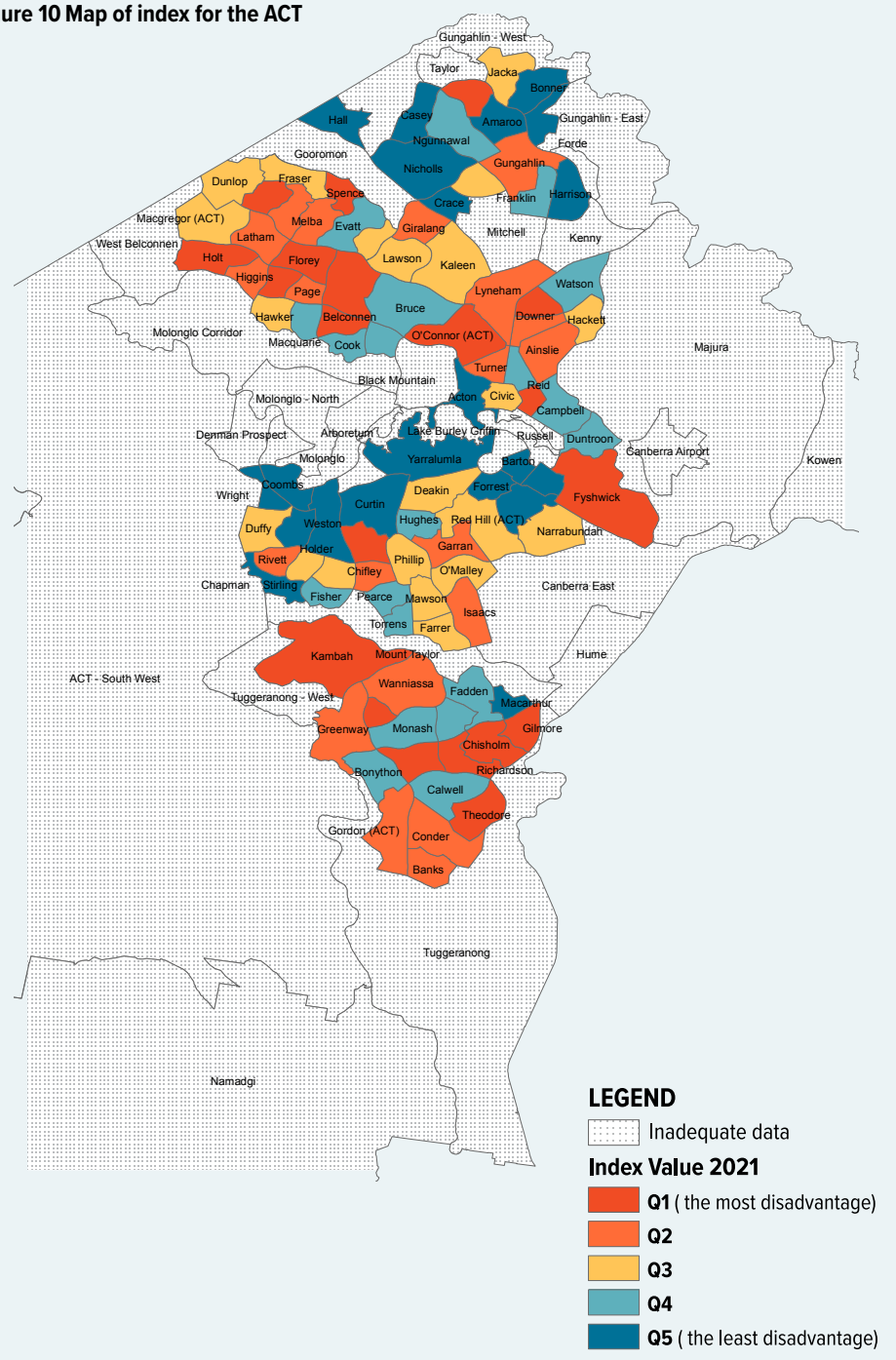


Table 73 List of 10 most disadvantaged locations in the ACT and 10 least disadvantaged locations

SA2 NAME	POPULATION	LOCATION
Most Disadvantaged Locations – listed alphabetically within bands		
Belconnen	7,634	ACT
Charnwood	2,860	ACT
Florey	4,655	ACT
Gilmore	2,719	ACT
Holt	4,863	ACT
Lyons (ACT)	3,141	ACT
Macquarie	2,824	ACT
Moncrieff	4,388	ACT
Reid	1,721	ACT
Richardson	3,006	ACT
Least Disadvantaged Locations [67]		
Amaroo	5,899	ACT
Barton	1,691	ACT
Casey	6,819	ACT
Chapman	2,775	ACT
Curtin	5,331	ACT
Forrest	1,766	ACT
Hall	291	ACT
Holder	2,647	ACT
Nicholls	6,908	ACT
Yarralumla	3,099	ACT

[67] Note that as outlined in Chapter 2, this is an index of disadvantage. None of the indicators measure advantage, like high income or high occupation. Therefore it cannot be said that an area of low disadvantage is high advantage.

MULTILAYERED DISADVANTAGE IN THE ACT

This analysis moves beyond the index, which identifies overall disadvantage in a location, to identifying locations of multilayered disadvantage in the ACT using the separate indicators. Multilayered disadvantage is where several indicators in one location are ranked as severely disadvantaged – in this instance, the top 5% most disadvantaged. This section provides a more detailed analysis than the summary index can.

Table 74 records locations where five or more indicators were in the top 5% of locations.

In total, seven locations across the ACT (see Table 74) met this criterion, and these locations accounted for 34% of the most disadvantaged indicators.

All of the top five locations except Richardson were also listed in the top ten most disadvantaged locations determined by the index.

Looking at the indicators that contributed to these results was difficult, as there were so few locations in the ACT experiencing multilayered disadvantage – seven suburbs in total (see Table 75).

Table 74 Multilayered disadvantage – Number of locations with 5 indicators or more in the most disadvantaged 5% across the ACT

NUMBER OF INDICATORS IN TOP 5%	NUMBER OF LOCATIONS	NUMBER OF POSITIONS [68]
5	2	10
6	2	12
7	1	7
8	2	16
Total (including locations not shown in table)	101	131

Table 75 List of locations with five or more indicators in top 5%

BAND	SA2 NAME	POPULATION
1	Belconnen	7,634
	Charnwood	2,860
	Moncrieff	4,388
	Reid	1,721
	Richardson	3,006
2	Holt	4,863
	Lawson	2,012

[68] Number of Positions is the number of indicators multiplied by number of locations

PERSISTENT DISADVANTAGE IN THE ACT

Unfortunately, many of the indicators for the ACT were not available in 2015. Therefore, this analysis is not available in this report.

THE MAJOR CONTRIBUTORS TO DISADVANTAGE IN THE ACT

Knowing where disadvantage is located is important, but governments and decision makers also need to be focused on the right issues to deliver change.

Our index shows us where general disadvantage is, while the process of constructing the index reveals which indicators have major impact of where a location stands in the rankings (ie key drivers of the index). Identifying these indicators in turn signals broad policy areas that can have an impact on a community's opportunity to flourish. The key drivers of the index are discussed below.

If we want to improve outcomes for the most highly disadvantaged communities, we must look at what forms of disadvantage are most overrepresented in those locations.

In states with a larger data set and more SA2s, we were able to consider the 3% most disadvantaged locations, and the level of overrepresentation of certain forms of disadvantage in those locations relative to the rest of the state. Unfortunately, in the ACT the most disadvantaged 3% comprises just three SA2s. The results were therefore not meaningful, and have not been published in this report.

The key drivers of the index can serve as a proxy insight into disadvantage, but may not reflect what is occurring in locations of extreme disadvantage. More research would be worthwhile in this field.

KEY DRIVERS OF THE INDEX

This analysis uses the Principal Components Analysis technique outlined in Chapter 1 to identify what the drivers of the index are. Those indicators with a loading above 0.6 are the ones that contribute most to the index of disadvantage, and can be said to contribute most to disadvantage in a location. They are shown in Table 75.

Similar to other states, low income presented as an important contributor to the index. Indicators in the economic and education domains were important for the index also. While not showing up in Table 75 as the loadings were just below 0.6, some of the new environment indicators also presented as important in the index. The ACT had three of the four environment indicators contribute to the index (see Table 72) with loadings just below 0.6.

While particulate matter was a strong contributor to the index in many states, it did not influence the ACT index. There are few industrial areas in the ACT, and those that do exist are very much separated from the residential population. The only power generation in the ACT are large solar farms.

Table 75 Indicators that contributed most to the index in the ACT

DOMAIN	INDICATOR	LOADING
Social Distress	% with low family Income (<$650 per week)	0.65
Economic	% unskilled occupations	0.63
Education	% adults with no post-school qualification	0.61
Economic	% household receiving rent assistance	0.61
Education	% who left school before Year 10	0.60

Overall, the analysis of indicators that contributed to disadvantage in the ACT showed that low income, economic and education indicators contributed to the index. Three of the four environment indicators were also important.

SIGNS OF IMPROVEMENT IN THE ACT

Again, this analysis was not available for the ACT as the indicators for 2015 were not available.

CONCLUSIONS

The analysis for the ACT was more difficult than it was for larger states, as much of the analysis of indicators uses the extremes of disadvantage – the most disadvantaged 3% of locations according to the index or locations that appear in the top 5% of disadvantage on individual indicators. This means with 101 SA2s in the ACT, there are three locations for the 3% analysis, and it isn't reliable. The 5% analysis is more reliable as it uses each indicator rather than the index, but there were still only seven locations with five or more indicators in the most disadvantaged 5% across the ACT. Most of these locations were also in the list of disadvantaged locations according to the index.

The index is reliable across the ACT, and the index has shown that suburbs in Belconnen and Tuggeranong districts were the most disadvantaged. The indicators that contributed most to the index were low income and proportion of people working in low skilled occupations.

CHAPTER 12

INSIGHTS FROM QUALITATIVE RESEARCH

The *Dropping off the Edge 2021* study incorporated a qualitative component to gain a better understanding from community members of the lived experience of disadvantage and to seek their ideas and insights about initiatives, programs and activities that have helped, or hindered, addressing complex disadvantage in their community. Through interviews and focus groups, 129 community members and service providers from across eight case study communities shared their experiences about disadvantage in their community. They provided insights and perceptions regarding the resources and programs available, community strengths and challenges in addressing disadvantage, and key priorities for action (see Chapter 3 for a description of the methodology).

Participants in the interviews and focus groups identified a range of community strengths, challenges and opportunities to support communities out of complex and often persistent disadvantage. In this chapter key themes identified in the qualitative study are provided, highlighting similarities and differences across the eight individual communities where relevant. The key themes that emerged included the need for good leadership across the community, providing a positive and coherent vision for the community, as well as the effective provision of services. Access to appropriate, strength-based services delivered by a range of providers who understood local needs was also identified as important, with critical gaps in services understood to further embed the impacts of disadvantage. High quality and easily accessible shared spaces for locals to come together was identified as being important for building local cohesion, accessing services and other community activities, and hence supporting community resilience. Clear communication about what services are available, and funding models that allow services to improve over time, are vital, enabling the provision of ongoing support to the community. Finally, community priorities are context-dependent, with the impact of disadvantage experienced differently depending on the individual and community circumstances. Hence, to address the complex web of disadvantage, responses must be tailored to each community and approaches to service delivery must place individuals, families or communities at the centre of delivery, driving services that will make a real and lasting difference.

These key themes emerged from focus group and interview discussions and highlighted what was important to participants in relation to their communities and the levels of disadvantage they experience. These themes are not necessarily directly related to individual statistical indicators discussed in the preceding chapters, but rather provide an understanding of the how such indicators are interlinked as part of the lived experience of disadvantage. However, it is important to recognise that the perspectives and experiences reflected in this report are based on a small number of community participants from a small number of communities. As such, these may not reflect the experience of other members of the community or social services sector in the case study areas, nor of other communities beyond the eight in scope in this report. These findings should not be generalised to other communities.

As described in Chapter 3, focus group participants included community members, many of whom demonstrated a commitment to their communities and positive community development outcomes, and worked as volunteers in various community organisations. Some focus group participants were employed in the community services sector. All of the interviewees were either employed by or volunteered for organisations active in addressing the impacts or causes of disadvantage (eg local government, community service organisations, local charity/service organisations).

This chapter provides an overview of participants' perceptions on community strengths, challenges, and available resources to address disadvantage, including identification of the challenges and perceived priorities for effective and sustainable mitigation of disadvantage. First, the four key community strengths and/or challenges identified in the focus groups and interviews are described: leadership, social cohesion, available activities and programs, and effective service delivery. Second, a summary of the four key features relating to the resources participants identified as being critical to support positive community outcomes is provided. These features include accessibility of resources, a consideration of the variety of resource providers, the importance of accessible community infrastructure and good communication and coordination processes. The chapter concludes with a brief discussion about the importance of community development approaches that place communities at the centre of actions to counter community disadvantage.

COMMUNITY STRENGTHS AND CHALLENGES

Study participants identified a range of community strengths and challenges that helped or hindered their community to thrive. Four interrelated community strengths and challenges were relatively consistent across the eight case study communities: leadership, social cohesion, and the availability as well as the effectiveness of activities and programs. For example, strong local leadership was identified as being critical in enabling the activities and programs that supported community cohesion, highlighting that the relationship between leadership, governance and services affect disadvantage. Each of these four key themes is discussed below.

Leadership

The existence of strong leadership was identified as a key community strength. Its absence presents a significant challenge. Leadership comes from local, state and federal government, non-government organisations, local community groups and individuals. All of these 'leaders' offer a range of resources for the community and hence are important for understanding and mitigating disadvantage.

For many study participants, leadership was identified as a missing resource in their community. Only two of the eight communities spoke positively about their local government providing leadership, of being proud of the support and/or progress made by the local government in regard to community development matters. In other case study communities, concerns about leadership varied, but included issues of representation and a lack of vision, both of which were seen as important in understanding, and hence addressing, disadvantage:

> **"I don't see them as being representative of the community. … they're aged, they're white, they're male and they dictate the policies, the planning strategies and everything that goes on in this town."**

> **"… There's actually no oversight. There's no forward planning and there's no strategy either."**

Participants identified that leadership is not the responsibility of a single organisation or individual, but rather a responsibility of the broader community:

> **"What's missing? Seriously, instead of services and stuff, I just think that what's missing in order to bring the community together and to create some vision and some leadership in this town, we need more conversations. I think that's a really important thing. I think we need the community consultation. We need the community to step up and to be flagging to council what they think is missing."**

> **"Leadership [is missing], but the leadership won't be one person. I think some organisation in (name of community) has to take leadership of the town. So once upon a time, it was the chamber of commerce. Once upon a time, it was a PCYC[69]. These organisations became an umbrella and that spread out. They became leaders within their community. Both of them are basically gone. So therefore there's no one. So we need to foster some community organisation."**

The importance of leadership in supporting locally available resources, whether it be infrastructure or funding for local activities, was identified and typically attributed to local and state government, with minor funding or activities provided by local charities or service organisations. Support from local government is not always forthcoming however, which adversely affects opportunities and cohesion within the community and consequently its sustainable development:

> **"When we talk about things like the connection, the cohesiveness and stuff, it comes through a council that can really bring a town together with its social programs, it's public art and entertainment and all that stuff. … It can draw people in and make that difference."**

[69] Police Citizens Youth Club

Leadership also extends to setting the right example for the community in order to address multilayered and persistent disadvantage. The importance of leadership in the form of people being positive role models was made by one Indigenous participant who focused on helping kids to break the cycle:

> **"… it's up to the community, but you still need leaders to show them. You have to have that because the cycle doesn't end otherwise. … So you still have to be a role model for the children, the children need the help most."**

Perceived poor leadership from government or other decision-making bodies can, at times, result in positive local leadership emerging. Examples of individuals or groups taking initiative on various social challenges, from homelessness to the environment, were identified across the communities. One community identified locally-led responses to reduce anti-social behaviour within the community:

> **"This community has gone from sitting back and watching things happening. So now they're standing up and they're taking responsibility for their community and taking that ownership."**

These community insights suggest that leadership is important in addressing disadvantage. Community members expect leadership that understands and respects the nature of the community, its needs and priorities, as well as its challenges. Further, they expect a vision for their community that recognises these challenges and drives community change to support all members of the community.

Social cohesion

Social cohesion relates to the connectedness of a society, the sense of belonging within the community and the relationships amongst community members (Michalos, 2014). An ongoing social process, social cohesion is often described as a process where society works in solidarity, creating trust and reducing inequality and marginalisation (Fonseca, Lukosch, & Brazier, 2019; Michalos, 2014). Given this, social cohesion is an important factor in addressing the prevalence and impacts of disadvantage. Social cohesion encourages a sense of community, stimulating networks and activities that enable community members to engage, interact and support one another.

Participants in each of the focus group communities spoke of good levels of social cohesion that enabled community members to support each other, even when facing significant challenges:

> **"They look after one another and everything's all right."**

> **"It's a friendly community. It's a welcoming community. It's the first place I've lived in Australia where I've known my neighbours and where you can feel safe just being on the streets."**

This strong sense of cohesion may be partially attributed to the high levels of volunteering experienced in the communities, and amongst study participants. Within the *Dropping off the Edge 2021* index, volunteering is an indicator of social cohesion, and all case study communities ranked well on this indicator. Additionally, focus groups participants were, typically, people who were community-minded and active in their community in a range of volunteer roles. As such they are connected within their community and likely to experience and perceive high levels of social cohesion, raising the possibility of some skewing of these perceptions.

However, communities were also quick to identify that such cohesion does not always run deep, a problem across many of the case study communities. One community member described the challenges their community continues to face in relation to issues of cohesion and inclusion resulting from racial prejudices (Indigenous and other ethnic groups) and youth disengagement:

> **"I agree there's quite a bit of racism in the town. I think this town is very fractured. … you see it here at this table. There's no one here. There's no, there's no Indigenous person sitting here. There's no young person sitting here. There's no one from another background, and it happens. It repeats all over this town."**

Social cohesion, in its push for equality, can provide supports that mitigate against the impacts of disadvantage. A range of priorities that supported social cohesion were identified, from large scale investments in community infrastructure including the construction of new community centres, to smaller investments in programs that bring people together:

> **"I think that we need some sort of family and community service here, a connecting space, whether it's events or activities, but also helping the family that needs to be networked with something else. A linking place, a bump-in place."**

> **"Whether there was like a community mentor program where all of these retired people have the opportunity to connect with the youth and then somehow link that back into the community. Whether a group of them came for coffee or ran the coffee van or got training or something like that, it'd be lovely to see."**

Despite the disadvantage they experience, this study found that community members are typically positive about the future of their community. Participants recognised both the strengths and challenges of their local community, and acknowledged that stronger leadership and more effort from both government and the communities themselves are needed to effectively address disadvantage. Activities and resources can provide opportunities to improve social cohesion, which helps communities to address and mitigate disadvantage both individually and as a community.

Available activities and programs

Like leadership, the availability of programs and activities was identified as being both a strength and a challenge for communities. With the exception of Atitjere (Harts Range), communities identified that a good range of programs and activities were available to them, to varying degrees. This included various government and non-government services, community activities, service groups, sport and other recreation organisations, arts and culture activities and local parks. These activities and programs were identified by participants as a community strength, as they provide opportunities for community members to engage with each other, strengthening cohesion and community spirit:

> **"I think it's a very strong community. It has got lots of different community groups, people doing different things ... So I think when people are involved in their community through sport, through the arts, through things like that, they have that connection to their town and they care about what's going to happen. It's really important."**

> **"This small rural public school... is the ticking heart of the community. It has an active P&C[70] and is a point of connection for the community – particularly those with young children. Its active Facebook presence keeps people linked with the school's activities."**

However, some activities and programs created a challenged for the community. For example, concerns were raised in a number of communities about how sport and other groups can be inaccessible, with the associated fees outside the reach of many community members. This can further entrench disadvantage due to people's inability to participate:

> **"When you look at stuff like sports and the capacity for children to participate in sport and recreation, because now it's more about suits and ties and club-based stuff than school-based stuff, so there is no equal playing ground and it costs so much to participate in sports. So there's a real poverty of kind of sport and recreation in some of the areas we work in."**

> **"But there are also a lot of activities for kids in this town. Believe it or not. There are lots of various clubs of all sorts of kinds. The problem is most of them have money attached, [like for] uniform."**

These concerns reflect the low incomes in many of the case study communities, which leaves little discretionary spending. For example, Atitjere (Harts Range) and Willmot are both in the top 10% most disadvantaged when it comes to low income, Beenleigh is in the top 15%, and Narrogin and Melton are just outside the top 20% most disadvantaged on this indicator.

[70] Police Citizens Youth Club

Many participants across the case study communities identified the need for free or low-cost resources to enable participants from across the community access to the resources and associated support, with one participant also identifying that some clubs are able to help low income families participate:

> **"We still try and provide a few things for kids as well, because when you're helping the kids, you're helping the parents. … So we try and keep things down as much as possible. Sometimes we might run a class and make $5. Well, that doesn't pay for the electricity but it doesn't matter."**

> **"Our grandchildren are only 7 and 4, but they have an abundance of things to do. Yes, it costs money, but there are ways around those things because the [sporting clubs] all said if you have a problem we can help out."**

There were a number of other areas where activities and programs were identified as missing, in particular youth programs and health services. Youth programs were identified as being important, providing opportunities to motivate young people and reduce the potential for them to disengage, although in some communities there seemed to be little appetite to provide such programs:

> **"It's the more marginalised kids from poorer homes that are likely to fall off the edge, struggling, we don't really offer a lot of diversionary programs and I don't think there's the political will to help out a lot."**

> **"Well, I think young people especially need more help in the area, whether it's more community activities for them to do. … I just think more kids maybe need programs like apprenticeships and things like that, or just something to help motivate them."**

In two of the case study communities, high juvenile crime rates were thought to be related to the lack of quality youth programs and services. Melton for example is in the top quintile of most disadvantaged communities in Victoria for juvenile convictions. While there are services and activities for young people in Melton, study participants felt that a greater diversity of these programs is needed, with more opportunities for young people to determine what activities they want:

> **"So rather than providing all these activities for kids that the kids are not going to, because it's just not interesting to them. I think they need more buy-in and that's maybe where there needs to be more of a kind of a councillor that needs to go into the schools and have a check with the schools and say, 'Hey, let's do a focus group like this with the kids to say, you know, we're in Melton, what do you guys want?'"**

Accessible and affordable health services were identified as missing across all the communities. People commented that they often need to travel to larger centres to access specialist health support in a timely manner, pay private health providers locally or endure long wait lists for a range of services including paediatrics and mental health support. These services, particularly clinical mental health services, are critical for these communities, with three case study communities being in the top 10% most disadvantaged for psychiatric admissions, and two in the top 10% most disadvantaged for suicide.

For families with complex health needs, this lack of ready access to support them to navigate health systems such as the National Disability Insurance Scheme potentially results in significant problems for vulnerable families, further embedding the lived experience of disadvantage:

> **"Unless they can afford to go private, which a lot of the families can't, they have to wait up to two years to see a paediatrician. And then the ability for them, a lot of very vulnerable families who may have children on the spectrum or trauma or family violence or mental health or a whole other layering of issues, even with an appropriate diagnosis after two years, there's not a lot of support for them to then get linked in with the NDIS to get the support that they need when they need it."**

Services and resources support individual and community health and wellbeing, providing access to activities and programs that address health, education and social cohesions outcomes. While the majority of study participants acknowledged that a range of services were made available to them, with more services available in, or close to, urban areas than regional and remote areas, the effectiveness of service delivery was raised as a key challenge.

Effective service delivery

Participants identified a number of factors that contribute to the perceived (in) effectiveness of service delivery, including funding arrangements and the potential for partnerships, and improved service design and delivery.

Funding is a critical resource for any service, whether it be formal government-based services, community services or volunteer-based community services. Appropriate funding can affect not only whether or not a service is delivered, but also how the service is delivered, including issues regarding eligibility. Attracting sufficient funding is a constant challenge for service providers and is a known key challenge across the community service sector. However, the processes and governance of funding is also important, ensuring the accountability and transparency necessary for public monies. For some vulnerable groups, access to funding due to the complexity of funding arrangements can affect the type of level of services available within a community. In Atitjere (Harts Range) for example, complicated funding models can impact locally-led community development programs:

> **"The council is not being involved with some of the Aboriginal organisations. Like here in the Northern Territory we have got the Aboriginal Benefits Trust accounts, which sometimes you can apply for funding to do infrastructure … The council itself hasn't got their information, or power I am not really sure, they not really tapping into these organisations for more funding and helping the community in developing better and working together."**

In other locations, complicated eligibility and funding criteria can also result in adverse service conditions that focus on outputs rather than people's needs:

> **"[The service provider] have spent a lot of time getting to know the family and then it turns out well, we've worked with him 12 months we have to close, or you disengage twice and we have to close, and that sort of thing. That real pressure to close a client and then get a new one, is sort of being driven by the logistics rather than the people."**

Partnerships were identified as one way to support all services, leveraging resources to provide an improved service to disadvantaged community members. Such partnerships include networks, clusters, shared activities, and formal and informal referrals across services, which may be supported by the co-location of services:

> **"We've set up a hub point. We partner with the council and [other services] that were placed in the same building, which creates a lot more opportunity for those incidental referrals and conversations and insights and information sharing that is really crucial across services in order to give them a holistic approach to clients."**

However, such co-location needs careful management, with study participants noticing how competitive behaviours can reduce the benefits for the community:

> **"I think it's great that this place has a lot of services, but at the same time, those services tend to clash and have a power struggle… the biggest thing I have witnessed is the lack of communication, the lack of trust that they have on a professional level, and it just seems like they're withholding too much. When that happens, it's the community and the groups that can be negatively impacted."**

A small number of community participants questioned the capacity of some service providers to effectively deliver the services. Participants felt that some organisations willingly accept funds to deliver specific programs, but then do not provide this service in an accessible manner. This can have significant consequences in regional and remote communities where there are not as many service options:

> **"When [service provider] started, everything was really good. When it started off we used to do activities, like go for hunting and things like that. … then they start stopping all these things down, slowing them down."**

Concerns about the effectiveness of service design and delivery were raised across many communities, with issues raised about their suitability for the community and its needs. Study participants questioned the design of services available in an area where there is limited uptake, believing that services do not adequately consider Indigenous culture:

> **"Why don't they want to engage in the [available service]? Their lifestyle doesn't work, and they don't always factor in Aboriginal mobility. … Aboriginal people have a different notion of home."**

This inadequacy of services may be less about the services and more about the community service system and its accessibility. Despite services being available, they were sometimes too challenging to access, especially in view of the often-complex needs of vulnerable families . In one community this challenge was addressed through additional resources, resulting in a holistic service delivery model led by families:

> **"[services] were meeting lots of families with a lot of complex needs. The service system that exists was not obviously fit for purpose and families weren't able to access the services they need. So we decided what would happen if we actually employed a social worker case worker to be embedded in the suburb… … and families get to know the caseworkers and basically trust them as individuals and request support, which is a sort of a different model than a referral model. Families are requesting the support they need."**

These experiences show that the availability of activities and programs within a community is only one aspect of ensuring community needs can be addressed. In order to make a difference in addressing disadvantage, activities need to be accessible to disadvantaged community members. They need to be delivered in an effective and culturally appropriate manner that adequately considers the complexity of disadvantage and its multiple impacts on individuals, families and communities.

RESOURCES TO SUPPORT POSITIVE COMMUNITY OUTCOMES

Relevant resources can mitigate the impacts of disadvantage, and support communities to move out of disadvantage. Resources consist of a variety of support measures and may include leadership, community infrastructure (eg community halls, neighbourhood centres, parks etc), a range of health and education services, projects and programs (eg early childhood education programs, parenting programs, financial counselling support, disability support, aged care support, transport subsidies, arts and culture etc) and community activities (eg Christmas carols, NAIDOC week activities, youth week activities, community markets etc).

This study identified that a range of resources were available in each community to varying degrees. In larger communities, more formal programs and resources (such as specialist health services, tertiary education, larger range of funded community development services) tended to be available due to the higher populations. However, smaller communities identified more volunteer based resources and recognised they often had to travel to larger centres for formal services.

Four key resources were identified as being critical to address community disadvantage: accessibility of resources, a consideration of the diversity of resource providers, the importance of accessible community infrastructure and good communication and coordination processes. Each of these is described below.

Accessibility of resources

Access to resources is critical. Accessibility is determined by both the existence of a resource (eg public transport or health service), and its availability or scope (eg ability to travel at relevant times or get an appointment in a reasonable time frame). Transport was identified in all communities as being important, yet often unavailable. The cost of public transport can be problematic for some communities such as in Atitjere (Harts Range) where the bus to Alice Springs (where many services are delivered) only runs two days a week at $95 each way per adult ($70/child). In other communities limited transport services, or the poor timing of public transport, presents challenges in getting to work, education services or social services:

> **"But then if they live out of town, how did they get in to get, to get to work? ...There's a big issue with that. Like from [nearby location] you cannot get here for a nine o'clock work. You can get in at 10:30 and then there is only one bus back. That's ridiculous. It's 10 minutes away."**

> **"... they continually place services centrally in [nearby CBD], and assume that there's going to be some sort of weird trickle down effect that will help families out this way. It doesn't always occur. And public transport is pretty crappy."**

> **"I would have to leave at seven o'clock in the morning, get to school half an hour late and then have to leave an hour and a half early to catch the afternoon bus. Otherwise, I was waiting around by myself at the station until 8.30 at night to not get home till 11, 12, depending on how well the train was running."**

The availability of transport can also affect access to local resources. Atitjere (Harts Range), a remote community, previously had a community bus that enabled community members to undertake cultural activities with the community, particularly with young people. One participant believed that cancellation of the local bus was impacting on young people due to the reduced connection with community:

> **"With that community bus we can go together and we can come back together and I've taken kids out Bush, camping out, doing activity stuff. Instead of calling them in you've got ....kids just running amok."**

Access can also be constrained by the capacity of the available resources. While resources may be available within the local community, often access to appointments is limited due to high demand:

> **"Resources such as health, early learning, support groups, counselling, and caseworkers. Now I know we have some of those already, but they are overwhelmed, they are swamped. So if you want to connect with a caseworker that does come here, you make an appointment and then they double book you, then you have to come back another week and then you go to wait another week, and in the end you end up walking away."**

This lack of capacity to meet service demands highlights the need to target services to the community. For example, in Melton the proportion of people on a disability support pension is 1.5 times the national average, emphasising the need for additional services to support people with a disability which was identified in the interviews as being a resource gap:

> **"... there's still a lack of occupational therapists and those sorts of services to support more people to get on the NDIS and get the support that they need. There are more service providers moving into the area, but there's still a lack of, um, services for disabled adults, like day services and those sorts of things."**

As identified previously, the usefulness of resources is only as good as their accessibility. Resources may be inaccessible not only due to associated costs, but also due to the limited availability of feasible transport options or the capacity of the resource to meet demands. All of these factors need to be considered in the design and delivery of resources to ensure access challenges can be mitigated wherever possible.

Diversity of resource providers

Resources are provided by a range of government, non-government and community-based organisations. This may include formal government agencies, government funded service providers, faith-based groups, service groups or local leaders and interest groups. Schools, for example, often provide additional support for disadvantaged young people and their families through a range of activities and programs:

> **"The breakfast program is a government initiative that we can access so we run the brekkie program once a week, but we also divvy up the food for food packs for vulnerable families."**

> **"[Attendance rates] used to be under 50% of students, Indigenous students going to school. Now they're looking at up to 80% of attending school because of this [Arthur Beetson -Artie] program."**

Resources are not always one-directional and simply consumed by an individual or a cohort within the community. Rather, many resources are multi-directional and develop further community resources by encouraging volunteering and other forms of engagement that support both the individual and their community. Some community development programs identified by study participants were multi-directional, developing engaged communities where members support each other in overcoming disadvantage:

> **"They started breakfast and it was, I suppose letting people know that there was volunteer opportunities and programs happening at the hub where people can get involved. ... that was also a good place to actually mobilise the community as well. Like draw them into the work."**

Such volunteering was identified as being of critical importance in communities. Volunteer-based activities and organisations help to provide additional resources beyond those offered, or funded, by government, although attracting volunteers is difficult:

> **"This place wouldn't function without volunteers, fundamentally, most of them are old and organisations like Rotary, for example, they just cannot get young people to go. … this town revolves around the sports clubs. I'm sure there's more volunteering there or it wouldn't exist."**

In acknowledging the diversity of organisations providing resources for the community, it is important to consider their role in mitigating community disadvantage and how they fit in with the broader active community development environment. Typically, networks are based around development agendas or affiliated organisations (eg youth-based networks, allied health networks). However, this can fail to recognise and engage many of the informal resource providers, the volunteers and other local leaders who may be operating outside the formal channels. Addressing disadvantage in a community should include identifying these informal resource providers, what activities they are undertaking and how best to support them where possible. Such support does not necessarily mean the provision of funding. Partnership arrangements, inclusion in networks or the provision of training are just a few alternative ways smaller and informal service providers can be supported.

Community infrastructure

Community infrastructure was identified by study participants as an important resource, and essential to ensuring the provision of community-led resources. Infrastructure refers to the places and spaces where people can come and meet, enabling opportunities for social cohesion, community activities and the delivery of programs and other support initiatives. Such places are available in some communities and not in others:

> **"Every time I come to programs there is always different faces. You can meet a lot of people from organisations like to do with kids. With all the programs they have here, you wouldn't have to go anywhere, they're all here."**

> **"We have never had a community centre … [there is] the event centre right next door to the library, … but it's not something that the normal everyday person would do or could afford. It is not for the community."**

> **"There are no spaces where you can get to know the people around you. Like I know my immediate neighbours, I know them quite well now. But there's no spaces where you can just meet people who live in the same community, just hang out and relax with people from the same community as you."**

Improved communication and coordination

Study participants identified communication and coordination as key resources in addressing disadvantage. Communication and coordination help community members and services providers understand what services are available across the community, enable uptake of services and potentially reduce duplication of services.

It is important to recognise that many services do employ approaches that involve comprehensive consultation and communication. These approaches often include a range of traditional and contemporary media platforms including flyers, newsletters, multiple websites, Facebook and other social media. Despite these efforts, many study participants indicated they were not aware of services available in their community. Without clear communication and coordination, participants felt that the delivery of services is hampered, potentially adversely affecting people seeking support:

> **"It's a lack of effective communication and coordination. The left-hand doesn't know the right-hand. The pilot program at school is consciously trying to link up a lot of these services, all those [identified services] are working together … But then they don't know what everyone else is doing."**

In every case study community there were participants who acknowledged they were unaware of certain resources available within their community. However, in those same communities there were others who had readily found information:

> **"But word of mouth is about the only way you find out about half of [the resources]. It's really, really badly organised. … Like where are the food banks? Where are services for people who are in need? That sort of thing. I mean the community health centre, half the people don't even know it existed."**

> **"So I've just put it in Google and I've come up with about a dozen different things here from the local council, youth jobs in the area, … the 10 best kids activities in the local council area. I'm not saying they're really good, but I just Googled in the time we had that conversation. … It's a matter of being proactive and looking. I'm not saying it's the panacea to all, but there are ways to find things."**

Poor access to the internet could be inhibiting awareness of available services, with community members not having sufficient internet access to conduct the research to both identify and understand the resources and services available to them. Five of the eight case study communities ranked as highly disadvantaged for internet access at home. One of the case study communities is in the top 10 % most disadvantaged and a further four are in the top 15% most disadvantaged for internet access.

Acknowledging the number of resources available in the community, one participant wanted an activity that not only brought the community together, but also directly shared information about locally available resources:

> **"[We need] something that allows us to improve communication and knowledge across the board that connects everybody to those [services]. I mean, set up a farmer's market in [location] or something that allows people to be exposed to all the capacity here. We've made the comment of, 'oh, it just isn't here', well it sounds like it is here, but nobody knows it."**

One study participant noted the importance of information sharing and communication, and suggested a regular forum where service providers (from across different areas) could come together to coordinate and drive improved social services:

> **"Once a year, an annual workshop to coordinate all community services, perhaps. … What are you offering? What have you found working for you? What are you not taking on going forward? … And hopefully collaboration is a great word because building that in with other services, we're all trying to do the same thing. We do really all want the same positive outcomes for the groups that we work with."**

In addition to more opportunities for consultation and coordination across service providers, study participants identified the importance of service databases as a support for community members and service providers alike. Well maintained databases help people identify and contact services relevant to their needs. They enable self-management and improve the efficiency of referrals across service providers. Such a database requires resourcing due to the complexity of needs and diversity of services available. A number of communities have the beginnings of such a database available on the council website or within particular services (for example the neighbourhood house). For one study participant what was available was a great start but more was needed:

> **"There's not enough of a central navigating system to try and find all the services available. We've got 'Ask Izzy' which had got some services on it, but not all of them. There needs to sort of be one centralised portal where services can go to get the most updated information. … 'Ask Izzy' shows some of the services that are in Melton, but not all … it still doesn't have things like getting psychologists, psychiatrists, and paediatrics."**

Positive community outcomes depend on a healthy and engaged community. Study participants identified a range of resources that are needed to provide community members with the opportunity and capacity to be healthy and engaged. These resources are not limited to the simple provision of appropriate health, education and other services, but require services that are accessible to all of the community in terms of cost, transport and delivery capacity. The provision of services through a range of providers helps to improve accessibility, as providers may offer support using different approaches targeted to different audiences. To work effectively, this 'resource ecosystem' needs sufficient community infrastructure, including the places and spaces where the community can come together.

PRIORITIES FOR COMMUNITY DEVELOPMENT APPROACHES

A key outcome of the qualitative component of the *Dropping off the Edge 2021* study is a local perspective on how disadvantage might be addressed in the case study communities. Priorities identified were diverse and dependent on how disadvantage was experienced in each community, highlighting the need for context specific resources to mitigate disadvantage. For example, in communities where employment opportunities were low, jobs were identified as a priority. In one case study location, access to public transport is poor and long-term unemployment is twice the national average, making local jobs an important issue:

> **"Close employment that is interesting and appropriate in [location]."**

Where the quality and quantity of housing was identified as contributing to disadvantage, housing was identified as a priority due to overcrowding. In Atitjere (Harts Range) where overcrowding in houses is approximately seven times the national average, improved housing was identified by many participants as being of critical importance. With houses often hosting multiple generations, conditions exacerbated the impacts of disadvantage across multiple facets of daily life:

> **"Housing so you can then have a better sleep at night. Adults who have got jobs can have a better sleep get up in the morning, there's hot water. And another thing with overcrowding too, you get one lot of family buying food and power card and stuff and the other lot of family that stopping there that don't. So that is hard."**

A number of services and programs were also listed as a priority, including those that assist with employment, increased access to various health services, aged care programs, and programs that support positive mental health:

> **"I think it would be good probably to create a group, a mental health group and then each week or each fortnight to tackle an issue that tends to have a high impact on a person's mental health, such as DV, suicide, past trauma, just tackle each one and to acknowledge the emotions, what you're feeling isn't taboo."**

Education was identified as a key priority to address community disadvantage. Seven of the eight case study communities had higher than average proportions of people who had not completed year ten, and six of the eight communities had lower than average proportions of people with post school qualifications. However, study participants' concern with education was not limited to formal education. Priorities focused on providing education to help community members learn critical contemporary life skills, including whether it be parenting, job readiness, financial literacy or the digital skills essential to stay connected and access services:

> **"Life skills [education] … so supporting them on how to do basic nutritious meals. The financial counselling, how to do a budget, how to save up. To have a place where people can go and ask, what does this mean? Why do I have to have insurance for my car? That sort of thing."**

While the community participants identified practical programs and activities as key priorities, community service professionals focused on service delivery and the need to critically review how services are delivered. In recognising that disadvantage is a complex web that is experienced differently by individuals depending on their personal circumstance and their community environment, study participants saw the need and opportunity for change. Some participants perceived that the previous decades of providing services into disadvantaged communities only served to support persistent disadvantage, and identified the need for comprehensive change within the community services sector:

> **"From where I sit [service providers] orbit each other in quite dysfunctional ways in uncoordinated dysfunctional ways. And there's a lot of meetings and discussions and some of the best work I see is the kind of investment that's put into the child and family centres, those early years programs, the creation of safe places for parents, even parents who are struggling on the edge of the child protection or child safety system, to be able to be supported rather than, you know, further victimised an understanding of bias and how that operates. … you can't talk about the medicine without talking about the cause, we wouldn't do that in physical health, it's like handing out a packet of cigarettes with one hand and a cancer treatment with the other."**

> **"I am very much aware that my organisation would have been part of keeping people poor for a long time, in a sense of being part of the service system that is about feeling good, not doing good. So [now] it's actually partnering with communities, actually building capacity not developing well, it's developing capacity, not just maintaining need."**

One participant noted that many providers may be unwilling to make some of the changes required to enable real change, which may require a commitment to place-based practice and the associated accountability to the community:

> **"I don't know how you can do the work without placing community at the centre. And that's not just jargon either. I think we're learning more and more what that means to place the community at the centre of everything we do when you're place-based. Accountability is huge – our actions and their consequences are visible to all the community. And I can see why a lot of organisations actually don't embrace it because it means that we have to change."**

The priorities identified by study participants were diverse, ranging from small local initiatives to larger community infrastructure development to broader scale normative changes to the community services sector. These differences highlight what is already well known, namely that community development is not homogenous, that positive change can be built upon inherent strengths and that real change requires real investment for the long haul.

This chapter drew on insights from 129 study participants to provide reflections on four key themes related to the role of resources in addressing disadvantage. The insights are not necessarily representative of the entire community due to the small number of participants. Further, these findings should not be generalised to other disadvantaged communities across Australia.

CHAPTER 13
CONCLUSIONS

This research report is the fifth in a series. With each iteration we have sought to add to the scope and depth of our body of research. *Dropping off the Edge 2021* includes some of the most significant changes and refinements, adding qualitative data for the first time as well as introducing a new method of constructing the index using domains rather than individual indicators. We also expanded the data inputs, adding an intergenerational and environmental lens when analysing disadvantage. Despite these changes, when we compare the 2021 indexes with those of 2015 or even 2007, we find that it is largely the same locations that are grappling with disadvantage. After refining the process of building the index and expanding the domains, the results reinforce the pertinence of the recommendations made in previous reports.

If anything, the changes made in the 2021 report only serve to confirm the multifaceted nature of disadvantage and the fact that different domains of disadvantage feed into one another, serving to create what in previous reports has been described as a "web of disadvantage". Unfortunately, the fact that disadvantage in different domains tends to cluster in the same places means that areas where education levels are low or internet access is poor might also rank poorly on environment indicators or on measures of intergenerational disadvantage. The Dropping off the Edge series has in addition highlighted the persistence of disadvantage over time.

Dropping off the Edge 2021 presents a summary of disadvantage across each state and territory, creating an index to rank high level disadvantage, and then examining indicators to drill down into this disadvantage.

In other words, the index helps us identify which locations are experiencing disadvantage in broad terms, and an analysis at the indicator level gives us more information about the persistence and depth of disadvantage and the interplay between disadvantage in several distinct domains.

These quantitative findings tell us an enormous amount about disadvantage across Australia. The qualitative findings, emerging from focus group interviews, shed some further light on what contributes to positive outcomes in particular communities, and what changes should be priorities for implementation. This qualitative research was undertaken in eight selected communities across Australia, adding a new source of insights to the Dropping off the Edge report.

Overall pattern of disadvantage in the states

For the majority of states and territories, when the geographic pattern of disadvantage is examined, the most disadvantaged locations were outside the capital cities, in regional and remote areas. The exceptions to this were Victoria and South Australia, where the majority of the most disadvantaged locations were in the city. This may be because there is a much higher proportion of SA2s in the cities of those two states.

In all states and territories, the least disadvantaged locations were largely found in the cities. This is possibly due to a greater provision of services in cities; more high-quality employment opportunities; and a more diverse education offering (see, for example, Roberts et al, 2019). Research has shown that schools in locations with higher levels of disadvantage are less able to provide students with access to core academic curriculum subjects in the final year of secondary school (Dean, Roberts, & Perry 2021).

Using the index, high disadvantage clusters in specific urban regions - south-west Sydney; the northern suburbs of Melbourne; south Brisbane; and west Hobart. This clustering of disadvantage is typical and is seen using other indexes of disadvantage (Stimson, 2001).

Contributors to the Index

In each state and territory we analysed which indicators most strongly represented disadvantage in that state or territory and therefore should be given a stronger weighting in the index. The weighted indicators were then used to construct a final index for that particular state or territory.

The five indicators that were most influential in each state index are shown in Table 76. Low income appeared in the top five in all states, and in four states was the most influential indicator overall. This is consistent with the ABS Socio-Economic Index for Areas and Index of Relative Socio-Economic Disadvantage (ABS, 2018).

Prison admissions had a strong influence on the index in six of the eight states and territories. This finding is consistent with the results of previous reports - contact with the justice system continues to hamper the life prospects of many Australians. High recidivism rates and the common trajectory of young people to the adult justice system are two areas that deserve particular attention. The increasing imprisonment rate, despite falling offender rates (see Productivity Commission, 2021) is particularly concerning given the heavy burden not only on individuals and families but the entire community.

Lack of internet access was also important in six of the eight states and territories. Once considered a luxury, internet access is increasingly crucial for participation in education, for a range of community activities and for accessing services. Many government and private services are now provided over the internet with the MyGov website, used for tax returns and family payments, constituting a prime example. Internet banking is also an important tool, and essential in the many regional and remote areas where physical branches have closed. And crucially, students now rely on the internet for research and sometimes also class attendance. Education is one vital pathway out of intergenerational disadvantage that could well be blocked by poor internet access.

Family violence and particulate matter were prominent in four of the states, with particulate matter having the strongest overall weighting in Queensland.

The focus groups in each community identified more visible aspects of disadvantage, like crime (in particular, drug use; youth crime); unemployment; and service provision (eg, health services; transport; etc).

The environment indicators had an impact on the overall index (see Table 76), and were important in identifying disadvantage in a location for a number of states. However, they were less likely to dominate in the analysis of the 3% most disadvantaged areas in each state.

The new lifetime disadvantage indicators contributed to the index for every state and territory (see Appendix 1 in Chapter 2) but were not in the top five indicators in each index (see Table 76).

Nevertheless, they added to our understanding of how disadvantage affects communities over time.

Table 76: Indicators that were important in the index

NSW	VIC	QLD	SA
% with low family Income (<$650 per week)	% with low family Income (<$650 per week)	Particulate matter	% with no Internet at home
Particulate matter	% who left school before Year 10	% with low family Income (<$650 per week)	Particulate matter
% who left school before Year 10	Family violence per 1,000 population	% with no Internet at home	Prison admissions per 1,000 population
% with no Internet at home	Prison admissions per 1,000 population	% aged under 24 and not in Education, Employment or Training (NEET)	% with low family Income (<$650 per week)
% adults with no post-school qualification	% with no Internet at home	Prison admissions per 1,000 population	Family violence per 1,000 population

WA	TAS	NT	ACT
% aged under 24 and not in Education, Employment or Training (NEET)	% with low family Income (<$650 per week)	% who need assistance with core activities	% with low family Income (<$650 per week)
Particulate matter	Family violence per 1,000 population	Prison admissions per 1,000 population	% unskilled occupations
Prison admissions per 1,000 population	Prison admissions per 1,000 population	Family violence per 1,000 population	% adults with no post-school qualification
% with low family Income (<$650 per week)	% with no Internet at home	% with low family Income (<$650 per week)	% household receiving rent assistance
% with no Internet at home	% adults with no post-school qualification	% with no Internet at home	% who left school before Year 10

MULTILAYERED DISADVANTAGE

Over the years, Dropping off the Edge has shown that different forms of disadvantage often cluster together. In the 2021 report, we identified locations that had five or more indicators[71] in the most disadvantaged 5%, and considered such communities to be dealing with multilayered disadvantage.

Across all states, 250 out of 2,188 SA2s (about 11%) experienced multilayered disadvantage.

In the more populous states with more SA2s (New South Wales, Victoria, Queensland, South Australia and Western Australia), the locations with multilayered disadvantage ranked in the top 5% most disadvantaged on up to 24 indicators (out of a total of 37). In many cases, these were also communities identified as most disadvantaged by the index.

In these locations with multilayered disadvantage, a few particular indicators were frequently present. These included jobless parents (top rank in five states and second in one), youth not in employment, education or training (highest rank in two states), and low income (top rank in one state but ranked in the top 10 in most other states).

Table 77 shows where each of these three indicators ranked relative to other indicators, when considering how often they were identified in communities with multilayered disadvantage. For example, a 1 for Jobless Parents in New South Wales means that jobless parents came up in the greatest number of communities with multilayered disadvantage in New South Wales.

In some of the less populous states (Tasmania, Northern Territory, ACT), there were too few SA2s to draw meaningful conclusions about the prominence of certain types of disadvantage in locations with multilayered disadvantage. Therefore, the results for these three states/territories have not been included in Table 77.

Table 77: Ranks of indicators in the multilayered disadvantage analysis

	JOBLESS PARENTS	YOUTH NOT IN EMPLOYMENT, EDUCATION OR TRAINING	LOW INCOME
NSW	1	3	5
VIC	2	5	3
QLD	1	1	3
SA	1	4	4
WA	1	1	1

[71] In this analysis we used all indicators available in that state or territory. The state/territory chapters identify which indicators were available.

PERSISTENT DISADVANTAGE

Persistent disadvantage is disadvantage that remains over many years. In this section, two types of analysis were used: analysis of the index over time and analysis of comparable indicators over time.

Comparing the index over time

Despite the fact that there have been significant changes between 2015 and 2021 in the method for determining the index, there was considerable overlap in the communities listed as disadvantaged in both years. It is clear that the index is consistent over time when identifying the most disadvantaged locations. In all states where data were available, our analysis showed that more than 90 per cent of the top ten most disadvantaged locations in 2015 were also in the 2021 list of most disadvantaged locations. Essentially, the new domains and indicators did little to vary the index rankings. Rather, they reinforced that these communities continue to be disadvantaged in multiple dimensions.

Comparing the indicators over time

The second approach to considering persistence of disadvantage involved the examination of the indicator rankings and any movements between 2015 and 2021. Examination of individual locations revealed whether high levels of disadvantage (ie top 5%) on a particular indicator were carried over from 2015 to 2021, or whether improvements were recorded.

Further, not all indicators could be compared over time because availability of data was inconsistent. Most indicators collected from the Census data are comparable over time and most of the data collected from the state departments were comparable over time, although there were some changes in the recording of residential addresses for offenders in Victoria in 2021. In Victoria, the prison admissions data were collected as the location of the offender when the offence was committed, rather than when the offender was sentenced, as was the case in the 2015 report. In many cases, the offender's address when sentenced is a remand centre.

For the Northern Territory and ACT, the 2015 rank data were not available at all, and so it was not possible to compare indicators over time. Further, in Tasmania, South Australia and Western Australia, there were less than 30 communities experiencing persistent disadvantage on at least one indicator. The conclusions we can make from this analysis are therefore limited, due to the small number of locations experiencing persistent disadvantage across the three states.

The conclusions in this section are therefore based on data for the three most populous states only, where the number of communities experiencing persistent disadvantage on one indicator or more was greater than 50.

Even where data were available in both 2015 and 2021, the fact that different statistical areas were used (postcodes/SLAs and SA2s respectively) means these comparisons must be made with caution. As outlined in Chapter 2, there was a considerable amount of work getting the different geographies in the 2015 Dropping off the Edge report into the SA2 geography required for this analysis. This re-allocation of geographies is not perfect, but is the best that can be done with the data available.

Overall, in the three states where there were enough communities to compare, 161 out of 1,536 SA2s (nearly 11%) experienced persistent disadvantage. However, this persistence was experienced across a range of indicators - there were no particular indicators that proved more persistent than others.

A summary of the results from this analysis is shown in Table 78. Analysis of the separate indicators that stayed in the top 5% for these three states showed that none of the indicators stood out as having a large impact on persistent disadvantage, reinforcing the conclusion that persistent disadvantage occurs across a number of indicators.

Table 78 Summary of persistent disadvantage for NSW, Victoria and Queensland

STATE	NUMBER OF PERSISTENT DISADVANTAGE COMMUNITIES
NSW	52
VIC	50
QLD	59

As well as considering high disadvantage (top 5%) on particular indicators in both 2015 and 2021, we also examined positive movements, where a location moved out of the 5% most disadvantaged locations. Again, caution must be taken in looking at these results as postcodes and SLAs were the geographical locations used in 2015 whereas SA2s were used in 2021. Further, when analysing a move out of the top 5% of disadvantage, there is no analysis of how far these locations have moved – whether the indicator is only just out of the 5% cut-off, or whether it is further than this. Finally, a location may have an indicator moving out of the top 5%, but still be disadvantaged overall.

The results from this analysis for the three most populous states is shown in Table 75. Again, the results for each indicator were not conclusive, and the state chapters identify the indicators important for each state in moving out of disadvantage.

Table 79 Summary of locations that had a least one indicator moving out of top 5%, NSW, Victoria and Queensland

STATE	NUMBER OF MOVERS
NSW	102
Vic	98
Qld	94

ANALYSIS OF THE MOST DISADVANTAGED 3% OF COMMUNITIES

The final set of analysis involved comparing the experience of the 3% most disadvantaged communities on a range of indicators compared with the remaining 97% of communities in the state. For each available indicator, we considered the rate of occurrence of that particular problem – and frequently found this rate was multiple times greater than the rate in the remaining 97%.

This analysis could only be used in the more populous states of NSW, Victoria and Queensland, where the 3% grouping comprised more than 10 localities.

Table 80 summarises the indicators that were most starkly overrepresented in those 3% of extremely disadvantaged communities. Public housing and crime data featured most prominently in this comparative analysis. While it could be argued that the prominence of public housing should be expected, because disadvantage is in itself a driver for the need for public housing, it is nevertheless useful to see that state-supported accommodation is a notable feature of these communities. It provides useful information regarding the challenges that might be facing individuals in these communities.

Table 80 List of indicators that were most overrepresented in the most disadvantaged 3% compared to the other 97% of communities in NSW, Victoria and Queensland

	NSW	VIC	QLD
Number of SA2s	17	14	16
Indicator 1	% people in public housing	% people in public housing	Family violence per 1,000 population
Indicator 2	Family violence per 1,000 population	Prison admissions per 1,000 population	% people in public housing
Indicator 3	Juvenile convictions per 1,000 population	% families with jobless parents	% experiencing long-term (>1 year) unemployment

QUALITATIVE ANALYSIS

One of the clearest messages from previous Dropping off the Edge reports has been the need for solutions that are tailored and targeted to individual locations seeking to address disadvantage. Every community is unique, and interventions are only likely to be successful where there is a deep understanding of the needs of the community and a respectful and collaborative approach to change.

The qualitative analysis in this report centred on eight carefully-selected communities. The communities were chosen for a range of reasons that made them particularly interesting to investigate in more detail.

Because the qualitative analysis was limited in scope and involved only a small number of focus groups and interviews in particular communities, the perceptions and comments do not have universal application. However, they provide a glimpse into how the communities see themselves and offer the beginnings of community voice in a conversation about change.

The qualitative analysis provides an insight into the issues experienced by disadvantaged communities and identifies a number of factors that can help improve outcomes for those communities.

The focus groups highlighted some additional factors that present challenges to improved prospects.

Participants were more likely to mention the more visible aspects of disadvantage such as crime (in particular, drug use and youth crime), unemployment, and lack of services (eg, health services, transport etc). They also confirmed the importance of internet access, referring to students from disadvantaged families sitting outside the library and cafes because it enabled them to log in to the internet.

Environmental factors such as air quality and access to green spaces were rarely mentioned. While environmental challenges may present a range of issues, including health and wellbeing implications, they infrequently fall into the "pressing issues", category. Disadvantaged communities, by necessity, are most likely to focus on immediate needs and barriers to success. Yet we know from the research cited in Chapter 2 that pollution, access to green spaces, heat stress and other environmental influences all play a part in a community's ability to thrive.

Qualitative analysis can also highlight factors that are difficult to measure or record in a statistically meaningful way. The importance of leadership, social cohesion and effective service delivery were themes frequently raised in focus group discussions.

Finally, where qualitative and quantitative findings reinforce each other, this sends a powerful message regarding the factors affecting a particular community. The Dropping off the Edge series provides the only summary index in Australia of such a comprehensive range of indicators including those related to community safety such as prison admissions and family violence. These indicators were identified in both the quantitative and qualitative analysis as making a strong contribution to disadvantage, and highlight areas for targeted solutions.

FUTURE REPORTS

In this report a number of limitations with the data have been identified; and a number of new indicators have been tested and found lacking.

An indicator that should be reconsidered in future studies is 'access to shops'. While the literature review shows that it is relevant to the measuring of disadvantage, it did not prove to be influential in shaping any of the state indexes, or in any of the indicator analysis. This may be because people are willing to drive to shops and do not need them in their immediate surrounds as long as they remain accessible. A better specification of this indicator would be important for the next report.

Culture and recreation facilities and nature reserves in the area were also specified in a way that meant many locations had 0, and in many states and territories, all locations had 0 due to the legal definition of nature reserves used. This needs to be reconsidered in the next report.

Finally, collecting the crime data (substantiated child maltreatment, juvenile convictions, prison admissions, and domestic or family violence protection orders) from each jurisdiction required considerable time and effort. All the data was collected except one indicator for South Australia. One indicator for the ACT could not be provided due to low numbers (juvenile convictions). The main issue with collecting data from each state and territory was that there were multiple contacts, and complexities in measuring an indicator, particularly when requiring the location of the offence. Ideally in the future, consistent and comparable data would be available from all states and territories from one national agency, perhaps led by the ABS or the Australian Institute of Criminology.

OUR CALL TO GOVERNMENTS

While *Dropping off the Edge 2021,* and previous reports, shows that the pattern of entrenched disadvantage in each state and territory is persistent over time, change can be achieved when the inter-related factors causing disadvantage are understood and community-led solutions are properly resourced.

Jesuit Social Services is calling on Federal, State and Local governments to prioritise the 3% most disadvantaged communities and to implement place-based approaches to alleviate disadvantage, nurture and empower local leaders and support these communities to thrive.

The provision of social infrastructure, education and employment opportunities, and high quality services are necessary to enable thriving communities. The COVID-19 Pandemic and 2019 Bushfires remind us also that those most disadvantaged are also often most impacted. Building community resilience and enabling communities to thrive are mutually reinforcing processes.

Governments need to ensure that appropriate legislative and policy frameworks are in place to support socially and environmentally just outcomes for all people. In addition, governments at all levels are recognising that top-down models of intervention are often insufficient to achieve desired outcomes, and that place-based approaches recognising the specific strengths and challenges of individual locations are required within an enabling policy context in order to achieve lasting change.

In other words, while addressing infrastructure and other general inequities is essential, governments must also collaborate and partner with communities in long term approaches to building thriving communities. Place-based approaches are enabled through processes of "shared design, shared stewardship, and shared accountability for outcomes and impacts" (Dart 2018:7). Place-based approaches are adaptable and continue to evolve. They belong to a broader network of practices that value community-driven change and transformation—these include co-design strategies, regenerative practice and place-making.

Governments need to prioritise addressing the causes of disadvantage through a suite of policy levers alongside increasing support for long term place-based approaches that seek to empower communities. Place based approaches require governments to:

- draw on the evidence provided by *Dropping off the Edge 2021* to identify and build an understanding of the unique factors causing disadvantage in different places and communities
- partner and collaborate with communities over the long term to identify and remove structural barriers to social, economic and environmental health and wellbeing
- draw on strength-based methods to empower local communities to design and implement policies, programs and services that are tailored to their unique needs
- build the capabilities and skills of communities, service providers and policy makers to work in partnership over the long term to achieve shared goals and outcomes
- invest in long term research as well as monitoring, evaluation and learning to inform and improve models of place-based policy and practice.

CHAPTER 14
BIBLIOGRAPHY

Abello, A., Cassells, R., Daly, A. D'Souza, G and Miranti, M (2016). Youth Social Exclusion in Australian Communities: A New Index. *Social Indicators Research* 128, 635–660 (2016).

Abhijith, K., Kumar, P., Gallagher, J., McNabola, A., Baldauf, R., Pilla, F., Broderick, B., Di Sabatino, S., Pulvirenti, B. (2017). Air pollution abatement performances of green infrastructure in open road and built-up street canyon environments – A review. *Atmospheric Environment, 162*, 71-86.

Abraham, K. G., Haltiwanger, J., Sandusky, K., & Spletzer, J. R. (2019). The Consequences of Long-Term Unemployment: Evidence from Linked Survey and Administrative Data. *ILR Review, 72*(2), 266-299.

Abrassart, A. (2015). Low-skill jobs or jobs for low-skilled workers? An analysis of the institutional determinants of the employment rates of low-educated workers in 19 OECD countries, 1997–2010. *Journal of European Social Policy, 25*(2), 225-241.

Adams, E. K., Hancock, K. J., & Taylor, C. L. (2020). Student achievement against national minimum standards for reading and numeracy in Years 3, 5, 7 and 9: A regression discontinuity analysis. *Australian Journal of Social Issues, 55*(3), 275-301.

Akbari, H. (2002). Shade trees reduce building energy use and CO2 emissions from power plants. *Environmental pollution, 116*, S119-S126.

Akbari, H., Pomerantz, M., & Taha, H. (2001). Cool surfaces and shade trees to reduce energy use and improve air quality in urban areas. *Solar energy, 70*(3), 295-310.

Alexandri, E., & Jones, P. (2008). Temperature decreases in an urban canyon due to green walls and green roofs in diverse climates. *Building and environment, 43*(4), 480-493.

Alwitt, L. F., & Donley, T. D. (1997). Retail stores in poor urban neighborhoods. *Journal of consumer affairs, 31*(1), 139-164.

Ambrey, C., Byrne, J., Matthews, T., Davison, A., Portanger, C., & Lo, A. (2017). Cultivating climate justice: Green infrastructure and suburban disadvantage in Australia. *Applied Geography, 89*, 52-60.

Anderson, J. O., Thundiyil, J. G., & Stolbach, A. (2012). Clearing the Air: A Review of the Effects of Particulate Matter Air Pollution on Human Health. *Journal of Medical Toxicology, 8*(2), 166-175.

Anderson, N. B., & Armstead, C. A. (1995). Toward understanding the association of socioeconomic status and health: A new challenge for the biopsychosocial approach. *Psychosomatic medicine, 57*(3), 213-225.

Anglicare. (2021). *Rental Affordability Snapshot National Report*. Retrieved from: https://www.anglicare.asn.au/publications/rental-affordability-snapshot-2021/

Aronson, M. F., Nilon, C. H., Lepczyk, C. A., Parker, T. S., Warren, P. S., Cilliers, S. S., Goddard, M. A., Hahs, A. K., Herzog, C., Katti, M., La Sorte, F.A., Williams, N. S. G., Zipperer, W. (2016). Hierarchical filters determine community assembly of urban species pools. *Ecology, 97*(11), 2952-2963.

Astell-Burt, T., & Feng, X. (2013). Health and the 2008 economic recession: evidence from the United Kingdom. *PloS one, 8*(2), e56674.

Astell-Burt, T., Navakatikyan, M. A., & Feng, X. (2020). Urban green space, tree canopy and 11-year risk of dementia in a cohort of 109,688 Australians. *Environment International, 145*, 106102.

Australian Bureau of Statistics. (1988). *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 1986* . ABS Cat# 2033.0.55.001

Australian Bureau of Statistics. (2004). *Census of Population and Housing : Socio-Economic Indexes for Area's (SEIFA) 2001 Technical Paper*. ABS Cat # 2039.0.55.001.

Australian Bureau of Statistics. (2018a). *Household use of information technology.* Retrieved from: https://www.abs.gov.au/statistics/industry/technology-and-innovation/household-use-information-technology/latest-release

Australian Bureau of Statistics. (2018b). *Socio-Economic Indexes for Areas (SEIFA) 2016 Technical Paper*. ABS Cat# 2033.0.55.001

Australian Bureau of Statistics. (2018c). *Socio-Economic Indexes for Areas (SEIFA) - 2016.* ABS Cat# 2033.0.55.001

Australian Bureau of Statistics. (2021). *Australian Statistical Geography Standard (ASGS)*. Retrieved from: https://www.abs.gov.au/websitedbs/D3310114.nsf/home/Australian+Statistical+Geography+Standard+(ASGS)

Australian Council of Social Services. (2015). *Inequality in Australia: A nation divided*. Australian Council of Social Services, Strawberry Hills.

Australian Early Development Census. (2019). *About the AECC Domains*. Canberra: Commonwealth of Australia

Australian Institute of Health and Welfare. (2015). *Chapter 4.5 Opposite ends of the spectrum—participation of young people in education and work*. Canberra: Australian Government Retrieved from: AW15-4-5-Opposite-ends-of-the-spectrum-participation-of-young-people-in-education-and-work.pdf.aspx

Australian Institute of Health and Welfare. (2019a). *Family, domestic and sexual violence in Australia: continuing the national story 2019: in brief*. Retreived from: https://www.aihw.gov.au/reports/domestic-violence/family-domestic-sexual-violence-australia-2019

Australian Institute of Health and Welfare. (2019b). *Youth justice in Australia 2017–18*. Retrieved from: https://www.aihw.gov.au/reports/youth-justice/youth-justice-australia-2017-18

Australian Institute of Health Welfare. (2017). *Australia's welfare 2017*. Retrieved from: https://www.aihw.gov.au/reports/australias-welfare/australias-welfare-2017/contents/table-of-contents

Australian Institute of Health Welfare. (2018). *Housing assistance in Australia 2018*. Retrieved from: https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2018

Australian Institute of Health Welfare. (2019a). *Housing assistance in Australia 2019*. Retrieved from: https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2019

Australian Institute of Health Welfare. (2019b). *Specialist homelessness services annual report 2017–18*. Retrieved from: https://www.aihw.gov.au/reports/homelessness-services/specialist-homelessness-services-2017-18

Australian Institute of Health Welfare. (2020a). *Australia's children*. Retrieved from: https://www.aihw.gov.au/reports/children-youth/australias-children

Australian Institute of Health Welfare. (2020b). *Mental health services in Australia*. Retrieved from: https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia

Australian Youth Affairs Coalition and Numbers and People Synergy, *Australian Youth Development Index 2020,* Retrieved from: https://www.ayac.org.au/australian-youth-development-index

Babey, S. H., Hastert, T. A., Yu, H., & Brown, E. R. (2008). Physical activity among adolescents: when do parks matter? *American journal of preventive medicine, 34*(4), 345-348.

Badland, H., Foster, S., Bentley, R., Higgs, C., Roberts, R., Pettit, C., & Giles-Corti, B. (2017). Examining associations between area-level spatial measures of housing with selected health and wellbeing behaviours and outcomes in an urban context. *Health & place, 43*, 17-24.

Balarajan, R., Yuen, P., & Machin, D. (1992). Deprivation and general practitioner workload. *British Medical Journal, 304*(6826), 529-534.

Barr, B., Taylor-Robinson, D., Scott-Samuel, A., McKee, M., & Stuckler, D. (2012). Suicides associated with the 2008-10 economic recession in England: time trend analysis. *BMJ* 345, e5142.

Bedimo-Rung, A. L., Mowen, A. J., & Cohen, D. A. (2005). The significance of parks to physical activity and public health: A conceptual model. *American journal of preventive medicine, 28*(2, Supplement 2), 159-168.

Ben-Shlomo, Y., White, I., & McKeigue, P. M. (1992). Prediction of general practice workload from census based social deprivation scores. *Journal of Epidemiology & Community Health, 46*(5), 532-536.

Bentley, R., Baker, E., Simons, K., Simpson, J. A., & Blakely, T. (2018). The impact of social housing on mental health: longitudinal analyses using marginal structural models and machine learning-generated weights. *International journal of epidemiology, 47*(5), 1414-1422.

Berk, M., Dodd, S., & Henry, M. (2006). It's the economy: the effect of macroeconomic variables of the rate of suicide. *Psychological Medicine, 36*(2), 181-189.

Biddle, N., Edwards, B., Gray, M., & Sollis, K. (2020). *COVID-19 and mortgage and rental payments,* retrieved from: https://csrm.cass.anu.edu.au/research/publications/covid-19-and-mortgage-and-rental-payments-may-2020

Blakely, T., Tobias, M., & Atkinson, J. (2008). Inequalities in mortality during and after restructuring of the New Zealand economy: repeated cohort studies. *BMJ, 336*(7640), 371-375.

Bosch, J., Palència, L., Malmusi, D., Marí-Dell'Olmo, M., & Borrell, C. (2019). The impact of fuel poverty upon self-reported health status among the low-income population in Europe. *Housing Studies, 34*(9), 1377-1403.

Brand, J. E. (2015). The Far-Reaching Impact of Job Loss and Unemployment. *Annual Review of Sociology, 41*, 359.

Bridges, S., & Disney, R. (2010). Debt and depression. *Journal of health economics, 29*(3), 388-403.

Broome, R. A., Powell, J., Cope, M. E., & Morgan, G. G. (2020). The mortality effect of PM2. 5 sources in the Greater Metropolitan Region of Sydney, Australia. *Environment International, 137*, 105429.

Brown, C. J., & Flood, K. L. (2013). Mobility limitation in the older patient: a clinical review. *Jama, 310*(11), 1168-1177.

Brown, S., & Gray, D. (2016). Household finances and well-being in Australia: An empirical analysis of comparison effects. *Journal of Economic Psychology, 53*, 17-36.

Buckingham, J., Wheldall, K., & Beaman-Wheldall, R. (2013). Why poor children are more likely to become poor readers: The school years. *Australian Journal of Education, 57*(3), 190-213.

Burra, T. A., Moineddin, R., Agha, M. M., & Glazier, R. H. (2009). Social disadvantage, air pollution, and asthma physician visits in Toronto, Canada. *Environmental Research, 109*(5), 567-574.

Cairns, J.-M., Graham, E., & Bambra, C. (2017). Area-level socioeconomic disadvantage and suicidal behaviour in Europe: A systematic review. *Social Science & Medicine, 192*, 102-111.

Carney, T., & Stanford, J. (2018). *The dimensions of insecure work: A factbook*. The Australia Institute, Centre for Future Work.

Castellani, G., & DeVaney, S. A. (2001). Using credit to cover living expenses: A profile of a potentially risky behavior. *Family Economics and Nutrition Review, 13*(2), 12-21.

Chamberlain, A. W., & Hipp, J. R. (2015). It's all relative: Concentrated disadvantage within and across neighborhoods and communities, and the consequences for neighborhood crime. *Journal of Criminal Justice, 43*(6), 431-443.

Chandler, A. (2020). Socioeconomic inequalities of suicide: Sociological and psychological intersections. *European Journal of Social Theory, 23*(1), 33-51.

Choenni, V., Hammink, A., & van de Mheen, D. (2017). Association Between Substance Use and the Perpetration of Family Violence in Industrialized Countries:A Systematic Review. *Trauma, Violence, & Abuse, 18*(1), 37-50.

Ciscar, J.-C., Iglesias, A., Feyen, L., Szabó, L., Van Regemorter, D., Amelung, B., Nicholls, R., Watkiss, P., Christensen, O.B., Dankers, R., Garrote, L. (2011). Physical and economic consequences of climate change in Europe. *Proceedings of the National Academy of Sciences, 108*(7), 2678-2683.

Clarke, L. W., & Jenerette, G. D. (2015). Biodiversity and direct ecosystem service regulation in the community gardens of Los Angeles, CA. *Landscape Ecology, 30*(4), 637-653.

Clarke, P. J., Ailshire, J. A., House, J. S., Morenoff, J. D., King, K., Melendez, R., & Langa, K. M. (2012). Cognitive function in the community setting: the neighbourhood as a source of 'cognitive reserve'? *J Epidemiol Community Health, 66*(8), 730-736.

Cobb-Clark, D. A., Dahmann, S., Salamanca, N., & Zhu, A. (2017). *Intergenerational disadvantage: Learning about equal opportunity from social assistance receipt.* Melbourne Institute Working Paper 28/17

Cochran, J. C., Mears, D. P., Bales, W. D., & Stewart, E. A. (2016). Spatial Distance, Community Disadvantage, and Racial and Ethnic Variation in Prison Inmate Access to Social Ties. *Journal of Research in Crime and Delinquency, 53*(2), 220-254.

Coelli, M., & Borland, J. (2016). Job polarisation and earnings inequality in Australia. *Economic Record, 92*(296), 1-27.

Cohen, M., Baudoin, R., Palibrk, M., Persyn, N., & Rhein, C. (2012). Urban biodiversity and social inequalities in built-up cities: New evidences, next questions. The example of Paris, France. *Landscape and Urban Planning, 106*(3), 277-287.

Cooper, N., Green, D., & Knibbs, L. D. (2019). Inequalities in exposure to the air pollutants PM2. 5 and NO2 in Australia. *Environmental Research Letters, 14*(11), 115005.

Copp, J. E., Kuhl, D. C., Giordano, P. C., Longmore, M. A., & Manning, W. D. (2015). Intimate partner violence in neighborhood context: The roles of structural disadvantage, subjective disorder, and emotional distress. *Social Science Research, 53*, 59-72.

Coveney, J., & O'Dwyer, L. A. (2009). Effects of mobility and location on food access. *Health & place, 15*(1), 45-55.

Cramm, J. M., & Nieboer, A. P. (2015). Social cohesion and belonging predict the well-being of community-dwelling older people. *BMC Geriatrics, 15*(1), 30.

Cummins, S., & Macintyre, S. (1999). The location of food stores in urban areas: a case study in Glasgow. *British Food Journal*. 101(7), pp. 545-553.

Curry, M., Mooi-Reci, I., & Wooden, M. (2019). Parental joblessness and the moderating role of a university degree on the school-to-work transition in Australia and the United States. *Social Science Research, 81*, 61-76.

Darin-Mattsson, A., Fors, S., & Kåreholt, I. (2017). Different indicators of socioeconomic status and their relative importance as determinants of health in old age. *International Journal for Equity in Health, 16*(1), 173.

Darton, D., & Strelitz, J. (2003). *Tackling UK poverty and disadvantage in the twenty-first century: an exploration of the issues*: Joseph Rowntree Foundation.

Davidson, P., Bradbury, B., Wong, M., & Hill, T. (2020). *Poverty in Australia 2020-part 1: overview*. ACOSS/UNSW Poverty and Inequality Partnership Report No. 3, Sydney: ACOSS

Davison, A., & Kirkpatrick, J. B. (2014). Risk and the Arborist in the Remaking of the A ustralian Urban Forest. *Geographical Research, 52*(2), 115-122.

de Keijzer, C., Gascon, M., Nieuwenhuijsen, M. J., & Dadvand, P. (2016). Long-term green space exposure and cognition across the life course: a systematic review. *Current environmental health reports, 3*(4), 468-477.

Dea, C., Gauvin, L., Fournier, M., & Goldfeld, S. (2019). Does place matter? An international comparison of early childhood development outcomes between the metropolitan areas of Melbourne, Australia and Montreal, Canada. *International journal of environmental research and public health, 16*(16), 2915.

Dean, J., Roberts, P., & Perry, L. (2021). School equity, marketisation and access to the Australian senior secondary curriculum. *Educational Review*, 1-21. Doi:10.1080/00131911.2021.1909537

Delbosc, A., & Currie, G. (2011a). The spatial context of transport disadvantage, social exclusion and well-being. *Journal of Transport Geography, 19*(6), 1130-1137.

Delbosc, A., & Currie, G. (2011b). Transport problems that matter – social and psychological links to transport disadvantage. *Journal of Transport Geography, 19*(1), 170-178.

Department of Parliamentary Services. (2016). *Housing and the social security system*. Canberra.

Doidge, J. C., Higgins, D. J., Delfabbro, P., Edwards, B., Vassallo, S., Toumbourou, J. W., & Segal, L. (2017). Economic predictors of child maltreatment in an Australian population-based birth cohort. *Children and youth services review, 72*, 14-25.

Donkin, A. J., Dowler, E. A., Stevenson, S. J., & Turner, S. A. (1999). Mapping access to food at a local level. *British Food Journal*. 101(7), pp. 554-564.

Duncan, G. J., & Le Menestrel, S. (2019). *A roadmap to reducing child poverty*: National Academies Press.

Esworthy, R. (2013). *Air quality: EPA's 2013 changes to the particulate matter (PM) standard*., Congressional Research Service Report

Exeter, D. J., & Boyle, P. J. (2007). Does young adult suicide cluster geographically in Scotland? *Journal of Epidemiology and Community Health, 61*(8), 731-736.

Exeter, D. J., Zhao, J., Crengle, S., Lee, A., & Browne, M. (2017). The New Zealand Indices of Multiple Deprivation (IMD): A new suite of indicators for social and health research in Aotearoa, New Zealand. *PloS one, 12*(8), e0181260.

Fahy, K., Lee, A., & Milne, B. (2017). *New Zealand socio-economic index 2013*: Statistics New Zealand.

Farrington, J. H. (2007). The new narrative of accessibility: its potential contribution to discourses in (transport) geography. *Journal of Transport Geography, 15*(5), 319-330.

Fergusson, D., McLeod, G., & Horwood, L. (2015). Leaving school without qualifications and mental health problems to age 30. *Social Psychiatry & Psychiatric Epidemiology, 50*(3), 469-478.

Fonseca, X., Lukosch, S., & Brazier, F. (2019). Social cohesion revisited: a new definition and how to characterize it. *Innovation: The European Journal of Social Science Research, 32*(2), 231-253.

Forbes, M., Barker, A., & Turner, S. A. (2010). *The effects of education and health on wages and productivity.* Productivity Commission Staff Working Paper, Melbourne

Global Humanitarian Forum (2009). *Human Impact Report: The anatomy of a silent crisis*. Geneva.

Frank, L. D., Kerr, J., Sallis, J. F., Miles, R., & Chapman, J. (2008). A hierarchy of sociodemographic and environmental correlates of walking and obesity. *Preventive Medicine, 47*(2), 172-178.

Gable, A., & Lingard, B. (2016). NAPLAN data: a new policy assemblage and mode of governance in Australian schooling. *Policy Studies, 37*(6), 568-582.

Gaugler, J. E., Duval, S., Anderson, K. A., & Kane, R. L. (2007). Predicting nursing home admission in the US: a meta-analysis. *BMC Geriatrics, 7*(1), 1-14.

Gerrish, E., & Watkins, S. L. (2018). The relationship between urban forests and income: A meta-analysis. *Landscape and Urban Planning, 170*, 293-308.

Gokce, B., & Ofer, S. (2017). The Emotional Toll of Long-Term Unemployment: Examining the Interaction Effects of Gender and Marital Status. *RSF: The Russell Sage Foundation Journal of the Social Sciences, 3*(3), 222-244.

Gong, & Tanton. (2018). *Returns to education in Australia 2006 – 2016,* NATSEM Working Paper. Retrieved from: https://www.governanceinstitute.edu.au/magma/media/upload/publication/411_Returns-to-education-in-Australia-2006-to-2016-With-Cover.pdf

Goss, P. J. E., Sonnemann, J., Chisholm, C., & Nelson, L. (2016). *Widening gaps: What NAPLAN tells us about student progress*, Grattan Institute Melbourne.

Greene, C. S., Robinson, P. J., & Millward, A. A. (2018). Canopy of advantage: Who benefits most from city trees? *Journal of Environmental Management, 208*, 24-35.

Hall, J. M., Handley, J. F., & Ennos, A. R. (2012). The potential of tree planting to climate-proof high density residential areas in Manchester, UK. *Landscape and Urban Planning, 104*(3-4), 410-417.

Hamada, S., & Ohta, T. (2010). Seasonal variations in the cooling effect of urban green areas on surrounding urban areas. *Urban forestry & urban greening, 9*(1), 15-24.

Handley, E. D., Rogosch, F. A., Guild, D. J., & Cicchetti, D. (2015). Neighborhood disadvantage and adolescent substance use disorder: The moderating role of maltreatment. *Child maltreatment, 20*(3), 193-202.

Hanigan, I. C., Broome, R. A., Chaston, T. B., Cope, M., Dennekamp, M., Heyworth, J. S., Heathcote, K., Horsley, J.A., Jalaludin, B., Jegasothy, E., Johnston, F.H. (2021). Avoidable Mortality Attributable to Anthropogenic Fine Particulate Matter (PM2. 5) in Australia. *International journal of environmental research and public health, 18*(1), 254.

Harding, A., Lloyd, R., & Greenwell, H. (2001). *Financial disadvantage in Australia 1990 to 2000 : the persistence of poverty in a decade of growth* The Smith Family, Camperdown NSW

Harding, A., McNamara, J., Daly, A., & Tanton, R. (2009). Child social exclusion: an updated index from the 2006 census. *Australian Journal of Labour Economics, 12*(1), 41-64.

Hatcher, C. B. (2000). Should households establish emergency funds? *Journal of Financial Counseling and Planning, 11*(2), 77.

Havik, T., Bru, E., & Ertesvåg, S. K. (2015). Assessing Reasons for School Non-attendance. *Scandinavian Journal of Educational Research, 59*(3), 316-336.

Hays, S. M., Kearns, R. A., & Moran, W. (1990). Spatial patterns of attendance at general practitioner services. *Social Science & Medicine, 31*(7), 773-781.

Heap, J., Fors, S., & Lennartsson, C. (2017). Coexisting Disadvantages in later Life: Demographic and Socio-Economic Inequalities. *Journal of Population Ageing, 10*(3), 247-267.

Hohl, K., Cote-Lussier, C., & David, J. (2020). Disadvantage, Crime, and Criminal Justice. In *Contemporary Criminological Issues*, University of Ottawa Press

Hong, J., Knapp, M., & McGuire, A. (2011). Income-related inequalities in the prevalence of depression and suicidal behaviour: a 10-year trend following economic crisis. *World Psychiatry, 10*(1), 40.

Hyndman, J. C., Holman, C. A. J., & Pritchard, D. A. (2003). The influence of attractiveness factors and distance to general practice surgeries by level of social disadvantage and global access in Perth, Western Australia. *Social Science & Medicine, 56*(2), 387-403.

Hyndman, J. C. G., & Holman, C. D. A. J. (2001). Accessibility and spatial distribution of general practice services in an Australian city by levels of social disadvantage. *Social Science & Medicine, 53*(12), 1599-1609.

Hystad, P., Payette, Y., Noisel, N., & Boileau, C. (2019). Green space associations with mental health and cognitive function: Results from the Quebec CARTaGENE cohort. *Environmental Epidemiology, 3*(1), e040.

Institute for Economics and Peace. (2016). *"Australian Youth Development Index: A Jurisdictional Overview of Youth Development."*, Institute for Economics and Peace

Isaacs, A. N., Enticott, J., Meadows, G., & Inder, B. (2018). Lower Income Levels in Australia Are Strongly Associated With Elevated Psychological Distress: Implications for Healthcare and Other Policy Areas. *Frontiers in Psychiatry, 9*(536).

Jackson, R. J., Dannenberg, A. L., & Frumkin, H. (2013). Health and the built environment: 10 years after. *American journal of public health, 103*(9), 1542-1544.

Jim, C. Y., Lo, A. Y., & Byrne, J. A. (2015). Charting the green and climate-adaptive city. *Landscape and Urban Planning, 138*(0), 51-53.

Johnson, G., Scutella, R., Tseng, Y., Wood, G., Guy, J., Rosanna, S., Yi-Ping, T., Gavin, W. (2015). Entries and exits from homelessness: a dynamic analysis of the relationship between structural conditions and individual characteristics. AHURI Final Report No.248. Melbourne: Australian Housing and Urban Research Institute.

Johnston, F., Hanigan, I., Henderson, S., Morgan, G., & Bowman, D. (2011). Extreme air pollution events from bushfires and dust storms and their association with mortality in Sydney, Australia 1994–2007. *Environmental Research, 111*(6), 811-816.

Johnston, F. H., Bailie, R. S., Pilotto, L. S., & Hanigan, I. C. (2007). Ambient biomass smoke and cardio-respiratory hospital admissions in Darwin, Australia. *BMC public health, 7*(1), 240.

Josey, Boreham, Laffan, & Griffiths. (2009). *Poverty in Queensland 2009*. Queensland Council of Social Services

Kabisch, N., van den Bosch, M., & Lafortezza, R. (2017). The health benefits of nature-based solutions to urbanization challenges for children and the elderly – A systematic review. *Environmental Research, 159*, 362-373.

Kallio, J. M., Kauppinen, T. M., & Erola, J. (2016). Cumulative Socio-economic Disadvantage and Secondary Education in Finland. *European Sociological Review, 32*(5), 649-661.

Kamruzzaman, M., & Hine, J. (2011). Participation index: a measure to identify rural transport disadvantage? *Journal of Transport Geography, 19*(4), 882-899.

Karhula, A., Lehti, H., & Erola, J. (2017). Intergenerational scars? The long-term effects of parental unemployment during a depression. *Research on Finnish Society, 10*, 87-99.

Karpman, M., & Acs, G. (2020). *Unemployment Insurance and Economic Impact Payments Associated with Reduced Hardship Following CARES Act*. Urban Institute, Washington DC

Kavanagh, A. M., Krnjacki, L., Aitken, Z., LaMontagne, A. D., Beer, A., Baker, E., & Bentley, R. (2015). Intersections between disability, type of impairment, gender and socio-economic disadvantage in a nationally representative sample of 33,101 working-aged Australians. *Disability and Health Journal, 8*(2), 191-199.

Keane, C. A., Magee, C. A., & Kelly, P. J. (2016). Is there a Complex Trauma Experience typology for Australians experiencing extreme social disadvantage and low housing stability? *Child Abuse & Neglect, 61*, 43-54.

Keller, J. P., Olives, C., Kim, S.-Y., Sheppard, L., Sampson, P. D., Szpiro, A. A., Oron, A.P., Lindstrom, J., Vedal, S., Kaufman, J. D. (2015). A unified spatiotemporal modeling approach for predicting concentrations of multiple air pollutants in the multi-ethnic study of atherosclerosis and air pollution. *Environmental health perspectives, 123*(4), 301-309.

Kendal, D., Williams, N. S., & Williams, K. J. (2012). Drivers of diversity and tree cover in gardens, parks and streetscapes in an Australian city. *Urban forestry & urban greening, 11*(3), 257-265.

Kirkpatrick, J. B., Daniels, G. D., & Zagorski, T. (2007). Explaining variation in front gardens between suburbs of Hobart, Tasmania, Australia. *Landscape and Urban Planning, 79*(3), 314-322.

Kisely, S., Abajobir, A. A., Mills, R., Strathearn, L., Clavarino, A., & Najman, J. M. (2018). Child maltreatment and mental health problems in adulthood: birth cohort study. *The British Journal of Psychiatry, 213*(6), 698-703.

Knibbs, L. (2020). *SatPM25 2000-2015 and SatNO2 2006-2011 modelled data aggregated to ABS 2016 Statistical Area 2 (SA2)*. Retrieved from Centre for Air pollution, energy and health Research.

Kõlves, K., Potts, B., & De Leo, D. (2015). Ten years of suicide mortality in Australia: Socio-economic and psychiatric factors in Queensland. *Journal of forensic and legal medicine, 36*, 136-143.

Korpi, T. (2001). Accumulating Disadvantage: Longitudinal Analyses of Unemployment and Physical Health in Representative Samples of the Swedish Population. *European Sociological Review, 17*(3), 255-273. Retrieved from http://www.jstor.org/stable/522880

Kuras, E. R., Warren, P. S., Zinda, J. A., Aronson, M. F. J., Cilliers, S., Goddard, M. A., Nilon, C.H. Winkler, R. (2020). Urban socioeconomic inequality and biodiversity often converge, but not always: A global meta-analysis. *Landscape and Urban Planning, 198*, 103799.

Kuusipalo, P., & Alastalo, M. (2020). The early school leaver count as a policy instrument in EU governance: the un/intended effects of an indicator. *International Studies in Sociology of Education, 29*(1-2), 61-84.

Lacmanović, S., Burić, S. B., & Tijanić, L. (2016). *The Socio-economic Costs of Underemployment.* Paper presented at the Management International Conference, MIC 2016: Managing Global Changes.

Laliberte Rudman, D., & Aldrich, R. (2016). "Activated, but stuck": Applying a critical occupational lens to examine the negotiation of long-term unemployment in contemporary socio-political contexts. *Societies, 6*(3), 28.

Laplagne, P., Glover, M., & Shomos, A. (2007). *Effects of health and education on labour force participation*. Productivity Commission Staff Working Paper, Productivity Commission, Melbourne

Lavrijsen, J., & Nicaise, I. (2015). Social Inequalities in Early School Leaving: The Role of Educational Institutions and the Socioeconomic Context. *European Education, 47*(4), 295-310.

Lefebvre, R., Fallon, B., Van Wert, M., & Filippelli, J. (2017). Examining the relationship between economic hardship and child maltreatment using data from the Ontario Incidence Study of Reported Child Abuse and Neglect-2013 (OIS-2013). *Behavioral Sciences, 7*(1), 6.

Leong, M., Dunn, R. R., & Trautwein, M. D. (2018). Biodiversity and socioeconomics in the city: a review of the luxury effect. *Biology Letters, 14*(5), 20180082.

Lin, B., Meyers, J., & Barnett, G. (2015). Understanding the potential loss and inequities of green space distribution with urban densification. *Urban forestry & urban greening, 14*(4), 952-958.

Liu, W., Chen, W., & Peng, C. (2014). Assessing the effectiveness of green infrastructures on urban flooding reduction: A community scale study. *Ecological Modelling, 291*, 6-14.

Liu, Y., Cheshire, L., & Wadley, D. (2016). Mapping mis-location and housing stress in the private rental sector: A case study of Brisbane, Australia. *Applied Geography, 76*, 207-216.

Loughnan, M., Nicholls, N., Tapper, N., & Chandra, S. (2011). Which postcodes are most vulnerable to hot weather in Melbourne? A spatial analysis of human vulnerability to heat events. *Epidemiology, 22*(1), S140.

Loughnan, M. E., Nicholls, N., & Tapper, N. J. (2010). The effects of summer temperature, age and socioeconomic circumstance on acute myocardial infarction admissions in Melbourne, Australia. *International journal of health geographics, 9*(1), 1-11.

Lucas, K., Mattioli, G., Verlinghieri, E., & Guzman, A. (2016). Transport poverty and its adverse social consequences. *Proceedings of the Institution of Civil Engineers - Transport, 169*(6), 353-365.

Lynch, M., Buckman, J., & Krenske, L. (2003). Youth justice: Criminal trajectories. *Trends & issues in crime and criminal justice*(265), 1.

Ma, L., Kent, J., & Mulley, C. (2018). Transport disadvantage, social exclusion, and subjective well-being: The role of the neighborhood environment—evidence from Sydney, Australia. *Journal of Transport and Land Use, 11*(1).

Mackenbach, J. P., Bos, V., Andersen, O., Cardano, M., Costa, G., Harding, S., Reid, A., Hemstrom, O., Valkonen, T., Kunst, A. E. (2003). Widening socioeconomic inequalities in mortality in six Western European countries. *International journal of epidemiology, 32*(5), 830-837.

Malvaso, C., & Delfabbro, P. (2015). Offending Behaviour Among Young People with Complex Needs in the Australian Out-of-Home Care System. *Journal of Child & Family Studies, 24*(12), 3561-3569.

Malvaso, C. G., Delfabbro, P. H., & Day, A. (2017). The child protection and juvenile justice nexus in Australia: A longitudinal examination of the relationship between maltreatment and offending. *Child Abuse & Neglect, 64*, 32-46.

Mann, L., Bateson, D., & Black, K. I. (2020). Teenage pregnancy. *Australian Journal of General Practice, 49*(6), 310-316.

Marino, J. L., Lewis, L. N., Bateson, D., Hickey, M., & Skinner, S. (2016). Teenage mothers. *Australian family physician, 45*(10), 712.

Martiello, M. A., & Giacchi, M. V. (2010). High temperatures and health outcomes: a review of the literature. *Scandinavian journal of public health, 38*(8), 826-837.

Matthews, T., Lo, A. Y., & Byrne, J. A. (2015). Reconceptualizing green infrastructure for climate change adaptation: Barriers to adoption and drivers for uptake by spatial planners. *Landscape and Urban Planning, 138*, 155-163.

Mayes, E., & Howell, A. (2018). The (hidden) injuries of NAPLAN: two standardised test events and the making of 'at risk' student subjects. *International Journal of Inclusive Education, 22*(10), 1108-1123.

McClelland, A. (2000). Effects of unemployment on the family. *The Economic and Labour Relations Review*, Vol 11, Issue 2, pp 198 - 212.

McColl, B., Pietsch, L., & Gatenby, J. (2002). Household Income. *Living Standards and Financial Stress*, 198-209.

McKenzie, K., Whitley, R. & Weich, S. (2002) Social capital and mental health. *British Journal of Psychiatry*, 181, 280–283.

McLachlan, R., Gilfillan, G., & Gordon, J. (2013). *Deep and persistent disadvantage in Australia*: Productivity Commission Canberra.

Melbourne Institute. (2020). *Poverty Lines: Australia*. Retrieved from University of Melbourne: Applied Economic and Social Research

Mersky, J. P., Janczewski, C. E., & Topitzes, J. (2016). Rethinking the Measurement of Adversity: Moving Toward Second-Generation Research on Adverse Childhood Experiences. *Child maltreatment, 22*(1), 58-68.

Michalos, A. C. (2014). *Encyclopedia of quality of life and well-being research*: Springer Netherlands Dordrecht.

Millán-Calenti, J. C., Tubío, J., Pita-Fernández, S., González-Abraldes, I., Lorenzo, T., Fernández-Arruty, T., & Maseda, A. (2010). Prevalence of functional disability in activities of daily living (ADL), instrumental activities of daily living (IADL) and associated factors, as predictors of morbidity and mortality. *Archives of gerontology and geriatrics, 50*(3), 306-310.

Milner, A., Page, A., Morrell, S., Hobbs, C., Carter, G., Dudley, M., Duflou, J., Taylor, R. (2014). The effects of involuntary job loss on suicide and suicide attempts among young adults: Evidence from a matched case–control study. *Australian & New Zealand Journal of Psychiatry, 48*(4), 333-340.

Milner, A., San Too, L., & Spittal, M. J. (2018). Cluster suicides among unemployed persons in Australia over the period 2001–2013. *Social Indicators Research, 137*(1), 189-201.

Milner, A., Smith, P., & LaMontagne, A. D. (2015). Working hours and mental health in Australia: evidence from an Australian population-based cohort, 2001–2012. *Occupational and environmental medicine, 72*(8), 573-579.

Milner, A. J., Niven, H., & LaMontagne, A. D. (2015). Occupational class differences in suicide: evidence of changes over time and during the global financial crisis in Australia. *BMC psychiatry, 15*(1), 1-7.

Ministry of Housing Communities and Local Government. (2019). *The English Indices of Deprivation 2019*. Ministry of Housing Communities and Local Government.

Miranti, R., McNamara, J., Tanton, R., & Harding, A. (2011). Poverty at the local level: National and small area poverty estimates by family type for Australia in 2006. *Applied Spatial Analysis and Policy, 4*(3), 145-171.

Mlinac, M. E., & Feng, M. C. (2016). Assessment of activities of daily living, self-care, and independence. *Archives of Clinical Neuropsychology, 31*(6), 506-516.

Moore, T. G., McDonald, M., Carlon, L., & O'Rourke, K. (2015). Early childhood development and the social determinants of health inequities. *Health Promotion International, 30*(suppl_2), ii102-ii115.

Moser, S. C. (2010). Communicating climate change: history, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change, 1*(1), 31-53.

Neckerman, K. M., Garfinkel, I., Teitler, J. O., Waldfogel, J., & Wimer, C. (2016). Beyond Income Poverty: Measuring Disadvantage in Terms of Material Hardship and Health. *Academic Pediatrics, 16*(3, Supplement), S52-S59.

Nepal, B., Tanton, R., & Harding, A. (2010). Measuring housing stress: how much do definitions matter? *Urban Policy and Research, 28*(2), 211-224.

Noble, M., Wright, G., Dibben, C., Smith, G., McLennan, D., Anttila, C., Barnes, H., Mokhtar, C., Noble, S., Avenell, D., Gardner, J., Covizzi, I., Lloyd, M. (2004). The English indices of deprivation 2004. *London: Office of the Deputy Prime Minister*.

Noble, M., Smith, G., Wright, G., Dibben, C., Lloyd, M., Ratcliff, A., McLellan, D., Sigala, M., Anttila, C. (2003). *Scottish Indices of Deprivation 2003*. Scottish Executive.

OECD. (2015). *How's Life? 2015: Measuring Well-being.* OECD Publishing, Paris

OECD. (2018). Affordable Housing Database. Retrieved from http://www.oecd.org/social/affordable-housing-database/.

OECD. (2019). *Education at a Glance 2019: OECD Indicators*, OECD Publishing, Paris.

OECD. (2020). OECD Better Life Index: Education. OECD Publishing, Paris.

Onishi, A., Cao, X., Ito, T., Shi, F., & Imura, H. (2010). Evaluating the potential for urban heat-island mitigation by greening parking lots. *Urban forestry & urban greening, 9*(4), 323-332.

Page, A., Sperandei, S., Spittal, M. J., Milner, A., & Pirkis, J. (2020). The impact of transitions from employment to retirement on suicidal behaviour among older aged Australians. *Social psychiatry and psychiatric epidemiology*, 1-13.

Parmes, E., Pesce, G., Sabel, C. E., Baldacci, S., Bono, R., Brescianini, S., d'Ippolito, C., Hanke, W., Horvat, M.,Liedes, H., Maio, S. (2020). Influence of residential land cover on childhood allergic and respiratory symptoms and diseases: Evidence from 9 European cohorts. *Environmental Research, 183*, 108953.

Patel, D., Jian, L., Xiao, J., Jansz, J., Yun, G., & Robertson, A. (2019). Joint effect of heatwaves and air quality on emergency department attendances for vulnerable population in Perth, Western Australia, 2006 to 2015. *Environmental Research, 174*, 80-87.

Pedlowski, M. A., Da Silva, V. A. C., Adell, J. J. C., & Heynen, N. C. (2002). Urban forest and environmental inequality in Campos dos Goytacazes, Rio de Janeiro, Brazil. *Urban Ecosystems, 6*(1), 9-20.

Perissinotto, C. M., Cenzer, I. S., & Covinsky, K. E. (2012). Loneliness in older persons: a predictor of functional decline and death. *Archives of internal medicine, 172*(14), 1078-1084.

Pianta, R., Hamre, B., Downer, J., Burchinal, M., Williford, A., LoCasale-Crouch, J., Howes, C., La Pora, K., Scott-Little, C. (2017). Early Childhood Professional Development: Coaching and Coursework Effects on Indicators of Children's School Readiness. *Early Education and Development, 28*(8), 956-975.

Pollock, N. J., Naicker, K., Loro, A., Mulay, S., & Colman, I. (2018). Global incidence of suicide among Indigenous peoples: a systematic review. *BMC Medicine, 16*(1), 145.

Productivity Commission (2021), *Australia's Prison dilemna*, Research Paper, Canberra

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*: Simon and schuster.

Rachwani. (2021). Extremely dangerous': how much of the heat can western Sydney bear? *The Guardian*, retrieved from: https://www.theguardian.com/australia-news/2021/mar/08/extremely-dangerous-how-much-of-the-heat-can-western-sydney-bear, 12 Nov 2021

Raleigh, V. S., & Balarajan, R. (1992). Suicide and self-burning among Indians and West Indians in England and Wales. *The British Journal of Psychiatry, 161*(3), 365-368.

Randolph, B., Liu, E., & Bradbury, B. (2020). *Poverty, Property and Place: A geographic analysis of poverty after housing costs in Australia.* A Report for the ACOSS-UNSW Poverty and Inequality Partnership by the City Futures Research Centre and the Social Policy Research Centre at UNSW

Ready, D. D. (2010). Socioeconomic Disadvantage, School Attendance, and Early Cognitive Development: The Differential Effects of School Exposure: a Magazine of Theory and Practice. *Sociology of Education, 83*(4), 271-286.

Redmond, G., Skattebol, J., Saunders, P., Lietz, P., Zizzo, G., O'Grady, E., Tobin, M., Thomson, S., Maurici, V., Huynh, J. (2016). *Are the kids alright? Young Australians in their middle years*, Final report of the Australian Child Wellbeing Project.

Reidpath, D. D., Burns, C., Garrard, J., Mahoney, M., & Townsend, M. (2002). An ecological study of the relationship between social and environmental determinants of obesity. *Health & place, 8*(2), 141-145.

Reiman, J., & Leighton, P. (2015). *Rich get richer and the poor get prison, the (subscription): Ideology, class, and criminal justice*: Routledge.

Ridani, R., Shand, F. L., Christensen, H., McKay, K., Tighe, J., Burns, J., & Hunter, E. (2015). Suicide prevention in Australian Aboriginal communities: a review of past and present programs. *Suicide and Life- Threatening Behavior, 45*(1), 111-140.

Rigolon, A. (2016). A complex landscape of inequity in access to urban parks: A literature review. *Landscape and Urban Planning, 153*, 160-169.

Roberts, P., Dean, J., & Lommatsch, G. (2019). *Still Winning? Social Inequity in the NSW Senior Secondary Curriculum Hierarchy*: Centre for Sustainable Communities, Universiy of Canberra

Rodwell, L., Romaniuk, H., Nilsen, W., Carlin, J. B., Lee, K. J., & Patton, G. C. (2018). Adolescent mental health and behavioural predictors of being NEET: a prospective study of young adults not in employment, education, or training. *Psychological Medicine, 48*(5), 861-871.

Roemmich, J. N., Epstein, L. H., Raja, S., Yin, L., Robinson, J., & Winiewicz, D. (2006). Association of access to parks and recreational facilities with the physical activity of young children. *Preventive Medicine, 43*(6), 437-441.

Rose, D., & Richards, R. (2004). Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public health nutrition, 7*(8), 1081-1088.

Roy, S., Byrne, J., & Pickering, C. (2012). A systematic quantitative review of urban tree benefits, costs, and assessment methods across cities in different climatic zones. *Urban forestry & urban greening, 11*(4), 351-363.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2020). *The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020*., Cambridge University Press

Sallis, J. F., Floyd, M. F., Rodríguez, D. A., & Saelens, B. E. (2012). Role of built environments in physical activity, obesity, and cardiovascular disease. *Circulation, 125*(5), 729-737.

Sarnecki, J. (1989). *Juvenile delinquency in Sweden: An overview*: National Council for Crime Prevention, Information Division.

Saunders, P. (2015). Social inclusion, exclusion, and well-being in Australia: meaning and measurement. *Australian Journal of Social Issues, 50*(2), 139-157.

Saunders, P., Bedford, M., Brown, J., Naidoo, Y., & Adamson, E. (2018). *Material Deprivation and Social Exclusion Among Young Australians: A child-focused approach,* SPRC Report 24/18

Sbihi, H., Tamburic, L., Koehoorn, M., & Brauer, M. (2015). Greenness and incident childhood asthma: a 10-year follow-up in a population-based birth cohort. *American journal of respiratory and critical care medicine, 192*(9), 1131-1133.

Schöllgen, I., Huxhold, O., Schüz, B., & Tesch-Römer, C. (2011). Resources for health: differential effects of optimistic self-beliefs and social support according to socioeconomic status. *Health psychology, 30*(3), 326.

Schulz, A., & Northridge, M. E. (2004). Social determinants of health: implications for environmental health promotion. *Health education & behavior, 31*(4), 455-471.

Scutella, R., Wilkins, R., & Kostenko, W. (2013). Intensity and persistence of individuals' social exclusion in Australia. *Australian Journal of Social Issues, 48*(3), 273-298.

Seivwright, A. N., Callis, Z., & Flatau, P. (2020). Food insecurity and socioeconomic disadvantage in Australia. *International journal of environmental research and public health, 17*(2), 559.

Shankar, A., McMunn, A., Demakakos, P., Hamer, M., & Steptoe, A. (2017). Social isolation and loneliness: Prospective associations with functional status in older adults. *Health psychology, 36*(2), 179.

Skattebol, J., & Redmond, G. (2019). Troubled kids? Locational disadvantage, opportunity structures and social exclusion. *Children's Geographies, 17*(1), 76-89.

Snowdon, J., Phillips, J., Zhong, B., Yamauchi, T., Chiu, H. F., & Conwell, Y. (2017). Changes in age patterns of suicide in Australia, the United States, Japan and Hong Kong. *Journal of Affective Disorders, 211*, 12-19.

Stanley, J., & Stanley, J. (2007). Public transport and social policy goals. *Road & Transport Research: A Journal of Australian and New Zealand Research and Practice, 16*(1), 20.

Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2008). *Report by the commission on the measurement of economic performance and social progress.* Retrieved from: https://ec.europa.eu/eurostat/documents/8131721/8131772/Stiglitz-Sen-Fitoussi-Commission-report.pdf

Stimson, R. (2001). Dividing societies: the socio- political spatial implications of restructuring in Australia. *Australian Geographical Studies, 39*(2), 198-216.

Suonpää, K., Kivivuori, J., & Aaltonen, M. (2018). Criminal history and social disadvantage as predictors of the severity of violent offending. *International Journal of Comparative and Applied Criminal Justice, 42*(2-3), 139-155.

Takano, T., Nakamura, K., & Watanabe, M. (2002). Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *Journal of Epidemiology & Community Health, 56*(12), 913-918.

Tanton, R., Harding, A., Daly, A., McNamara, J., & Yap, M. (2010). Australian children at risk of social exclusion: a spatial index for gauging relative disadvantage. *Population, Space and Place, 16*(2), 135-150.

Tanton, R., Peel, D., & Vidyattama, Y. (2018). *Every suburb Every town: Poverty in Victoria*. Victorian Council of Social Services

Tanton, R., Vidyattama, Y., & Miranti, R. (2016). *Small area Indicators of Wellbeing for Older Australians (IWOA).* The Benevolent Society, Sydney

Tanton, R., Vidyattama, Y., & Mohanty, I. (2015). Disadvantage in the Australian Capital Territory. *Policy Studies, 36*(1), 92-113.

Tanton, R., Vidyattama, Y., Nepal, B., & McNamara, J. (2011). Small area estimation using a reweighting algorithm. *Journal of the Royal Statistical Society: Series A (Statistics in Society), 174*(4), 931-951.

The Smith Family. (2018). *Attendance lifts achievement: Building the evidence base to improve student outcomes*. The Smith Family

Thomas, D., & Hall, A. (2016). *Housing affordability in Australia*. Parliament of Australia.

Tiwary, A., Williams, I., Heidrich, O., Namdeo, A., Bandaru, V., & Calfapietra, C. (2016). Development of multi-functional streetscape green infrastructure using a performance index approach. *Environmental pollution, 208*, 209-220.

Trancoso, R., Syktus, J., Toombs, N., Ahrens, D., Wong, K. K.-H., & Dalla Pozza, R. (2020). Heatwaves intensification in Australia: A consistent trajectory across past, present and future. *Science of The Total Environment, 742*, 140521.

Turrell, G., Blakely, T., Patterson, C., & Oldenburg, B. (2004). A multilevel analysis of socioeconomic (small area) differences in household food purchasing behaviour. *Journal of Epidemiology & Community Health, 58*(3), 208-215.

Turrell, G., Haynes, M., Wilson, L.-A., & Giles-Corti, B. (2013). Can the built environment reduce health inequalities? A study of neighbourhood socioeconomic disadvantage and walking for transport. *Health & place, 19*, 89-98.

Turrell, G., Hewitt, B., Patterson, C., Oldenburg, B., & Gould, T. (2002). Socioeconomic differences in food purchasing behaviour and suggested implications for diet- related health promotion. *Journal of Human Nutrition and Dietetics, 15*(5), 355-364.

Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J., & James, P. (2007). Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. *Landscape and Urban Planning, 81*(3), 167-178.

Ulmer, J. M., Wolf, K. L., Backman, D. R., Tretheway, R. L., Blain, C. J. A., O'Neil-Dunne, J. P. M., & Frank, L. D. (2016). Multiple health benefits of urban tree canopy: The mounting evidence for a green prescription. *Health & place, 42*, 54-62.

UNDP. (2020). *Human Development Report 2020: Techincal Notes*. Retrieved from http://hdr.undp.org/sites/default/files/hdr2020_technical_notes.pdf

Vaneckova, P., Beggs, P. J., & Jacobson, C. R. (2010). Spatial analysis of heat-related mortality among the elderly between 1993 and 2004 in Sydney, Australia. *Social Science & Medicine, 70*(2), 293-304.

Vauhkonen, T., Kallio, J., Kauppinen, T. M., & Erola, J. (2017). Intergenerational accumulation of social disadvantages across generations in young adulthood. *Research in Social Stratification and Mobility, 48*, 42-52.

Vera-Toscano, E. (2020). The Mechanisms Underlying the Intergenerational Transmission of Disadvantage: Three Examples from Australia. *Australian Economic Review, 53*(2), 247-253.

Vidyattama, Y., & Tanton, R. (2019). *Mapping economic disadvantage in New South Wales*. Report for NSW Council of Social Services

Wang, D., Brown, G., Zhong, G., Liu, Y., & Mateo-Babiano, I. (2015). Factors influencing perceived access to urban parks: A comparative study of Brisbane (Australia) and Zhongshan (China). *Habitat International, 50*, 335-346.

Watkins, R., Palmer, J., & Kolokotroni, M. (2007). Increased temperature and intensification of the urban heat island: Implications for human comfort and urban design. *Built Environment, 33*(1), 85-96.

Weatherburn, D. (1992). *Economic adversity and crime*. Australian Institute of Criminology Trends and Issues Paper 40

Weatherburn, D. (2001). *What causes crime?,* NSW Bureau of Crime Statistics and Research Sydney.

Western, M., & Tomaszewski, W. (2016). Subjective wellbeing, objective wellbeing and inequality in Australia. *PloS one, 11*(10), e0163345.

Winkler, E., Turrell, G., & Patterson, C. (2006). Does living in a disadvantaged area mean fewer opportunities to purchase fresh fruit and vegetables in the area? Findings from the Brisbane food study. *Health & place, 12*(3), 306-319.

Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'. *Landscape and Urban Planning, 125*, 234-244.

World Health Organisation. (2018). Ambient (outdoor) air pollution. Retrieved from https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health

Worthington, A. C. (2004). Emergency funds in Australian households: An empirical analysis of capacity and sources. *Financial Counseling and Planning, 15*(1), 21-30.

Wray, M., Colen, C., & Pescosolido, B. (2011). The Sociology of Suicide. *Annual Review of Sociology, 37*(1), 505-528.

Zavaleta, D., Samuel, K., & Mills, C. T. (2017). Measures of social isolation. *Social Indicators Research, 131*(1), 367-391.

APPENDIX 1: LIST OF ALL INDICATORS AND THE STATES THAT USED THE INDICATOR IN THEIR INDEX

DOMAINS	VARIABLE NAMES	INDICATORS	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
SOCIAL DISTRESS										
1	low_ income650	Proportion of people living in low income households (earning less than $650 per week or $33,800 per year	x	x	x	x	x	x	x	x
2	volunteer	Proportion of people who volunteer	x					x	x	x
3	no_internet	Proportion of people in households with internet not accessed from dwelling	x	x	x	x	x	x	x	x
4	access_ shop	Number of grocery shops and supermarkets in the location								
5	access_ culturerec	Proportion of location used for Recreation and culture—parks, sportsgrounds, camping grounds, swimming pools, museums, places of worship, zoos (including butterfly farms) with a primary purpose of recreation and culture	x							
6	overcrowd	Proportion of households without suitable number of bedrooms	x	x	x	x	x	x	x	x
HEALTH										
7	prop_dsp	Proportion of people receiving a disability support pension	x	x	x	x	x	x	x	
8	psy_ad	Overnight admitted mental health-related separations per 10,000 population							x	x
9	gp2	General Practitioners and Resident Medical Officers per 1,000 population							x	x
10	suicide	Intentional self-harm death per 1,000 population								
11	need_ assist	Proportion of people who need assistance with core activities	x	x	x	x	x	x	x	
COMMUNITY SAFETY										
12	Child_ m1000	Number of substantiated child (aged 0 – 14) maltreatment cases per 1,000 children	x		x	x	x	x	x	x

DOMAINS	VARIABLE NAMES	INDICATORS	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
13	juve_convic1000	Number of juvenile (age 10 – 17) convictions per 1,000 population aged 10-17	x	x	x		x	x	x	
14	prison_adm1000	Number of prison admission per 1000 adult population aged 18 and over	x	x	x	x	x	x	x	x
15	f_violence1000	Number of people covered by a domestic or family violence protection order from either a criminal or civil case per 1,000 adult population aged 18 and over	x	x	x	x		x	x	
ECONOMIC										
16	unskilled	Proportion of people working in low skilled occupations to total labour force	x	x	x	x	x	x		x
17	underemployed	Proportion of people who are working and would like to work more hours to total labour force					x			
18	lt_unemp	Proportion of people who have been unemployed for more than 1 year to total labour force	x	x	x	x		x	x	
19	_24neet	Proportion of young adults (18 – 24) not in employment, education, or training	x	x	x	x	x	x	x	
20	h_stress	Proportion of households in bottom 2 quintiles of income distribution (40%) paying more than 30% of their gross income on rent or mortgage (microsimulation)						x	x	
21	public_h	Proportion of people living in social/public housing	x		x	x	x	x	x	x
22	rent_assistance	Proportion of people receiving rent assistance in location to population aged 18 and over	x	x		x		x	x	x
23	fin_stress	Proportion of people who cannot raise $2,000 in a week for something important (microsimulation)								

DOMAINS	VARIABLE NAMES	INDICATORS	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
EDUCATION										
24	naplan_ y3nt2	Proportion of Year 3 students not "At or above national minimum standard" on the numeracy assessment scale			x	x	x	x	x	
25	naplan_ y3rt2	Proportion of Year 3 students not "At or above national minimum standard" on the reading assessment scale			x	x	x		x	
26	naplan_ y9nt2	Proportion of Year 9 students not "At or above national minimum standard" on the numeracy assessment scale					x	x	x	
27	naplan_ y9rt2	Proportion of Year 9 students not "At or above national minimum standard" on the reading assessment scale					x	x	x	
28	attend_l2	Proportion of full time students in Years 1-10 whose attendance rate in Semester 1 was below 90%	x	x	x	x		x	x	x
29	school_ leave	Proportion of people in location who left school before Year 10	x	x	x	x		x	x	x
30	no_ postqual	Proportion of people in location with no post school qualification	x	x	x	x		x	x	x
31	aedc_one	Proportion of young children vulnerable on at least 1 domain of the Australian Early Development Census (AEDC)			x	x		x		
ENVIRONMENT										
32	part_ matter2	Amount of particulate matter greater than 2.5 microns in width	**x**	**x**	**x**	**x**	**x**	**x**	**x**	
33	green_ canop	Proportion of location with considerable wood vegetation (tree cover)	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
34	heat_ vulnerable	Number of days above 38 degrees	**x**	**x**	**x**	**x**	**x**			**x**
35	nat_res	Proportion of area in SA2 that are declared nature reserve								**x**

DOMAINS	VARIABLE NAMES	INDICATORS	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
LIFETIME DISADVANTAGE										
36	teen_preg	Proportion of female youth age 15-19 who have at least one child	x	x	x	x	x	x	x	x
37	jobless_ parents	Proportion of dependent children aged 0-14 in a family where no parent is working (unemployed or not in the labour force)	x	x	x	x	x	x	x	x

APPENDIX 2. QUALITATIVE QUESTIONS

DROPPING OFF THE EDGE Focus Group Questions

The focus group questions are intended to be open ended to provide interviewees the opportunity to share their experiences and insights in detail. Probes (additional sub-questions) will be used to prompt discussion that ensures a cross sectional focus on all the supporting pillars (ie health, education, crime, mental health, environment/spaces).

The following questions would follow the usual preamble that describes the project, its aims and required ethical procedures.

Introductions around the table

1. Tell me about your [location] community:

a. [On the paper in front of you] Write down 3 or more words that describe what a strong and vibrant community looks like to you. Now write 3 or more words that describe what a struggling community looks like to you. [discuss these across the group, including what parts of the community they are 'coming from']

b. [With this discussion in mind], what are the good things about this community that you think help the people in your community to do well?

i. Probe to ensure a full review of all pillars

c. What aspects of your community do you think hinder positive outcomes for people in your community?

i. Probe to ensure a full review of all pillars

2. [Following a short overview of the communities DROPPING OFF THE EDGE outcomes] In this year's DROPPING OFF THE EDGE report, your community [insert change here]:

a. What do you think influenced this change?

b. What types of programs or activities occur within your community that might impact on these outcomes, and why?

i. Probe to ensure a full review of all pillars

c. Have there been any government or community-based activities/programs in the last five years that have led to [positive and negative] outcomes for your community members? Please describe them.

i. How has COVID affected these activities and their outcomes?

3. Positive community outcomes are driven by government and community resources [add explanation of what a 'resource' is]:

a. List the resources available within your community that help your community members to do well? [discuss these around the table]

b. What resources do you think your community is missing?

i. Probe to ensure a full review of all pillars

c. What are the key challenges facing the sustainability and effectiveness of these community support resources?

i. How has COVID affected these challenges?

d. How can government and other social services providers best support community resources in driving positive change in your community?

4. **What would be your 3 key priorities to improve your community and community member outcomes? List them on your paper. [discuss these around the table]**

5. **Any other comments about your community you would like to raise?**

DROPPING OFF THE EDGE Interview Questions

The interview questions are intended to be open ended to provide interviewees the opportunity to share their experiences and insights in detail. Probes (additional sub-questions) will be used to prompt discussion that ensures a cross sectional focus on all the supporting pillars (ie health, education, crime, mental health, environment/spaces).

The following questions would follow the usual preamble that describes the project, its aims and required ethical procedures.

1. **Tell me about you and [your organisation]:**

2. **Tell me about [location community]:**

    a. What are the good things about this community that you think help the people in your community to do well?

        i. Probe to ensure a full review of all pillars

    b. What aspects of your community do you think hinder positive outcomes for people in your community?

        i. Probe to ensure a full review of all pillars

3. **[Following a short overview of the communities DROPPING OFF THE EDGE outcomes] In this year's DROPPING OFF THE EDGE report, your community [insert change here]:**

    a. What do you think influenced this change?

    b. What types of programs or activities occur within your community that might impact on these outcomes, and why?

        i. Probe to ensure a full review of all pillars

    c. Have there been any government or community-based activities/programs in the last five years that have led to [positive and negative] outcomes for your community members? Please describe them.

        i. How has COVID affected these activities and their outcomes?

4. **Positive community outcomes are driven by government and community resources [add explanation of what a 'resource' is]:**

    a. What resources are available within your community that help your community members to do well?

    b. What resources do you think your community is missing?

        i. Probe to ensure a full review of all pillars

    c. What are the key challenges facing the sustainability and effectiveness of these community support resources?

        i. How has COVID affected these challenges?

    d. How can government and other social services providers best support community resources in driving positive change in your community?

5. **What would be your 3 key priorities to improve your community and community member outcomes?**

6. **Any other comments about your community you would like to raise?**

APPENDIX 3: INDICATORS FROM *DROPPING OFF THE EDGE 2021* FOR EACH FOCUS GROUP LOCATION COMPARED TO NATIONAL AVERAGE

The crime data is excluded from these figures due to confidentiality

Figure 11: Willmot (Bidwill – Hebersham – Emerton SA2)

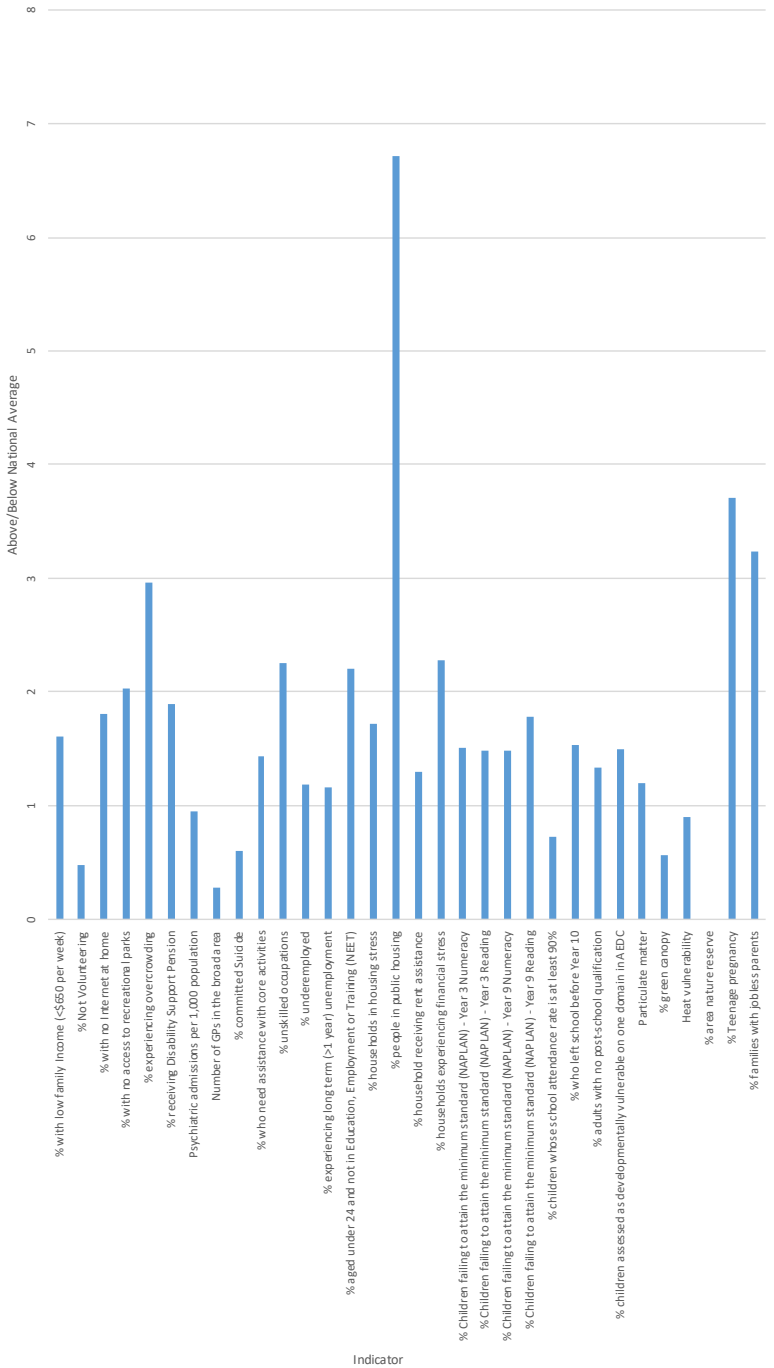


Figure 12: Seaham-Woodville

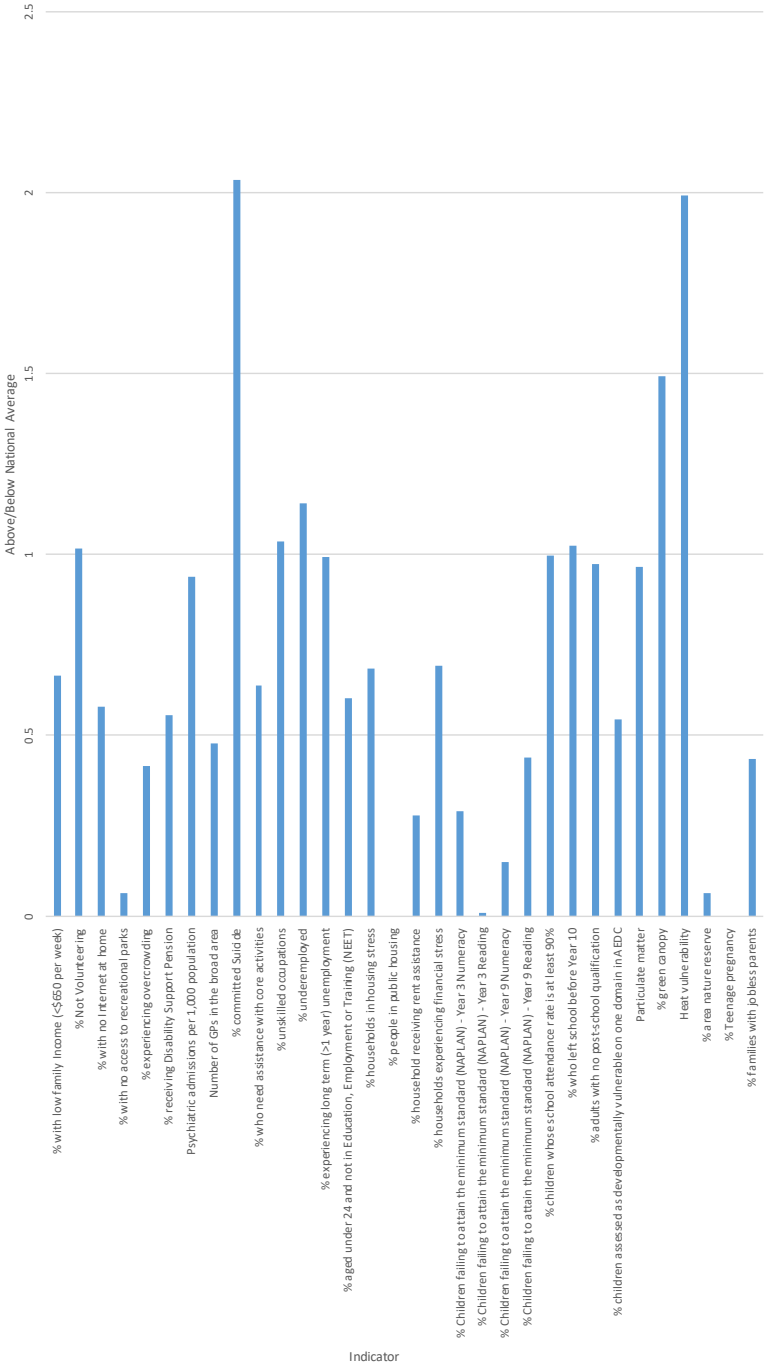


Figure 13: Melton

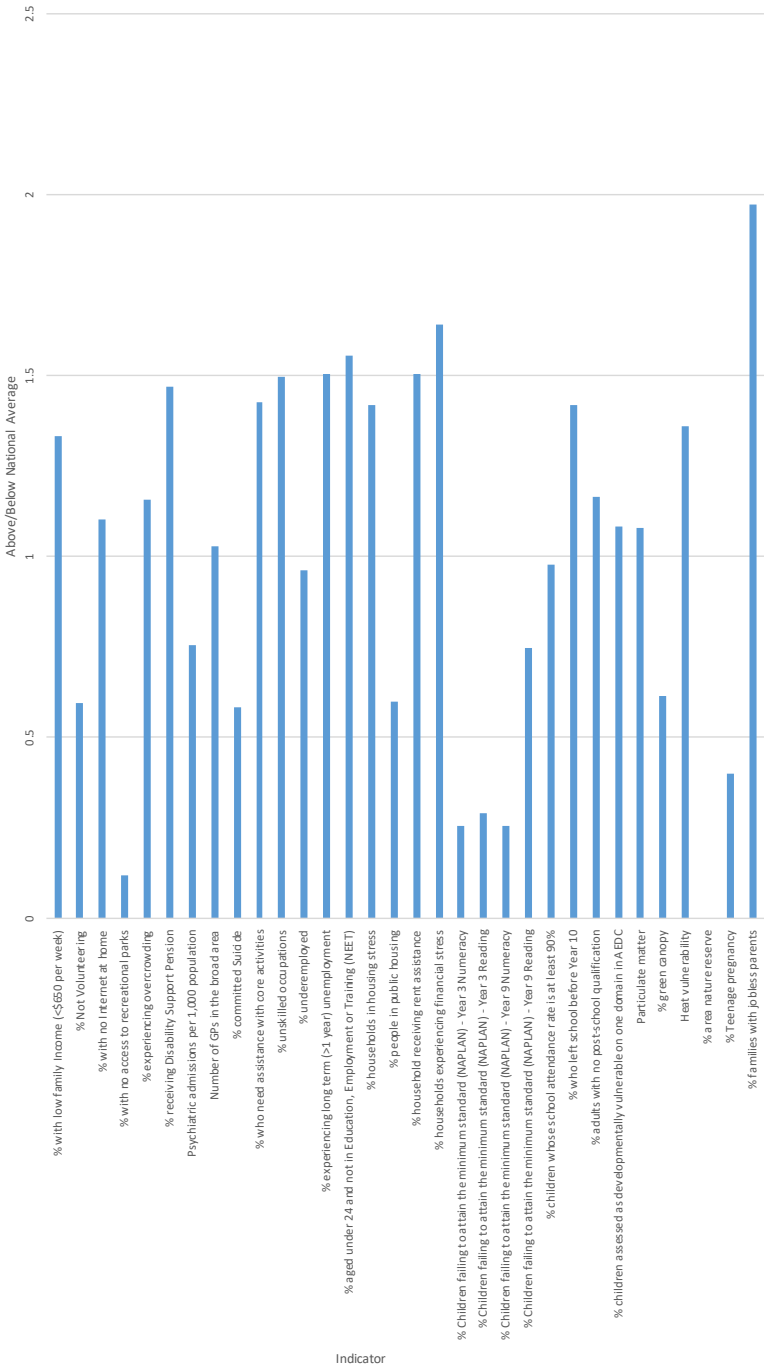


Figure 14: Swan Hill

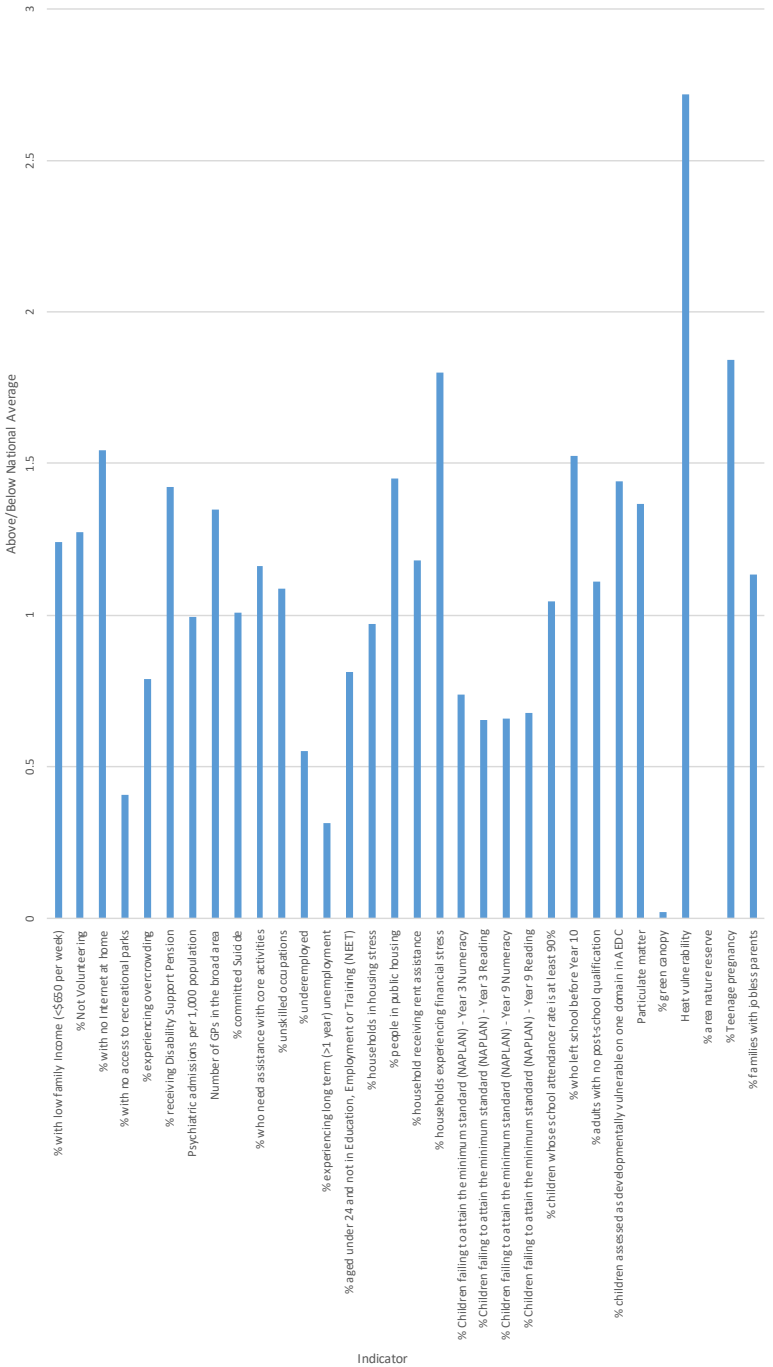


Figure 15: Beenleigh

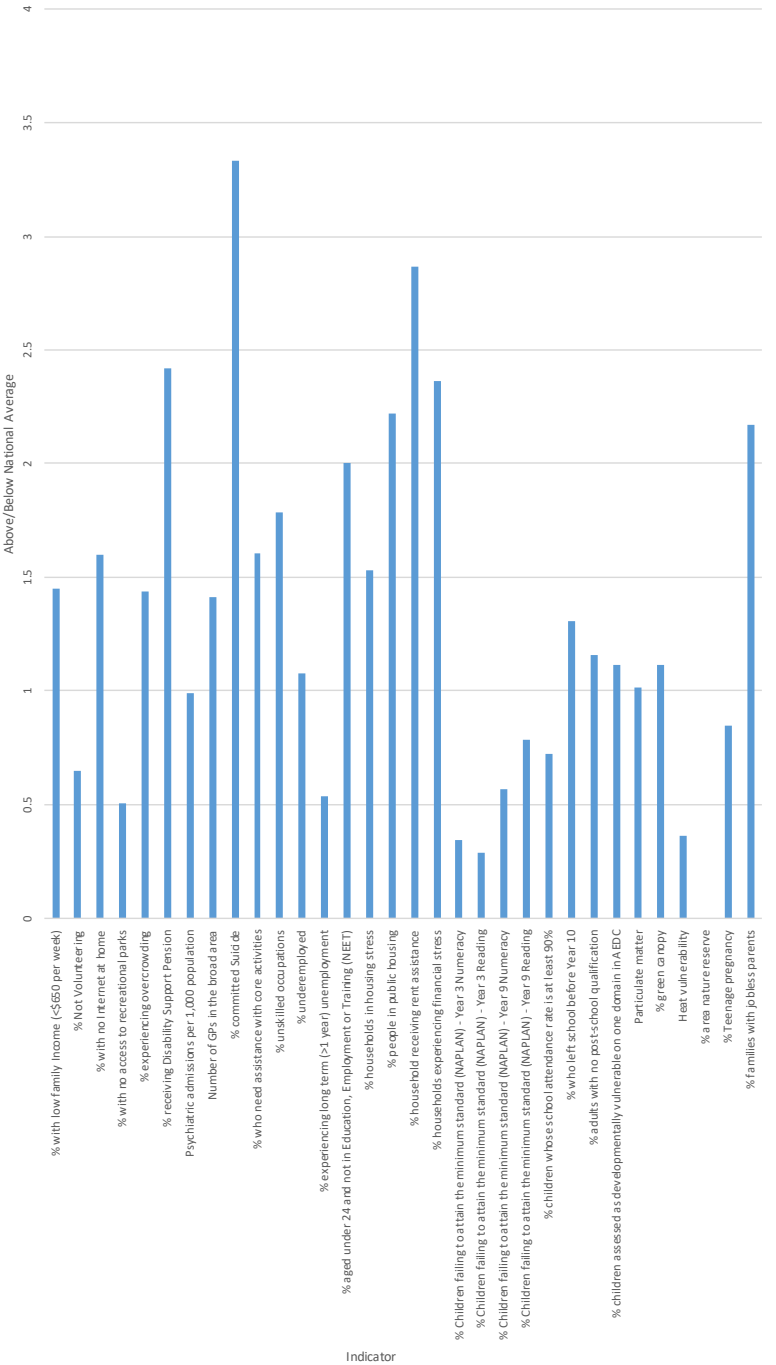


Figure 16: Narrogin

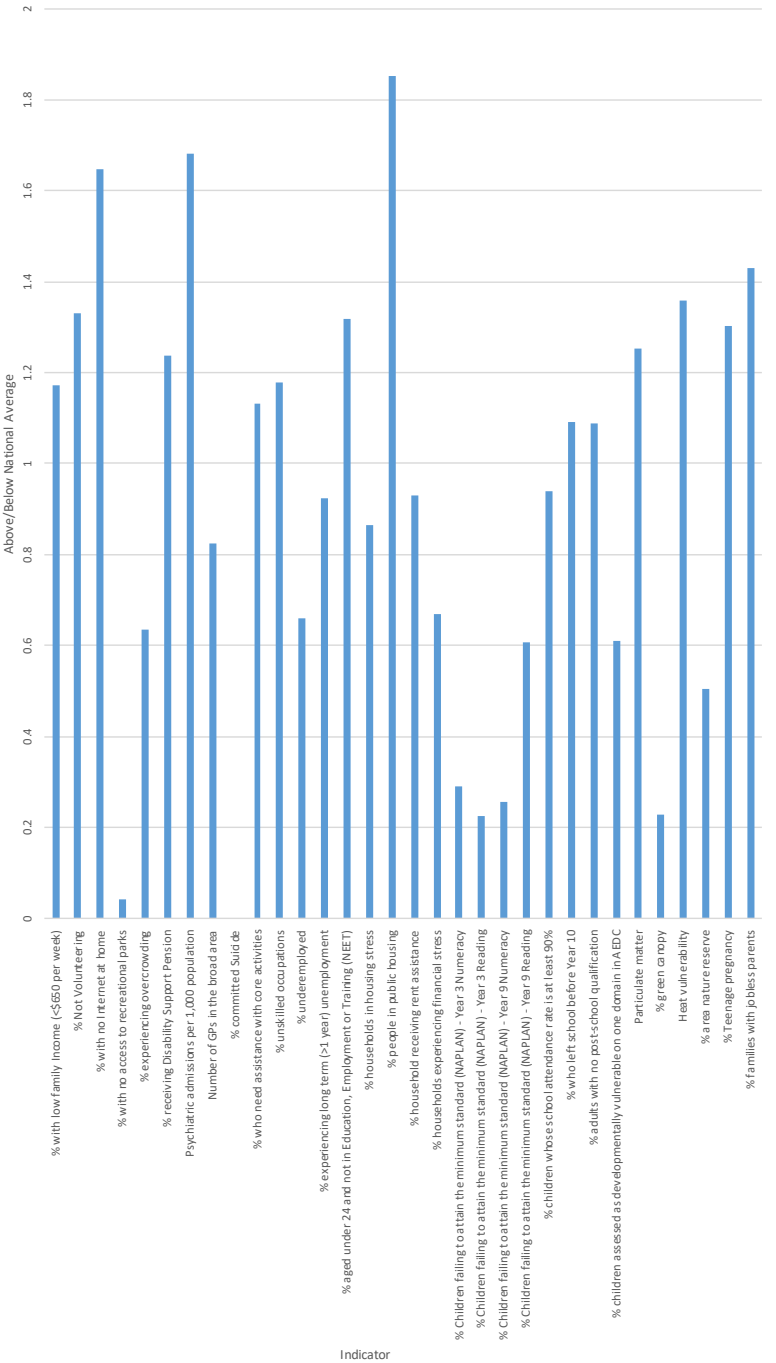


Figure 17: Sandover-Plenty

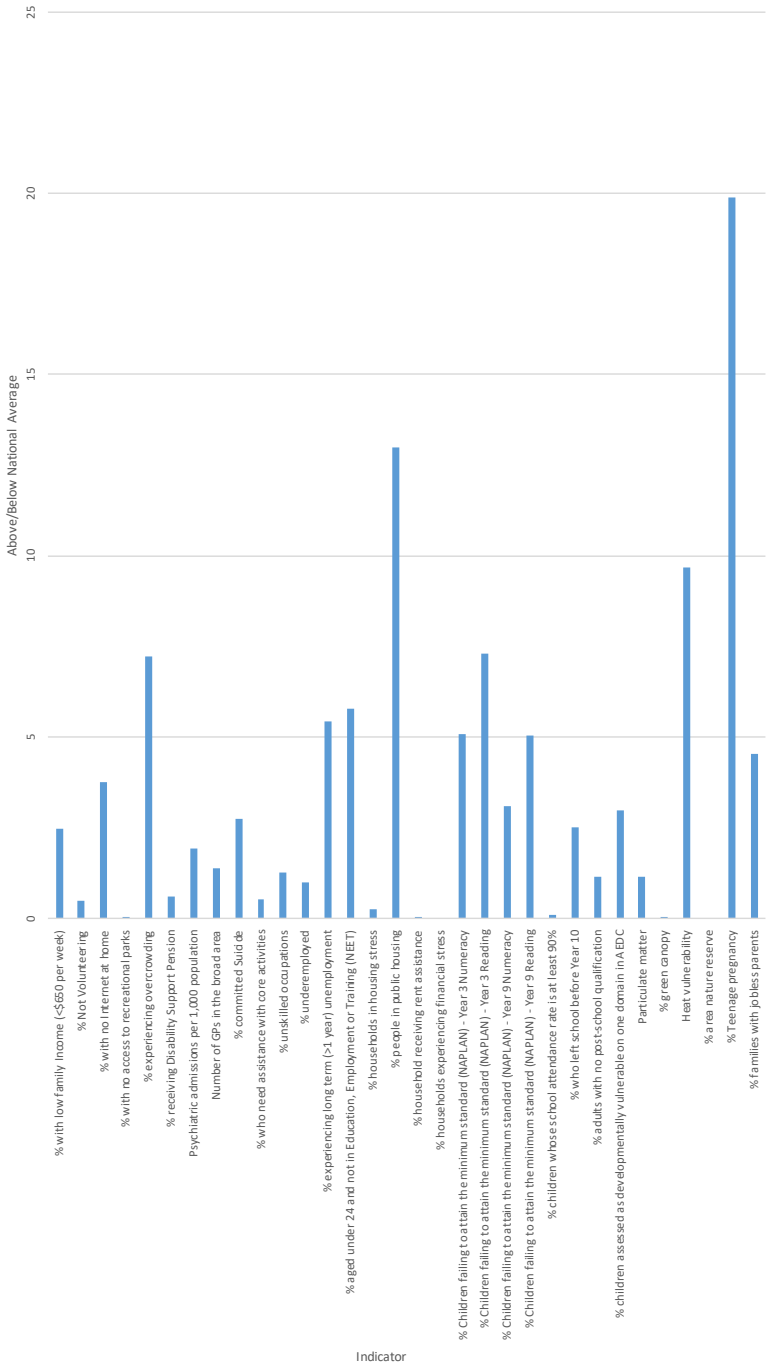
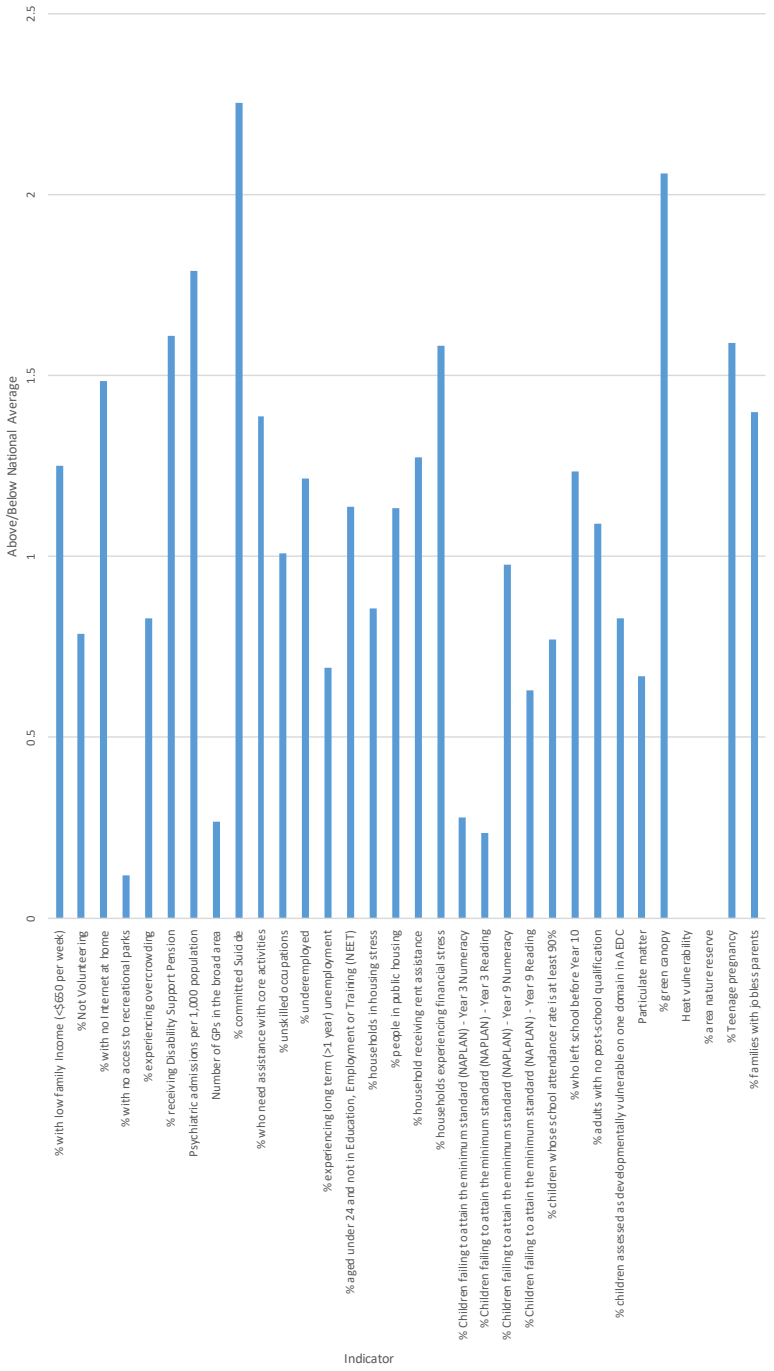


Figure 18: Montrose-Rosetta



Jesuit Social Services
Building a Just Society

Centre for JUST Places
Resilient, inclusive & regenerative communities