# LIVEABILITY IN WESTERN SYDNEY

COMPARATIVE ANALYSIS OF 14 LIVEABILITY INDICATORS FOR LOCAL GOVERNMENT AREAS IN THE *WESTINVEST PROGRAM* AND THE GREATER SYDNEY REGION

FINAL REPORT AND APPENDICES

December 2022

ACKNOWLEDGEMENT OF COUNTRY

With respect for Aboriginal cultural protocol and in recognition that its campuses occupy their traditional lands, Western Sydney University (WSU) acknowledges the Darug, Eora, Dharawal (also referred to as Tharawal) and Wiradjuri peoples and thanks them for their support of its work in their lands (Greater Western Sydney and beyond).

10th Anniversary Celebration of the Men's Shed, Blacktown, 2014.
Photo: Sally Tsoutas.

ABOUT THE CENTRE FOR WESTERN SYDNEY

Western Sydney University (WSU) is the only university in New South Wales (NSW) with a legislated commitment to conduct research that meets the needs of Western Sydney communities. Fulfilling this unique mandate for research, WSU established the Centre for Western Sydney (CfWS) in 2014.

Combining WSU's world-class research expertise with frank and fearless advocacy on issues of importance to Western Sydney, the work of the CfWS is guided by its ambition for a thriving Western Sydney that is understood and respected for its strengths and contributions regionally, nationally, and internationally. Delivered through a strong politics of listening, the Centre aims to drive informed dialogue and action in region.

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Photo: Sally Tsoutas

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Parramatta River, Parramatta.
Photo: Destination NSW

EXECUTIVE SUMMARY

In January 2022, the NSW Government commissioned the Centre for Western Sydney (Western Sydney University) to:

1. Undertake a review of existing liveability data sources, and identify and define a set of macro (high level) metrics for the elements of liveability[1] which are likely to be impacted by the WestInvest Program[2].

2. Analyse data relating to the set of WestInvest Liveability metrics and:

   a. Apply these to the 15 WestInvest Local Government Areas (LGAs); and,
   b. Compare with the non WestInvest LGAs of the Greater Sydney Region (GSR) (excl. the Central Coast).

3. Use these analyses to establish:

   a. Comparison between bespoke 'liveability' profiles for each WestInvest LGA (15) and non-WestInvest LGAs (18); and
   b. Baseline liveability data measurements for each metric to further support program design, as well as future outcome evaluation of the long term impacts the WestInvest Program, (or other related research endeavours).

Responding to this brief, this study identified 14 liveability metrics where data were available and related (to various extents) to potential liveability outcomes of the WestInvest Program for the 15 WestInvest LGAs, the WestInvest region as a whole and the broader GSR (see Table ES.1).

Table ES.1: List of fourteen (14) Liveability Metrics used in study.

	VIBRANT COMMUNITIES
1	Social Infrastructure Index
2	Proportion of employed population working locally
3	Attendance and participation in cultural activities
4	Participation in sport or other physical activities
	ACCESSIBILITY
5	Metro Accessibility/Remoteness Index Australia (ARIA)
6	Walkability Index
7	Digital Inclusion Index
8	Index of Relative Socio-economic Advantage and Disadvantags (IRSAD)
	ENVIRONMENTAL AMENITY
9	Access to Public Open Spaces
10	Urban Vegetation Cover (UVC)
11	Heat Vulnerability Index (HVI)
12	Air Quality PM2.5 annual average [µg/m≥]
	SAFE SPACES
13	Crime Incidents in Public Open Spaces
14	Traffic Incidents Involving Pedestrians

Data relating to the set of 14 Liveability metrics were then acquired, analysed and mapped:

   a. For the 15 WestInvest LGAs; and,
   b. Compared with non WestInvest LGAs.

Presenting analysis of the data collated for each metric, the report provides a diverse set of baseline[3] liveability measurements for each of the fifteen (15) WestInvest LGAs.

While the data presented in this report indicate that there are many areas in which the WestInvest Program can make a difference in improving the liveability of the 15 eligible LGAs, three key areas emerged around how the WestInvest Program is most likely to make a transformational impact on the liveability of Western Sydney:

- **Green infrastructure and public open spaces** – improvements in air quality, access to public open spaces, walkability, and heat vulnerability.
- **Community infrastructure** – improvements in community participation in sport, arts and cultural activities.
- **Walkability** – improvements in social connectedness, health outcomes and perceptions of safety.

This report is structured as follows:

- **Section 1:** Outlines the WestInvest Program and uses data from the 2021 Census of Population and Housing to provide a demographic overview of the Western Sydney region.
- **Section 2:** Details the key measures used in this study of liveability in Western Sydney and the rest of the GSR.
- **Section 3:** Outlines the 14 liveability metrics that were selected.
- **Sections 4 to 7:** presents the data and analyses of the 14 liveability metrics with comparisons drawn between WestInvest LGAs and non-WestInvest LGAs of the GSR.
- **Section 8:** Summarises the key findings and conclusions from the above analyses.
- **Section 9:** Lists the sources of literature and data sets used in this research.
- **Appendix 1:** Presents the liveability profiles of the 15 WestInvest LGAs.
- **Appendix 2:** Presents the demographic profiles of the 15 WestInvest LGAs.

Parramatta Park, Parramatta.
Photo: Destination NSW

[1]It is important to note that the concept of 'liveability' is much broader than the WestInvest Program scope.

[2]WestInvest is a 'social infrastructure' program, it will have a range of impacts on liveability, but these will not be able to be directly attributed to the Program due to the wide range of social contextual factors and other concurrent government and non-government initiatives.

[3]Baseline refers to the most recent data measurements available at November 2022. Nine of the 14 metrics use data collected since 2020. The remaining five use data collected between 2015-2018.

1 INTRODUCTION

1.1 THE WESTINVEST PROGRAM

In September 2021, the NSW Government announced the $5 billion WestInvest Program (WestInvest or the Program) designed to fund transformational infrastructure projects across six focus areas (see Figure 1.1).

The Program's investment in local projects that support community amenity and liveability seek to achieve high-level outcomes for Western Sydney communities including:

a. Enhanced access, amenity and sustainability of green open spaces.
b. Enhanced access, amenity and durability of community infrastructure.
c. Improved modernity, amenity and utility of schools.
d. Enhanced access, amenity and diversity of arts and cultural facilities.
e. Enhanced access, amenity and prosperity of town centres.
f. Improved effectiveness of local traffic management on local roads.

Figure 1.1: WestInvest funding six focus areas.

QUALITY GREEN AND OPEN SPACES

COMMUNITY INFRASTRUCTURE

SCHOOL MODERNISATION

ARTS & CULTURAL FACILITIES

HIGH STREET ACTIVATION

LOCAL TRAFFIC PROGRAMS
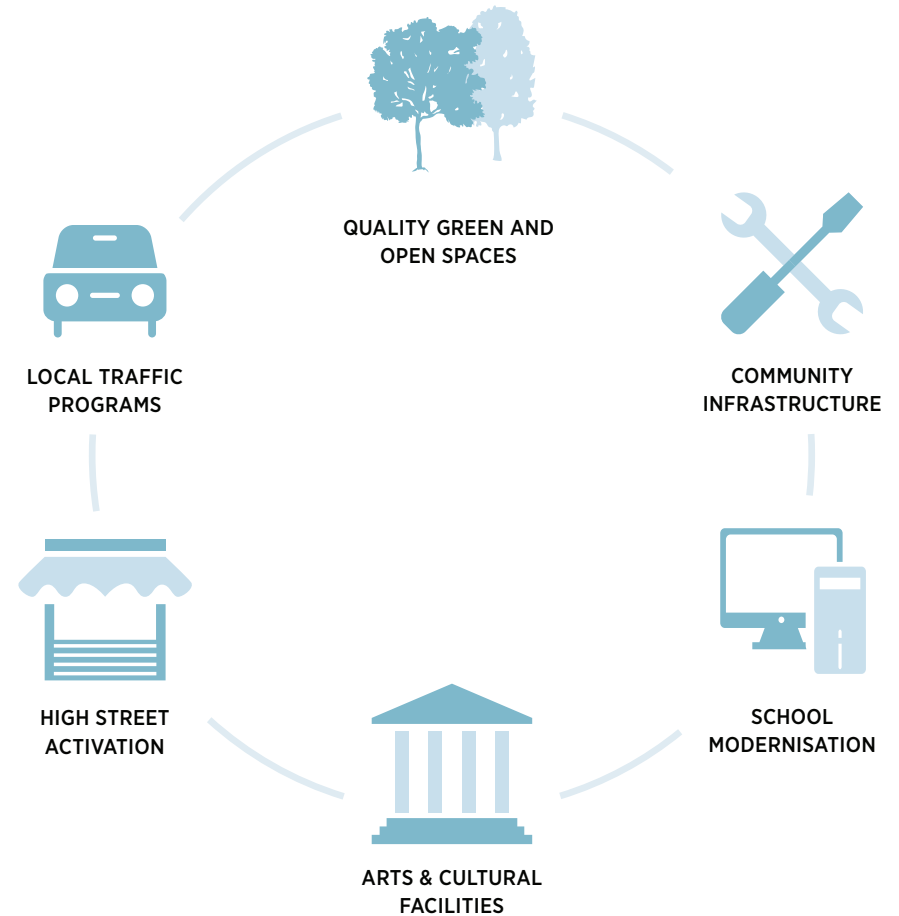
The Rock Lookout, Mulgoa.
Photo: Destination NSW

Fifteen LGAs form the WestInvest Program's geographical focus (see Table 1.1 and Figure 1.2). These LGAs are among the State's fastest growing council areas, experiencing large population growth.

Table 1.1: List of the 15 LGAs eligible for WestInvest support.

WESTINVEST LGAS	
1	Blacktown
2	Blue Mountains
3	Burwood
4	Camden
5	Campbelltown
6	Canterbury-Bankstown
7	Cumberland
8	Fairfield
9	Hawkesbury
10	Liverpool
11	Parramatta
12	Penrith
13	Strathfield
14	The Hills Shire
15	Wollondilly

Figure 1.2: Map of GSR and the 15 LGAs eligible for WestInvest support.
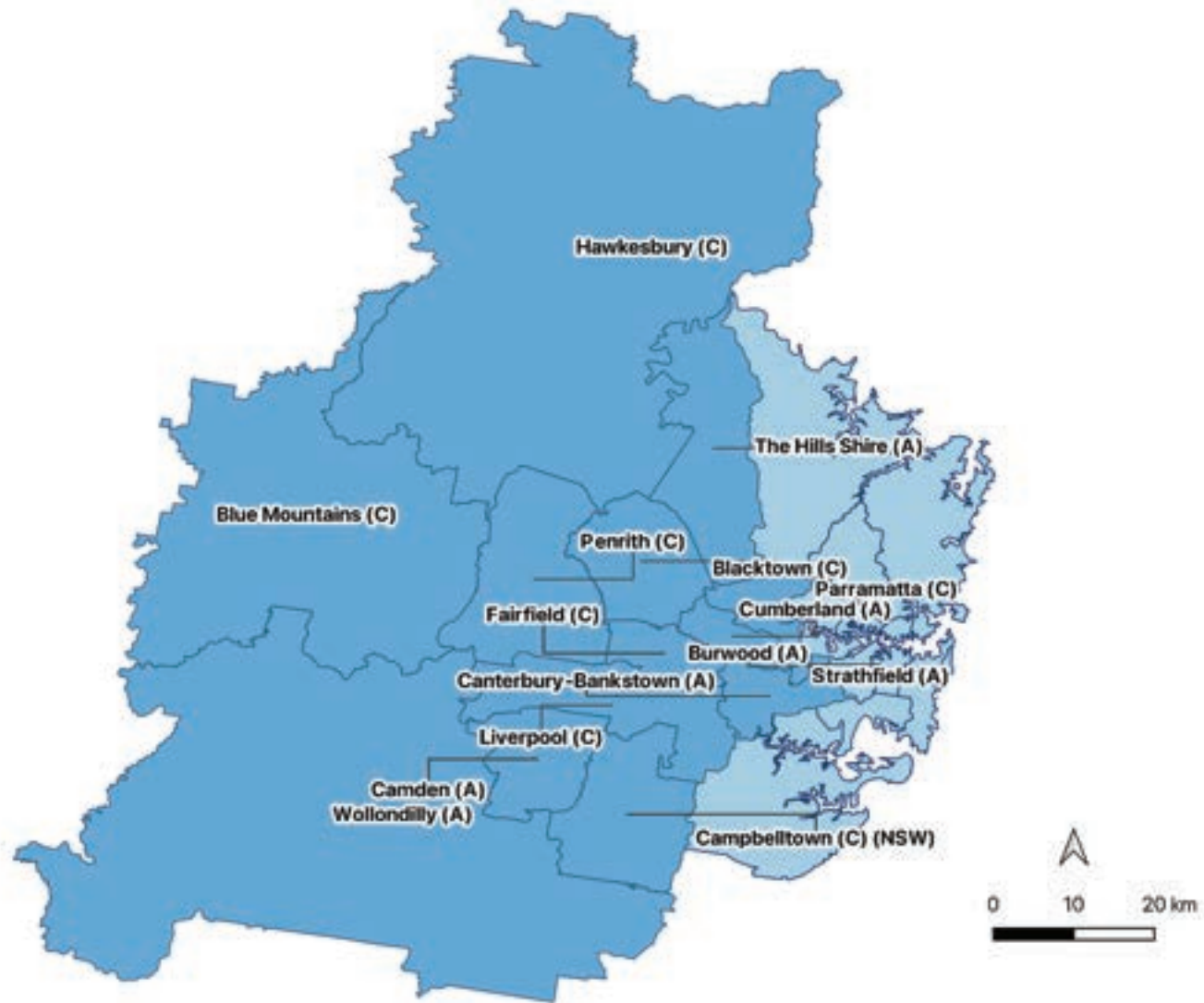
Source: Dufty-Jones, R. (2022). Australian Bureau of Statistics (ABS) 2022. Australian Statistical Geography Standard (ASGS) Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Chang Lai Yuan Gardens, Doonside.
Photo: Destination NSW

1.2 THE DEMOGRAPHIC DIVERSITY OF WESTERN SYDNEY

Western Sydney is home to one of the fastest growing urban regions in Australia. Almost 2.7 million people – or 1 in 9 Australians – live in the WestInvest region (Table 1.2, ABS 2022). Blacktown has the largest population (almost 400,000 people) and Burwood the smallest (40,197 people).

Data presented in Table 1.2 and Figure 1.3 show that the total WestInvest region covers almost 9000 km^2 (86% of the total GSR area). Furthermore, despite the region's population size Western Sydney has a much lower population density (1,698 persons/km^2) to the rest of GSR (3,720 persons/km^2). Wollondilly has the lowest population density (21 persons/km^2) and Burwood the highest (5,667 persons/km^2).

An important demographic feature of the WestInvest region is the high representation of individuals (6.8%) who identify as Aboriginal and/or Torres Strait Islander compared to the non-WestInvest LGAs that make up the GSR (4.5%). Considerable diversity regarding the size of Indigenous populations exists between individual Western Sydney LGAs. For example, only 2.6% of The Hills Shire LGA's population identify as Aboriginal and/or Torres Strait Islander compared to 10.1% of Penrith's population and 9% of both Campbelltown's and Hawkesbury's populations.

Table 1.2: Population and land area, WestInvest LGAs, WestInvest and non-WestInvest regions, 2021.

Region	Total Population	Population (% of GSR)	Indigenous Population (% of LGA)	Land area (km^2)	Population density (persons/km^2)
Blacktown	396,804	8.1	7.8	239	1,674
Blue Mountains	78,121	1.6	5.8	1431	55
Burwood	40,197	0.8	5.1	7	5,667
Camden	119,319	2.4	6.0	202	595
Campbelltown	176,557	3.6	9.0	311	571
Canterbury-Bankstown	371,025	7.6	6.6	110	3,378
Cumberland	235,463	4.8	7.1	73	3,258
Fairfield	208,456	4.3	5.7	102	2,059
Hawkesbury	67,201	1.4	9.0	2775	24
Liverpool	233,466	4.8	7.0	306	767
Parramatta	256,702	5.3	4.8	84	3,081
Penrith	217,654	4.5	10.1	405	542
Strathfield	45,600	0.9	5.0	14	3,281
The Hills Shire	191,878	3.9	2.6	386	499
Wollondilly	53,948	1.1	8.2	2555	21
All WestInvest LGAs	**2,692,354**	**55.1**	**6.8**	**9000**	**1,698**
All non-WestInvest LGAs	**2,192,094**	**44.9**	**4.5**	**1455**	**3,720**

Source: ABS (2022).

Figure 1.3: LGA population density (persons per km2), GSR, 2021.
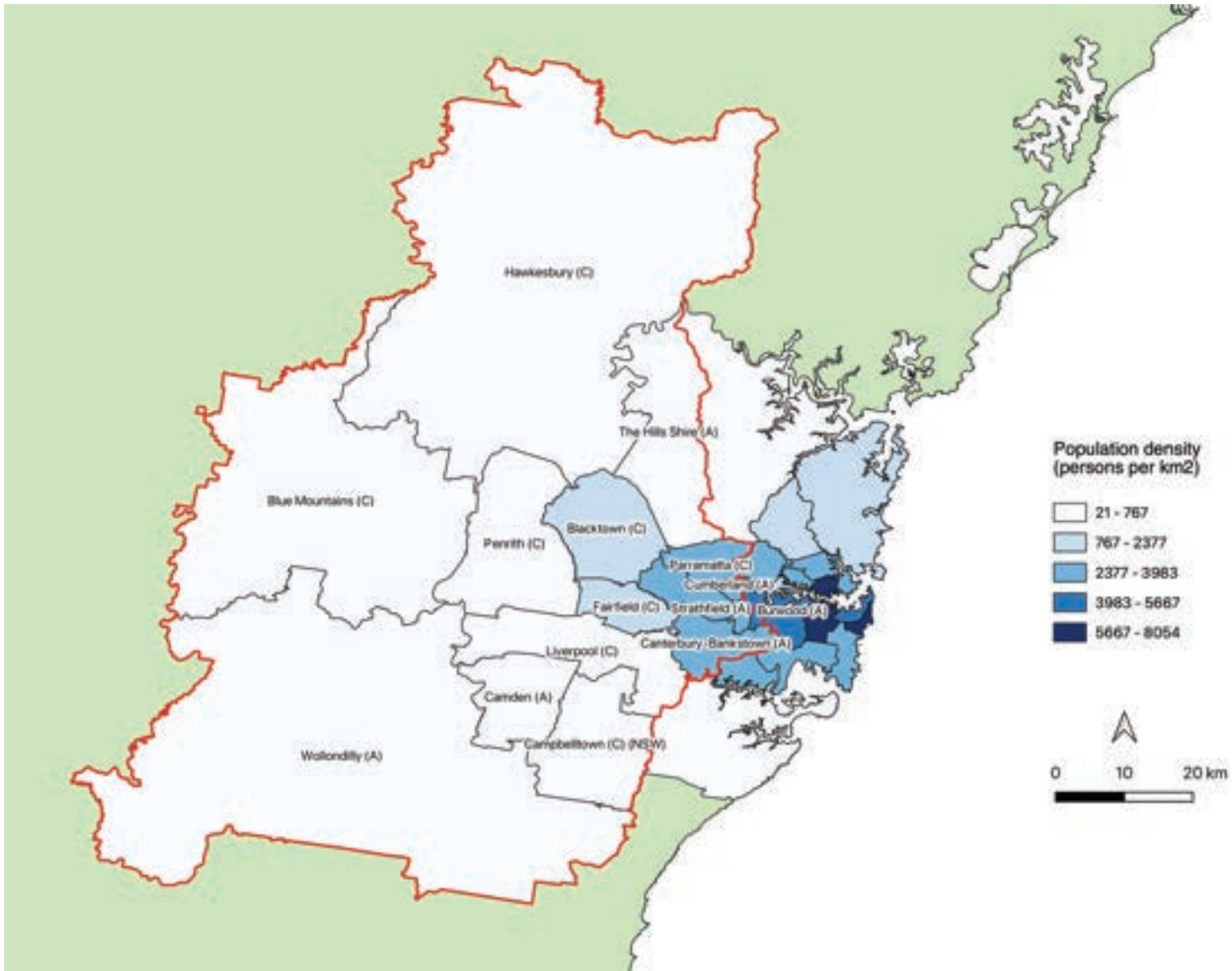
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021 ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Figure 1.4: Percentage proportion of LGA population who identify as Aboriginal and/or Torres Strait Islander (Indigenous Population), GSR, 2021.
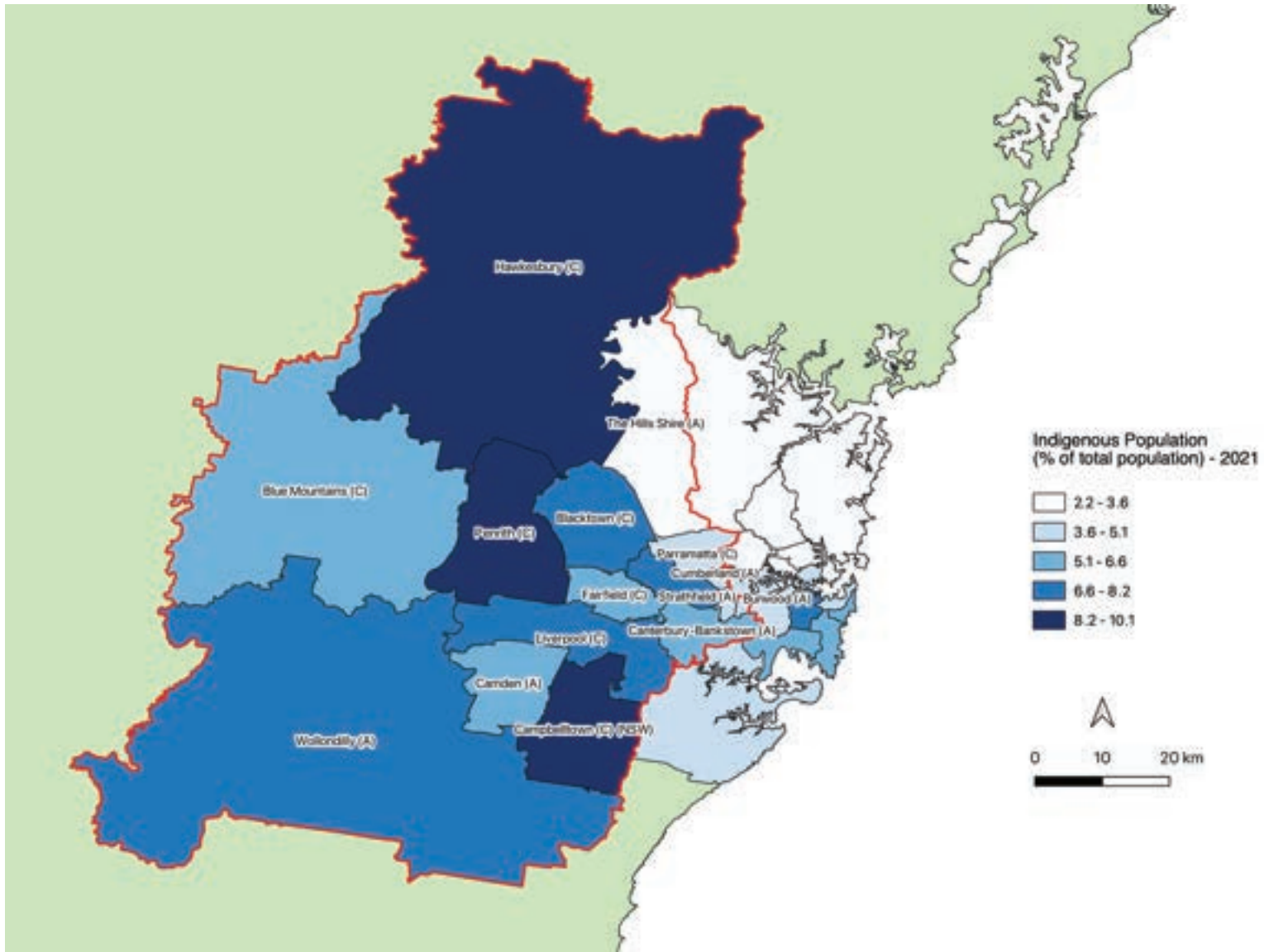
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021 ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Another striking demographic feature of the WestInvest region is its relative youth. Table 1.3 shows that the region's median age of 39.5 years is more than 12 months lower than the non-WestInvest region's median age of 40.9 years. At the LGA scale, Camden and Strathfield have the lowest median ages (32.7 and 32.9) while the Blue Mountains has the highest (45.2 years – see also Figure 1.4).

Western Sydney's school-aged (5-17 years old) population makes up 17.3% of the region's total population (compared to 13.8% of the rest of the GSR). This population is highest (19.6%) in Camden and The Hills Shire and lowest in Burwood (10.6%) and Strathfield (12.2%).

Breaking the school-aged population into primary (5-11 year) and secondary (12-17 years) school-aged groups reveals that almost 1 in 10 people living in the WestInvest region are primary school-aged (compared to 7.5% of the non-WestInvest region of the GSR). The primary-school aged population is highest in Camden (11.4%), followed by Blacktown (10.9%) and The Hills Shire (10.8%) LGAs and lowest in Burwood (5.5%) and Strathfield (6.9%).

However, while a smaller population overall in Western Sydney (7.6%) secondary-school aged population is highest in The Hills Shire (8.8%), Wollondilly (8.7%) and Liverpool (8.5%) WestInvest LGAs and lowest in Burwood (5.1%) and Strathfield (5.3%).

Table 1.3: Median age and percentage proportion of population aged between 5-17 years old (school aged population), WestInvest LGAs, WestInvest and non-WestInvest regions, 2021.

Region	Median Age (years)	Primary school-aged population (5-11 years – % total population)	Secondary school-aged population (12-17 years – % total population)	Total school-aged population (5-17 years – % total population)
Blacktown	34.4	10.9	7.9	18.8
Blue Mountains	45.2	8.5	7.8	16.3
Burwood	34.1	5.5	5.1	10.6
Camden	32.7	11.4	8.2	19.6
Campbelltown	35.2	10.4	7.9	18.3
Canterbury-Bankstown	36.3	9.3	7.5	16.8
Cumberland	33.7	9.4	6.7	16.0
Fairfield	38.9	8.6	8.1	16.7
Hawkesbury	38.7	8.9	7.9	16.8
Liverpool	34.4	10.5	8.5	19.0
Parramatta	35.3	8.8	5.8	14.5
Penrith	35.0	9.9	7.8	17.6
Strathfield	32.9	6.9	5.3	12.2
The Hills Shire	38.5	10.8	8.8	19.6
Wollondilly	37.0	10.2	8.7	18.9
All WestInvest LGAs	**39.5**	**9.7**	**7.6**	**17.3**
All non-WestInvest LGAs	**40.9**	**7.5**	**6.3**	**13.8**

Source: ABS (2022).

Figure 1.5: LGA median age (years), GSR, 2021.
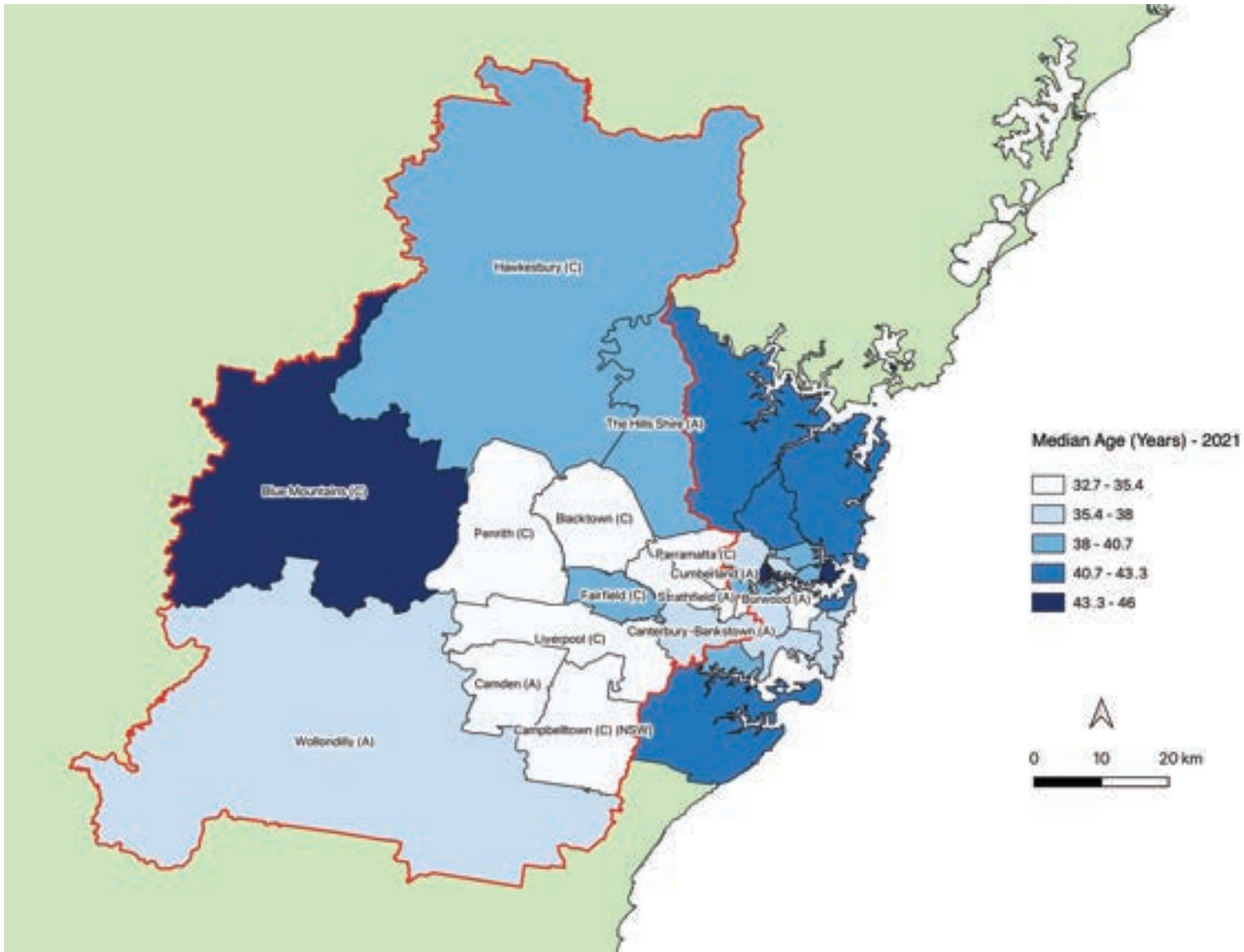
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021 ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Almost three-quarters (74.1%) of Western Sydney's population have at least one parent who was born overseas (compared to 64.2% of the rest of the GSR). This demographic feature is especially high in Fairfield where over 90% of the LGA's population has at least one parent who was born overseas, followed by 88.6% of both Cumberland's and Strathfield's populations (Table 1.4).

Figure 1.5 shows that a further 46.6% of Western Sydney's population were born overseas (compared 42.6% of the rest of the GSR population). Here Strathfield had the highest proportion of its local population – almost two-thirds (63.8%) – who were born overseas. This is followed by Fairfield (61.4%) and Cumberland (60.3%).

While – as a whole – a lower proportion of Western Sydney's population only speak English (47.7%) (compared to the rest of the GSR, 64.2%), there are very high proportions of 'English-speaking only' populations in certain Western Sydney LGAs. For example, 90.1% of the Blue Mountain's population only speak English, closely followed by Wollondilly (89.6%) and Hawkesbury (88.4%).

Table 1.4 further disaggregates the population who speak 'another language and English' into:

• those who speak English 'very well or well'
• those who speak English 'not well or not at all'

More than one-third (38%) of Western Sydney's population speak another language and English 'very well' or 'well'. This becomes more than half the local population in Strathfield (54.6%) and Cumberland (51.6%). While a much lower proportion of the region's population, 8.7% of those living in the WestInvest LGAs speak another language and English 'not well' or 'not at all', with almost a quarter of Fairfield's population identifying in this way (see Figure 1.6).

Table 1.4: Ancestry, place of birth and English-speaking proficiency as a percentage proportion of population, WestInvest LGAs, WestInvest and non-WestInvest regions, 2021.

Region	Born Overseas (% of LGA)	A parent born overseas (% of LGA)	Speaks English Only (% of LGA)	Speaks another language and English 'very well' or 'well' (% of LGA)	Speaks another language and English 'not well' or 'not at all' (% of LGA)
Blacktown	49.6	76.1	47.6	41.3	5.3
Blue Mountains	20.8	43.1	90.1	6.2	0.5
Burwood	63.0	86.1	31.4	49.2	13.8
Camden	25.9	53.7	74.0	20.4	2.3
Campbelltown	40.5	67.3	57.8	32.0	4.3
Canterbury-Bankstown	50.8	83.2	33.8	46.4	12.9
Cumberland	60.3	88.6	26.6	51.6	14.2
Fairfield	61.4	91.3	23.4	47.7	22.9
Hawkesbury	17.7	38.1	88.4	6.5	0.8
Liverpool	48.8	81.4	39.5	44.5	9.8
Parramatta	57.6	81.6	38.2	47.1	9.4
Penrith	28.7	53.3	74.2	17.6	2.2
Strathfield	63.8	88.6	29.1	54.6	11.0
The Hills Shire	42.5	69.4	58.6	34.3	4.6
Wollondilly	15.8	36.5	89.6	5.3	0.6
All WestInvest LGAs	**46.6**	**74.1**	**47.7**	**38.0**	**8.7**
All non-WestInvest LGAs	**42.6**	**67.4**	**64.2**	**26.9**	**4.6**

Source: ABS (2022).

Figure 1.6: Percentage proportion of LGA population who were born overseas, GSR, 2021.
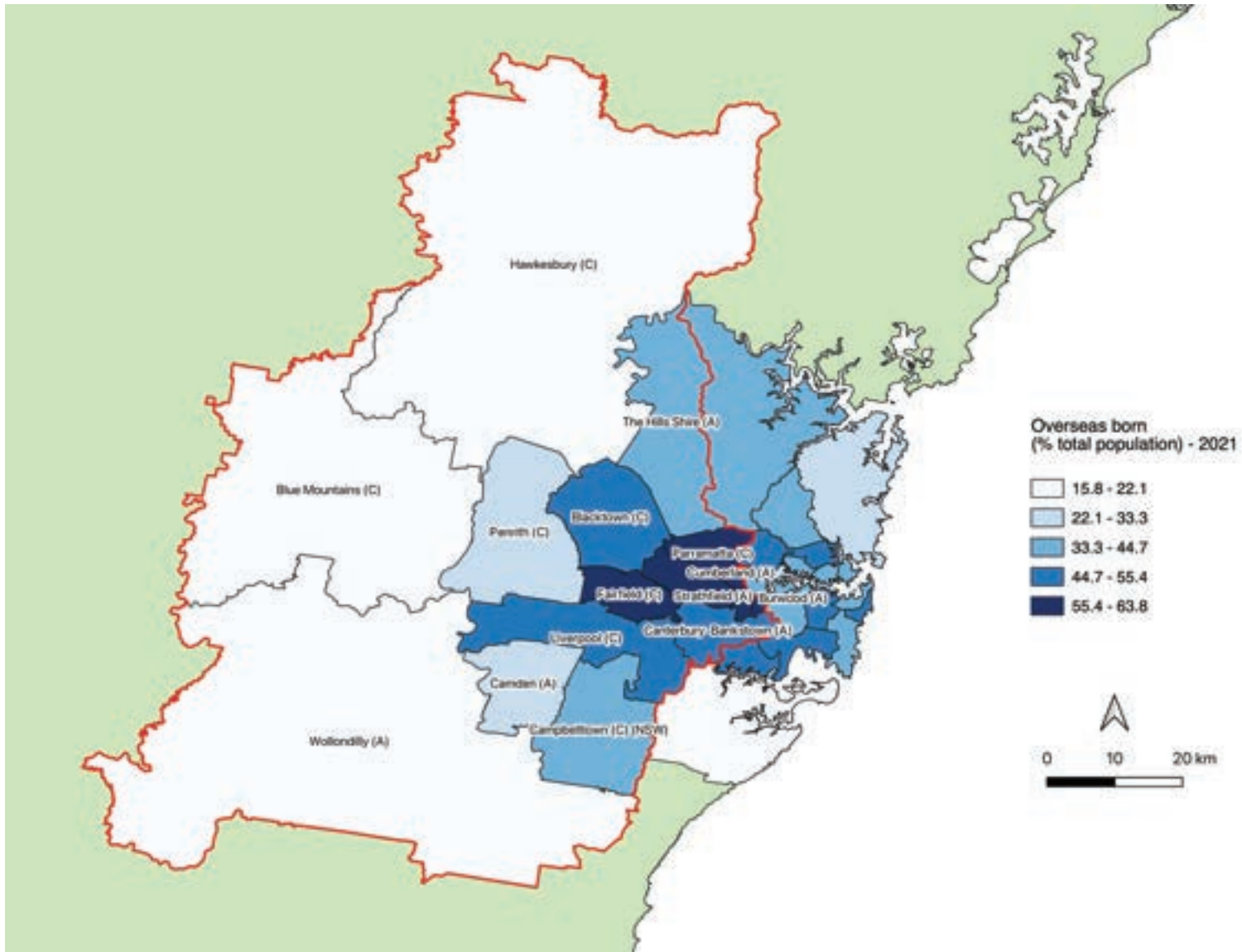
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021 ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Figure 1.7: Percentage proportion of LGA population who speaks another language and English 'not well or 'not at all', GSR, 2021.
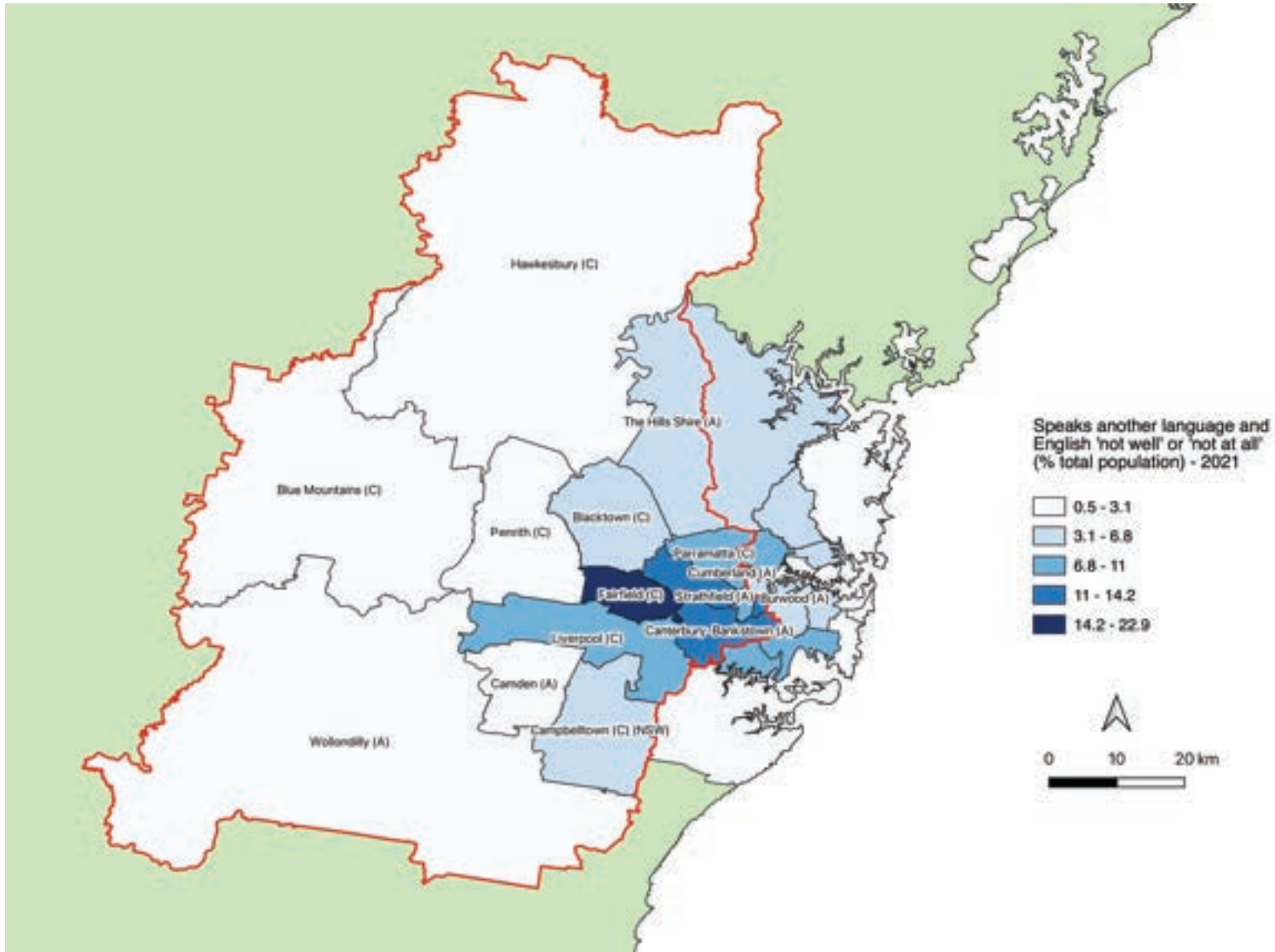
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021 ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Detailed profiles for each WestInvest LGA (n=15) for the above demographic features are presented in Appendix 2 of this report. Each contribute to both the unique strengths and challenges that the Western Sydney region and individual LGAs bring to the transformational opportunities around improving liveability that the WestInvest Program aims to address.

Quang Minh Asian Groceries, Chapel Road, Bankstown, 2022.
Photo: Kyisoe Han

Fitzpatrick Park, Picnic Point.
Photo: Destination NSW

2 MEASURING 'LIVEABILITY'

2.1 LIVEABILITY AS A DYNAMIC CONCEPT

Creating liveable places and communities that support health and wellbeing, economic success and environmental sustainability is a priority for policymakers in Australia and overseas. Within the academic literature, the concept of urban 'liveability' has no precise or universally agreed-upon definition. For instance, liveability is represented by a host of overlapping terms, such as sense of place, quality of life, urbanism, place quality, sustainability, and physical capital. Adding to this complexity, this concept is multidimensional and hierarchical, consisting of different and interrelated domains and sub-domains that can all be defined and measured in different ways (an issue that we will return to later in the section, see Lowe et al., 2015).

One approach to defining liveability is provided by Lowe et al (2013: 11) who describe a liveable place as one that is:

> ... safe, attractive, socially cohesive and inclusive, and environmentally sustainable; with affordable and diverse housing linked to employment, education, public open space, local shops, health and community services, and leisure and cultural opportunities; via convenient public transport, walking and cycling infrastructure.

As part of a wider program to develop liveability 'indicators that are evidence-based, specific and quantifiable, relevant to the Australian policy context, and able to be measured at both city-wide and neighbourhood-level scales', Lowe et al. (2013: 5) identified 11 policy areas that contributed to the liveability of a place.

Building on the work of Lowe et al. (2013) the Liveability Framework developed by ARUP for the NSW Department of Planning and Environment (DPE) and the Greater Sydney Commission (GSC) (2017) also identified liveable places and communities to generate the following positive outcomes:

1. **Sense of belonging and local identity**
2. **Community engagement**
3. **Connected communities**
4. **Urban design excellence**
5. **Social infrastructure**
6. **Diversity of job opportunities**
7. **Housing choice**
8. **Culture and innovation**
9. **Environmental quality**

It was decided to employ the nine 'Liveability Outcome Areas' developed by ARUP (2017: 3) in its *Liveability Framework* in this study because it was a tool specifically developed for use by the 'broad cross-section of Sydney's key organisations and stakeholders who are shaping liveability outcomes across the city' (see Table 2.1 for an explanation of each of the nine outcomes). This research builds on work already developed for and with the NSW Government, and it provides the opportunity to extend these efforts by applying to the WestInvest Program case study.

Table 2.1: ARUP's Liveability Outcomes Framework.

ARUP'S Liveability Outcomes Framework	
Liveability Outcomes	**Outcome Descriptions**
Sense of belonging	This creates great places that are socially inclusive and promote respect and feelings of belonging.
Community engagement	This promotes community engagement, empowerment and ownership in shaping resilient places and is delivered across all liveability outcomes.
Connected communities	This supports walking, wheeling, cycling and public transport movement between destinations.
Urban design excellence	This delivers high quality design that supports community safety, health and wellbeing, and enhances community assets and character.
Supportive social infrastructure	This promotes an integrated approach to social infrastructure that includes healthcare, education, supermarkets, public open spaces and other community/ cultural facilities.
Diversity of job opportunities	This provides access to a range of jobs and learning / skills development opportunities.
Housing choice	This supports affordable and appropriate housing.
Culture and innovation	This supports culture, creative development, digital technology and innovation.
Environmental quality	This delivers environmental quality and access to the natural environment.

Source: ARUP (2017).

Despite 'liveability' existing as a focus of public policy for more than 50 years, it is also a concept that is notoriously difficult to define precisely (McArthur and Robin, 2019; Infrastructure Australia, 2018; ARUP, 2017). This definitional difficulty lies in the fact that liveability is a dynamic notion.

As the extensive work in both policy and academia shows, liveability encompasses many elements of urban life. All these elements are important, but the specific elements and their order of priority in terms of how they contribute to 'liveability' will differ

- between individuals and communities, and
- across times and locations.

For example, the contribution that 'digital inclusion' makes to liveability is a relatively recent element that was not present in early work on liveability. Similarly, some individuals may sacrifice accessibility to public transport by moving further from a city centre to access affordable housing and/or the environmental amenity of a peri-urban or regional location. Meanwhile others will value other elements of liveability and will make quite different locational choices based on these values. Last, the liveability values we prioritise will also change over our life course.

The variety in what elements of liveability are valued by different communities was evident in the results from the 'Have Your Say' survey that the WestInvest Program (2022) conducted in early 2022. This survey was conducted by the Program to 'capture ideas and gain feedback from Western Sydney residents about the infrastructure projects that would improve their local communities' (WestInvest, 2022: 4).

As Table 2.2 summarises, 35% of all the valid responses (n=1892[4]) to the Have Your Say survey across the WestInvest region identified 'quality green and open spaces' to be the highest priority of all the WestInvest focus areas. This was consistent across all but one of the WestInvest LGAs – namely Penrith, where 44% of respondents identified 'community infrastructure a priority'. While 'high street activation' was a priority for 16% of participants from Burwood, only 9% of those in Camden identified this as a priority. However, the opposite was the case when it came to 'arts and cultural facilities' where 19% of survey respondents in Camden prioritised this infrastructure compared to 9% in Burwood.

Thirlmere Lakes National Park, Thirlmere.
Photo: Destination NSW

Table 2.2: WestInvest 'Have Your Say' Survey Responses, 2022.

	# Valid Responses	Quality green and open spaces	Community infrastructure	Local traffic programs	High street activation	Arts and cultural facilities	School modernisation
Blacktown	472	38%	21%	11%	10%	9%	11%
Blue Mountains	113	37%	21%	14%	14%	8%	6%
Burwood	51	30%	19%	16%	16%	7%	12%
Camden	175	31%	23%	9%	9%	19%	9%
Campbelltown	208	34%	25%	9%	11%	13%	8%
Canterbury-Bankstown	113	37%	18%	12%	13%	13%	7%
Cumberland	81	35%	20%	11%	13%	13%	8%
Fairfield	70	35%	23%	15%	12%	8%	7%
Hawkesbury	104	37%	23%	14%	11%	8%	7%
Liverpool	251	37%	23%	11%	11%	8%	10%
Parramatta	218	37%	22%	13%	8%	15%	5%
Penrith	325	29%	44%	7%	8%	8%	4%
Strathfield	48	28%	17%	20%	15%	7%	13%
The Hills Shire	91	33%	20%	17%	11%	10%	9%
Wollondilly	87	36%	22%	16%	8%	13%	5%
WestInvest Sydney region	1892	35%	24%	12%	11%	10%	8%

Source: WestInvest Program Office (WIPO) (2022)

IMPLICATIONS FOR THIS STUDY

Given the dynamic nature of the concept of liveability the study's approach to defining liveability was refined using the specific parameters set out by the WestInvest Program. As outlined in Section 1 of this report, the WestInvest Program targets six specific focus areas (see Figure 1.1):

- Quality green and open space
- Community infrastructure
- School modernisation
- Arts and cultural facilities
- High street activation
- Local traffic programs.

Each focus area contains different elements or attributes that contribute to liveability, such as trees, pavements, buildings, spaces and landscape, various land uses and community users.

As a result of the above features of the WestInvest Program, some aspects of the general definition of liveability (e.g. housing) that are undoubtedly important to the overall liveability experienced by Western Sydney communities, do not form part of the remit of this particular Program. The implications of this are detailed in Table 2.3, where:

- Four of the nine Liveability Outcome Areas[5]– 'connected communities', 'social infrastructure', 'culture and innovation', and 'environmental quality' – are directly[6] relevant to and/or targeted by WestInvest.
- Three areas – 'sense of belonging and local identity', 'community engagement', and 'urban design excellence' – are indirectly[7] relevant to/influenced by the infrastructure funded by the Program.
- Two areas – 'housing choice' and 'diversity of job opportunities' – are not a focus of the Program.

Table 2.3: Relevance of Liveability Outcome areas with the remit WestInvest Program.

	ARUP's Liveability Outcome Areas	Directly relevant to WestInvest	Indirectly relevant WestInvest
1	Sense of belonging and local identity	Yes	No
2	Community engagement	Yes	No
3	Connected communities	Yes	No
4	Urban design excellence	No	Yes
5	Social infrastructure	Yes	No
6	Diversity of job opportunities	No	No
7	Housing choice	No	No
8	Culture and innovation	Yes	No
9	Environmental quality	Yes	No

Source: Adapted from ARUP (2017).

2.2 THE LIMITATIONS OF 'LIVEABILITY' METRICS

A plethora of urban metrics and indices have emerged internationally since the 1990s, with early city benchmarking projects geared primarily around a city's role in global economic processes (Kitchin et al., 2015). However, the release of the United Nation's Sustainable Development Goals (2015) and New Urban Agenda (2016) marked a shift that had been underway since the turn of the century to benchmarking cities in terms of their 'liveability' (Giap et al., 2012; ARUP, 2017).

While liveability metrics often aim to bring greater accountability and transparency to urban policy processes and performances, if uncritically implemented, these quantitative approaches can create a false impression that the insights provided are objective and accurate representations of a community and/or location (McManus, 2012). Furthermore, the quality of 'liveability' metrics can be undermined by a lack of transparency regarding the methods and/or the quality and accessibility of the data used to create them.

When used in isolation, liveability metrics can decontextualise 'a city from [its] history, its political economy, [and] the wider set of social, economic and environmental relations that frame its development' (Kitchin et al., 2015: 19). Negative data about a city or region's 'liveability', without place-specific context, can further stigmatise that location and its people.

IMPLICATIONS FOR THIS STUDY

A metric approach to 'liveability', such as the one this study has adopted, can have important effects. If done well, liveability metrics can provide a way to improve accountability and transparency in what is a complex area of public policy. Liveability data can be used to shape urban governance, influence decisions and direct investment. In this way, liveability metrics do not just reflect what is happening in our cities, they can also act in powerful ways to create cities.

In responding to the above limitations regarding metric approaches to liveability this research selected data that were:

- **contemporary** – where possible, the most recent data available were used.
- **time series** – also referred to as time-stamped data, typically consist of successive measurements made from the same source over a time interval and are used to track change over time (e.g. Census data).
- **accessible** – publicly available data or involving a low access cost were prioritised. This enables the study to be reproduced in other locations and updated as new data becomes available.
- **transparent and peer-reviewed** – data were selected in terms of whether the methodology used to create the data set was accessible and peer-reviewed.
- **geographical scale** – data needed to be applied to the LGA geographies of the GSR.

Notwithstanding these data parameters, it should be noted that the best quantitative/metric approaches to liveability analyses need to be accompanied by qualitative research. Qualitative data provides essential augmentation to liveability metrics by providing important local context and in-depth perspectives around the specific liveability values and experiences of individuals and communities that is absent from a metric approach. While this qualitative dimension was beyond the study's scope, it should be pursued as the WestInvest Program is rolled out.

2.3 ALIGNMENT WITH THE WESTINVEST FOCUS AREAS

The nine *Liveability Outcomes Areas* developed by ARUP (2017) were further streamlined into four overarching Liveability Categories for this study (see Table 2.4).

1. Vibrant communities
2. Accessibility
3. Environmental amenity
4. Safe spaces

These four liveability categories were then aligned with the six WestInvest Focus Areas, with each category aligning with a minimum of three of the six focus areas (see Table 2.5). This framework was then used to identify a series of 14 metrics and associated data. These are detailed in Section 3.

Table 2.4: Study Liveability Categories aligned to ARUP's liveability outcome areas.

Liveability Categories	Liveability Outcome Areas (ARUP 2017)	
Vibrant communities	1. Sense of belonging and local identity 2. Community engagement 3. Connected communities 4. Urban design excellence 5. Social infrastructure	6. Diversity of job opportunities 7. Housing choice 8. Culture and innovation 9. Environmental quality
Accessibility	1. Sense of belonging and local identity 2. Community engagement 3. Connected communities 4. Urban design excellence 5. Social infrastructure	6. Diversity of job opportunities 7. Housing choice 8. Culture and innovation 9. Environmental quality
Environmental amenity	1. Sense of belonging and local identity 2. Community engagement 3. Connected communities 4. Urban design excellence	5. Social infrastructure 9. Environmental quality
Safe Spaces	1. Sense of belonging and local identity 2. Community engagement 3. Connected communities	4. Urban design excellence 9. Environmental quality

Table 2.5: Alignment of six WestInvest Focus Areas with this study's four Liveability Categories.

Liveability Categories		WestInvest Focus Areas					
		Quality green open spaces	Community infrastruc-ture	Local school moderni-sation	Arts and cultural facilities	High street activation	Local traffic programs
1	Vibrant communities	X	X		X	X	X
2	Accessibility	X	X	X			X
3	Environmental amenity	X		X		X	X
4	Safe spaces	X	X		X	X	X

Thirlmere Lakes National Park, Thirlmere.
Photo: Destination NSW

Paul Keating Park and the new Western Sydney University Bankstown City Campus,
Canterbury-Bankstown, 2022.
Photo: Kyisoe Han

3 LIVEABILITY METRICS

As Table 3.1 outlines, the 14 metrics were aligned to one of the four Liveability Categories identified in the previous section (1. Vibrant Communities, 2. Accessibility, 3. Environmental Amenity, and 4. Safe Spaces).

Of the 14 metrics used:

- Five were assessed as **directly** impacted/influenced by the WestInvest Program.
- Five were considered **indirectly** impacted/influenced by the Program.
- One was identified as a **mixture** of both direct and indirect impacts/influences.
- Three were evaluated as having no or **limited** impact/influence by the activities undertaken through the Program. However, these metrics were included as they provided important contextual information about the liveability of each LGA (e.g. accessibility to services, assessment of socio-economic advantage/disadvantage, etc.).

Further details on each of the 14 metrics are provided in Table 3.1.

Table 3.1: List of 14 Liveability Metrics used in study.

LIVEABILITY METRIC				DATA COLLECTIONS			
#	TITLE	DESCRIPTION	DEGREE OF RELEVANCE TO WESTINVEST PROGRAM	SOURCE	GEOGRAPHY	NOTES ON DATA COLLECTION AND FREQUENCY	YEAR
LIVEABILITY CATEGORY			VIBRANT COMMUNITIES				
1	Social Infrastructure Index	Access to social infrastructure was calculated based on six measures: Community Centres, Culture and Leisure, Early Years, Education, Health and Social Services and Sport and Recreation.	**Mixed** • *Direct Impact:* community centres; culture and leisure; sport and recreation; education. • *No/Limited Impact:* health and social services; early years.	The Australian Urban Observatory (AUO) https://auo.org.au/	LGA	The frequency of this data is unknown, however two phases of this data have been released in 2018 and 2021.	2021
2	Proportion of those employed who work locally	Percentage of employed persons living and working in the same LGA.	**No/Limited Impact**	ABS https://tablebuild-er.abs.gov.au/	LGA	Quinquennial	2021

		LIVEABILITY METRIC			DATA COLLECTIONS		
#	TITLE	DESCRIPTION	DEGREE OF RELEVANCE TO WESTINVEST PROGRAM	SOURCE	GEOGRAPHY	NOTES ON DATA COLLECTION AND FREQUENCY	YEAR
LIVEABILITY CATEGORY			VIBRANT COMMUNITIES				
3	Adult attendance and participation in cultural activities	The *Cultural Activities Survey*, Australia, 2017-18, was a topic on the Multipurpose Household Survey (MPHS) conducted throughout Australia from July 2017 to June 2018. The survey was designed to provide statistics about participation and attendance in selected cultural activities.	Direct Impact	ABS https://tablebuild-er.abs.gov.au/	Statistical Area 4 (SA4)*	Unknown	2018
4	Adult attendance and participation in sport and other physical activities	The *AusPlay Survey* is a large-scale national survey to track the sporting behaviours and activities of the Australian population.	Direct Impact	The Clearinghouse for Sport https://www.clearinghouse-forsport.gov.au/re-search/ausplay	LGA	This is the latest data, published in 2022 as part of the AUSPLAY National Sport and Physical Activity Participation Report.	2022
LIVEABILITY CATEGORY			ACCESSIBILITY				
5	Metropolitan Accessibility	*Metro ARIA* is a geographic index that quantifies service accessibility within metropolitan areas. The index aims to reflect the ease or difficulty people face accessing basic services within metropolitan areas, derived from the measurement of road distances people travel to reach different services.	No/Limited Impact	Hugo Centre for Population and Migration Studies, University of Adelaide https://arts.ade-laide.edu.au/hugo-centre/-services/aria#metro-aria	LGA	Unknown	2015
6	Walkablity Index	This metric was calculated as the sum of standardised scores of local neighbourhood attributes including street connectivity, dwelling density & index of access to daily living services.	Indirect Impact	AUO https://auo.org.au/	LGA	The frequency of this data is unknown, however two phases of this data have been released in 2018 and 2021.	2021
7	Digital Inclusion	The *Australian Digital Inclusion Index* (ADII) uses data from the Australian Internet Usage Survey to measure digital inclusion across three dimensions of 1. Access, 2. Affordability and 3. Digital Ability.	Indirect Impact	Thomas, J., Barraket, J., Parkinson, S., Wilson, C., Holcombe-James, I., Brydon, A., Kennedy, J. (2021). Australian Digital Inclusion Index: 2021, Dashboard Dataset Release 1. Melbourne: RMIT and Swinburne University of Technology, and Telstra. https://www.digitalinclu-sionindex.org.au/	LGA	Data expected to be updated annually. 2021 data was the latest available at the time of writing this report in 2022.	2021

LIVEABILITY METRIC			DEGREE OF RELEVANCE TO WESTINVEST PROGRAM	DATA COLLECTIONS			
#	TITLE	DESCRIPTION		SOURCE	GEOGRAPHY	NOTES ON DATA COLLECTION AND FREQUENCY	YEAR
8	Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)	The IRSAD is one of four (4) indexes that comprise the Socio-Economic Indexes for Areas (SEIFA). SEIFA ranks areas in Australia according to relative socio-economic advantage & disadvantage. The indexes are based on information from the five-yearly Census of Population & Housing.	No/Limited Impact	ABS https://tablebuild-er.abs.gov.au/	LGA	Updated IRSAD data is expected to be released in April 2023. 2016 data was the latest available at the time of writing this report in 2022.	2016
LIVEABILITY CATEGORY			ENVIRONMENTAL AMENITY				
9	Access to public open spaces	Areas of open space, and those which may be considered publicly accessible, were identified using a detailed set of OpenStreetMap tags and morphological criterion.	Direct Impact	AUO https://auo.org.au/	LGA	The frequency of this data is unknown, however two phases of this data have been released in 2018 and 2021.	2021
10	Urban Vegetation Cover (UVC)	Vegetation cover dataset for GSR was generated from analysis of high-resolution vegetation imagery and digital aerial photography from 2016.	Direct Impact	NSW Office of Environment and Heritage (OEH) https://www.seed.nsw.gov.au	LGA	Unknown	2016
11	Heat Vulnerability Index (HVI)	This metric addresses indicators of exposure, sensitivity and adaptive capacity to calculate overall HVI score. HVI has been derived from the analysis of Land Surface Temperature data with vegetation cover data, integrated with socio-economic data from the 2016 ABS Census.	Indirect Impact	OEH https://www.seed.nsw.gov-.au	LGA	Unknown	2016
12	Air Quality	The NSW air quality monitoring network has been designed to cover the complex topography and variable meteorological conditions across New South Wales, as well as diverse emission sources. This extensive monitoring network produces data needed to determine the spatial and temporal variation in air pollutants, population exposure to air pollutants, and to evaluate the performance of air quality models.	Indirect Impact	NSW Department of Planning, Industry and Environment (DPIE) Air Quality Monitoring Network https://www.dpie.nsw.gov-.au/air-quality/air-quality-da-ta-services	Air quality monitoring stations (AQMS) located in the GSR.	2019 and 2021 data was the latest available at the time of writing this report in 2022.	2019 & 2021

	LIVEABILITY METRIC			DATA COLLECTIONS			
#	TITLE	DESCRIPTION	DEGREE OF RELEVANCE TO WESTINVEST PROGRAM	SOURCE	GEOGRAPHY	NOTES ON DATA COLLECTION AND FREQUENCY	YEAR
LIVEABILITY CATEGORY			SAFE SPACES				
13	Incidents of crime in public open spaces	Offences recorded by NSW Police are categorised by premises type. This metric will use data relating to offences that occurred in public open spaces including: • outdoor/public space (road/street/footpath). • park/bushland /garden; camping, caravan area, public amenities etc. • recreation spaces (sports ground /centre, gym, hall, golf course, race course, casino, art gallery, museum, cinema, tennis court etc.).	Indirect Impact	NSW Bureau of Crime Statistics and Research (BOSCAR) https://www.bocsar.nsw.gov.au/	LGA	This report draws upon crime statistics from Jan-Dec 2021, published in 2022. This data was the latest available at the time of writing this report in 2022.	2021
14	Traffic Incidents Involving Pedestrians	NSW Crash and Casualty Statistics data collected include all incidents that conform to the national guidelines for reporting and classifying road vehicle crashes. This metric will use data on traffic incidents that involved pedestrians.	Direct Impact	Transport for NSW (TfNSW) Centre for Road Safety https://roadsafety.transport.nsw.gov.au/statistics/index.html	LGA	This report draws upon data published as part of a report, which was finalised and published in Oct 2021. This data was the latest available at the time of writing this report in 2022.	2021

Parramatta Mall, Parramatta, 2019.
Photo: Sally Tsoutas

4 VIBRANT COMMUNITIES

Four metrics were selected to evaluate the vibrancy of WestInvest LGA areas compared to non-WestInvest LGAs: 1) Social Infrastructure; 2) Proportion of employed population working locally; 3) Adult attendance and participation in cultural activities and 4) Adult participation in a sport or other physical activities.

4.1 SOCIAL INFRASTRUCTURE INDEX

The provision of well-planned social infrastructure supports the liveability of communities by promoting and facilitating social interaction. Social infrastructure includes cultural and leisure centres (e.g. museums, art galleries, libraries, cinemas, theatres etc.), education (childcare, schools etc.), health and social services (e.g. dentists, doctors, pharmacies etc), and sports and recreation facilities (swimming pools, sports clubs etc.).

The Social Infrastructure Index provides a score out of 15, with 0 indicating low accessibility to social infrastructure and 15 indicating high accessibility to social infrastructure.

The data presented in Table 4.1 show that the non-WestInvest LGAs overall have a higher social infrastructure score of 8.1/15 compared to the WestInvest LGAs (6.0/15). Of the WestInvest LGAs, Burwood scores highest in terms of social infrastructure accessibility (9.2/15) and Wollondilly scores lowest (3.5/15). As with other liveability measures, Figure 4.1 illustrates the 'distance decay effect' with access to social infrastructure diminishing the further an LGA is from the eastern urban core of the GSR.

Table 4.1: Social Infrastructure Index score[1], 2021.

Local Government Area	Social Infrastructure Index Score[1]
Wollondilly	3.5
Hawkesbury	4.1
Blue Mountains	4.2
Camden	4.5
The Hills Shire	4.9
Campbelltown	5.4
Blacktown	5.6
Penrith	5.7
Liverpool	6.0
Average WestInvest LGAs	**6.0**
Fairfield	6.9
Cumberland	7.2
Canterbury-Bankstown	7.6
Parramatta	7.6
Average Non-WestInvest LGAs	**8.1**
Strathfield	8.2
Burwood	9.2

Source: AUO (2022).
[1]Score out of 15 – where 0 indicates low accessibility to social infrastructure and 15 indicates high accessibility to social infrastructure.

Figure 4.1: LGA Social Infrastructure Index score,[1] GSR, 2021.
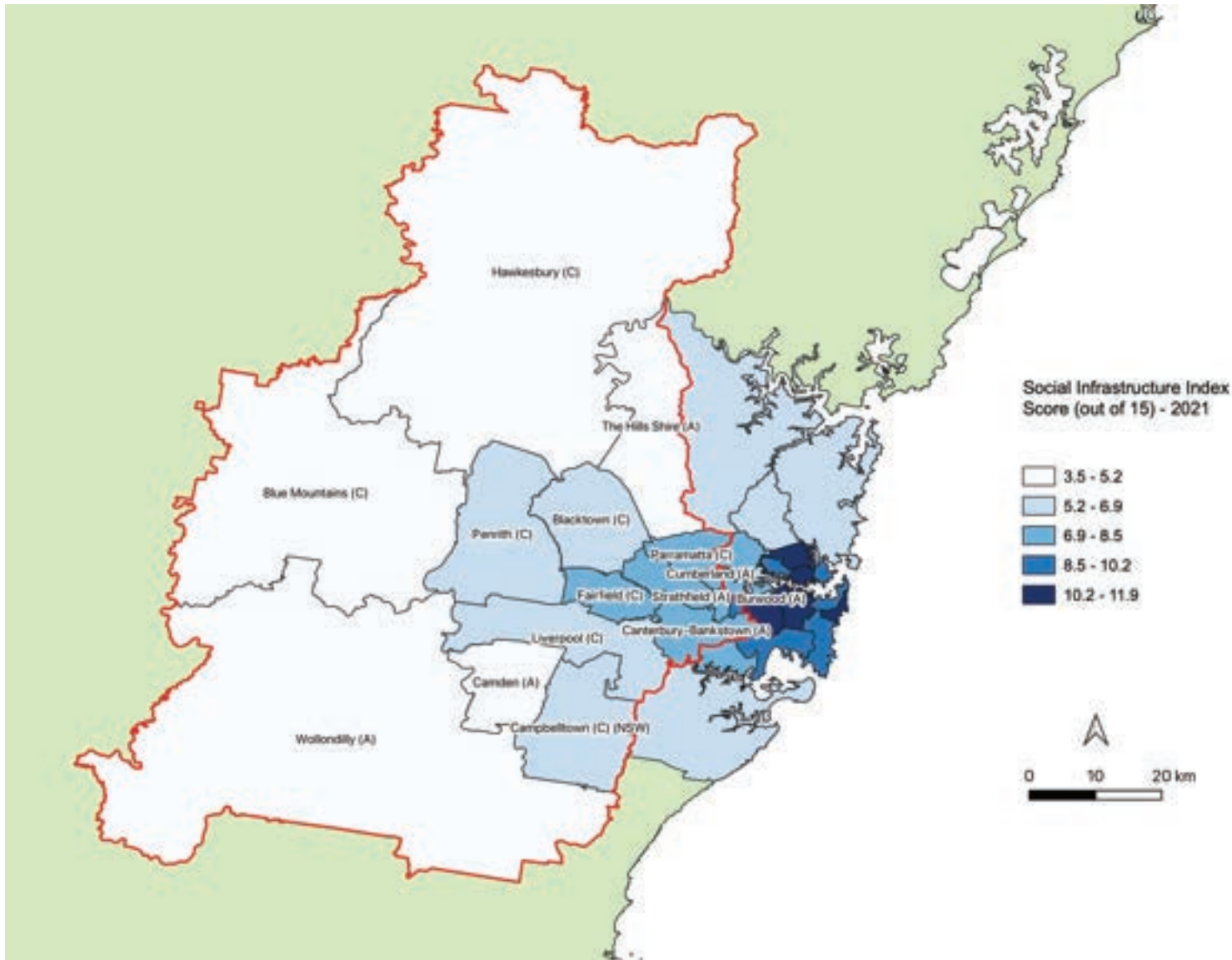
Source: Dufty-Jones, R. (2022). Social Infrastructure Index 2021, AUO. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Score out of 15 – where 0 indicates low accessibility to social infrastructure and 15 indicates high accessibility to social infrastructure.

Aboriginal Cultural Walk, Parramatta.
Photo: Destination NSW

4.2 PROPORTION OF EMPLOYED POPULATION WORKING LOCALLY

The percentage of the population employed locally[8] as a metric for liveability was as an indicator of long commute distances and times. Long commute distances and times can negatively impact the liveability of an area in terms of the individual well-being, local economy, social and community connections and the environment.

Long commutes can adversely impact work-life balance leading to detrimental effects on family and other social relationships. Similarly, when employees live closer to their workplaces, the likelihood of commuting to work using public transport, walking or cycling, as opposed to relying on private vehicles, is increased. Public and active transport use reduces traffic congestion and emissions from private vehicles, which positively supports the built and natural environment and an individual's physical activity (Chatterjee et al, 2020).

The data[9] presented in Table 4.2 and Figure 4.2 shows that the non-WestInvest LGAs (36.6%) overall have a comparatively higher proportion (approximately 3%) of their employed population working locally compared to WestInvest LGAs (33.5%). Within the WestInvest LGAs the Blue Mountains (47.5%) scores highest in terms of their employed population working locally and Strathfield scores lowest (14.1%).

Table 4.2: Percentage proportion of employed population working locally, 2021.

Local Government Area	Employed population working locally
Strathfield	14.1
Burwood	16.2
Cumberland	25.0
Parramatta	29.1
Canterbury-Bankstown	32.8
The Hills Shire	32.8
Camden	33.2
Blacktown	33.3
Fairfield	33.3
Average WestInvest LGAs	**33.5**
Liverpool	34.4
Wollondilly	35.2
Campbelltown	36.4
Average Non-WestInvest LGAs	**36.6**
Penrith	43.1
Blue Mountains	47.5
Hawkesbury	49.6

Source: ABS (2022).

It is important to note that where people work, and their commuting patterns have changed significantly over the past two years. The impact of the COVID-19 pandemic resulted in an unprecedented proportion of the labour force and businesses working from home. Experts argue that an increase in working from home due to the impact of the COVID-19 pandemic could have far-ranging consequences for the distribution of economic activity inside urban areas: if managed well by public policy this shift could improve both productivity and individual well-being (Delventhal et al., 2022; Ethridge et al., 2020). While it remains to be seen the extent to which these changes to work locations and commuting patterns will persist and become permanent, those working from home is expected to be much more prevalent than before 2020.

[8]Based on 2021 Australian Census of Population data of those who lived and worked in the same LGA.

[9]Data should be treated with some caution as they were collected during the COVID-19 lockdowns for large parts of Australia. During the lockdowns, many occupations were required to work from home if possible, and some industries were closed, so people did not travel to work. For this reason, the proportions of those who lived and worked in the same LGA may have increased.

Figure 4.2: Percentage proportion of employed population who live and work in the same LGA, GSR, 2021.
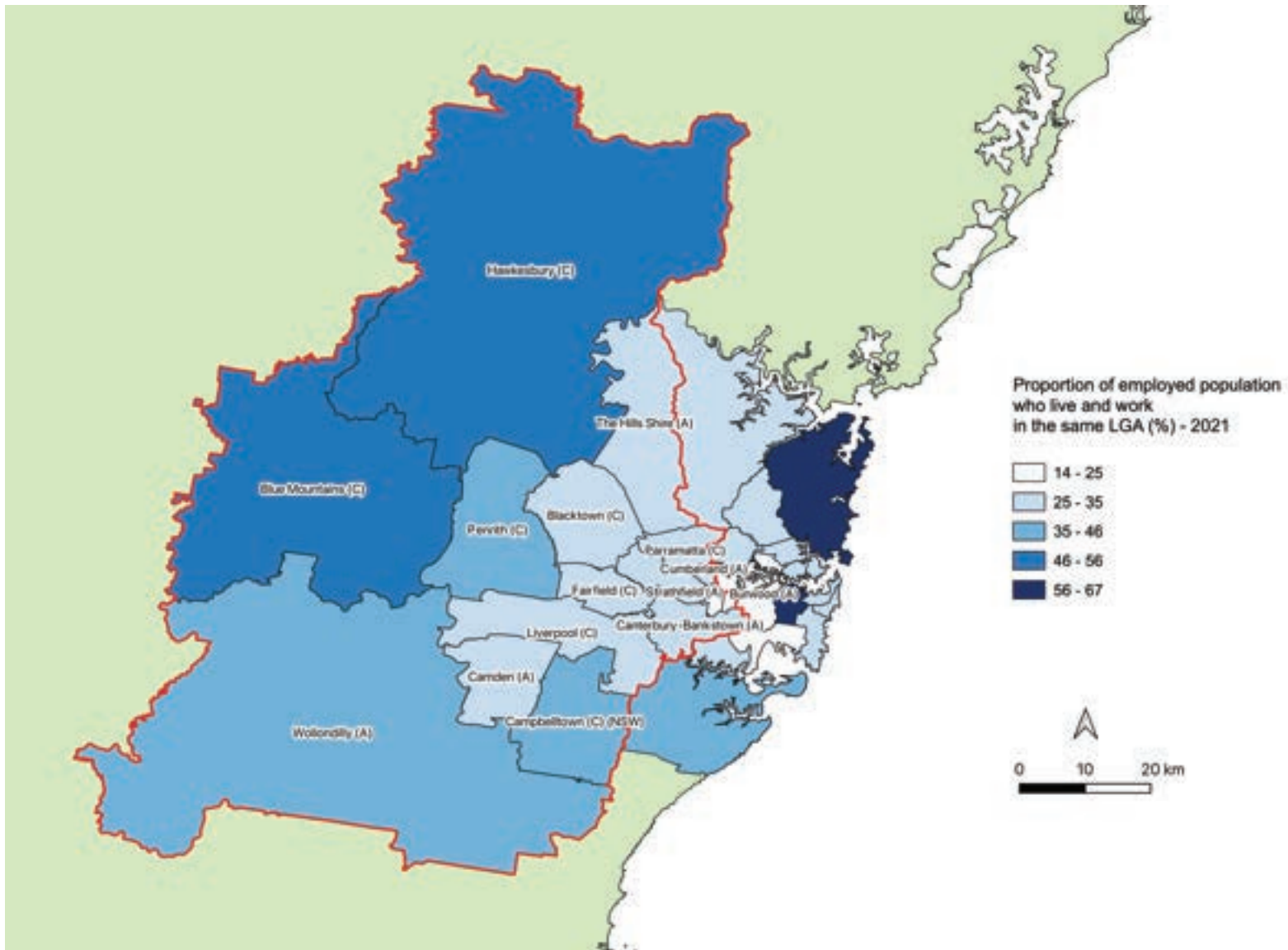
Source: Dufty-Jones, R. (2022). Census of Population and Housing 2021, ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

4.3 ATTENDANCE AND PARTICIPATION IN CULTURAL ACTIVITIES

Attendance and participation in cultural activities[10] contribute to an area's liveability by activating communities and neighbourhoods and facilitating learning and development (Infrastructure NSW, 2016). To identify a baseline measurement for this dimension of vibrant places, this study examined data from the ABS Cultural Participation Survey conducted during 2017/18.[11] Specifically, this research examined the data on adults who attended or participated in a cultural activity in the previous 12 months.

Data were accessed via the ABS TableBuilder site at the Statistical Area 4 (SA4) geography. ABS correspondence tables were used to convert the data from the SA4 to the LGA geographies used in this report.

The data presented in Table 4.3 and Figure 4.3 reveal that, on average, a higher percentage of those living in non-WestInvest LGAs (86.8%) **attended** a cultural activity in the previous 12 months compared to the average attendance rate for those living in WestInvest LGAs (79.1%).

Within the WestInvest LGAs, Burwood (90%) and the Blue Mountains (89%) had the highest rate of attendance at a cultural activity in the previous 12 months. Blacktown, Cumberland, Fairfield, Hawkesbury, Penrith and The Hills Shire LGAs had the lowest percentage of their local populations having attended a cultural activity in the previous 12 months (76%).

Regarding **participation** in cultural activities, Table 4.3 and Figure 4.4 show that non-WestInvest LGAs (37.5%) continue to have a higher proportion of their local populations who had participated in a cultural activity in the previous 12 months compared to the WestInvest LGAs (28.9%).

Table 4.3: Percentage proportion of adult population who participated or attended a cultural activity in previous 12 months, 2018

Local Government Area	Attended (%) a cultural activity	Participated (%) in a cultural activity
Campbelltown	78%	22%
Camden	77%	23%
Blacktown	76%	25%
Hawkesbury	76%	26%
Penrith	76%	27%
Average WestInvest LGAs	**79.1%**	**28.9%**
Cumberland	76%	29%
Fairfield	76%	29%
Liverpool	78%	29%
Strathfield	77%	29%
The Hills Shire	76%	29%
Wollondilly	78%	30%
Canterbury-Bankstown	79%	31%
Blue Mountains	89%	32%
Parramatta	84%	34%
Average Non-WestInvest LGAs	**86.8%**	**37.5%**
Burwood	90%	38%

Source: ABS (2022)

Yet, within the WestInvest LGAs, differences in participation rates compared to attendance can also be observed. For example, while Burwood (38%) and the Blue Mountains (32%) were also among the WestInvest LGAs with the highest rates of participation in cultural activities, they were joined by Parramatta (34%) and Canterbury-Bankstown (31%). Similarly, low attendance rates did not translate into low participation rates in cultural activities. Campbelltown, for instance, had a comparatively moderate attendance rate (78%) but recorded the lowest participation rate (22%) in cultural activities among WestInvest LGAs.

[10] A cultural activity is defined as an activity in which a person has attended or participated, which has not been done for secondary or tertiary studies.
[11] The next Cultural Participation Survey is scheduled to be conducted in 2021/22 by the ABS.

Figure 4.3: Percentage proportion of LGA adult population who attended a cultural activity in previous 12 months, GSR, 2018.
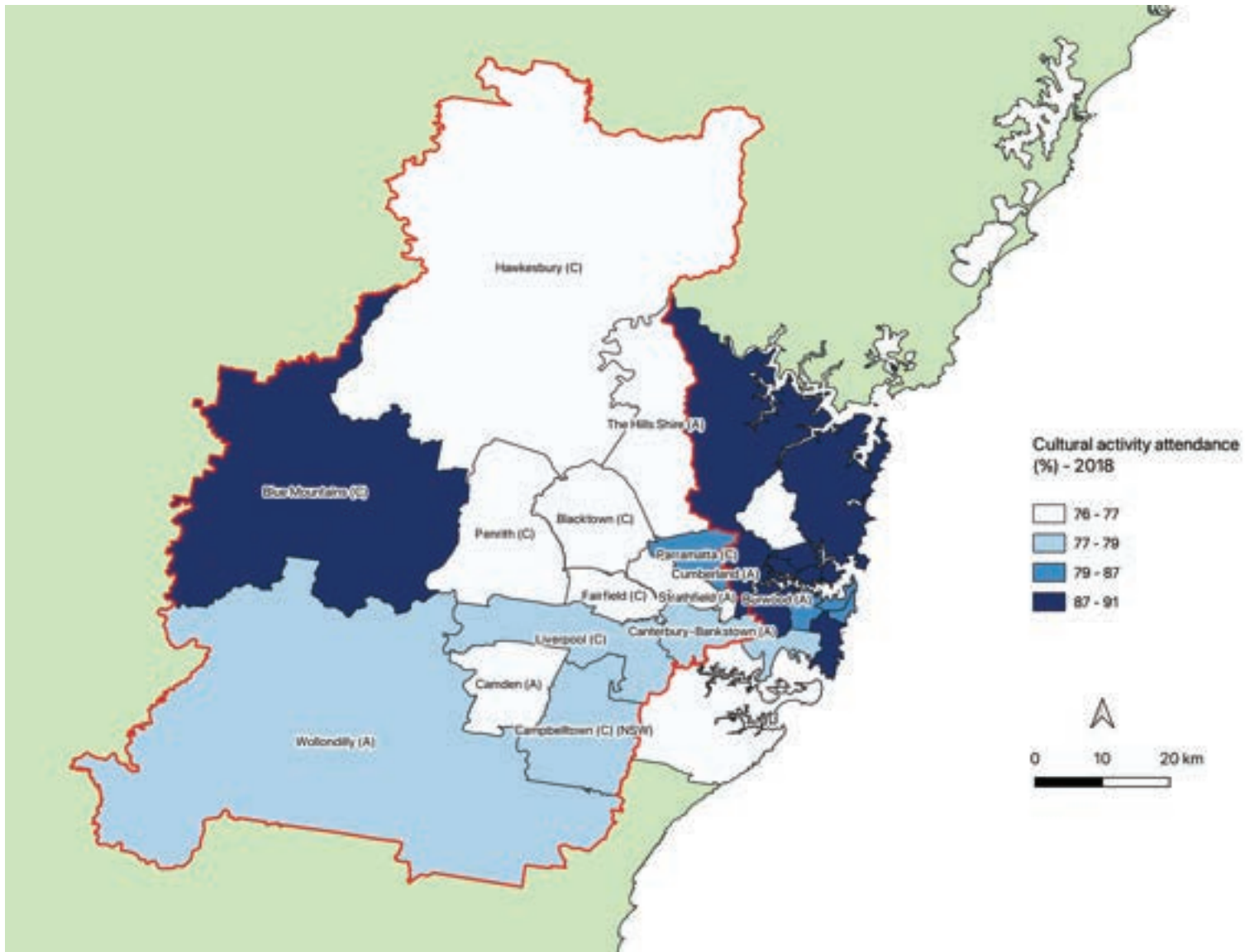
Source: Dufty-Jones, R. (2022). Cultural Participation Survey 2018, ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Lanterns in Macquarie Mall, Liverpool, 2022.
Photo: Sally Tsoutas

Figure 4.4: Percentage proportion of LGA adult population who participated in a cultural activity during previous 12 months, GSR, 2018.
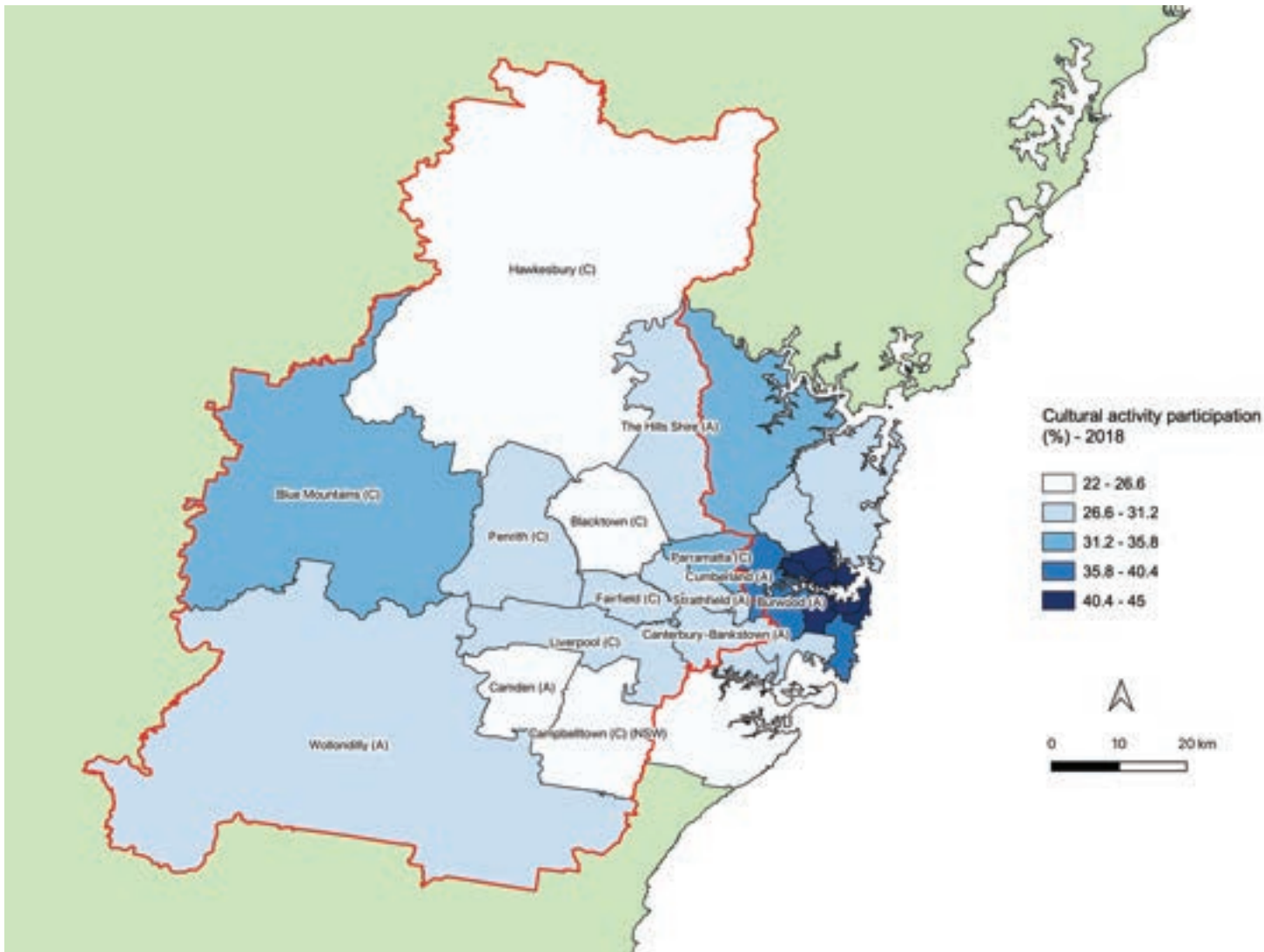
Source: Dufty-Jones, R. (2022). Cultural Participation Survey 2018, ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

4.4 PARTICIPATION IN SPORT AND PHYSICAL ACTIVITIES

While the economic and health benefits of participation in sport and physical activities are generally accepted, research is also increasingly pointing to the social benefits that can be derived from participating in these activities. KPMG (2020: 15) notes two key aspects of these social benefits:

The first of these is the social connections that this infrastructure creates through events, programs and activities. The second is the role that infrastructure plays in communities in which it is located.

To better understand current levels of adult participation in sport and other physical activities this study draws on the LGA level data from 2021 collected through the annual AusPlay Survey led by the Australian Sports Commission (ASC).

Table 5.4 and Figure 4.5 show that the non-WestInvest LGAs (94.7%) overall have a higher proportion of their local populations who participated in a sport or other physical activity during the previous 12 months in 2021 compared to the populations of the WestInvest LGAs (86.1%).

Within the WestInvest LGAs Parramatta (94.3%), Strathfield (92.6%) and the Blue Mountains (91.4%) had the highest proportion of their local population who participated in a sport or other physical activity during this time. Conversely, Hawkesbury (75.4%) and Campbelltown (79.6%) had the lowest proportion of adults who had participated in a sport or other physical activity.

Table 4.4: Percentage proportion of LGA adult population who participated in a sport or physical activity during previous 12 months, July 2021 – June 2022

Local Government Area	Participated in a sport or other physical activity – total (%)	Participated in a sport or other physical activity – via an organisation or venue[2] (%)
The Hills Shire[1]	–	–
Hawkesbury	75.4	94.7
Campbelltown	79.6	42.0
Penrith	81.1	51.0
Fairfield	82.1	47.7
Cumberland	84.0	53.1
Liverpool	85.6	48.3
Blacktown	85.9	50.6
Average WestInvest LGAs	**86.1**	**52.5**
Camden	87.4	63.4
Canterbury-Bankstown	88.3	56.4
Burwood	88.4	58.4
Wollondilly	89.8	52.8
Blue Mountains	91.4	51.2
Strathfield	92.6	54.2
Parramatta	94.3	63.8
Average Non-WestInvest LGAs	**94.7**	**68.5**

Source: Clearing House for Sport (2022)
[1] Sample size was too small to provide data for this LGA
[2] For each activity recorded, adults were asked whether they had participated 'through an organisation – like a club or a gym; or at a venue – like a pool or an oval'

However, Table 4.4 and Figure 4.6 show that a similar picture emerges when the 2021 adult participation in a sport or other physical activity was examined in terms of the role that organisations (e.g. a club or a gym) and venues (e.g. a pool or an oval) played.

Again, non-WestInvest LGAs (68.5%) overall have a higher proportion of their local populations who participated in a sport or other physical activity during the previous 12 months in 2021 via an organisation or venue compared to the populations of the WestInvest LGAs (52.5%).

Within the WestInvest LGAs Parramatta (94.3%) led the ranking with Camden (63.4%) having the next highest proportion of their local population who participated in a sport or other physical activity via an organisation or venue during this time. Similarly, Hawkesbury (41.8%) and Campbelltown (42.0%) had the lowest proportion of adults who had participated in a sport or other physical activity via an organisation or venue.

While there are differences, when examining this data at the aggregate level and looking at those LGAs at either end of the spectrum, there appears to be a correlation between overall adult participation in a sport or other physical activity and the role that organisations and venues plays in these overall outcomes. This needs to be examined further to establish whether there is a causal relationship but should be noted for now given the some of the focus areas of the WestInvest Program.

Commbank Stadium, Parramatta, 2020.
Photo: Sally Tsoutas

Figure 4.5: Percentage proportion of LGA adult population who participated in a sport or physical activity during previous 12 months, GSR, 2021.
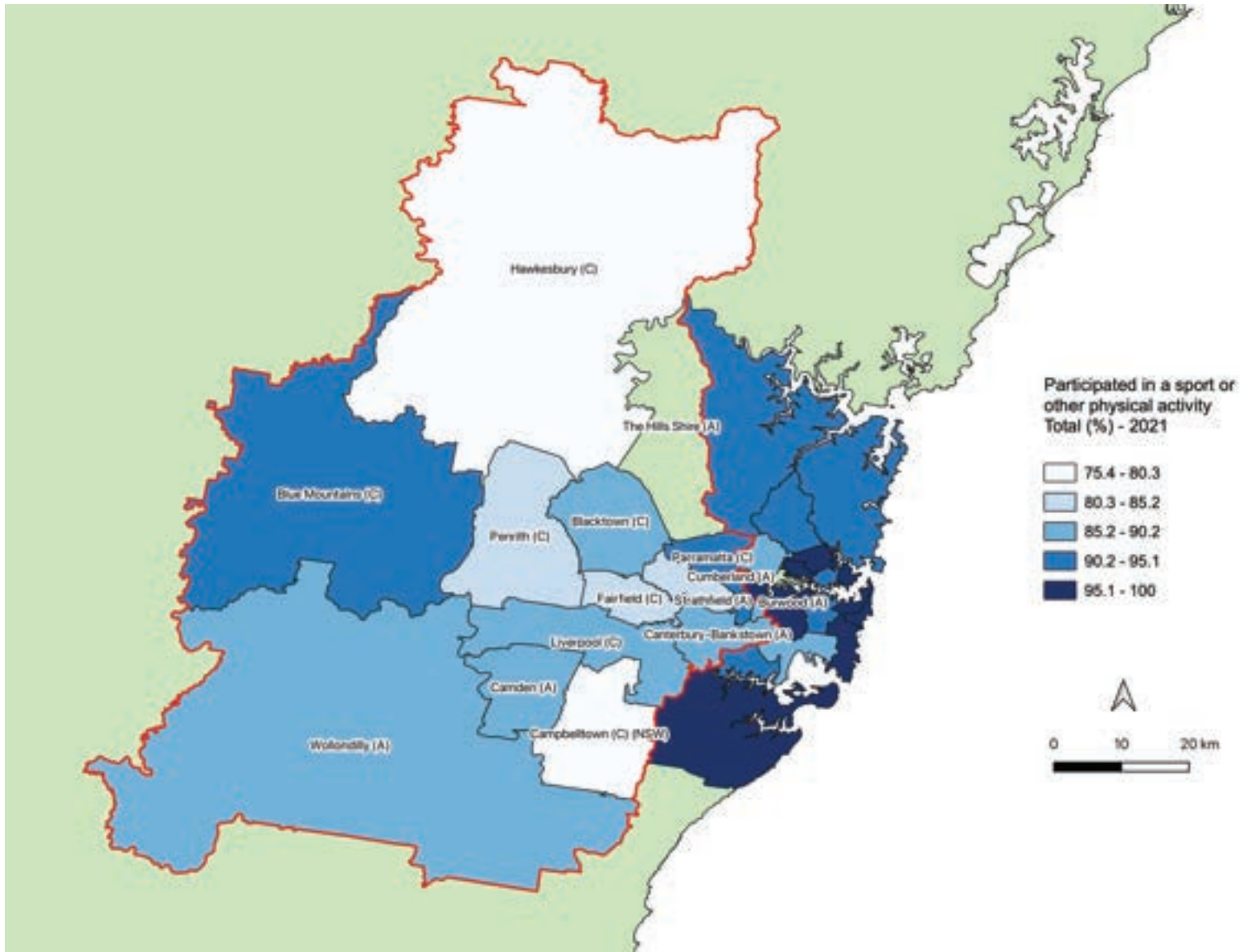
Source: Dufty-Jones, R. (2022). AusPlay Survey 2021, Clearing House for Sport. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Figure 4.6: Percentage proportion of LGA adult population who participated in a sport or physical activity during previous 12 months via an organisation or venue, GSR, 2021.
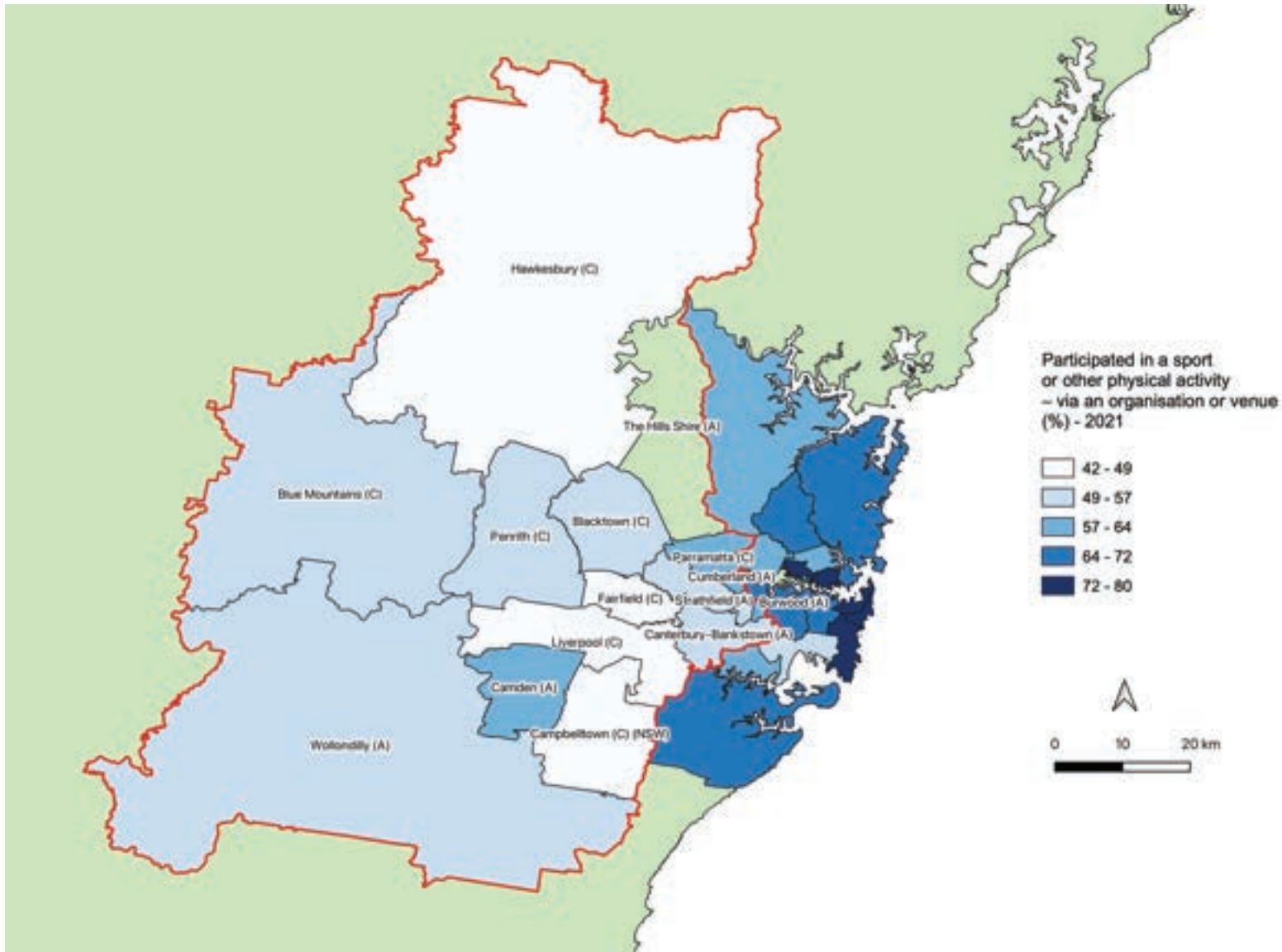
Source: Dufty-Jones, R. (2022). AusPlay Survey 2021, Clearing House for Sport. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

5 ACCESSIBILITY

Four metrics were selected to better understand how accessible or connected WestInvest LGA communities are compared to non-WestInvest LGAs: 1) Metro ARIA, 2) Walkability Index, 3) ADII and 4) IRSAD.

5.1 METRO ARIA

Accessibility is concerned with the opportunities available to people in a particular location to consume goods (e.g. food) or services (e.g. education, health). The Metro ARIA measure was included because accessibility contributes to the wider liveability of a region (Somenhalli et al. 2016).

The Metro ARIA is a composite spatial index that scores[12] urban areas in Australia according to the ease or difficulty that people living in a metropolitan location face when accessing basic services[13]. It provides a nationally consistent and comparable dataset that quantifies geographic accessibility within the metropolitan area.

Metro ARIA is derived from the measurement of road distances from land parcels within Australia's eight capital cities (Adelaide, Brisbane, Canberra, Darwin Melbourne, Perth and Sydney) to services locations belonging to five service themes:

• Education
• Health
• Shopping
• Public Transport
• Financial/Postal Services

The ARIA methodology (which focuses on quantifying remoteness in non-metropolitan areas) was adapted and refined in the Metro ARIA to provide a sensitive representation of the differences in access levels within a metropolitan context. While the methodology for Metro ARIA was developed in 2001, it was not until 2015 that a national Metro ARIA for all capital cites was completed by the Hugo Centre for Migration and Population Research (University of Adelaide) and released via the Australian Urban Research Infrastructure Network (Taylor and Lange, 2016).

The Metro ARIA has been widely used by government and non-government agencies, however it also has some limitations (Taylor and Lange, 2016). One weakness of the Metro ARIA is that it is based on measurements of road distances to destinations. This means that the Metro ARIA favours road-based forms of mobility (e.g. the motor vehicle as the preferred mode of travel) and conceives public transport as a service to be accessed, and not as a means of potential access (Pitot et al. 2006). Similarly, the focus on road distances and not travel times is also problematic as this does not account for the impact of congestion on reducing accessibility by increasing travel times over comparatively short road distances.

Another weakness is that the Metro ARIA is based on the 2011 ABS Urban Centre boundaries for each of the eight Australian Capital Cities and has not been updated since it was first released in 2015. As a result, the metropolitan geographies used in the Metro ARIA are now more than 10 years out of date and do not account for the rapid population and urban changes that have occurred since 2011. This means that there are some metropolitan regions that are not included. For example, in this report there were insufficient Metro ARIA data available for the 119 ABS Statistical Area Level 1 (SA1) geographies that make up the Wollondilly LGA (only 3 of the 119 SA1s had Metro ARIA data). Likewise, almost half of the SA1s that make up the Blue Mountains LGA were not part of the Metro ARIA (102 of the 198 SA1s had Metro ARIA data). Therefore, some caution should be used when interpreting this data.

The Metro ARIA data are provided at the SA1 level. ABS correspondence tables were used to collate data according to LGA region. Using these data, average Metro ARIA scores were generated for each LGA and the wider WestInvest and non-WestInvest regions (excluding Wollondilly).

Table 5.1 and Figure 5.1 show that non-WestInvest LGAs overall have a higher accessibility score of 1.5 compared to WestInvest LGAs (2.2). Figure 5.1 also illustrates that accessibility is highest in the City of Sydney/CBD and, that accessibility in the GSR diminishes the further west an LGA is from the Sydney CBD.

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[12]Metro ARIA classifies areas on a scale of 1-5. Where 1 represents high metropolitan accessibility and 5 represents low metropolitan accessibility.

[13]It should be noted that the degree of impact that this measure will have on an individuals' liveability of an area will depend on a range of factors (e.g. income, health, etc). With the right resources individuals may sacrifice accessibility in order to access affordable housing and/or the environmental amenity of a regional location with limited impact on their overall experience of liveability.

Table 5.1: Metro ARIA scores for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, 2015.

Local Government Area	Metro ARIA Score[1]
Blue Mountains*	3.1
Camden	3.1
Penrith	3.1
Campbelltown	3.0
The Hills Shire	2.6
Blacktown	2.4
Liverpool	2.3
Average WestInvest LGAs	**2.2**
Hawkesbury	2.2
Fairfield	2.1
Cumberland	1.8
Parramatta	1.7
Average Non-WestInvest LGAs	**1.5**
Canterbury-Bankstown	1.5
Burwood	1.2
Strathfield	1.1
Wollondilly	n/a

Source: Hugo Centre for Migration and Population Research (2022).
[1]Scale of 1-5 – where 1 represents high metropolitan accessibility and 5 represents low metropolitan accessibility.
*Incomplete data – only 102 out of the total 198 SA1s in the Blue Mountains LGA had Metro ARIA data.

Prince Alfred Square, Parramatta.
Photo: Destination NSW

Figure 5.1: LGA Metro ARIA score[1], GSR, 2015*.
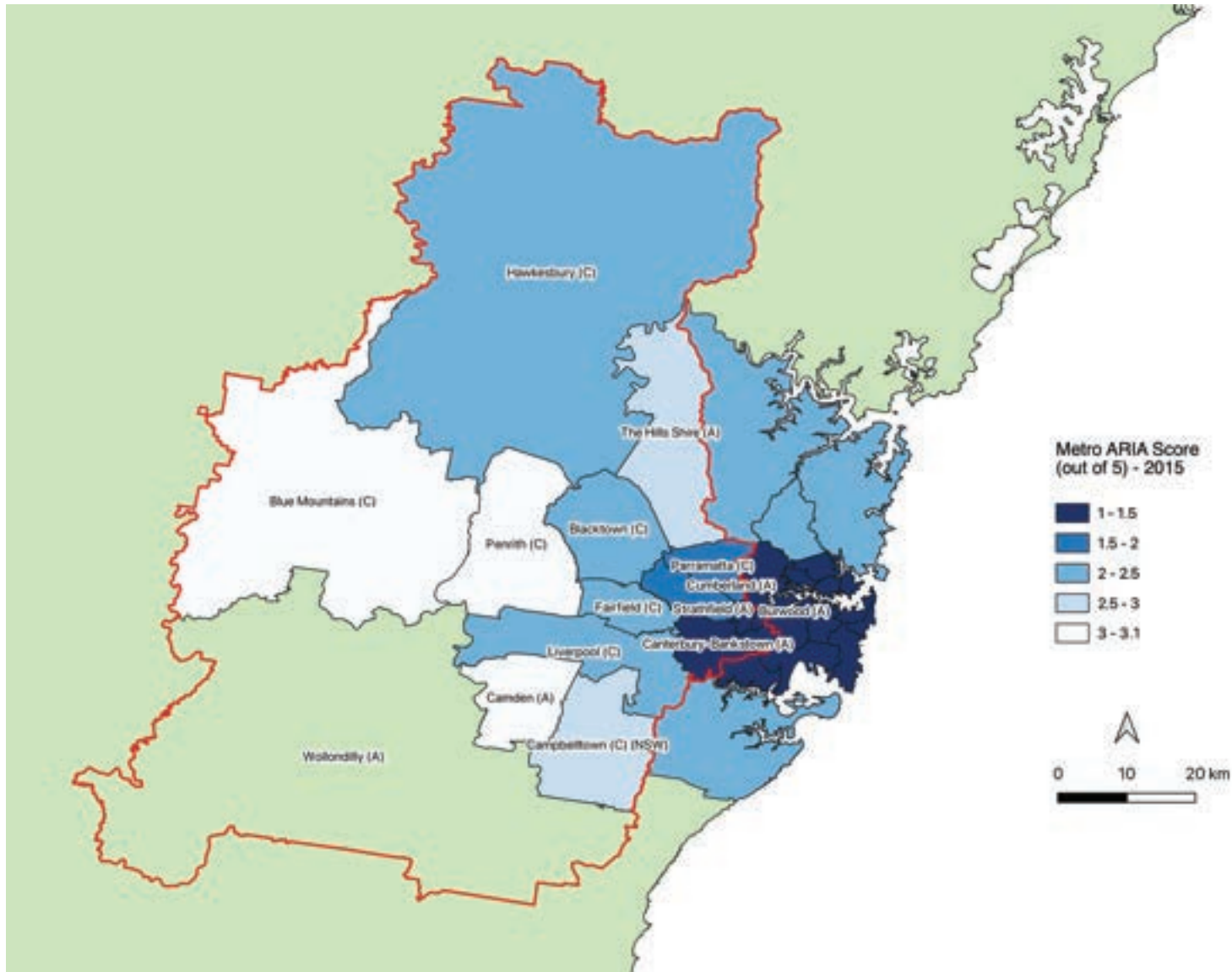
Source: Dufty-Jones, R. (2022) Metro ARIA 2015, Hugo Centre for Migration and Population Research. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Scale of 1-5 – where 1 represents high metropolitan accessibility and 5 represents low metropolitan accessibility.
*No Metro ARIA data were available at the Wollondilly LGA region and limited Metro ARIA data was available at the Blue Mountains LGA region.

5.2 WALKABILITY INDEX

The Walkability Index is calculated as the sum of standardised scores of local neighbourhood attributes including street connectivity, dwelling density and the index of access to daily living services (Giles-Corti et al., 2014). These factors influence how people move around their local neighbourhoods to complete everyday activities. The 'walkability' of an area is an important influence on social connectedness, sustainability, physical activity and health outcomes (Saelens et al., 2003)[14].

The Walkability Index has an average of 0. A negative result indicates low/poor walkability and a positive result indicates high/good walkability.

The data presented in Table 5.2 show that non-WestInvest LGAs overall have a higher walkability score of 1.7 compared to WestInvest LGAs (-0.7). There is high variability within the WestInvest LGAs. Wollondilly (-2.8) and the Blue Mountains (-2.3) LGAs have the lowest walkability scores, with Burwood having a very high walkability score of 2.2.

The 'distance decay effect'[15] observed regarding the Urban Liveability Index and the Metro ARIA data is also present in the Walkability Index scores when mapped (see Figure 5.2), with an LGA's 'walkability' diminishing the further it is from the Sydney CBD.

Table 5.2: Walkability Index scores for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, 2021.

Local Government Area	Walkability Index Score[1]
Wollondilly	-2.8
Blue Mountains	-2.3
Hawkesbury	-2.0
Camden	-1.9
Campbelltown	-1.2
Penrith	-1.1
The Hills Shire	-1.0
Liverpool	-0.8
Blacktown	-0.7
Average WestInvest LGAs	**-0.7**
Strathfield	-0.4
Fairfield	0.2
Cumberland	0.3
Parramatta	0.3
Canterbury-Bankstown	0.4
Average Non-WestInvest LGAs	**1.7**
Burwood	2.2

Sources: AUO (2022).
[1]Average is 0 – negative results indicate low/poor walkability and a positive result indicates high/good walkability.

[14]As with the Metro ARIA measure, walkability and its impact on an individuals' overall liveability experience of an area will vary depending on the level of personal/household resources they have to mitigate the impacts of a low walkability score.
[15]Distance decay effect describes the declining effect on cultural or spatial interactions the greater the distance is between two locations. In urban spaces a 'distance decay effect' can be observed in relation to land prices, street quality, building density, pedestrian density etc. Technological and social changes (e.g. faster travel, ICT, the COVID-19 pandemic etc) can impact how the distance decay effect manifests by changing the real and perceived impact of distance on interactions.

Figure 5.2: LGA Walkability Index – Overall score[1], GSR, 2021.
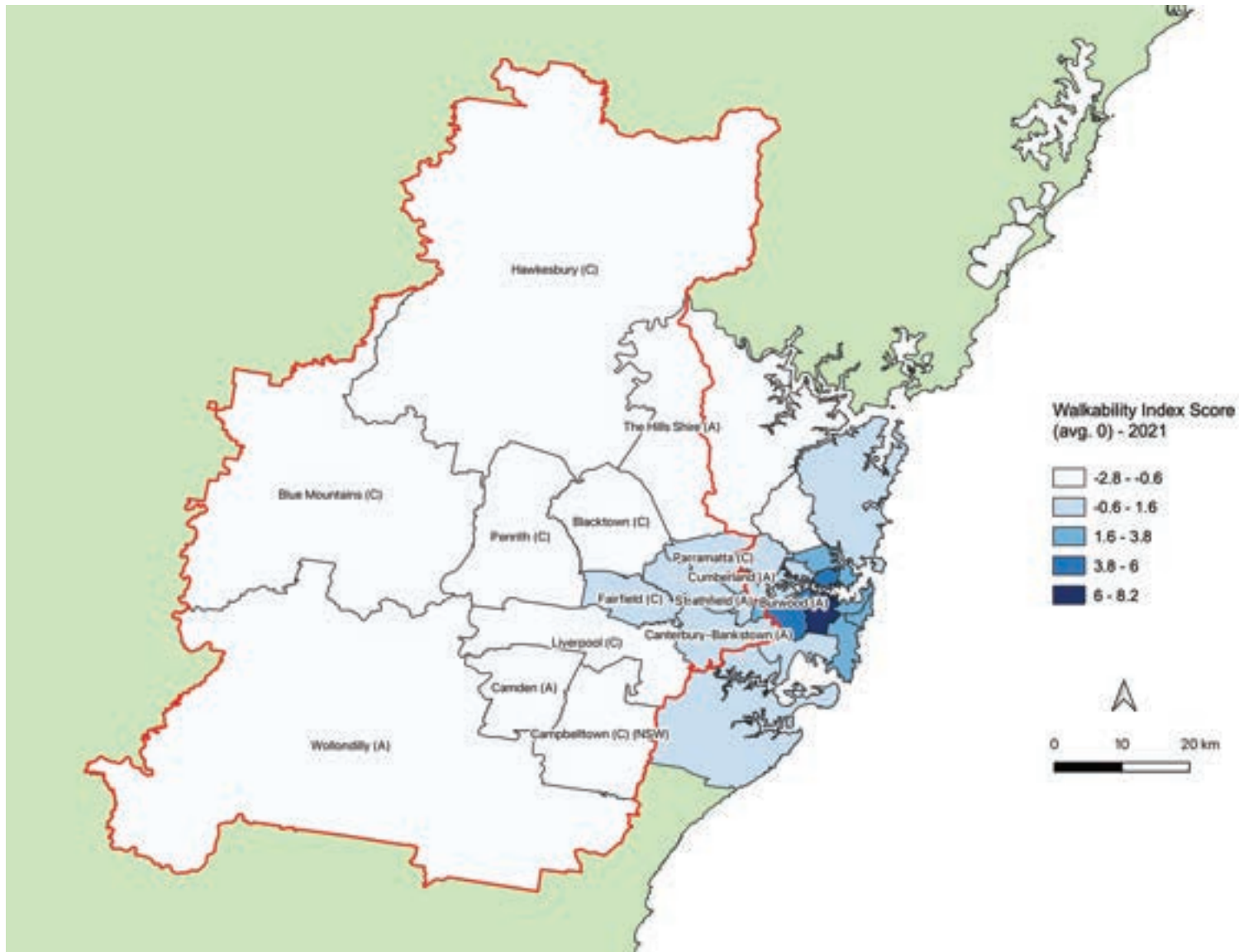
Source: Dufty-Jones, R. (2022). Walkability Index 2021, AUO. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Average is 0 – negative results indicate low/poor walkability and a positive result indicates high/good walkability.

Parramatta River, Parramatta, 2020.
Photo: Sally Tsoutas

5.3 DIGITAL INCLUSION INDEX

A collaboration between RMIT, Swinburne University of Technology, and Telstra, the Australian Digital Inclusion Index (ADII) uses data from the Australian Internet Usage Survey to measure digital inclusion across three dimensions of:

- **Access** (defined as the types of digital connections and devices we have; how frequently we use them to get online; and how much data we can use).
- **Affordability** (defined as a ratio of household income to the median cost of an 'internet bundle' for an ideally connected single-headed and family household).
- **Digital Ability** (defined as what we are able do online, and our confidence in doing it).

Because it is specifically the 'Access' component of the ADII that will be indirectly impacted by some WestInvest Projects (e.g. some town centre projects could include free public Wi-Fi hotspots) the data specific to this measure as well as the overall ADII score are included in this analysis.

ADII scores range from 0 to 100. The higher the score, the greater the level of digital inclusion. Total Index scores have been classified into four groups:

a. Highly excluded (45 or below),
b. Excluded (above 45 and below 61),
c. Included (61 and below 80), and
d. Highly included (80 and above).

Table 5.3 illustrates that non-WestInvest LGAs on average have a higher digital inclusion score (76.2) than the WestInvest LGAs (72.4). Within the WestInvest LGAs there is only one LGA, The Hills Shire, that can be classified as highly digitally included (a score of 80 and above). Canterbury-Bankstown has the lowest digital inclusion score of 67 – which is only 6 points from being classified as 'digitally excluded' (a score of 61 or less). Regarding Access and Overall Digital Inclusion, Figures 5.3 and 5.4 shows that south-western Sydney suburbs tend to be the least digitally included compared to all other LGAs in the Greater Sydney Region (GSR).

Table 5.3: Australian Digital Inclusion Index (ADII) 'access' and 'overall' scores for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, 2021.

Local Government Area	Australian Digital Inclusions Index (ADII) – Access[1]	Australian Digital Inclusions Index (ADII) - Overall Score[2]
Canterbury-Bankstown	69	67
Hawkesbury	70	72
Liverpool	70	70
Parramatta	70	76
Wollondilly	70	72
Blacktown	71	71
Campbelltown	71	70
Cumberland	71	70
Average WestInvest LGAs	**72**	**72.4**
Blue Mountains	72	72
Fairfield	72	69
Penrith	72	72
Burwood	73	74
Strathfield	74	75
Average Non-WestInvest LGAs	**75**	**76.2**
Camden	75	76
The Hills Shire	79	80

Sources: Thomas et al (2021).
[1]Score out of 100 – where 100 indicates high digital inclusion in terms of accessibility.
[2]Score out of 100 – where 100 indicates high overall digital inclusion in terms of a) accessibility, b) affordability, and c) ability.

Figure 5.3: LGA ADII – Access score, GSR, 2021.
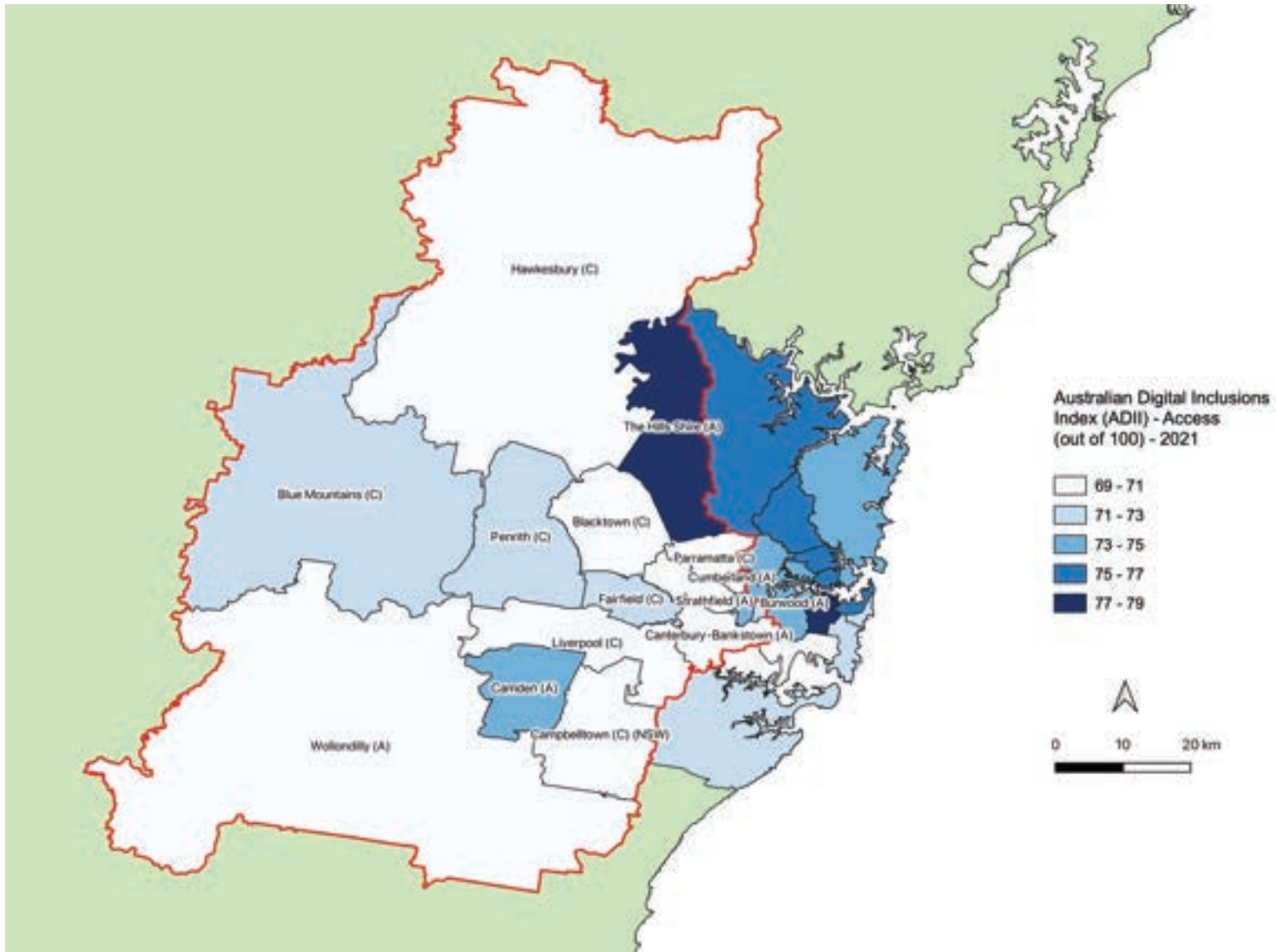
Source: Dufty-Jones, R. (2022). ADII 'access' Scores 2021[1], Thomas et al (2021). ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Score out of 100 – where 100 indicates high overall digital inclusion in terms of accessibility.

Figure 5.4: LGA Australian Digital Inclusion Index (ADII) – Overall score, GSR, 2021.

5.4 INDEX OF RELATIVE SOCIO-ECONOMIC ADVANTAGE AND DISADVANTAGE (IRSAD)

SEIFA was developed by the ABS and ranks areas in Australia according to relative socio-economic advantage and disadvantage. The ABS broadly defines relative socio-economic advantage and disadvantage regarding people's access to material and social resources, and their ability to participate in society. SEIFA indexes are based on information from the five-yearly Census and consist of four indexes, each focusing on a different aspect of socio-economic advantage and disadvantage by summarising a different subset of Census variables (ABS 2018: 4).

This study focuses on one of the four SEIFA indexes: the IRSAD. The IRSAD summarises variables that indicate either relative advantage or disadvantage. This index ranks areas on a continuum from most disadvantaged to most advantaged. An area with a high score on this index has a relatively high incidence of advantage and a relatively low incidence of disadvantage.

Table 5.4 and Figure 5.5 show that on average non-WestInvest LGAs have a higher IRSAD score and decile (1116.8, 9.9) than WestInvest LGAs (1010.7, 7.7). Within the WestInvest LGAs there are only three (3 out of 15) LGAs in the tenth IRSAD decile, compared to 16 (out of 18) non-WestInvest LGAs - Parramatta, Strathfield, and The Hills Shire. Fairfield has the lowest IRSAD decile ranking of 2. Figure 5.5 shows that inner south-western Sydney LGAs (Fairfield, Cumberland, Campbelltown, Liverpool and Canterbury-Bankstown) are more disadvantaged compared to the non-WestInvest LGAs in the GSR.

Table 5.4: IRSAD scores and deciles for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, 2016*.

Local Government Area	Index of Relative Socio-economic Advantage and Disadvantage Score (IRSAD)	IRSAD Decile[1]
Fairfield	896	2
Campbelltown	948	5
Cumberland	959	5
Canterbury-Bankstown	961	6
Liverpool	972	6
Penrith	988	8
Blacktown	993	8
Average WestInvest LGAs	**1011**	**8**
Hawkesbury	1014	9
Wollondilly	1030	9
Blue Mountains	1042	9
Burwood	1043	9
Camden	1056	9
Parramatta	1063	10
Strathfield	1063	10
Average Non-WestInvest LGAs	**1117**	**10**
The Hills Shire	1133	10

Sources: ABS (2022).
[1]Scale of 1-10 – where 1 represents areas most disadvantaged and 10 represents areas most advantaged.
*SEIFA scores based on 2021 Census data will be released in 2023.

Figure 5.5: LGA Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) Decile ranking, GSR, 2016.
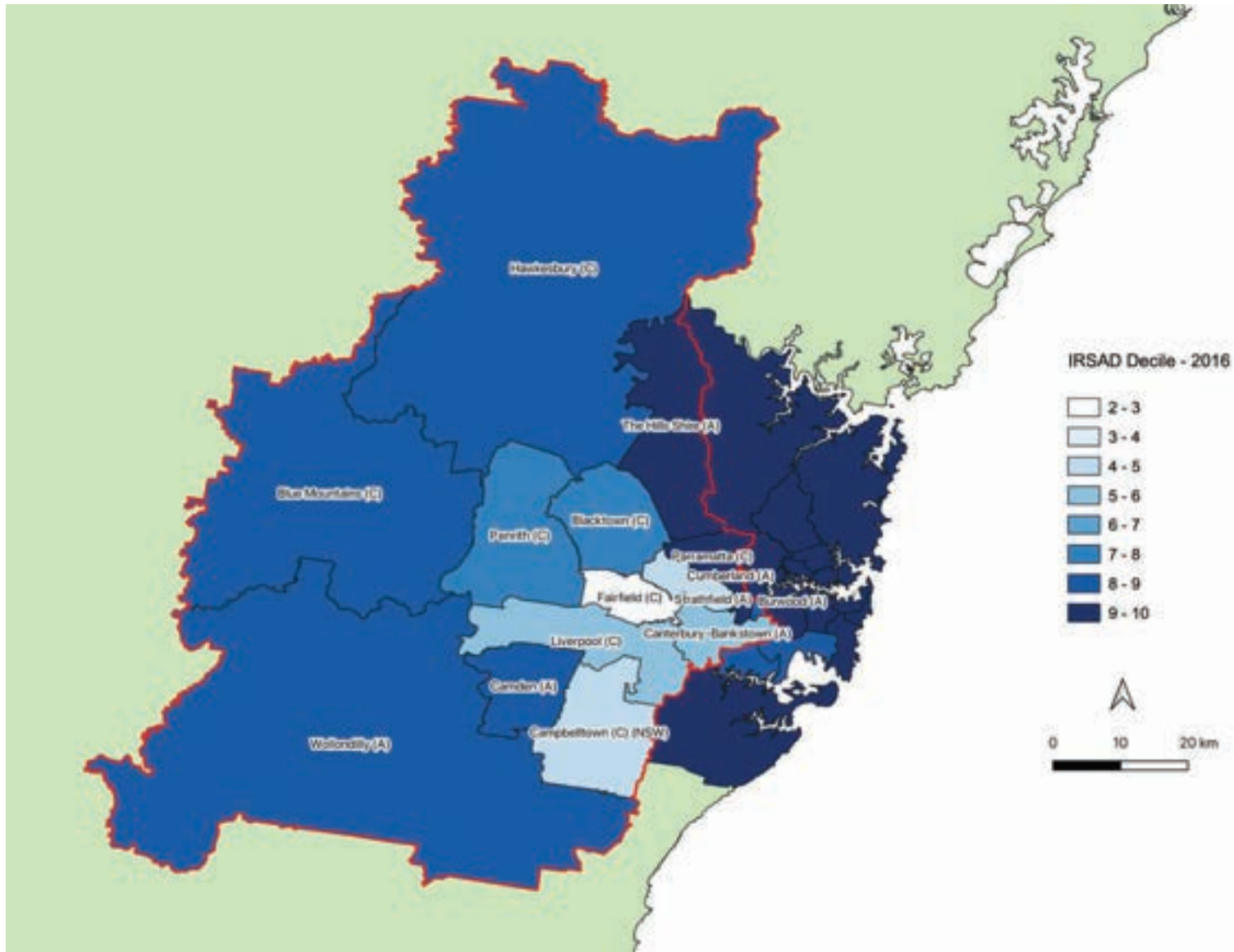
Source: Dufty-Jones, R. (2022). IRSAD Decile Ranking1 2016, ABS. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Scale of 1-10 – where 1 represents areas most disadvantaged and 10 represents areas most advantaged.

Echo Point Lookout, Katoomba, Blue Mountains, 2018.
Photo: Sally Tsoutas

6 ENVIRONMENTAL AMENITY

Four metrics were selected to better understand the environmental amenity of the WestInvest LGAs compared to non-WestInvest LGAs: 1) Access to public open spaces[16]; 2) Urban Vegetation Cover (UVC); 3) Heat Vulnerability Index (HVI); and 4) Particulate Matter (PM2.5) as a measure of air.

6.1 ACCESS TO PUBLIC OPEN SPACES

Public open spaces are areas where everyone has the right to visit without being excluded due to economic or social conditions. Public open spaces are important to urban liveability because they provide places for people to socialise, exercise and play. They can be parks, reserves, beaches and the like.

The Australian Urban Observatory differentiates between small and large public open spaces. Large public open spaces (spaces larger than 1.5 hectares) are important because they offer a wider range of uses to larger sections of the community. For example, large public open spaces can incorporate multiple full-sized playing fields for diverse organised sports and may contain amenities such as bike and walking tracks, as well as additional facilities such as shelters and toilets to support large social gatherings. Large public open spaces can also preserve and promote biodiversity and are therefore extremely important from an environmental and conservation perspective.

Table 6.1: Percentage proportion of dwellings located within 400 metres of a large public open space, 2021

Local Government Area	Proportion of dwellings within 400m of a large POS
Hawkesbury	23.6
Cumberland	25.2
Strathfield	25.4
Burwood	26.4
Canterbury-Bankstown	27.4
Camden	27.9
Wollondilly	30.9
Liverpool	36.0
Fairfield	38.4
Average WestInvest LGAs	**39.6**
Blacktown	40.6
Average Non-WestInvest LGAs	**40.8**
The Hills Shire	45.7
Parramatta	46.7
Penrith	47.0
Campbelltown	53.1
Blue Mountains	100.0

Source: AUO (2022).

Table 6.1 and Figure 6.1 presents the percentage proportion of dwellings located within 400 metres of large public open spaces. They reveal that, on average, dwellings in non-WestInvest LGAs only have marginally better access to large public open spaces (40.8%) compared to WestInvest LGAs (39.6%). Of all the WestInvest LGAs, dwellings in the Blue Mountains have the best access to large public open spaces (100%). Meanwhile, dwellings in the Hawkesbury LGA have the poorest access to large public open spaces (23.6%).

[16] It is unknown how frequently this data will be updated. However, 2021 data for this metric will be released in mid-2022.

Figure 6.1: Proportion of LGA dwellings located within 400 metres of a large public open space, GSR, 2021.
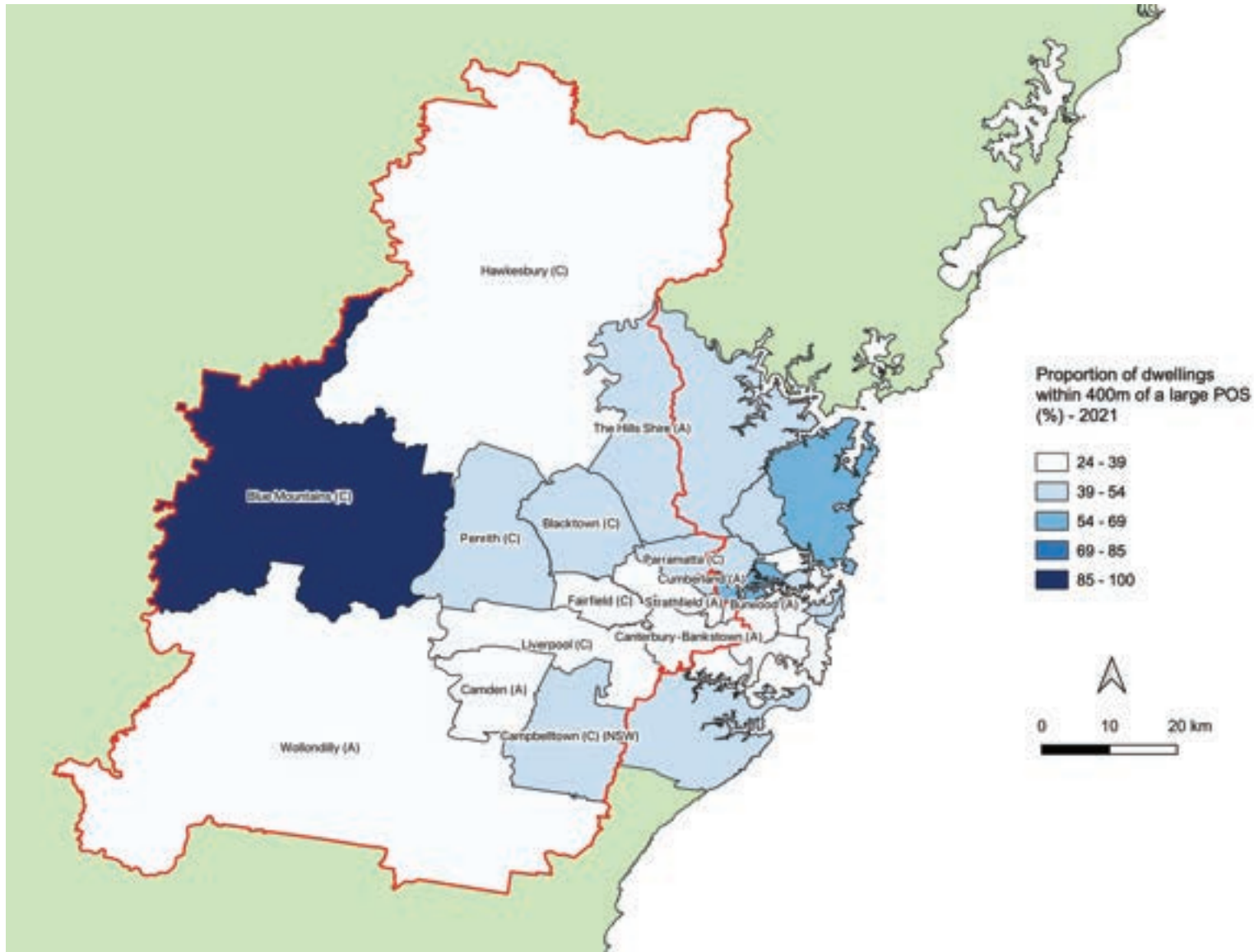
Source: Dufty-Jones, Rae. (2022). Access to POS 2021. AUO. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

6.2 URBAN VEGETATION COVER

Urban vegetation (e.g. public and national parks, residential gardens, nature strips, street trees etc) is vital to liveability. As Williams et al (2014) argue, urban vegetation cover brings various environmental, economic and health benefits to urban residents such as cooling the urban landscape as well as reducing both energy use and carbon dioxide emissions.

This metric uses the NSW Department of Planning and Environment's (DPE) Urban Vegetation Cover (UVC) dataset for the GSR.[17] This was created from analysis of high resolution (0.3m) vegetation imagery and digital aerial photography from 2016 (OHE 2019)[18].

Table 6.2 and Figure 6.2 present the percentage of a region's urban vegetation cover (all types of vegetation) of the region's total area. They show that, unlike many other liveability metrics covered in this report, urban vegetation cover is a strength of the WestInvest LGAs when compared to the non-WestInvest LGAs. Collectively, more than half (53.1%) of the WestInvest LGAs have some type of urban vegetation cover (compared to 44.8% of the area covered by the non-WestInvest LGAs).

Predictably, the Blue Mountains LGA had the highest urban vegetation cover at 85.6%. Despite this relative strength there are WestInvest LGAs that have comparatively poor urban vegetation cover. For example, only 25.4% of the Cumberland LGA has urban vegetation cover, which is considerably lower than the GSR average. This makes this LGA and others like it (e.g. Burwood and Strathfield) more vulnerable to other negative environmental impacts such as extreme heat.

Table 6.2: Urban Vegetation Cover (UVC) – all types of vegetation – as a percentage proportion of total of area, 2016.

Local Government Area	Proportion of LGA urban vegetation cover – all types of vegetation
Cumberland	25.4%
Burwood	27.2%
Strathfield	28.3%
Canterbury-Bankstown	30.9%
Parramatta	36.8%
Fairfield	38.1%
Blacktown	40.8%
Average WestInvest LGAs	**53.1%**
Average Non-WestInvest LGAs	**44.8%**
Penrith	61.7%
Liverpool	64.7%
Camden	65.5%
Campbelltown	69.4%
Wollondilly	69.8%
The Hills Shire	73.0%
Hawkesbury	79.0%
Blue Mountains	85.6%

Source: DPIE (2016).

[17]These data do not represent a complete wall-to-wall cover of the full extent of GSR, in particularly the non-urban areas of larger LGAs with more rural components, such as Hawkesbury, Wollondilly and Blue Mountains (OHE, 2019).
[18]It is unknown when this data will be updated.

Blue Mountains National Park, Katoomba, Blue Mountains, 2022.
Photo: Sally Tsoutas

Figure 6.2: Urban Vegetation Cover (UVC) – all types of vegetation – as a percentage proportion of total of LGA area, GSR, 2016.
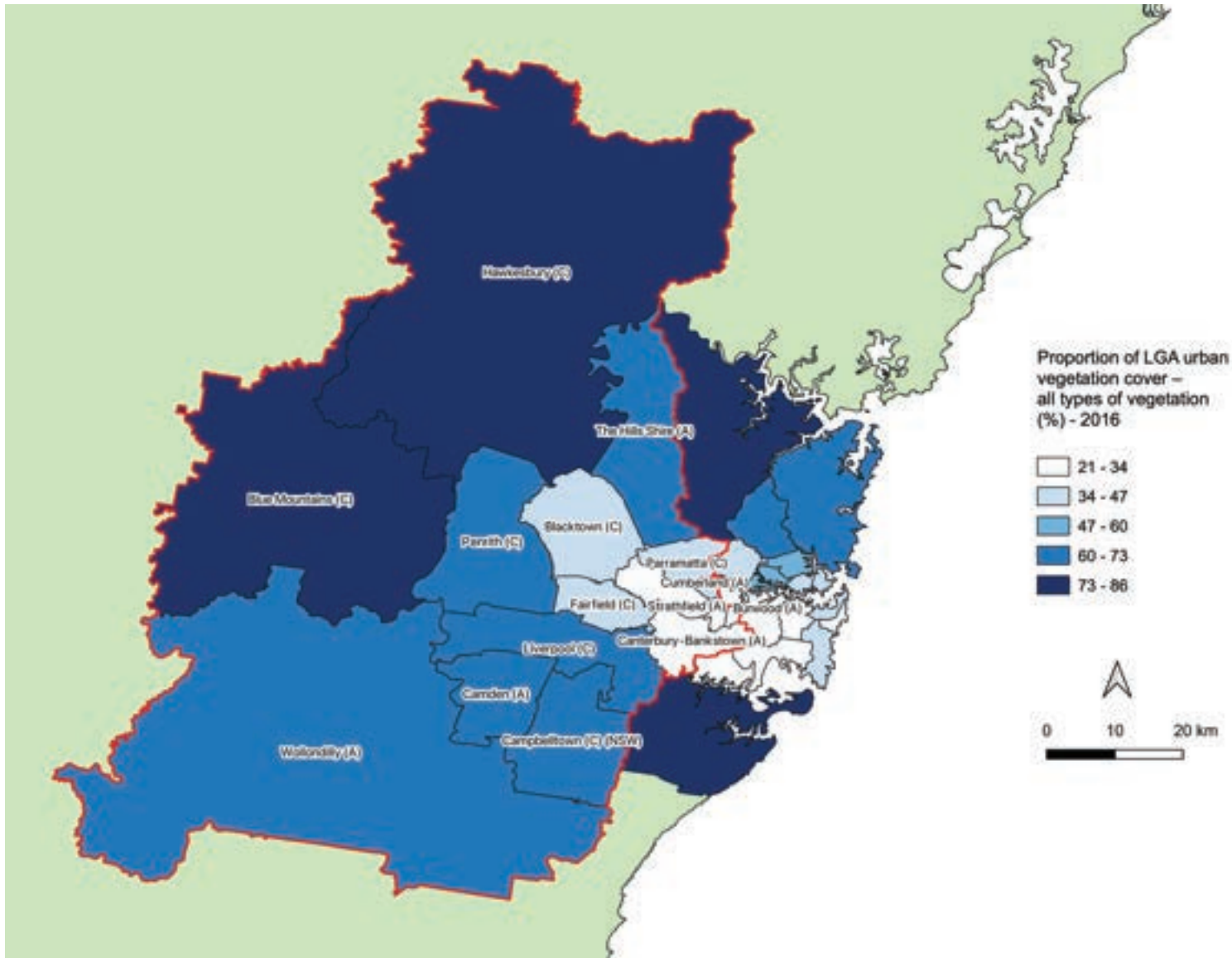
Source: Dufty-Jones, R. (2022). UVC 2016, NSW SEED Portal. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

6.3 HEAT VULNERABILITY INDEX

An area's vulnerability to heat is another important dimension of environmental amenity as a component of urban liveability, especially as communities adjust to the ongoing impacts of climate change. Areas vulnerable to extremes of heat tend to have higher concentrations of populations who are more sensitive, less adaptive and more exposed to the adverse effects of heat.

The Heat Vulnerability Index represents an area's exposure, sensitivity and adaptive capacity to urban heat on a scale of 1 to 5, with 1 representing low exposure, low sensitivity and high adaptive capacity and 5 representing high exposure, high sensitivity and low adaptive capacity. The Heat Vulnerability Index has been derived from the analysis of Land Surface Temperature data from Landsat 8 with vegetation cover data, integrated with socio-economic data from the 2016 ABS Census and mapped to the SA1 (OHE 2019: 3).

Table 6.3 and Figure 6.3 reveal that the WestInvest LGAs (3.0) are more vulnerable to extreme heat than non-WestInvest LGAs (2.3). However, there is considerable variability within the WestInvest LGAs group regarding individual Heat Vulnerability Index scores. For example, the Blue Mountains has a Heat Vulnerability Index of 1.1, meaning it has low exposure, low sensitivity and high adaptive capacity to extreme heat. With a Heat Vulnerability Index of 4.4, Fairfield sits at the other end of this scale, indicating that it has high exposure, high sensitivity and low adaptive capacity to extreme heat events.

Parts of Western Sydney are more vulnerable to heat due to their geography. Specifically, the low altitude (excluding the Blue Mountains) and inland location mean that this region does not benefit from the natural cooling that arises from coastal breezes. However, the region's natural vulnerability to heat is exacerbated by urban development decisions that create environments of dense concrete and lack of green spaces that act to absorb and amplify heat (Melville-Rea and Verschuer, 2022).

Table 6.3: Heat Vulnerability Index– Overall score, GSR, 2016.

Local Government Area	Heat Vulnerability Index (HVI) Score[1]
Fairfield	4.4
Cumberland	4.2
Canterbury-Bankstown	3.9
Liverpool	3.7
Burwood	3.6
Blacktown	3.5
Campbelltown	3.5
Penrith	3.1
Average WestInvest LGAs	**3.0**
Camden	2.7
Strathfield	2.7
Parramatta	2.6
Average WestInvest LGAs	**2.3**
Hawkesbury	1.9
The Hills Shire	1.7
Wollondilly	1.7
Blue Mountains	1.1

Source: DPIE (2016).
[1]Scale of 1-5 – where 1 represents areas that have low vulnerability to heat and 5 indicates areas that have high vulnerability to heat.

Figure 6.3: LGA Heat Vulnerability Index – Overall score, GSR, 2016.
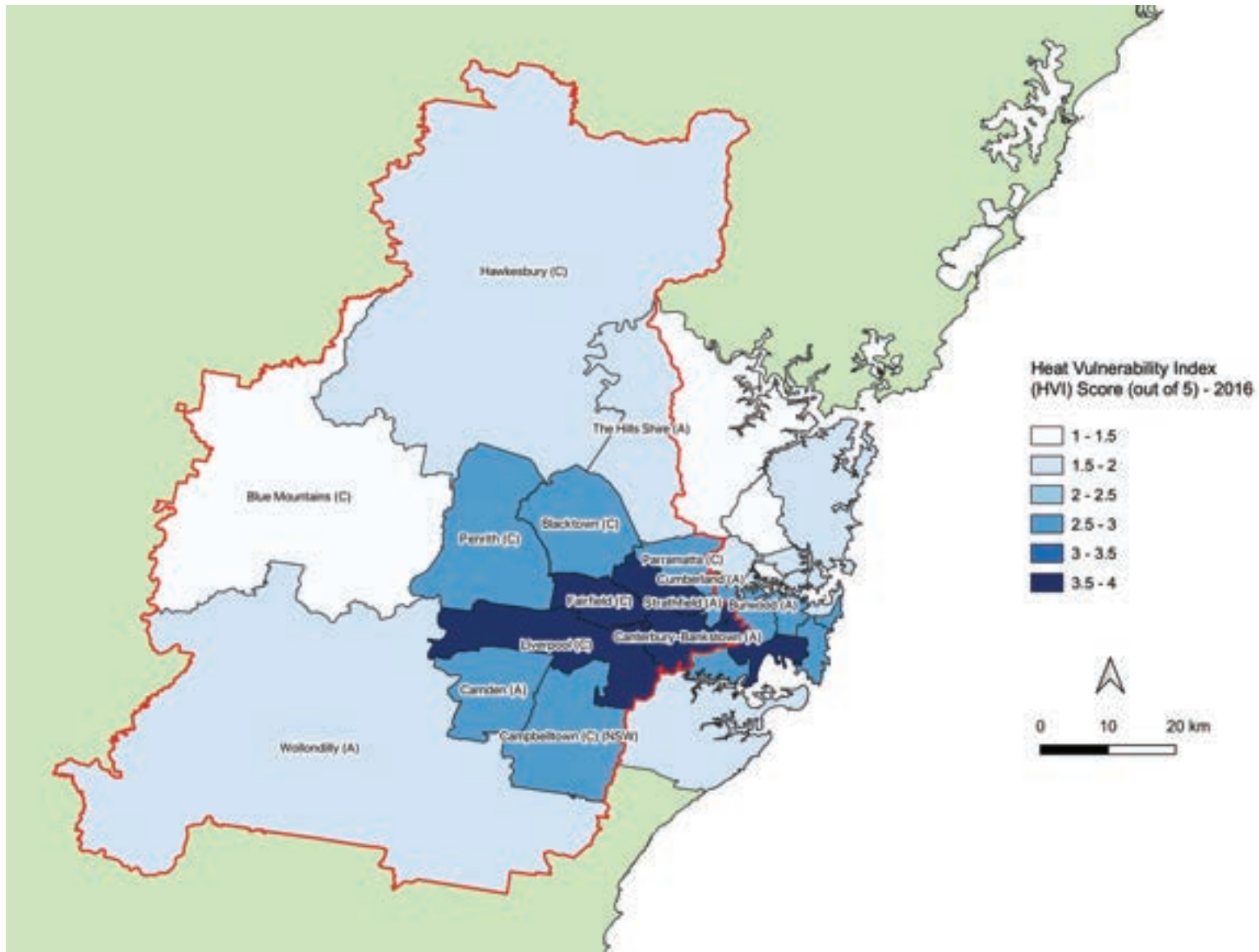
Source: Dufty-Jones, R. (2022). HVI 2016[1], NSW SEED Portal. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[1]Scale of 1-5 – where 1 represents areas that have low vulnerability to heat and 5 indicates areas that have high vulnerability to heat.

6.4 AIR QUALITY – PM2.5

Clean air is essential to urban liveability. Air quality is not only a determinant of human health, it also affects natural ecosystems, urban environments, agricultural crops and climate (DPIE 2020: 2). While the GSR's air quality is comparable with other cities in Australia and good by world standards, it has historically been worse in south-west and north-west Sydney. Furthermore, future deterioration in the GSR's air quality is likely through urbanisation and densification, increased transport and energy use, and climate change.

One measure of air quality is particulate matter (PM). Suspended particulates contribute to acute lower respiratory infections and other diseases such as cancer. Of these, the fine particulates or PM2.5 (diameter of 2.5 microns and smaller) are more deleterious to health as they can lodge deep in lung tissue and are therefore more injurious to health than coarser particulates. Some of the contributing sources of PM2.5 in the GSR are wood heaters (31%), industry (26%), on-road motor vehicles (19%), power stations (17%) and non-road diesel and marine emissions (6%) (DPIE, 2020:1).

This study assesses the annual concentrations of PM2.5 for 2019 and 2021. Both periods were selected as they offer insight into PM2.5 levels at two extremes. It should be noted that:

- The 2019 data include the impacts of the 2019/20 summer bushfires that negatively impacted the air quality in GSR that year.
- The 2021 data were influenced by the ongoing impacts of the COVID-19 lockdowns and the positive impact on the GSR's air quality.

Data for these two periods were sourced from the NSW DPIE Air Quality Monitoring Network which provides publicly available, continuous, high-quality measurements of air pollutant concentrations (DPIE, 2020: 7).

The data presented in Table 6.4 and Figures 6.4 and 6.5 needs to be interpreted with the following caveats:

a. Some LGAs (Blue Mountains, Burwood, Fairfield and Strathfield) have no Air Quality Monitoring Stations (AQMS) located within their boundaries so do not have any data associated with these regions.
b. Some LGAs (Camden, Canterbury-Bankstown, Penrith, and Wollondilly) have more than one AQMS. A measure for these LGAs was derived by averaging the AQMS data.
c. Some LGAs (Cumberland, Penrith, Sydney, and the Hills Shire) had AQMS established in 2021 and have no data for 2019.
d. All data should not be interpreted as providing representative geographical coverage of the whole of the GSR and that any regional comparisons should be made with caution.

Table 6.4 and Figure 6.4 show that in 2019 all WestInvest LGAs with AQMS data except for Penrith had annual concentrations of PM2.5 above 10 μg/m (average annual concentrations of greater than 10 μg/m's are known to be injurious to human health). The Hawkesbury LGA had the highest annual concentrations of PM2.5 due to significant bushfire events that occurred in and near this region in the latter half of 2019.

Table 6.4 and Figure 6.5 reveal a vastly different situation in 2021 with all WestInvest LGAs with AQMS data registering annual concentrations of PM2.5 well below 10 μg/m. These air quality results can partly be attributed to the lower rates of industry, transport and energy activities/consumption and associated reduction in emissions that were a consequence of the COVID-19 lockdowns, and the absence of bushfires.

Table 6.4: Average annual concentrations of LGA Particulate Matter (PM) 2.5 (micrograms per cubic metre), GSR, 2019 and 2021.

Local Government Area	PM2.5 annual average [μg/m≥] (2019)	PM2.5 annual average [μg/m≥] (2021)
Hawkesbury	13.1	6.8
Liverpool	12.8	7.9
Blacktown	11.9	6.9
Campbelltown	11.8	6.3
Wollondilly	11.8	4.9
Camden	11.6	6.7
Canterbury-Bankstown	11.1	6.9
Average WestInvest LGAs	**11.1**	**6.5**
Parramatta	10.5	6.6
Average Non-WestInvest LGAs	**10.1**	**6.6**
Penrith	4.9	6.9
Blue Mountains	n/a	n/a
Burwood	n/a	n/a
Cumberland	n/a	6.1
Fairfield	n/a	n/a
Strathfield	n/a	n/a
The Hills Shire	n/a	5.9

Source: DPE (2022).

Figure 6.4: Average annual concentrations of LGA Particulate Matter (PM) 2.5 (μg/m), GSR, 2019[#].

Figure 6.5: Average annual concentrations of LGA Particulate Matter (PM) 2.5 (µg/m), GSR, 2021[#].
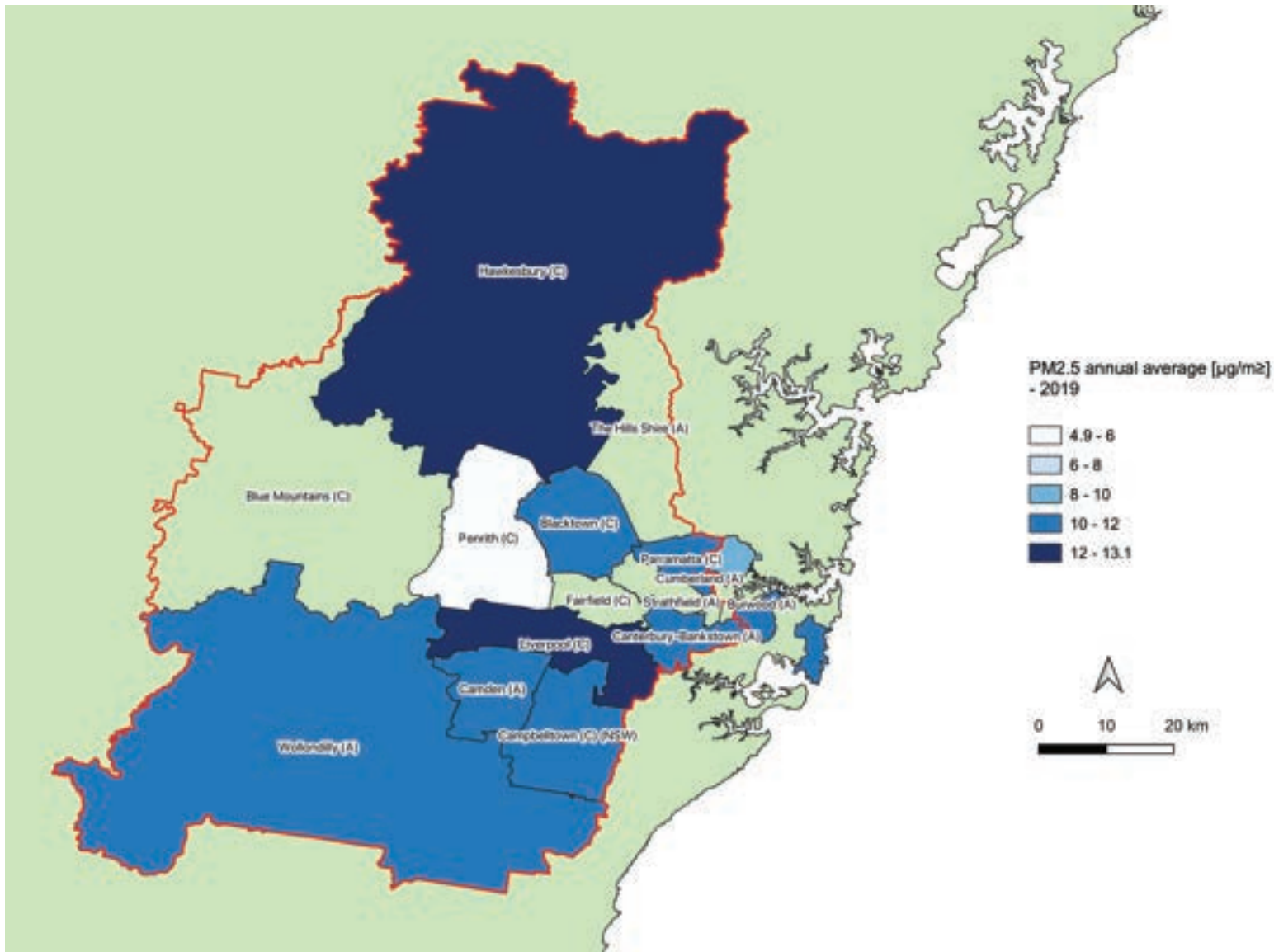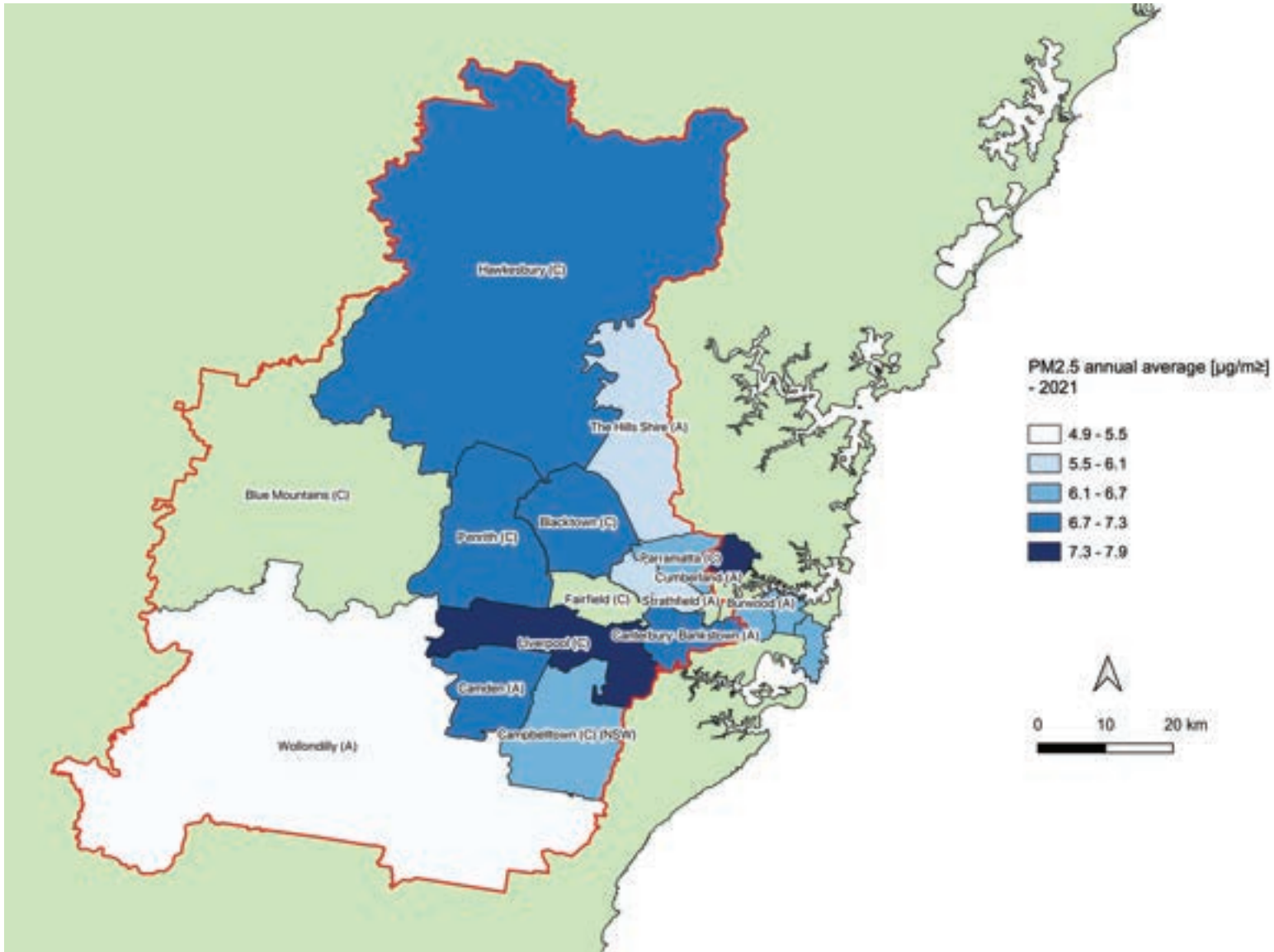
Source: Dufty-Jones, R. (2022). NSW Air Quality Monitoring Network 2021, DPIE. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.
[#]NB data were affected by the lower rates of industry, transport and energy activities/consumption and associated reduction in emissions that were a consequence of the COVID-19 lockdowns.

7 SAFE SPACES

Two key metrics were selected to better understand how the category of safe spaces could be compared between WestInvest LGAs and non-WestInvest LGAs: 1) Crime incidents that occurred in public open spaces and 2) Traffic incidents involving pedestrians[19].

7.1 CRIME INCIDENTS IN PUBLIC OPEN SPACES

Crime can be both a subjective measure (e.g. perceptions of crime, fear of crime) or an objective measure (e.g. rates of crimes reported to police). Lowe et al (2013: 19) note that the 'large number of crime and safety indicators in the liveability literature suggests that this is a key construct of liveability', with areas with lower crime rates considered more liveable.

For this research the study sourced data through the NSW Bureau of Crime Statistics and Research (BOCSAR). BOCSAR's crime data consists of criminal incidents reported to, or detected by, police and recorded on the NSW Police Force's Computerised Operational Policing System. Relevant to this research, BOSCAR provides data on:

- number of offences recorded by police in each LGA; and,
- spatial distribution of incidents, including locations and premises at which these incidents occur.

The research sourced data for 2021[20] on the number of incidents of crime, in each LGA in the GSR, on premises considered public open space (an amalgamation of two categories of premises: 'recreation' and 'outdoor/public place').

The unweighted data in Table 7.1 (and mapped in Figure 7.1) illustrate that when examining LGA public open space crime incidents as a percentage proportion of all public open space crime incidents in the GSR (2021), the WestInvest region accounts for just over half (54%) of all public open space crime incidents in the GSR. Blacktown had the highest rate of public open space crime incidents across the GSR with 10%, followed by Canterbury-Bankstown (8%).

Table 7.1: Crime Incidents in public open spaces for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, Jan-Dec 2021.

Local Government Area	Percentage of regional POS Crime Incidents (as a proportion of all POS Crime Incidents in the GSR)
All WestInvest LGAs	**54%**
All Non-WestInvest LGAs	**46%**
Blacktown	10%
Canterbury-Bankstown	8%
Penrith	6%
Cumberland	5%
Parramatta	5%
Liverpool	5%
Fairfield	4%
Campbelltown	4%
Blue Mountains	2%
Burwood	1%
Strathfield	1%
Wollondilly	1%
Camden	1%
Hawkesbury	1%
The Hills Shire	1%

Source: BOSCAR (2022).

[19]These were the only two datasets available in 2022 that met the parameters defined for the study.

[20]This report draws upon crime statistics from Jan-Dec 2021, published in 2022. This data was the latest available at the time of writing this report in 2022.

Figure 7.1: LGA public open space crime incidents as a percentage proportion of all public open space crime incidents in GSR, GSR, Jan-Dec 2021.
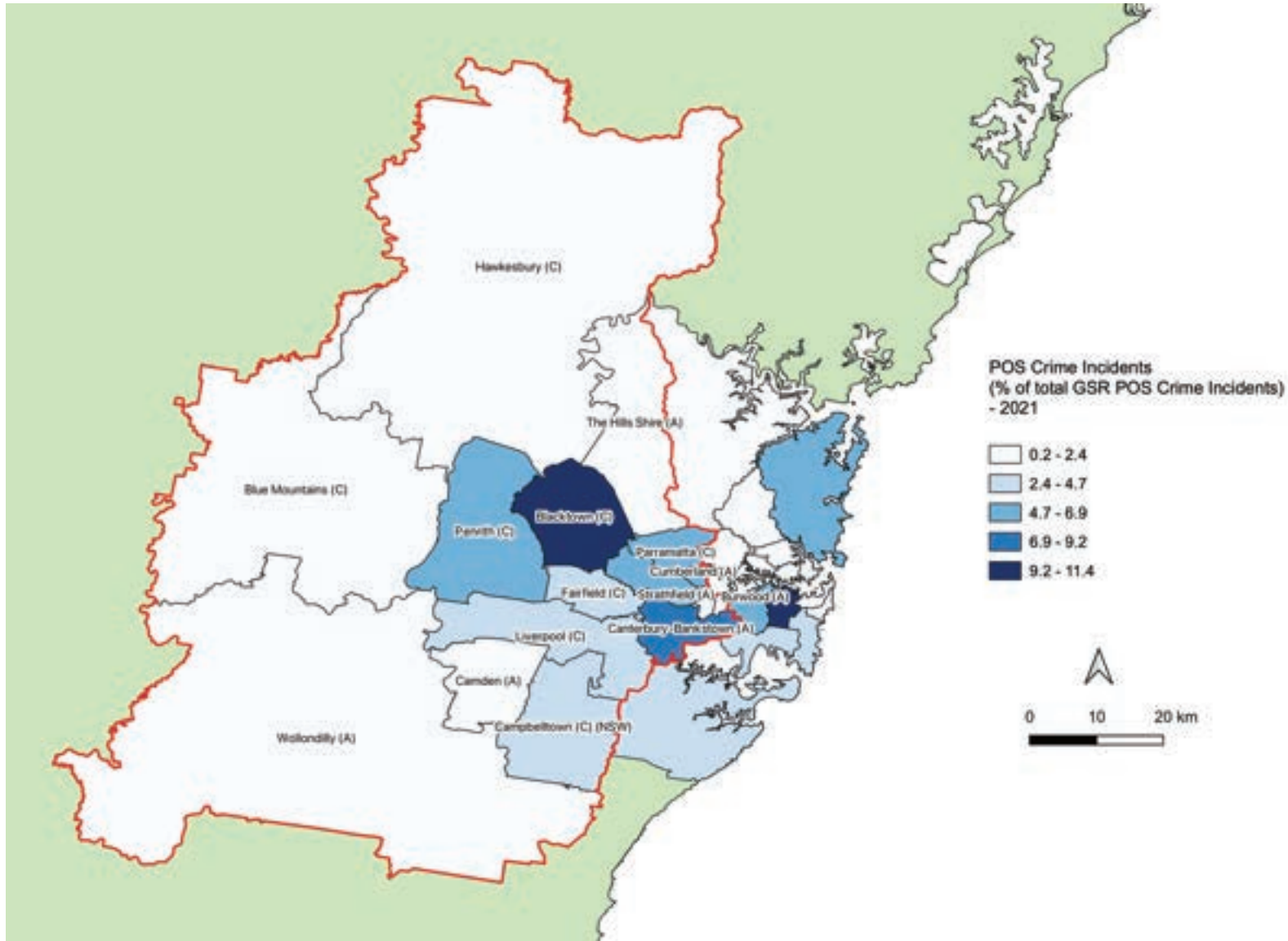
Source: Dufty-Jones, R. (2022). NSW Incidents of Crime Data 2021, BOSCAR. ASGS Edition 3, using QGIS [GIS software], version 3.16. Sydney, WSU.

Main Street, Blacktown, 2022.
Photo: Sally Tsoutas

7.2 TRAFFIC INCIDENTS INVOLVING PEDESTRIANS

Traffic and associated accidents contribute to community safety. Pedestrian safety is also a component of an area's 'walkability' – a factor in urban liveability.

For this metric, data on traffic incidents involving pedestrians for all GSR LGAs in 2020 were sourced through the NSW Centre for Road Safety[21].

The Centre collates road crash statistics using data from NSW Health, the State Insurance Regulatory Authority, iCare (Insurance & Care NSW) and the NSW Police Force. Crashes included in the data are those that:

• Were reported to the police
• Occurred on roads open to the public
• Involved at least one moving road vehicle
• Involved at least one person being killed or injured or at least one motor vehicle being towed away.

The Centre defines pedestrians as any person who is not in, on, boarding, entering, alighting or falling from a road vehicle at the time of the crash.

The unweighted data presented in Table 7.2 (and mapped in Figure 7.2) presents traffic incidents involving pedestrians as a percentage of the total traffic incidents involving pedestrians in the GSR. The data show that the regional proportions of traffic incidents involving pedestrians were evenly distributed – 50:50 – between the WestInvest and non-WestInvest LGAs.

Canterbury-Bankstown accounted for 13% of all pedestrian traffic incidents recorded in the GSR during 2020, which was more than twice the proportion of the next-ranked WestInvest LGAs – Parramatta, Cumberland and Blacktown – each accounting for 6% of all pedestrian traffic incidents recorded in the GSR.

Table 7.2: Traffic incidents involving pedestrians for individual WestInvest LGAs, the WestInvest and non-WestInvest regions, 2021.

Local Government Area	Percentage of Traffic Incidents Involving Pedestrians (as a proportion of total Traffic Incidents Involving Pedestrians GSR)
All Non-WestInvest LGAs	**50%**
All WestInvest LGAs	**50%**
Canterbury-Bankstown	13%
Parramatta	6%
Cumberland	6%
Blacktown	6%
Fairfield	5%
Liverpool	3%
Penrith	3%
Campbelltown	2%
Burwood	1%
Camden	1%
Wollondilly	1%
Strathfield	1%
The Hills Shire	1%
Hawkesbury	1%
Blue Mountains	0%

Source: NSW Centre for Road Safety (2022).

[21]This report draws upon data published as part of a report which was finalised and published in Oct 2021. This data was the latest available at the time of writing this report in 2022.

Figure 7.2: LGA traffic incidents involving pedestrians as a percentage proportion of all pedestrian traffic incidents in GSR, GSR, 2021.
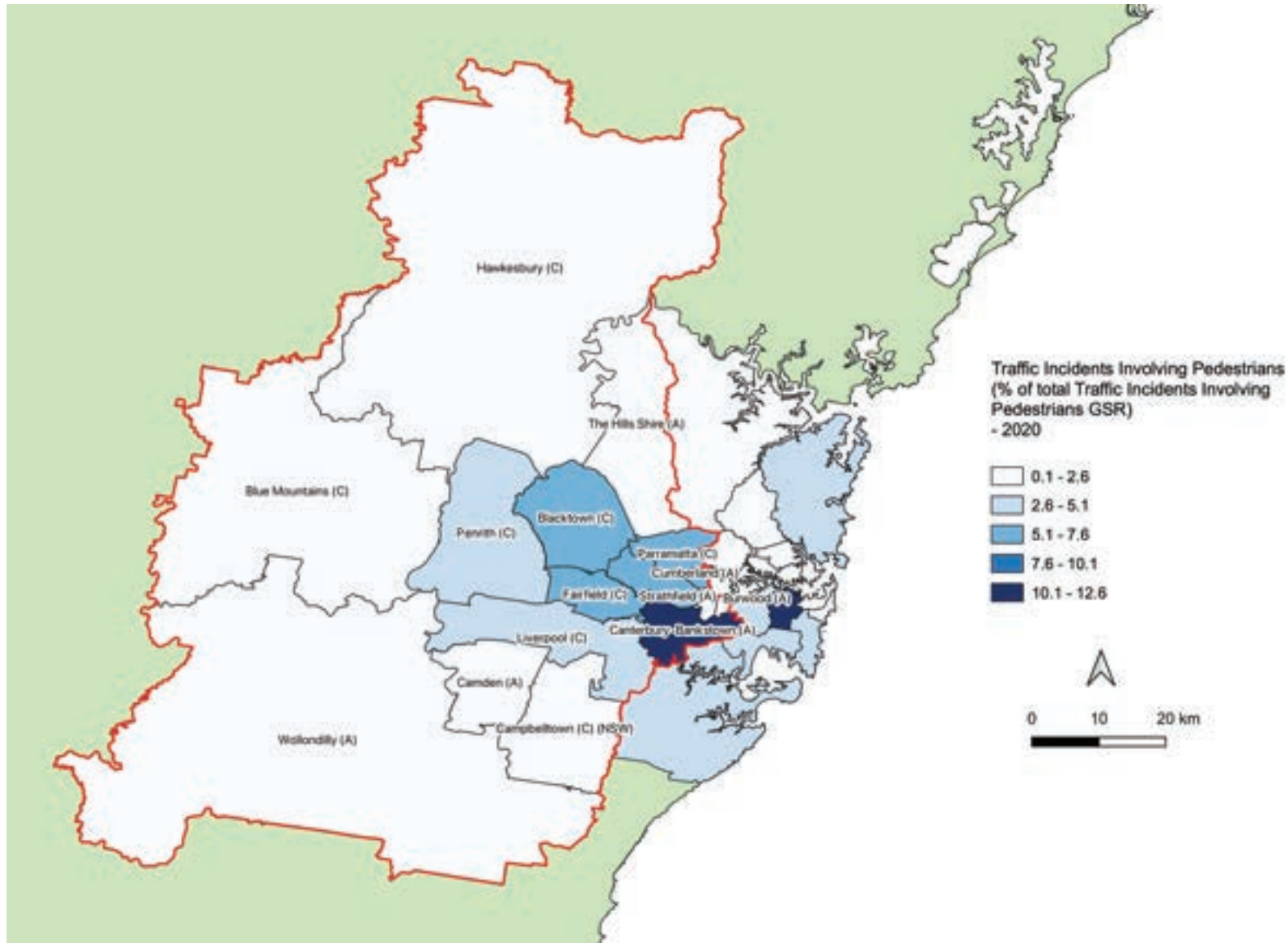
Road in Blacktown, 2022.
Photo: Sally Tsoutas

8 KEY FINDINGS AND IMPLICATIONS

This study identified 14 liveability metrics for which data were available, met the study's parameters (p.16) and related (to varying degrees) to the liveability of the GSR (excluding the Central Coast) (see Table 8.1).

Table 8.1: List of 14 Liveability Metrics used in study

VIBRANT COMMUNITIES	
1	Social Infrastructure Index
2	Proportion of employed population working locally
3	Attendance and participation in cultural activities
4	Participation in sport or other physical activities
ACCESSIBILITY	
5	Metro ARIA
6	Walkability Index
7	ADII
8	IRSAD
ENVIRONMENTAL AMENITY	
9	Access to public open spaces
10	Urban vegetation cover
11	Heat Vulnerability Index
12	Air Quality PM2.5 annual average [μg/m≥]
SAFE SPACES	
13	Crime Incidents in public open spaces
14	Traffic Incidents Involving Pedestrians

Data relating to the set of 14 Liveability metrics were then acquired, analysed and mapped:

- For the 15 WestInvest LGAs; and,
- Compared with non-WestInvest LGAs.

Notwithstanding obvious limitations with the age of some of the data, this work has collated important liveability data on each metric to provide a broad set of baseline measurements across the scope of liveability in WestInvest LGAs in 2022 that the Program may impact.

In this section:

- We identify three key areas that offer opportunities to invest in infrastructure that will make a transformative impact on the liveability of the 15 WestInvest LGAs.
- We propose next steps regarding any future evaluation of the extent to which the WestInvest Program has contributed to improved liveability in Western Sydney.

8.1 OPPORTUNITIES TO INVEST IN INFRASTRUCTURE THAT WILL HAVE A TRANSFORMATIVE IMPACT ON THE LIVEABILITY OF WESTERN SYDNEY

The data presented in this report, combined with the results from the 'Have Your Say' survey[22], indicate that there are many areas where the WestInvest Program can make a difference to improve the liveability of the 15 eligible LGAs.

Three key areas emerged around how the WestInvest Program can make a transformational impact on the liveability of Western Sydney:

1. Green infrastructure and public open spaces.
2. Community infrastructure.
3. Walkability.

8.1.1. GREEN INFRASTRUCTURE AND PUBLIC OPEN SPACES

A major existing strength of the WestInvest region's liveability is its overall high rate of urban vegetation cover. On average, 53.1% of the area of WestInvest LGAs had some form of urban vegetation cover, compared to the average of 44.8% across non-WestInvest LGAs.

While urban vegetation cover varied across the individual LGAs in Western Sydney, this collective result should be recognised as a significant 'liveability asset' of the WestInvest region that contributes substantially to Greater Sydney's 'Green Grid' (NSW Government Architect, 2017). Indeed, we believe that WestInvest is uniquely positioned to advance this feature of Western Sydney and support the region to become the 'lungs' of Greater Sydney.

[22]NB: The survey response rate was not large enough to be considered a statistically representative sample of the 15 WestInvest LGAs' populations.

The WestInvest Program can strategically invest in the urban vegetation cover strength of Western Sydney in two ways: 1) preserve and enhance urban vegetation cover in those areas where coverage is strongest (e.g. Blue Mountains, Hawkesbury, The Hills Shire, Wollondilly, Camden, Liverpool and Penrith); 2) prioritise the development of urban vegetation cover in those LGAs that have coverage below 50% of their total area (e.g. Cumberland, Burwood, Strathfield, Canterbury-Bankstown, Parramatta, Fairfield, Blacktown).

Strategic investment in the urban vegetation cover of the Western Sydney region by the Program is also a priority identified by participants in the 'Have Your Say' survey (WestInvest Program Office, 2022); where 35% of all those who responded identified 'quality green and open spaces' to be a priority: the highest result across the six priority areas of the Program. This was particularly the case for respondents from:

• Blacktown (38%)
• Blue Mountains (37%)
• Canterbury Bankstown (37%)
• Hawkesbury (37%)
• Liverpool (37%)
• Parramatta (37%) and
• Wollondilly (36%)

Last, investing in the urban vegetation cover and vision of Western Sydney as the 'lungs' of Greater Sydney, the Program will also facilitate improvements[23] in other aspects of liveability such as improving:

• air quality,
• access to public open spaces,
• walkability, and
• heat resilience.

8.1.2. COMMUNITY INFRASTRUCTURE

The second area where WestInvest can generate a transformative impact on the liveability of Western Sydney concerns community infrastructure. Community infrastructure supports community liveability by promoting and facilitating community-based activities. This study found that in terms of social[24] infrastructure, WestInvest LGAs rated comparatively lower (5.8/15[25]) than non-WestInvest LGAs (8.7/15). Indeed, 24% of 'Have Your Say' survey respondents identified 'community infrastructure' as a priority in their LGA (the second-highest priority after 'quality green and open spaces'). This was a particular priority for participants from Penrith (44%) and Campbelltown (25%).

Drilling down, this research showed that, despite a robust level of overall participation in sport and other physical activities in Western Sydney, the role organisations and venues play in facilitating this participation was considerably lower than that in Eastern Sydney (52.5% compared to 68.5%).

Turning to 'arts and cultural infrastructure', it was also found that pockets of strong attendance and participation in cultural activities in Western Sydney would benefit through the support of the WestInvest Program. Our findings are supported by the 'Have Your Say' survey, where 10% of all participants identified 'arts and cultural infrastructure' as a priority in their area. The following LGAs had high response rates regarding improving this type of infrastructure in their region:

• Camden (19%)
• Parramatta (15%)
• Campbelltown (13%)
• Canterbury-Bankstown (13%)
• Cumberland (13%) and
• Wollondilly (13%).

Place-based approaches will be key to the successful design and delivery of WestInvest projects funded to enhance the community, arts and cultural facilities in Western Sydney. Place-based approaches will ensure projects respond to the unique social, economic and cultural strengths and needs of each LGA.

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[23]Potential for improvements in the above liveability metrics will arise both directly and indirectly from urban vegetation cover. Similarly, such flow-on effects will vary depending on the types of infrastructures funded.

[24]Social infrastructure includes:

cultural and leisure centres (e.g., museums, art galleries, libraries, cinemas, theatres, community centres etc.)

education (childcare, schools etc.)

health and social services (e.g., dentists, doctors, pharmacies etc.)

sports and recreation facilities (swimming pools, sports clubs etc.)

Community infrastructure, for the purposes of the WestInvest Program, only includes two of these four:

cultural and leisure centres (including community centres)

[25]Where 0 indicates low accessibility to social infrastructure and 15 indicates high accessibility to social infrastructure.

8.1.3. WALKABILITY

Using the Australian Urban Observatory's (AUO's) 'Walkability Index'[26] this study found that non-WestInvest LGAs overall had higher walkability (an average score of +1.9) compared to WestInvest LGAs (an average score of -0.7).

While 'walkability' is one of the more place-specific/subjective measures of liveability, it is also an important dimension of liveability that can contribute to other positive quality of life factors including:

- social connectedness
- sustainability
- physical activity and positive health outcomes
- actual and perceived public safety[27].

Walkability cuts across three focus areas of the WestInvest Program:

- Local traffic programs,
- High street activation, and
- Quality green and open spaces

Program investments in these priority areas will therefore contribute to closing the 'walkability' gap currently experienced by those living in Western Sydney.

8.2 FURTHER RESEARCH AND COLLABORATION

Continuing the tradition of 'once in a generation' urban transformation programs such as the Sydney 2000 Olympic Games and the Building Better Cities, WestInvest will make a transformational investment in the urban infrastructure of Western Sydney, being a significant contributor to the creation of liveable places in the region.

Research and evaluation will be key to understand and account for the 'place-making' impacts of the Program over the short and long term.

In particular, as outlined in the WestInvest Program Guidelines, the required monitoring and evaluation of WestInvest project impacts provide a unique opportunity for the NSW Government to establish an evidence base and innovate new data collection methods to better capture the non-traditional benefits

(e.g., wider economic, green infrastructure, public space benefits) that are expected to result from this investment[28].

8.3 LIMITATIONS OF THE STUDY

This report does not represent a detailed technical report, but instead provides an overview of the process, methodology and findings of the investigation into a selection of bespoke measures of urban 'liveability' that can be applied at a macro scale to the GSR, with comparisons made between the fifteen (15) LGAs of the WestInvest Program and the rest of GSR (excluding Central Coast). Because of this, the level of detail provided within this report has been deliberately reduced to support the broad digestibility of the data and analysis of this study.

The analysis presented within this report has relied on currently available data and research. Some of the data used were limited by when they were collected and how frequently they are updated. This is especially the case for those data collected prior to the COVID-19 pandemic. However even data collected after March 2020 should be analysed with some degree of caution as it remains to be seen what the long-term impacts of COVID-19 will be on patterns on work and commuting. Further research to better understand these changes will be essential to ensure the best future public policy responses.

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[26]The Walkability Index has an average of 0. A negative result indicates low/poor walkability and a positive result indicates high/good walkability.

[27]This research showed that the WestInvest region accounted for a little over half (54%) of all public open space crime incidents in the GRS and exactly half of all traffic incidents involving pedestrians in the GSR.

[28]See for example NSW DPE (2022); ARUP (2017)

Echo Point Lookout, Katoomba, Blue Mountains, 2018.
Photo: Sally Tsoutas

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APPENDIX 1:
LIVEABILITY PROFILES FOR 15 WESTINVEST LGAS

A1.1. BLACKTOWN

Table A1.1: Blacktown LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest

	Blacktown	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	5.6	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	33.3	33.5	36.6
Cultural activity participation (%) - 2018	25.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	85.9	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	50.6	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	2.4	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-0.7	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	71.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	71.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	993.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	8.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	88.5	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	40.6	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	41.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	11.9	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	6.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	9.9	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	6.1	49.8	50.2

A1.2. BLUE MOUNTAINS

Table A1.2: Blue Mountains LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

LGAs	Blue Mountains	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	4.2	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	47.5	33.5	36.6
Cultural activity participation (%) - 2018	32.0	29.0	38.0
Cultural activity attendance (%) - 2018	89.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	91.4	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	51.2	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	3.1*	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-2.3	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1042.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	9.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	100.0	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	100.0	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	86.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	1.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	–	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	1.7	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	0.3	49.8	50.2

* Incomplete data – only 102 out of the total 198 SA1s in the Blue Mountains LGA had Metro ARIA data.

A1.3. BURWOOD

Table A1.3: Burwood LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Burwood	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	9.2	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	16.2	33.5	36.6
Cultural activity participation (%) - 2018	38.0	29.0	38.0
Cultural activity attendance (%) - 2018	90.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	88.4	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	58.4	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	1.2	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	2.2	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	73.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	74.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1043.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	9.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	72.8	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	26.4	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	27.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	4.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	–	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	0.8	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	0.6	49.8	50.2

A1.4. CAMDEN

Table A1.4: Camden LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Camden	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	4.5	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	33.2	33.5	36.6
Cultural activity participation (%) - 2018	23.0	29.0	38.0
Cultural activity attendance (%) - 2018	77.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	87.4	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	63.4	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	3.1	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-1.9	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	75.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	76.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1056.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	9.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	84.4	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	27.9	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	66.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	11.6	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	6.7	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	1.3	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	1.0	49.8	50.2

A1.5. CAMPBELLTOWN

Table A1.5: Campbelltown LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Campbelltown	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	5.4	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	36.4	33.5	36.6
Cultural activity participation (%) - 2018	22.0	29.0	38.0
Cultural activity attendance (%) - 2018	78.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	79.6	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	42.0	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	3.0	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-1.2	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	71.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	948.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	5.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	89.9	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	53.1	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	69.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	11.8	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	6.3	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	4.1	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	1.5	49.8	50.2

A1.6. CANTERBURY-BANKSTOWN

Table A1.6: Canterbury-Bankstown LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Canterbury-Bankstown	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	7.6	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	32.8	33.5	36.6
Cultural activity participation (%) - 2018	31.0	29.0	38.0
Cultural activity attendance (%) - 2018	79.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	88.3	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	56.4	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	1.5	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	0.4	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	69.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	67.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	961.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	6.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	75.8	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	27.4	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	31.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	4.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	11.1	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	6.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	7.5	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	12.6	49.8	50.2

A1.7. CUMBERLAND

Table A1.7: Cumberland LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Cumberland	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	7.2	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	25.0	33.5	36.6
Cultural activity participation (%) - 2018	29.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	84.0	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	53.1	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	1.8	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	0.3	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	71.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	959.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	5.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	84.7	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	25.2	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	25.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	4.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	6.1	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	5.3	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	5.8	49.8	50.2

A1.8. FAIRFIELD

Table A1.8: Fairfield LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Fairfield	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	6.9	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	33.3	33.5	36.6
Cultural activity participation (%) - 2018	29.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	82.1	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	47.7	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	2.1	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	0.2	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	69.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	896.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	2.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	79.3	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	38.4	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	38.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	4.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	–	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	3.8	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	5.2	49.8	50.2

A1.9. HAWKESBURY

Table A1.9: Hawkesbury LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Hawkesbury	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	4.1	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	49.6	33.5	36.6
Cultural activity participation (%) - 2018	26.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	75.4	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	41.8	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	2.2	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-2.0	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1014.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	9.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	66.2	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	23.6	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	79.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	2.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	13.1	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	6.8	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	1.0	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	1.1	49.8	50.2

A1.10. LIVERPOOL

Table A1.10: Liverpool LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Liverpool	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	6.0	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	34.4	33.5	36.6
Cultural activity participation (%) - 2018	29.0	29.0	38.0
Cultural activity attendance (%) - 2018	78.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	85.6	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	48.3	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	2.3	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-0.8	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	972.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	6.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	83.0	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	36.0	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	65.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	4.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	12.8	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	7.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	4.6	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	3.4	49.8	50.2

A1.11. PARRAMATTA

Table A1.11: Parramatta LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Parramatta	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	7.6	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	29.1	33.5	36.6
Cultural activity participation (%) - 2018	34.0	29.0	38.0
Cultural activity attendance (%) - 2018	84.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	94.3	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	63.8	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	1.7	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	0.3	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	76.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1063.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	10.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	89.3	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	46.7	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	37.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	10.5	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	6.6	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	5.4	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	6.3	49.8	50.2

A1.12. PENRITH

Table A1.12: Penrith LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Penrith	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	5.7	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	43.1	33.5	36.6
Cultural activity participation (%) - 2018	27.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	81.1	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	51.0	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	3.1	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-1.1	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	988.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	8.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	89.1	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	47.0	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	62.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	4.9	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	6.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	5.7	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	2.9	49.8	50.2

A1.13. STRATHFIELD

Table A1.13: Strathfield LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Strathfield	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	8.2	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	14.1	33.5	36.6
Cultural activity participation (%) - 2018	29.0	29.0	38.0
Cultural activity attendance (%) - 2018	77.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	92.6	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	54.2	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	1.1	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-0.4	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	74.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	75.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1063.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	10.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	81.9	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	25.4	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	28.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	3.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	–	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	0.8	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	0.7	49.8	50.2

A1.14. THE HILLS SHIRE

Table A1.14: The Hills Shire LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	The Hills Shire	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	4.9	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	32.8	33.5	36.6
Cultural activity participation (%) - 2018	29.0	29.0	38.0
Cultural activity attendance (%) - 2018	76.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	–	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	–	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	2.6	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-1.0	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	79.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	80.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1133.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	10.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	81.7	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	45.7	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	73.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	2.0	3.0	2.0
PM2.5 annual average [μg/m≥] - 2019	–	11.1	10.1
PM2.5 annual average [μg/m≥] - 2021	5.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	1.5	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	1.4	49.8	50.2

A1.15. WOLLONDILLY

Table A1.15: Wollondilly LGA Liveability Metrics compared to all WestInvest LGAs and non-WestInvest LGAs

	Wollondilly	WestInvest LGAs	Non-WestInvest LGAs
VIBRANT COMMUNITIES			
Social Infrastructure Index Score (Scale: 0 = low and -15 = high accessibility) - 2021	3.5	6.0	8.1
Proportion of employed population who live and work in the same LGA (%) - 2021	35.2	33.5	36.6
Cultural activity participation (%) - 2018	30.0	29.0	38.0
Cultural activity attendance (%) - 2018	78.0	79.0	87.0
Participated in a sport or other physical activity – total (%) - 2021	89.8	86.1	94.7
Participated in a sport or other physical activity – via an organisation or venue (%) - 2021	52.8	52.5	68.5
ACCESSIBILITY			
Metro ARIA Score (Scale: 1= high and 5 = low accessibility) - 2015	n/a	2.2	1.5
Walkability Index Score (avg. = 0; n<0 poor/low and n>0 good/high walkability) - 2021	-2.8	-0.7	1.7
ADII - Access (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	70.0	72.0	75.0
ADII - Overall Score (Scale: 0 = poor and 100 = good/high digital inclusion) - 2021	72.0	72.0	76.0
IRSAD Score (high score = high advantage and low disadvantage) - 2016	1030.0	1011.0	1117.0
IRSAD Decile (Scale: 1 = most disadvantaged and 10 = most advantaged) - 2016	9.0	8.0	10.0
ENVIRONMENTAL AMENITY			
Proportion of dwellings within 400m of a public open space (%) - 2021	63.1	82.0	83.0
Proportion of dwellings within 400m of a large public open space (%) - 2021	30.9	39.6	40.8
Proportion of LGA urban vegetation cover – all types of vegetation (%) - 2016	70.0	53.0	45.0
Heat Vulnerability Index Score (Scale: 1 = low vulnerability and 5 = high vulnerability to heat) - 2016	2.0	3.0	2.0
PM2.5 annual average [µg/m≥] - 2019	11.8	11.1	10.1
PM2.5 annual average [µg/m≥] - 2021	4.9	7.2	6.6
SAFE SPACES			
Public open space Crime Incidents (% of public open space Crime Incidents in the GSR) - 2021	0.7	54.1	45.9
Traffic Incidents Involving Pedestrians (% of total Traffic Incidents Involving Pedestrians GSR) - 2021	1.0	49.8	50.2

APPENDIX 2:
2021 CENSUS PROFILES FOR 15 WESTINVEST LGAs

A2.1. BLACKTOWN

Table A1.1: Blacktown LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Blacktown	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**396,776**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**1,674**	**1,698**	**3,720**
Population (% of total population GSR)	8.1	55.1	44.9
Median Age	34.4	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	10.9	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	7.9	7.6	6.3
Government Primary (% of total population attending primary education institution region)	63.1	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	53.1	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	35.4	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	12.9	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	18.9	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.5	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	3.4	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	25.5	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	6.6	8.5	14.6
Indigenous Population (% of total population region)	7.8	6.8	4.5
Born Overseas (% of total population region)	49.6	46.6	42.6
Arrived after 2010 (% of total population region)	15.0	13.3	13.4
A parent born overseas (% of total population region)	76.1	74.1	67.4
Speaks English Only (% of total population region)	47.6	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	41.3	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	5.3	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Indo-Aryan	39	Chinese	20	Chinese	22
	2	Southeast Asian	14	Indo-Aryan	14	Indo-Aryan	17
	3	Arabic	6	Arabic	11	Arabic	11
	4	Chinese	6	Vietnamese	8	Southeast Asian	6
	5	Tamil	4	Southeast Asian	5	Vietnamese	5

A2.2. BLUE MOUNTAINS

Table A2.2: Blue Mountains LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Blue Mountains	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**78,121**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**55**	**1,698**	**3,720**
Population (% of total population GSR)	1.6	55.1	44.9
Median Age	45.2	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	8.5	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	7.8	7.6	6.3
Government Primary (% of total population attending primary education institution region)	68.8	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	54.8	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	22.8	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	10.0	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	20.9	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	1.0	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	1.1	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	23.9	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	5.9	8.5	14.6
Indigenous Population (% of total population region)	5.8	6.8	4.5
Born Overseas (% of total population region)	20.8	46.6	42.6
Arrived after 2010 (% of total population region)	2.1	13.3	13.4
A parent born overseas (% of total population region)	43.1	74.1	67.4
Speaks English Only (% of total population region)	90.1	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	6.2	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	0.5	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Spanish	10	Chinese	20	Chinese	22
	2	Chinese	8	Indo-Aryan	14	Indo-Aryan	17
	3	German	8	Arabic	11	Arabic	11
	4	Southeast Asian	6	Vietnamese	8	Southeast Asian	6
	5	Indo-Aryan	5	Southeast Asian	5	Vietnamese	5

A2.3. BURWOOD

Table A2.3: Burwood LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Burwood	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**40,217**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**5,667**	**1,698**	**3,720**
Population (% of total population GSR)	0.8	55.1	44.9
Median Age	34.1	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	5.5	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	5.1	7.6	6.3
Government Primary (% of total population attending primary education institution region)	56.1	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	47.2	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	18.0	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	9.5	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	18.9	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	1.9	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	9.4	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	15.2	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	23.4	8.5	14.6
Indigenous Population (% of total population region)	5.2	6.8	4.5
Born Overseas (% of total population region)	63.0	46.6	42.6
Arrived after 2010 (% of total population region)	26.5	13.3	13.4
A parent born overseas (% of total population region)	86.1	74.1	67.4
Speaks English Only (% of total population region)	31.4	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	49.2	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	13.9	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Chinese	46	Chinese	20	Chinese	22
	2	Indo-Aryan	15	Indo-Aryan	14	Indo-Aryan	17
	3	Arabic	6	Arabic	11	Arabic	11
	4	Italian	5	Vietnamese	8	Southeast Asian	6
	5	Korean	5	Southeast Asian	5	Vietnamese	5

A2.4. CAMDEN

Table A2.4: Camden LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Camden	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	119,325	2,692,354	2,192,094
Population Density Region (persons per km²)	595	1,698	3,720
Population (% of total population GSR)	2.4	55.1	44.9
Median Age	32.7	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	11.4	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	8.2	7.6	6.3
Government Primary (% of total population attending primary education institution region)	62.0	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	44.9	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	39.4	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	12.2	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	19.2	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.5	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	1.5	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	35.2	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	2.3	8.5	14.6
Indigenous Population (% of total population region)	6.0	6.8	4.5
Born Overseas (% of total population region)	25.9	46.6	42.6
Arrived after 2010 (% of total population region)	5.8	13.3	13.4
A parent born overseas (% of total population region)	53.7	74.1	67.4
Speaks English Only (% of total population region)	74.0	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	20.4	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	2.3	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Indo-Aryan	25	Chinese	20	Chinese	22
	2	Arabic	10	Indo-Aryan	14	Indo-Aryan	17
	3	Spanish	7	Arabic	11	Arabic	11
	4	Chinese	6	Vietnamese	8	Southeast Asian	6
	5	Southeast Asian	6	Southeast Asian	5	Vietnamese	5

A2.5. CAMPBELLTOWN

Table A2.5: Campbelltown LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Campbelltown	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	176,519	2,692,354	2,192,094
Population Density Region (persons per km²)	571	1,698	3,720
Population (% of total population GSR)	3.6	55.1	44.9
Median Age	35.2	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	10.4	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	7.9	7.6	6.3
Government Primary (% of total population attending primary education institution region)	66.0	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	57.7	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	31.7	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	11.3	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	13.6	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.6	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	3.2	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	26.2	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	7.7	8.5	14.6
Indigenous Population (% of total population region)	9.0	6.8	4.5
Born Overseas (% of total population region)	40.5	46.6	42.6
Arrived after 2010 (% of total population region)	9.1	13.3	13.4
A parent born overseas (% of total population region)	67.3	74.1	67.4
Speaks English Only (% of total population region)	57.8	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	32.0	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	4.3	8.7	4.6

		Language	%	Language	%	Language	%
	1	Indo-Aryan	35	Chinese	20	Chinese	22
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	2	Arabic	12	Indo-Aryan	14	Indo-Aryan	17
	3	Southeast Asian	8	Arabic	11	Arabic	11
	4	Chinese	5	Vietnamese	8	Southeast Asian	6
	5	Samoan	5	Southeast Asian	5	Vietnamese	5

A2.6. CANTERBURY-BANKSTOWN

Table A2.6: Canterbury-Bankstown LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

		Canterbury-Bankstown		WestInvest LGAs		Non-WestInvest LGAs	
Total Population Region		371,006		2,692,354		2,192,094	
Population Density Region (persons per km²)		3,378		1,698		3,720	
Population (% of total population GSR)		7.6		55.1		44.9	
Median Age		36.3		36.2		39.3	
Primary schoolers (5 to 11) (% of total population, region)		9.3		9.7		7.5	
Secondary schoolers (12 to 17) (% of total population region)		7.5		7.6		6.3	
Government Primary (% of total population attending primary education institution region)		53.5		62.2		64.6	
Government Secondary (% of total population attending secondary education institution region)		52.0		52.7		44.2	
Families with children 0-14 years of age (% total dwellings region)		27.5		30.2		22.5	
Families with dependent children (students) aged 15-25 years (% total dwellings region)		12.6		12.3		9.7	
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)		14.5		17.4		28.9	
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)		0.8		0.8		2.5	
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)		2.9		3.0		4.0	
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)		18.3		23.6		18.5	
Does not own a motor vehicle (% total dwellings region)		11.4		8.5		14.6	
Indigenous Population (% of total population region)		6.6		6.8		4.5	
Born Overseas (% of total population region)		50.8		46.6		42.6	
Arrived after 2010 (% of total population region)		12.4		13.3		13.4	
A parent born overseas (% of total population region)		83.2		74.1		67.4	
Speaks English Only (% of total population region)		33.8		47.7		64.2	
Speaks another language and English 'very well' or 'well' (% of total population region)		46.4		38.0		26.9	
Speaks another language and English 'not well' or 'not at all' (% of total population region)		12.9		8.7		4.6	
		Language	**%**	**Language**	**%**	**Language**	**%**
	1	Arabic	29	Chinese	20	Chinese	22
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	2	Chinese	15	Indo-Aryan	14	Indo-Aryan	17
	3	Vietnamese	13	Arabic	11	Arabic	11
	4	Indo-Aryan	13	Vietnamese	8	Southeast Asian	6
	5	Greek	8	Southeast Asian	5	Vietnamese	5

A2.7. CUMBERLAND

Table A2.7: Cumberland LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Cumberland	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**235,439**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**3,258**	**1,698**	**3,720**
Population (% of total population GSR)	4.8	55.1	44.9
Median Age	33.7	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	9.4	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	6.7	7.6	6.3
Government Primary (% of total population attending primary education institution region)	57.4	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	52.4	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	28.5	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	11.2	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	13.6	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.9	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	5.0	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	18.6	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	12.4	8.5	14.6
Indigenous Population (% of total population region)	7.1	6.8	4.5
Born Overseas (% of total population region)	60.3	46.6	42.6
Arrived after 2010 (% of total population region)	21.3	13.3	13.4
A parent born overseas (% of total population region)	88.6	74.1	67.4
Speaks English Only (% of total population region)	26.6	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	51.6	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	14.2	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Arabic	22	Chinese	20	Chinese	22
	2	Indo-Aryan	20	Indo-Aryan	14	Indo-Aryan	17
	3	Chinese	17	Arabic	11	Arabic	11
	4	Tamil	5	Vietnamese	8	Southeast Asian	6
	5	Turkish	4	Southeast Asian	5	Vietnamese	5

A2.8. FAIRFIELD

Table A2.8: Fairfield LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Fairfield	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**208,475**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**2,059**	**1,698**	**3,720**
Population (% of total population GSR)	4.3	55.1	44.9
Median Age	38.9	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	8.6	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	8.1	7.6	6.3
Government Primary (% of total population attending primary education institution region)	63.2	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	68.2	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	26.3	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	15.1	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	8.8	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.5	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	1.6	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	20.0	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	10.4	8.5	14.6
Indigenous Population (% of total population region)	5.7	6.8	4.5
Born Overseas (% of total population region)	61.4	46.6	42.6
Arrived after 2010 (% of total population region)	16.3	13.3	13.4
A parent born overseas (% of total population region)	91.3	74.1	67.4
Speaks English Only (% of total population region)	23.4	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	47.7	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	22.9	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Vietnamese	30	Chinese	20	Chinese	22
	2	Arabic	13	Indo-Aryan	14	Indo-Aryan	17
	3	Chinese	11	Arabic	11	Arabic	11
	4	Khmer	5	Vietnamese	8	Southeast Asian	6
	5	Spanish	3	Southeast Asian	5	Vietnamese	5

A2.9. HAWKESBURY

Table A2.9: Hawkesbury LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Hawkesbury	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	67,207	2,692,354	2,192,094
Population Density Region (persons per km²)	24.4	1,698	3,720
Population (% of total population GSR)	1.4	55.1	44.9
Median Age	38.7	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	8.9	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	7.9	7.6	6.3
Government Primary (% of total population attending primary education institution region)	67.8	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	42.6	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	26.1	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	9.9	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	15.6	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	1.1	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	0.9	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	34.6	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	3.8	8.5	14.6
Indigenous Population (% of total population region)	9.0	6.8	4.5
Born Overseas (% of total population region)	17.7	46.6	42.6
Arrived after 2010 (% of total population region)	2.4	13.3	13.4
A parent born overseas (% of total population region)	38.1	74.1	67.4
Speaks English Only (% of total population region)	88.4	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	6.5	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	0.8	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Indo-Aryan	16	Chinese	20	Chinese	22
	2	Chinese	10	Indo-Aryan	14	Indo-Aryan	17
	3	Italian	6	Arabic	11	Arabic	11
	4	Southeast Asian	6	Vietnamese	8	Southeast Asian	6
	5	Arabic	5	Southeast Asian	5	Vietnamese	5

A2.10. LIVERPOOL

Table A2.10: Liverpool LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Liverpool	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	233,446	2,692,354	2,192,094
Population Density Region (persons per km²)	767	1,698	3,720
Population (% of total population GSR)	4.8	55.1	44.9
Median Age	34.4	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	10.5	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	8.5	7.6	6.3
Government Primary (% of total population attending primary education institution region)	55.1	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	51.3	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	33.2	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	14.9	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	14.4	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.9	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	1.9	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	23.6	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	7.7	8.5	14.6
Indigenous Population (% of total population region)	7.0	6.8	4.5
Born Overseas (% of total population region)	48.8	46.6	42.6
Arrived after 2010 (% of total population region)	11.0	13.3	13.4
A parent born overseas (% of total population region)	81.4	74.1	67.4
Speaks English Only (% of total population region)	39.5	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	44.5	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	9.8	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Arabic	24	Chinese	20	Chinese	22
	2	Indo-Aryan	15	Indo-Aryan	14	Indo-Aryan	17
	3	Vietnamese	10	Arabic	11	Arabic	11
	4	Chinese	5	Vietnamese	8	Southeast Asian	6
	5	Serbian	4	Southeast Asian	5	Vietnamese	5

A2.11. PARRAMATTA

Table A2.11: Parramatta LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Parramatta	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**256,729**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**3,081**	**1,698**	**3,720**
Population (% of total population GSR)	5.3	55.1	44.9
Median Age	35.3	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	8.8	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	5.8	7.6	6.3
Government Primary (% of total population attending primary education institution region)	71.8	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	60.4	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	27.5	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	9.7	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	25.7	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	1.3	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	4.3	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	19.0	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	11.8	8.5	14.6
Indigenous Population (% of total population region)	4.8	6.8	4.5
Born Overseas (% of total population region)	57.6	46.6	42.6
Arrived after 2010 (% of total population region)	23.2	13.3	13.4
A parent born overseas (% of total population region)	81.6	74.1	67.4
Speaks English Only (% of total population region)	38.2	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	47.1	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	9.4	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Chinese	34	Chinese	20	Chinese	22
	2	Indo-Aryan	21	Indo-Aryan	14	Indo-Aryan	17
	3	Korean	10	Arabic	11	Arabic	11
	4	Arabic	6	Vietnamese	8	Southeast Asian	6
	5	Southeast Asian	4	Southeast Asian	5	Vietnamese	5

A2.12. PENRITH

	Penrith	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	**217,664**	**2,692,354**	**2,192,094**
Population Density Region (persons per km²)	**542**	**1,698**	**3,720**
Population (% of total population GSR)	4.5	55.1	44.9
Median Age	35.0	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	9.9	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	7.8	7.6	6.3
Government Primary (% of total population attending primary education institution region)	65.7	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	47.8	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	29.7	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	10.1	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	15.7	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.7	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	1.9	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	31.8	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	6.5	8.5	14.6
Indigenous Population (% of total population region)	10.1	6.8	4.5
Born Overseas (% of total population region)	28.7	46.6	42.6
Arrived after 2010 (% of total population region)	5.6	13.3	13.4
A parent born overseas (% of total population region)	53.3	74.1	67.4
Speaks English Only (% of total population region)	74.2	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	17.6	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	2.2	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Indo-Aryan	25	Chinese	20	Chinese	22
	2	Southeast Asian	11	Indo-Aryan	14	Indo-Aryan	17
	3	Arabic	9	Arabic	11	Arabic	11
	4	Chinese	6	Vietnamese	8	Southeast Asian	6
	5	Samoan	3	Southeast Asian	5	Vietnamese	5

A2.13. STRATHFIELD

Table A2.13: Strathfield LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Strathfield	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	45,593	2,692,354	2,192,094
Population Density Region (persons per km²)	3,281	1,698	3,720
Population (% of total population GSR)	0.9	55.1	44.9
Median Age	32.9	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	6.9	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	5.3	7.6	6.3
Government Primary (% of total population attending primary education institution region)	56.8	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	51.8	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	22.4	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	10.2	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	21.4	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	1.2	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	8.1	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	20.8	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	14.1	8.5	14.6
Indigenous Population (% of total population region)	5.0	6.8	4.5
Born Overseas (% of total population region)	63.8	46.6	42.6
Arrived after 2010 (% of total population region)	26.4	13.3	13.4
A parent born overseas (% of total population region)	88.6	74.1	67.4
Speaks English Only (% of total population region)	29.1	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	54.6	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	11.0	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Chinese	27	Chinese	20	Chinese	22
	2	Indo-Aryan	22	Indo-Aryan	14	Indo-Aryan	17
	3	Korean	10	Arabic	11	Arabic	11
	4	Arabic	8	Vietnamese	8	Southeast Asian	6
	5	Tamil	7	Southeast Asian	5	Vietnamese	5

A2.14. THE HILLS SHIRE

Table A2.14: The Hills Shire LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	The Hills Shire	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	191,876	2,692,354	2,192,094
Population Density Region (persons per km²)	499	1,698	3,720
Population (% of total population GSR)	3.9	55.1	44.9
Median Age	38.5	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	10.8	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	8.8	7.6	6.3
Government Primary (% of total population attending primary education institution region)	66.6	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	44.3	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	35.0	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	16.7	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	29.0	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.6	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	2.1	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	23.9	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	2.4	8.5	14.6
Indigenous Population (% of total population region)	2.6	6.8	4.5
Born Overseas (% of total population region)	42.5	46.6	42.6
Arrived after 2010 (% of total population region)	11.3	13.3	13.4
A parent born overseas (% of total population region)	69.4	74.1	67.4
Speaks English Only (% of total population region)	58.6	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	34.3	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	4.6	8.7	4.6

		Language	%	Language	%	Language	%
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	1	Chinese	30	Chinese	20	Chinese	22
	2	Indo-Aryan	23	Indo-Aryan	14	Indo-Aryan	17
	3	Korean	5	Arabic	11	Arabic	11
	4	Southeast Asian	5	Vietnamese	8	Southeast Asian	6
	5	Arabic	5	Southeast Asian	5	Vietnamese	5

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A2.15. WOLLONDILLY

Table A2.15: Wollondilly LGA 2021 Census profile compared to all WestInvest LGAs and non-WestInvest LGAs

	Wollondilly	WestInvest LGAs	Non-WestInvest LGAs
Total Population Region	53,961	2,692,354	2,192,094
Population Density Region (persons per km²)	21	1,698	3,720
Population (% of total population GSR)	1.1	55.1	44.9
Median Age	37.0	36.2	39.3
Primary schoolers (5 to 11) (% of total population, region)	10.2	9.7	7.5
Secondary schoolers (12 to 17) (% of total population region)	8.7	7.6	6.3
Government Primary (% of total population attending primary education institution region)	64.9	62.2	64.6
Government Secondary (% of total population attending secondary education institution region)	41.7	52.7	44.2
Families with children 0-14 years of age (% total dwellings region)	30.9	30.2	22.5
Families with dependent children (students) aged 15-25 years (% total dwellings region)	10.9	12.3	9.7
#Method of travel to work - worked at home (% of total employed population 15 years of age and over region)	14.9	17.4	28.9
#Method of travel to work - Active Transport (% of total employed population 15 years of age and over region)	0.9	0.8	2.5
#Method of travel to work - Public Transport (% of total employed population 15 years of age and over region)	0.6	3.0	4.0
#Method of travel to work - Vehicle (% of total employed population 15 years of age and over region)	37.1	23.6	18.5
Does not own a motor vehicle (% total dwellings region)	2.5	8.5	14.6
Indigenous Population (% of total population region)	8.2	6.8	4.5
Born Overseas (% of total population region)	15.8	46.6	42.6
Arrived after 2010 (% of total population region)	1.1	13.3	13.4
A parent born overseas (% of total population region)	36.5	74.1	67.4
Speaks English Only (% of total population region)	89.6	47.7	64.2
Speaks another language and English 'very well' or 'well' (% of total population region)	5.3	38.0	26.9
Speaks another language and English 'not well' or 'not at all' (% of total population region)	0.6	8.7	4.6

		Language	%	Language	%	Language	%
	1	Italian	12	Chinese	20	Chinese	22
	2	Arabic	12	Indo-Aryan	14	Indo-Aryan	17
Language (other than English) spoken at home ranked by size (% of total population who speak a language other than English region)	3	Spanish	9	Arabic	11	Arabic	11
	4	Chinese	7	Vietnamese	8	Southeast Asian	6
	5	Croatian	6	Southeast Asian	5	Vietnamese	5

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