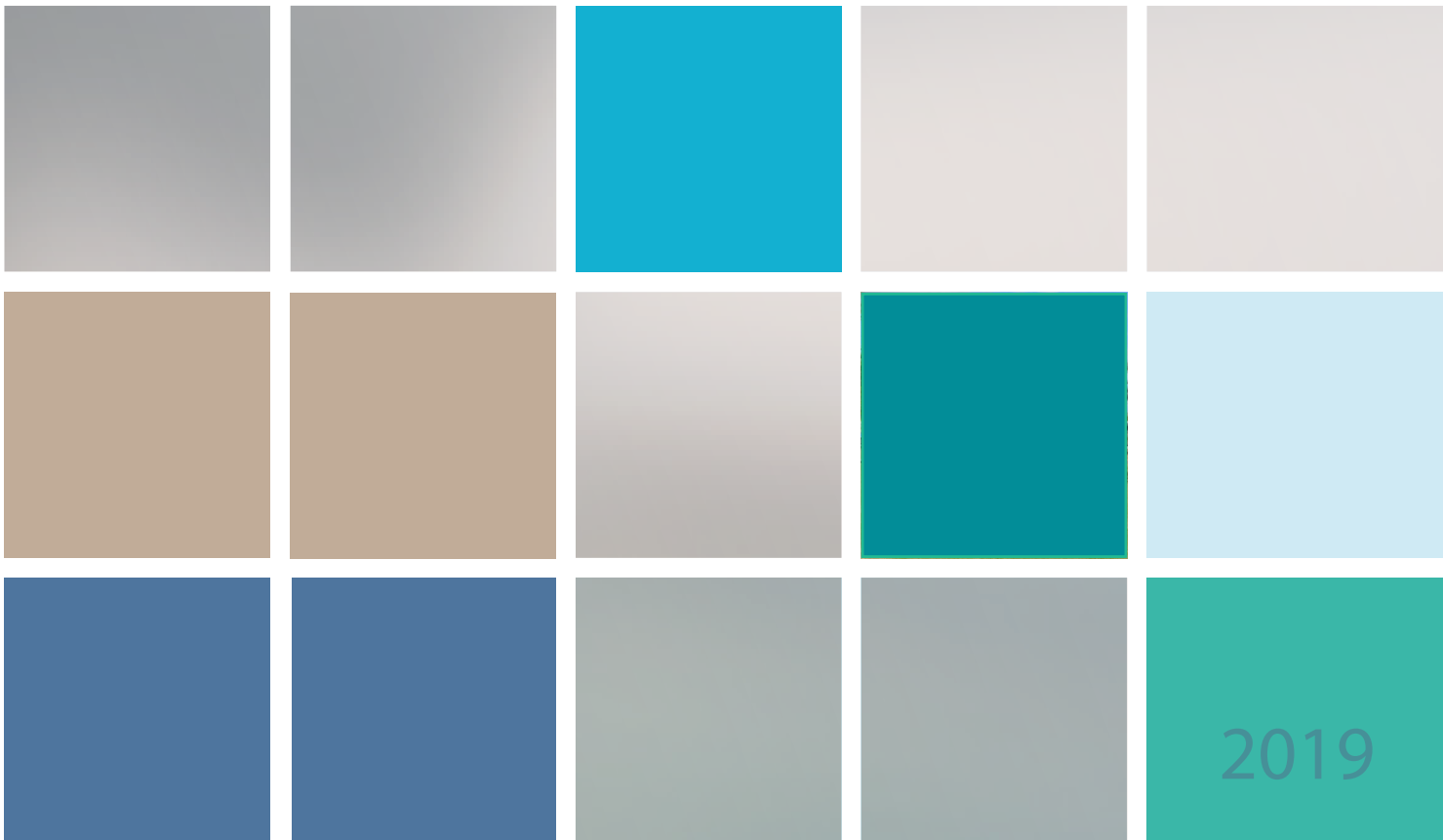# A Liveability Assessment of the Neighbourhoods of Manningham:

The application of indicators as evidence to plan for a healthy and liveable community.

Dr Melanie Davern, Rebecca Roberts, Carl Higgs and Dr Alan Both

2019

RMIT UNIVERSITY | Centre for Urban Research

VICTORIA State Government

Clean Air and Urban Landscapes Hub
National Environmental Science Programme

Healthy Liveable CITIES

Healthy Liveable Cities Group
Centre for Urban Research
RMIT University
La Trobe Street, Melbourne VIC 3000
T: + 61 3 9925 4577
E: melanie.davern@rmit.edu.au
http://cur.org.au/research-programs/healthy-liveable-cities-group/

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RMIT UNIVERSITY HEALTHY LIVEABLE CITIES

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Executive Summary

The next decade will bring population growth and change across the Manningham Local Government Area (LGA). The resident population for the municipality was over 125,000 in 2018 and is projected to increase to over 148,000 by 2036 and accommodate nearly 23,000 additional residents over the next 17 years. A critique associated with current planning methods is that they are generally quite retrospective and often populations grow before infrastructure and services are delivered which can have negative impacts on the liveability of an area. New learning and analysis techniques are needed to support more informative planning practices. This includes a focus on spatial availability and geographic access to health promoting features of the environment and services in neighbourhoods. This will build equitably serviced, healthy and liveable neighbourhoods for all residents as the population of Manningham and Melbourne continues to grow rapidly throughout the 21st century. Effective decision-making and investment requires a comprehensive understanding of current strengths and limitations of liveability and the ability to detect, monitor and track changes in liveability across time.

In 2019, the *Healthy Liveable Cities Group* at RMIT University completed a Neighbourhood Liveability Assessment of all the neighbourhoods across the Manningham municipality. Over 280 neighbourhoods of approximately 400 people were assessed on important liveability indicators aligned to the social determinants of health. This can be simply understood as health being determined by where we are born, live, learn, work, play and age. The Liveability Assessment was funded by the Victorian Department of Health and Human Services. It is recommended that Liveability Assessment results are shared across council departments to support integrated planning and with the broader Manningham community to assist with future community-engaged and evidence-informed planning practices in the future.

This report provides a spatial analysis of 16 different indicators with 26 separate measures across neighbourhoods of the Manningham LGA and includes indicators of:

- Socio-Economic Index for Areas (SEIFA);
- Access to Alcohol;
- Access to Food;
- Access to Public Open Space;
- Access to Services of Daily Living;
- Access to Services for Older People;
- Access to General Practitioners;
- Early Childhood;

- Education;
- Employment;
- Family Violence;
- Gambling:
- Housing Affordability;
- Social Infrastructure;
- Transport; and
- Walkability.

Findings reveal that the Manningham LGA has a number of different liveability strengths and challenges. Overall, results suggest a divide between the outer eastern more rural suburbs of Park Orchards, Warrandyte, Wonga Park and sections of Donvale with the more inner suburbs of Doncaster, Doncaster East, Templestowe, Templestowe Lower and Bulleen. Less socio-economic disadvantage is visible in the more outer eastern suburbs but they remain less well serviced by public transport, services and walkable neighbourhoods. In comparison, the more inner neighbourhoods closer to central Melbourne have better access to a number of these services, but with low public transport use and reduced walkable access to public open space in many neighbourhoods. Results also reveal that there are neighbourhoods across these suburbs experiencing housing affordability stress, that are co-located in areas with high expenditure on electronic gaming and above average developmental vulnerability in children identified through the Australian Early Development Census.

The results of this report clearly identify the need for neighbourhood level assessment in Manningham as opposed to standard use municipal averages in the application of social, economic and environmental data. When LGA averages are used they combine data from the more socio-economically advantaged areas of the outer east with the more diverse results of the inner suburbs of Manningham. This results in an average LGA result for Manningham that fails to identify neighbourhoods of greater need that require further attention in future planning.

Why produce a Liveability Assessment of Manningham?

A Liveability Assessment of Manningham provides a place-based or spatial analysis of liveability across 281 neighbourhoods of Manningham to understand liveability strengths and challenges across these areas. The assessment aims to inform future policy and planning decision-making, strategies, interventions and investments across the municipality and to assist with longer term monitoring and evaluation. This project included a Liveability Assessment that initially focused on the Jackson's Court Neighbourhood Centre but was extended across all neighbourhoods of the Manningham LGA with funding and support from the Victorian Department of Health and Human Services (DHHS). A Liveability Assessment of all neighbourhoods across Manningham provides a convenient method to understand critical social, economic and environmental factors that influence public health and quality of life outcomes for all residents of the LGA. This is also very important to assist with future planning for the area in light or newly proposed state infrastructure development plans that will affect many residents of Manningham and the substantial population growth predicted for the municipality (Figure 1) and Melbourne over the next 40 years.
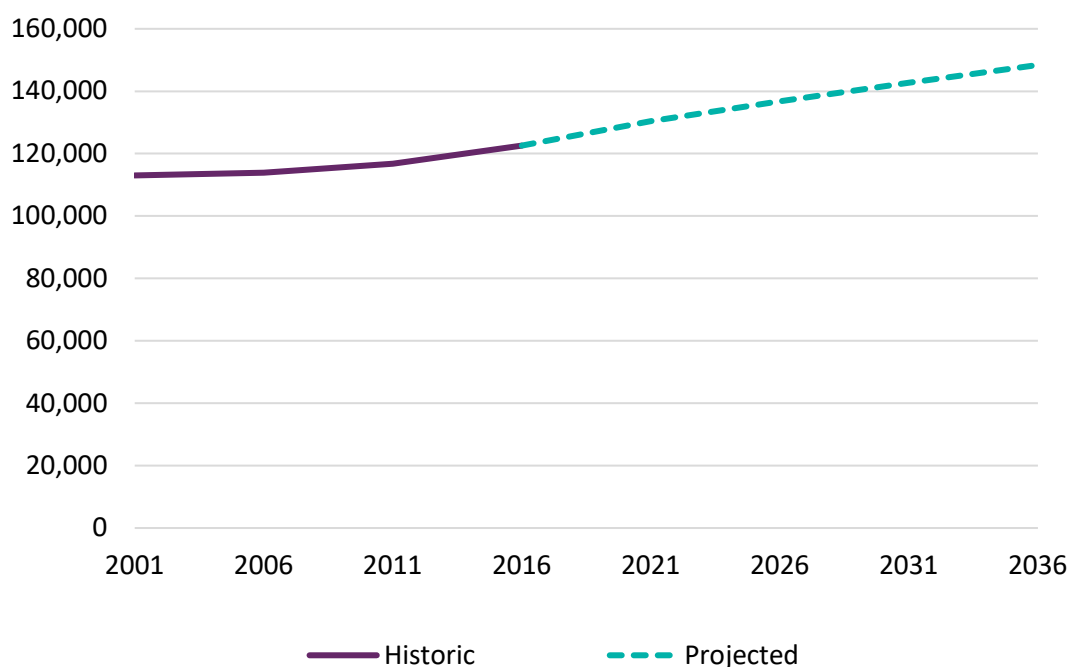
Figure 1: Victoria in Future projected population growth expected for Manningham LGA 2016 to 2056 (Department of Environment Land Water and Planning, 2019).

Manningham's Municipal Public Health and Wellbeing Plan or Healthy City Strategy 2017-2021 was developed within an integrated Council Plan[1] guided by Manningham Council's vision of *a liveable and harmonious city*. The Council Plan 2017-2021 includes five major themes: Healthy Community; Liveable Places and Spaces; Resilient Environment; Vibrant and Prosperous Economy; and Well Governed Council (Figure 2).

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[1] http://www.manningham.vic.gov.au/council-plan

Figure 2: Manningham Healthy City Strategy 2017-2021 (Manningham City Council, 2017)

The Healthy City Strategy 2017-2021 has four focus areas: Inclusive and Harmonious; Healthy and Well; Safe and Resilient; and Connected and Vibrant (Figure 3).

Figure 3: Manningham Council Plan 2017-2021 (Manningham City Council, 2017)

The indicators selected for inclusion in this Liveability Assessment are relevant to all the themes identified across the Council Plan and Healthy City Strategy.

The indicators selected for inclusion in this Liveability Assessment have been developed in partnership with Manningham Council, DHHS and RMIT University based on the needs of council and a broader understanding of liveability and how this concept related to the social determinants of health. Manningham liveability, health and wellbeing themes and focus areas also connect to the priorities of the current Victorian Public Health and Wellbeing Plan 2015-2019 (Department of Health and Human Services, 2015) and domains of health and associated Victorian public health and wellbeing outcomes framework (Figure 4).

Domain 1: Victorians are healthy and well

Outcome
Victorians have good physical health

Indicators
Increase healthy start in life
Reduce premature death
Reduce preventable chronic diseases
Increase self-rated health
Decrease unintentional injury
Increase oral health
Increase sexual and reproductive health

Outcome
Victorians have good mental health

Indicators
Increase mental wellbeing
Decrease suicide

Outcome
Victorians act to protect and promote health

Indicators
Increase healthy eating and active living
Reduce overweight and obesity
Reduce smoking
Reduce harmful alcohol and drug use
Increase immunisation

Domain 2: Victorians are safe and secure

Outcome
Victorians live free from abuse and violence

Indicators
Reduce prevalence and impact of abuse and neglect of children
Reduce prevalence and impact of family violence
Increase community safety

Outcome
Victorians have suitable and stable housing

Indicator
Decrease homelessness

Domain 4: Victorians are connected to culture and community

Outcome
Victorians are socially engaged and live in inclusive communities

Indicators
Increase connection to culture and communities
Increase access to social support

Outcome
Victorians can safely identify and connect with their culture and identity

Indicator
Increase tolerance of diversity

Domain 3: Victorians have the capabilities to participate

Outcome
Victorians participate in learning and education

Indicators
Decrease developmental vulnerability
Increase educational attainment

Outcome
Victorians participate in and contribute to the economy

Indicator
Increase labour market participation

Outcome
Victorians have financial security

Indicator
Decrease financial stress

Domain 5: Victoria is liveable

Outcome
Victorians belong to resilient and liveable communities

Indicators
Increase neighbourhood liveability
Increase adaptation to the impacts of climate change

Outcome
Victorians have access to sustainable built and natural environments

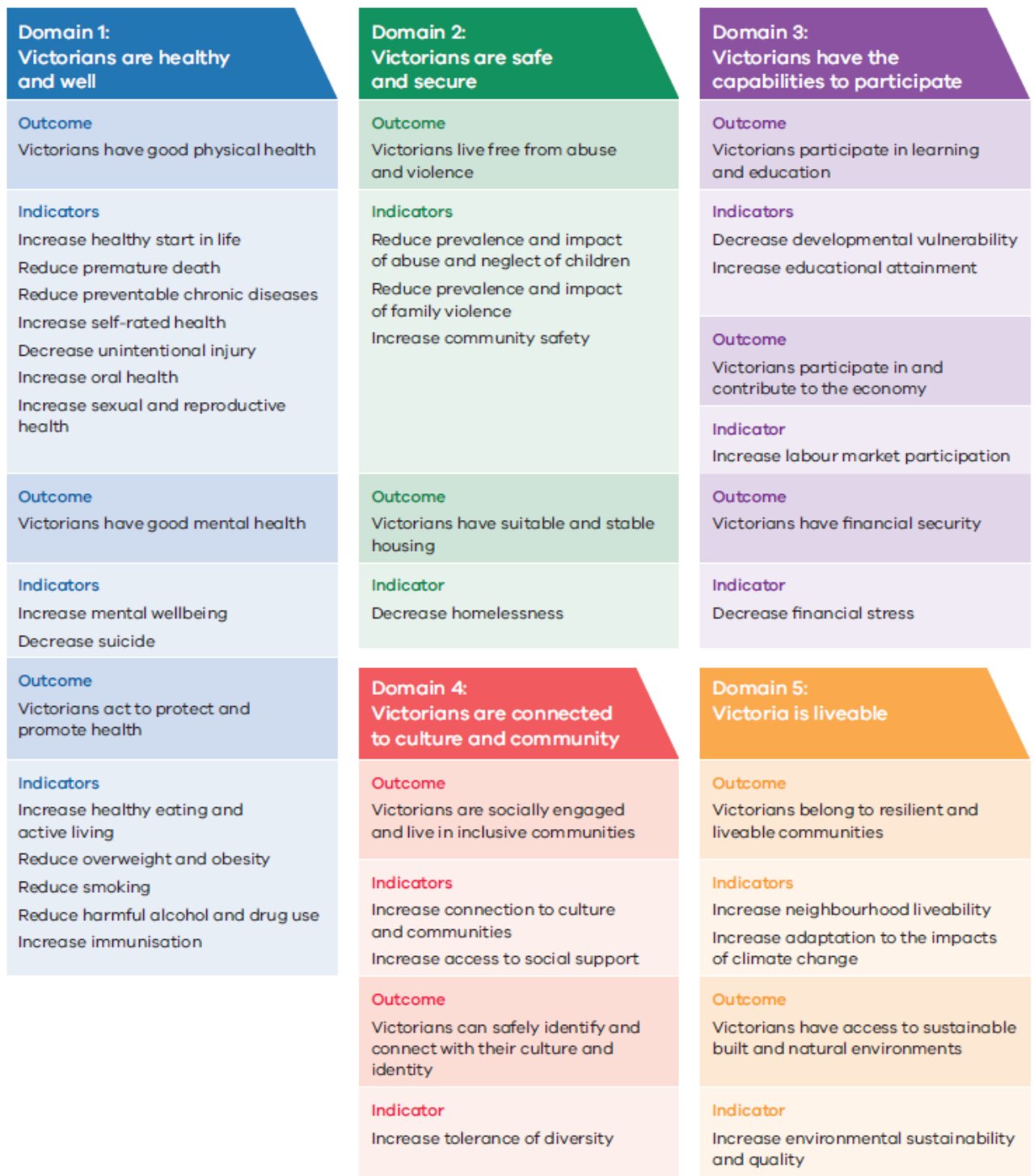Indicator
Increase environmental sustainability and quality

Figure 4: Domains included within the Victorian public health outcomes framework (Department of Health and Human Services, 2016)

What is a Liveability Assessment?

The Liveability Assessment of Manningham provides spatial analysis of 16 different liveability indicators at the neighbourhood level with neighbourhoods defined as Statistical Area Level 1 according the Australian Statistical Geography Standard used by the Australian Bureau of Statistics. The selected liveability indicators are consistent with the Victorian Public Health and Wellbeing Plan 2015-2019 (Department of Health and Human Services, 2015) and based on over 7 years of research and conceptual understanding of liveability (Badland et al., 2014) within the *Healthy Liveable Cities Group* at RMIT University. This ensures that academically rigorous liveability indicators are included throughout the assessment with locally, nationally and internationally validated and respected measures.

A major benefit of a Liveability Assessment is that it provides a spatial assessment at the neighbourhood level of key social determinants of health. Indicators selected for inclusion in a Liveability Assessment are social, economic and environmental spatial indicators that are deemed most relevant to a specific municipality. The specific indicators and measures selected for investigation in this Liveability Assessment for Manningham are provided in Table 1 and include 16 different indicators with 26 separate measures of:

- Socio-Economic Index for Areas (SEIFA);
- Access to Alcohol;
- Access to Food;
- Access to Public Open Space;
- Access to Services of Daily Living;
- Access to Services for Older People;
- Access to General Practitioners;
- Early Childhood;
- Employment;
- Family Violence;
- Gambling;
- Housing Affordability;
- Social Infrastructure;
- Transport; and
- Walkability.

Indicators included in the Liveability Assessment provide data using a method that is easily understood and communicated (i.e. the benefit of spatial indicators) and are uniquely created according to best practice, public health, research methods and knowledge. This is essential for practical application in planning because indicators must be developed according to theory in order to interpret changes over time and should also be connected to a policy lever for population level changes to occur (Davern, Gunn, Giles-Corti, & David, 2017). Furthermore, indicators provide a tip of the iceberg representation of important issues and act as a catalyst to begin conversations within organisations, with stakeholders and the local community encouraging further investigation and an integrated planning approach. They are also essential to measure improvements made over time and support the evaluation of strategies.

Table 1: Indicators and Measures included in the Manningham Liveability Assessment

SEIFA - IRSD	• Socio-Economic Index for Areas – Relative Disadvantage (IRSD)
Access to Alcohol	• Distance to premise with an on-license alcohol permit • Distance to premise with an off-license alcohol permit
Access to Food	• Average distance to the closest location where healthy food can be purchased (km) • Average distance to the closest location where unhealthy food can be purchased (km) • Average distance to the closest café (km) • Average number of cafes within 1600m
Access to Public Open Space	• Distance to nearest Public Open Space • Distance to nearest Public Open Space >1.5ha in size • Location of Public Open Space overlaid with Transport Walkability Index
Access to Services of Daily Living	• Average number of daily living types present measured as a score of 0-3, with 1 point for each category: (i) Convenience store/petrol station/newsagent; (ii) Public transport stop; (iii) Supermarket within 1600m network distance.
Access to Services for Older People	• Index of Access to Services for Older People
Access to General Practitioners	• Access to General Practitioners (distance) • Access to a General Practitioner with bilingual services
Early Childhood	• Australian Early Development Census proportion of children "developmentally vulnerable" (0-10th percentile) on two or more AEDC domains
Employment	• Journey to work travel mode using any public transport • Journey to work travel mode of public transport with distance travelled • Youth not engaged at all in work or study (expressed as a percentage of people aged 15-19 years not attending secondary school).
Family Violence	• Only suburb level data available from Victorian Police (Crime Statistics Agency)
Gambling	• Number of electronic gaming machines • Expenditure of electronic gaming machines (per venue)
Housing affordability	• Proportion of owner-occupied households with income in the bottom 40 percent of the income distribution spending more than 30% of household income on housing costs • Proportion of rental households with income in the bottom 40 percent of the income distribution spending more than 30% of household income on housing costs *Note: moderate, low and very low income definitions are included in 2018 revisions of the Planning and Environment Act and low and very low income cited in the Act are consistent with the bottom 40% of incomes.

Social Infrastructure	• Mix of social infrastructure - calculated based on 4 domains: Health and Social Services; Early Years; Culture and Leisure; and Community Centres. These domains were measured by 15 individual service types which were used to calculate the presence of service mix for each neighbourhood ranging from 0-15.
Transport	• Proportion of residential dwellings within 400m of a public transport stop • Proportion of residential dwellings within 400m of a public transport stop with service frequency calculated for 7:00am and 7:00pm on a normal weekday.
Walkability	• Walkability for Transport Index • Walkability for Transport with local footpath network • Walkability for Transport calculated according to time with depth elevation modelling

Objectives of the Manningham Liveability Assessment

The primary objectives of the Manningham Liveability Assessment were:

1. Use a range of data to calculate a range of spatial liveability indicators at the neighbourhood level of Statistical Area Level 1 (SA1) representing approximately 400 individuals;
2. Identify differences in social determinants of health for the neighbourhoods across the Manningham LGA with data presented in map format with an interpretative written report;
3. Benchmark liveability in 2019, and identify strengths, weaknesses and opportunities for planning to improve liveability across neighbourhoods within the municipality;
4. Strengthen evidence available to Manningham City Council for use in future planning and advocacy activities.

Methodology

Geographic Information Systems (GIS) are used in this report to complete small area spatial analyses. This spatial methodology is useful for the identification of trends and patterns across areas that are harder to identify using traditional forms of data analysis. Maps presented provide an assessment of liveability for a single point in time and can be replicated in the future during key planning milestones to identify changes occurring across time.

Maps have been produced using a range of different data sources including many from the Australian Bureau of Statistics 2016 Census, data that are publicly available, Manningham City Council data, as well as new data produced by the *Healthy Liveable Cities Group at* RMIT University. Data sources are provided on each map with additional detail is provided in Appendix 1: Data Sources. The Socio-Economic Indexes for Areas or SEIFA Index for Relative Disadvantage (SEIFA - IRSD) is also provided for small areas (Australian Bureau of Statistics, 2011a). SEIFA indexes are used to measure socio-economic status and rank areas in Australia on the basis of relative socio-economic advantage or disadvantage. These data are useful for making comparisons between areas experiencing disadvantage with areas that are less disadvantaged. The Indexes include variables including income, education level, occupation and skill levels, housing and dwelling types, and other more general variables including internet connections, disability, car ownership, families, and marital status among others.

Wherever possible, analyses and maps are produced using Australian Bureau of Statistics (ABS) Statistical Area Level 1 (SA1) geography as per the Australian Statistical Geography Standard (ASGS). ASGS Ed 2016 Digital Boundaries in ESRI Shapefile Format were used to model area boundaries and were obtained from the ABS. The 2018 Open Street Map (OSM) network was used for all road network analyses. ABS SA1s are used to represent neighbourhoods in this report with a population of 200-800 people or average of 400 people.[2]
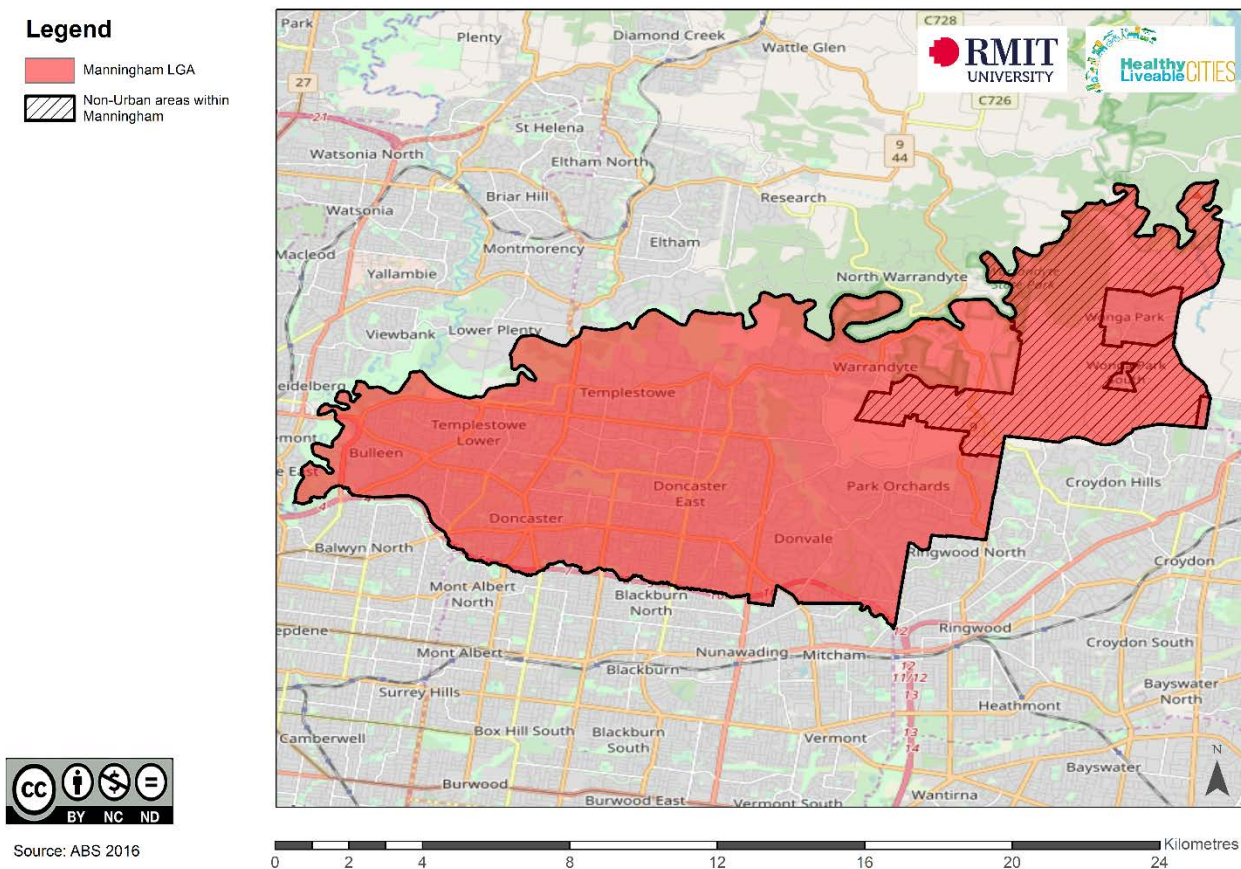
Figure 5: Urban area of Manningham within Manningham LGA

Urban areas within the Manningham LGA are presented in Figure 5 and analyses were restricted to the 281 SA1s within the area of the urban boundary of the Manningham LGA. The ABS applies the ASGS definition of Sections of State using population counts to define SA1s as urban or rural with populations of 100,000 or more classified as Major Urban while Other Urban includes populations of 1,000 to 99,000[3].

Non-urban areas with small populations (<1000 people) within this Section of State definition are represented by the diagonal pattern across Wonga Park and areas of the Warrandyte State Park. The estimated population for the entire Manningham LGA is 122,902 people according to the 2016 Census. Family Violence is the only indicator presented at suburb level as provided by the Crime Statistics Agency while AEDC results are only released at Statistical Area Level 2 (SA2).

2

http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%201%20(SA1)~10013

3

https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/F886C1E5F565EF95CA257C12000CA035?opendocument#PARALINK5

Background Understanding of Liveability

The *Healthy Liveable Cities Group* is located within the Centre for Urban Research at RMIT University[4]. The research program is led by Director, Professor Billie Giles-Corti, with Co-Directors Dr Melanie Davern and Associate Professor Hannah Badland bringing together a multidisciplinary research team investigating the influence of urban design and planning on community health and wellbeing. The team's policy focussed research is developed in partnership with stakeholders across industry, state government and local government to inform best practice policy and planning through the creation of liveability indicators. Team expertise has been developed from multiple disciplines, including epidemiology, psychology, spatial analysis, computer science, policy analysis and economic evaluation with a strong focus on research translation and engagement. Liveability research is the core interest of the *Healthy Liveable Cities Group.* The research program was established in 2012 and is built on policy partnered research development and application.

Liveability is a very popular term that is well known to a range of different stakeholders within government, planning, property, health and the general community. In 2012 the *Healthy Liveable Cities Group* at RMIT University completed a thorough review of both academic and grey literature on the topic of liveability. This led to an international review of liveability indicators and development of a new definition of a liveable community as:

> *safe, attractive, socially inclusive and cohesive, environmentally sustainable with affordable*
> *and diverse housing, linked by convenient public transport, walking and cycling infrastructure*
> *to employment, education, local shops and community services, leisure and cultural*
> *opportunities and public open space* (Lowe et al., 2013)

Since being developed, our definition of liveability has been adopted by DHHS in the Victorian Public Health and Wellbeing Plan 2015-2019 (Department of Health and Human Services, 2015) and informed Plan Melbourne - the metropolitan planning scheme shaping the city and the state over the next 35 years. The *Healthy Liveable Cities Group* is also currently developing a Liveability Index for Melbourne that will be applied to other national cities across Australia as part of the NHMRC Centre for Research Excellence in Healthy Liveable Cities. This is arguably the world's first liveability index designed and built specifically to enhance population health outcomes. Most recently our research group has released the *Creating Liveable Cities in Australia*[5] report which measures liveability across Australian capital cities.

The liveability indicators produced by the *Healthy Liveable Cities Group* are based on a spatial or place focused assessment of liveability. These liveability indicators provide a spatial assessment of the building blocks required to produce good health outcomes and align to the social determinants of health – the conditions in which people are born, grow, live, work and age (World Health Organisation, 2017).

Liveability is an easily understood interpretation of the social determinants of health which are elegantly described in the Dahlgren and Whitehead's (1991) rainbow model of health provided in Figure 6.

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[4] http://cur.org.au/research-programs/healthy-liveable-cities-group/
[5] http://cur.org.au/project/national-liveability-report/

Figure 6: Dahlgren and Whitehead's (1991) Rainbow Model of the social determinants of health

The upstream determinants or conditions that surround people are influential on long term health outcomes and these conditions are easily assessed and interpreted using small area liveability indicators. These indicator-based results can then be used to identify areas needing intervention or strategies for future policy and planning implementation.

Indicators included in this Liveability Assessment provide a neighbourhood level understanding of many of these upstream social determinants describing socio-economic conditions (SEIFA), access to local community and social infrastructure services, environmental conditions such as access to public open space, walkability, transport, employment, early education, housing, food environments, access to alcohol and more downstream outcomes such as gambling and family violence. All of these very important determinants are examined in separate mapped results in the proceeding report with a final chapter describing conclusions and implications.

Results: Liveability Indicator Assessment

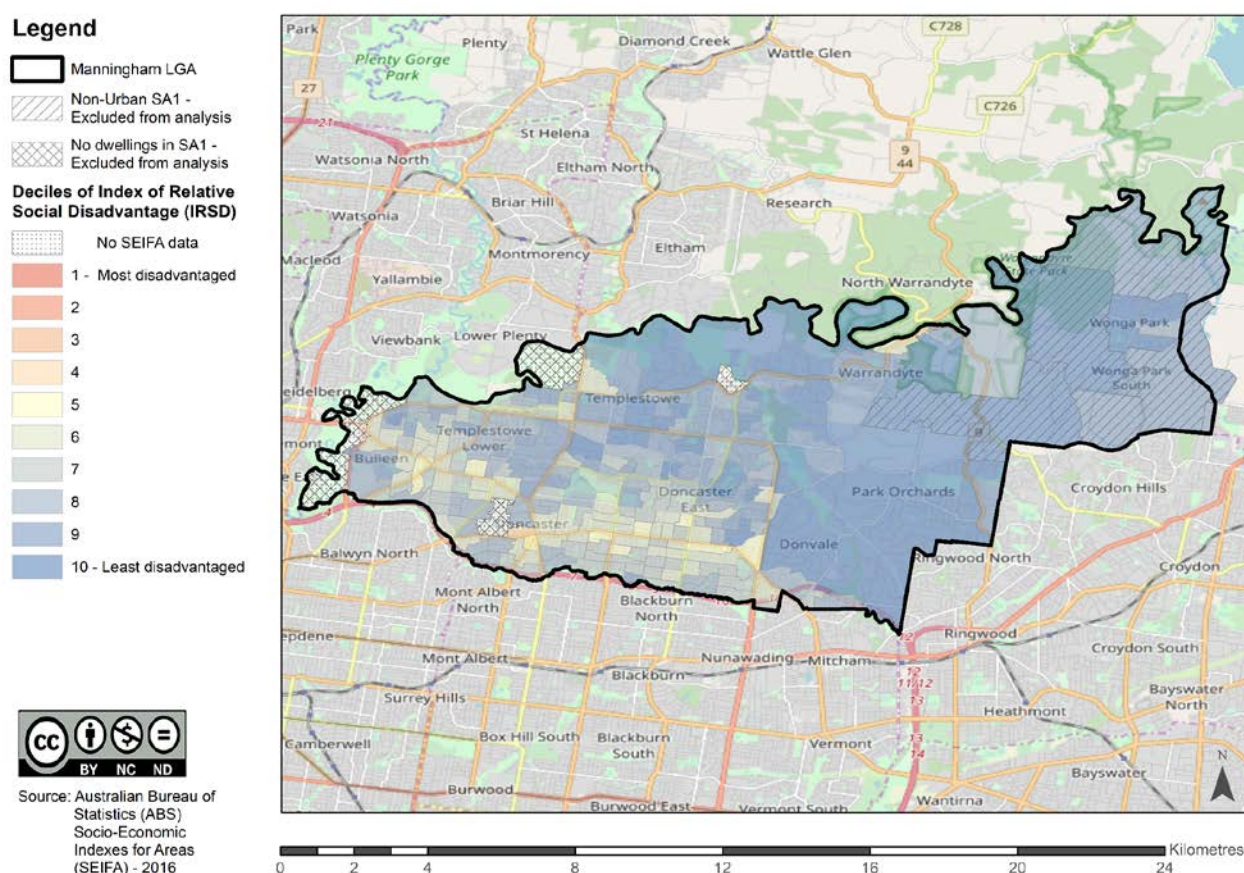## Socio Economic Index for Areas - Index of Relative Disadvantage (SEIFA IRSD)

Figure 7: Manningham SEIFA Index of Relative Disadvantage (SEIFA-IRSD)

As described earlier in the method section, the SEIFA IRSD includes a range of social and economic factors in one index and include income, education level, occupation and skill levels, housing and dwelling types, and more general variables such as internet connections, disability, car ownership, family types and marital status. As explained previously in the methodology section of this report (Figure 5), low population density areas are represented by a diagonal pattern in Figure 7 above and areas without residential population and dwellings (e.g. Westerfolds Park area or golf courses) are excluded and represented by a crosshatched pattern for those areas. These representations also appear in subsequent mapped results throughout the report.

SEIFA results for Manningham reveal low levels of disadvantage across the LGA. This is consistent with 2016 Census data indicating that the 2016 median weekly household income of $1895 which is $180 above the Victorian average. The outer eastern suburbs of the LGA are least disadvantaged and represented in darker blue shading and include suburbs with very low population densities that are officially classified as non-urban areas of Melbourne. In contrast to these outer eastern suburbs, numerous neighbourhoods of Doncaster, Doncaster East, Templestowe Lower and Bulleen have neighbourhoods shaded yellow representing mid-range socio-economic disadvantage. In summary, these neighbourhood level results of SEIFA IRSD reveal evidence of notable variation of socio-economic differences across the LGA.

Access to Alcohol – On License
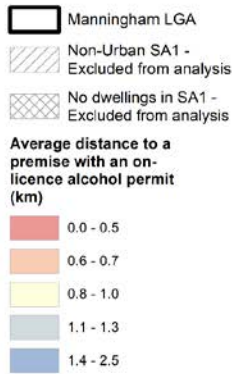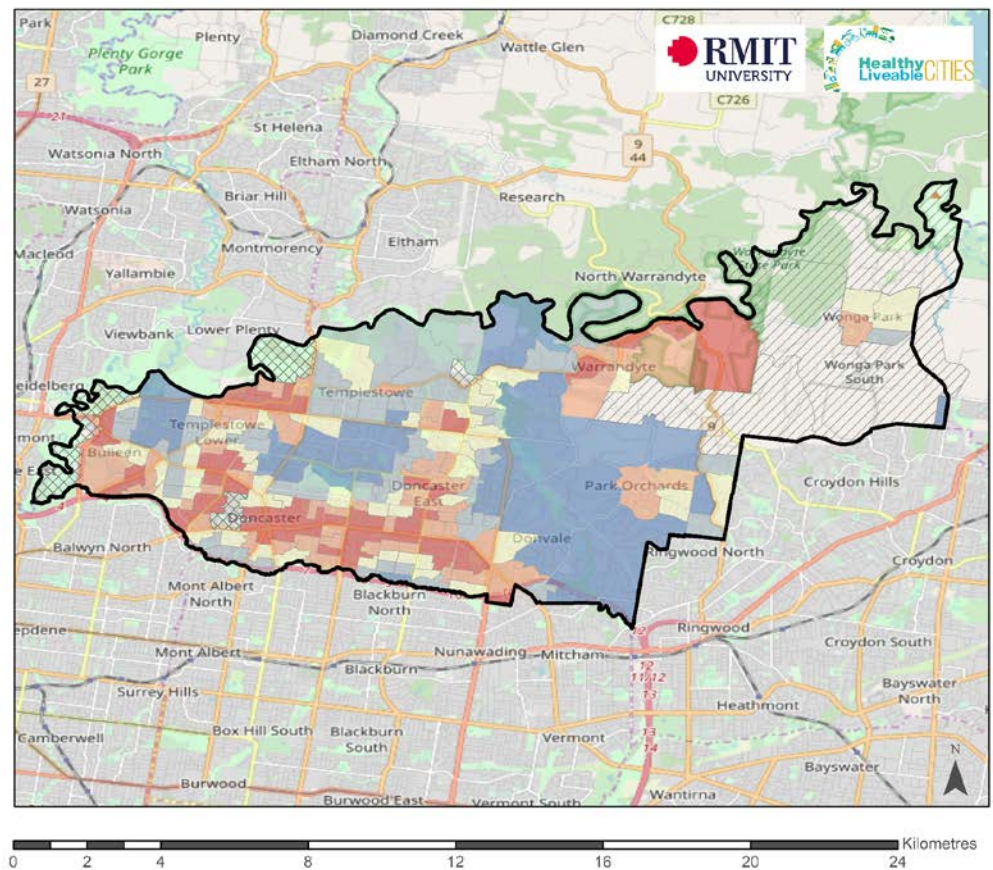
Figure 8: Average distance (km) to premises with an on-license alcohol permit within Manningham

Access to venues with an on-license alcohol permit have been sourced from the Victorian Commission for Gambling and Liquor Regulation (VCGLR) which is the independent statutory authority regulating Victoria's gambling and liquor. Many neighbourhoods of Doncaster, Bulleen, Doncaster East, Templestowe Lower, Warrandyte and Park Orchards are less than 700m (0.7km) of a venue with an on-license alcohol permit represented by red (0-0.5km) and orange (0.6-0.7km) areas in Figure 8. It is interesting to note that access to these on-license venues is not restricted across the more rural suburbs in the outer east with the exception of the blue shaded areas between Park Orchards, Donvale and Warrandyte. No neighbourhood within the Manningham LGA is further than 2.5km from an on-licensed venue.

Access to Alcohol – Off License
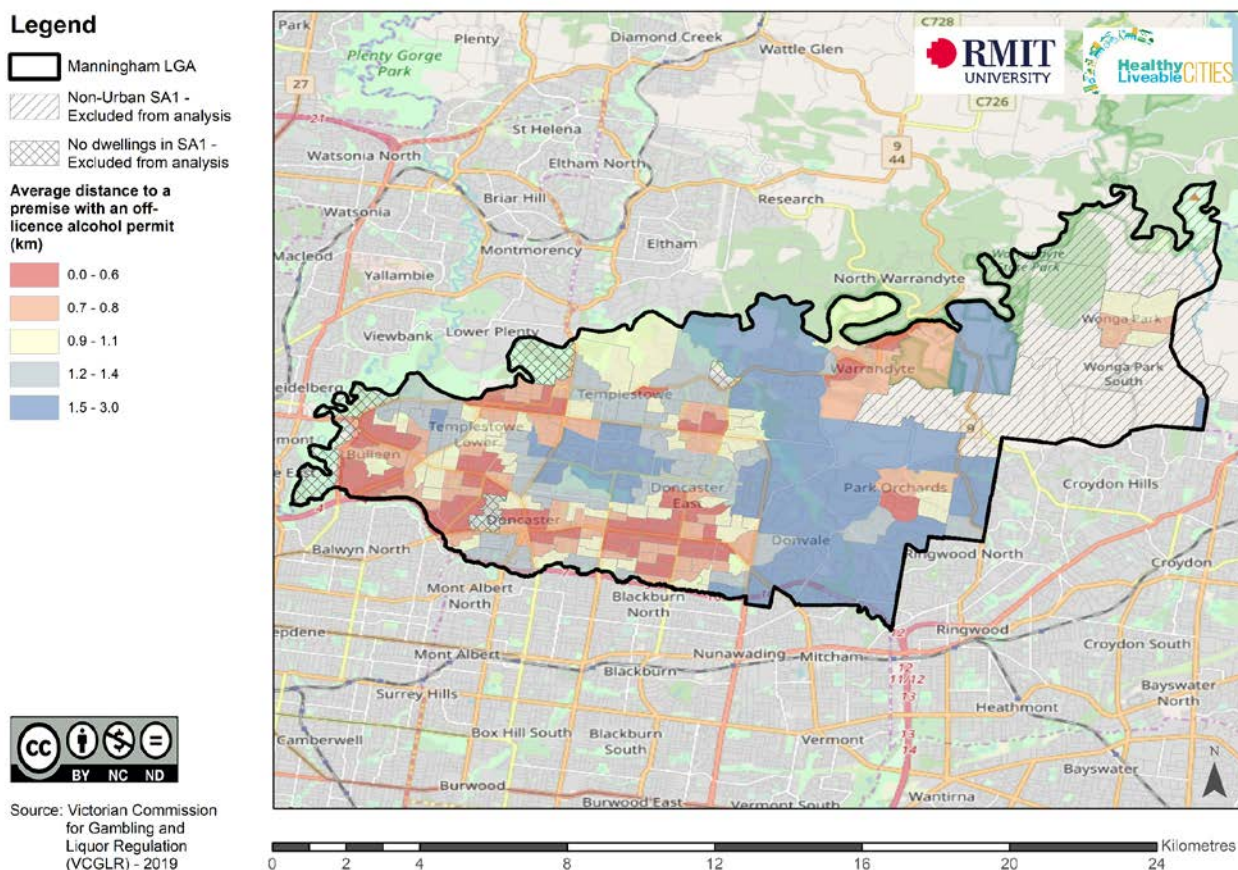
Figure 9: Average distance (km) to premises with an off-license alcohol permit within Manningham

Distance to venues with an off-license alcohol permit (take-away alcohol) have also been sourced from the VCGLR, calculated by neighbourhood and are presented in Figure 9. Access to off-license alcohol permits is very similar to on-license access with most neighbourhoods living within close distance (less than 0.8km) as represented in red and orange shading with closest access across neighbourhoods of Bulleen, Doncaster, Doncaster East, Templestowe Lower, Park Orchards and Warrandyte. No neighbourhood within the Manningham LGA is further than 3.0km from a venue with a venue with an off-license alcohol permit.

Access to Food – Healthy
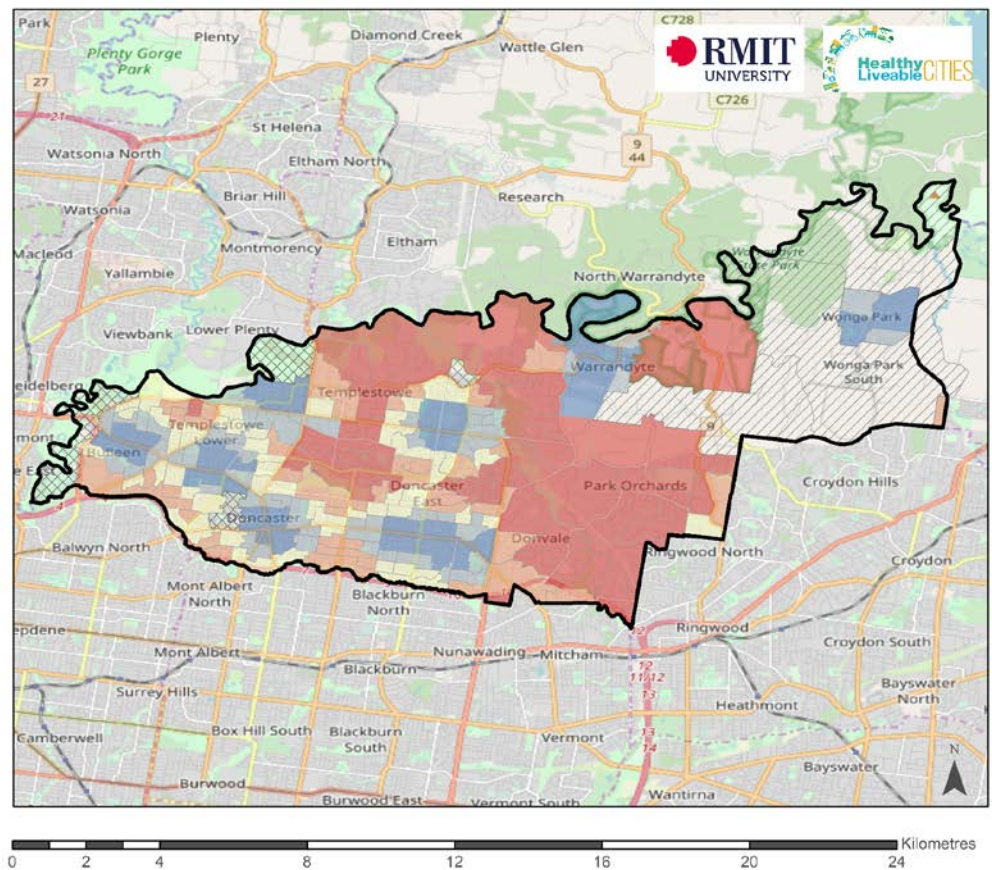
Figure 10: Average distance (km) to the closest supermarket in Manningham

Neighbourhood activity centres are clearly identifiable in Figure 10 and represented by neighbourhoods shaded in darker blue and concentrated across Bulleen, Templestowe Lower, Doncaster, Doncaster East, Warrandyte and Wonga Park. Many neighbourhoods across these suburbs have access to supermarkets within 1.2km and are represented in blue shaded areas. Many neighbourhoods of Donvale, Park Orchards, Templestowe and Warrandyte are shaded in red and located up to 3.9km (2.1-3.9km) from a location where healthy food can be purchased.

Access to Food – Unhealthy
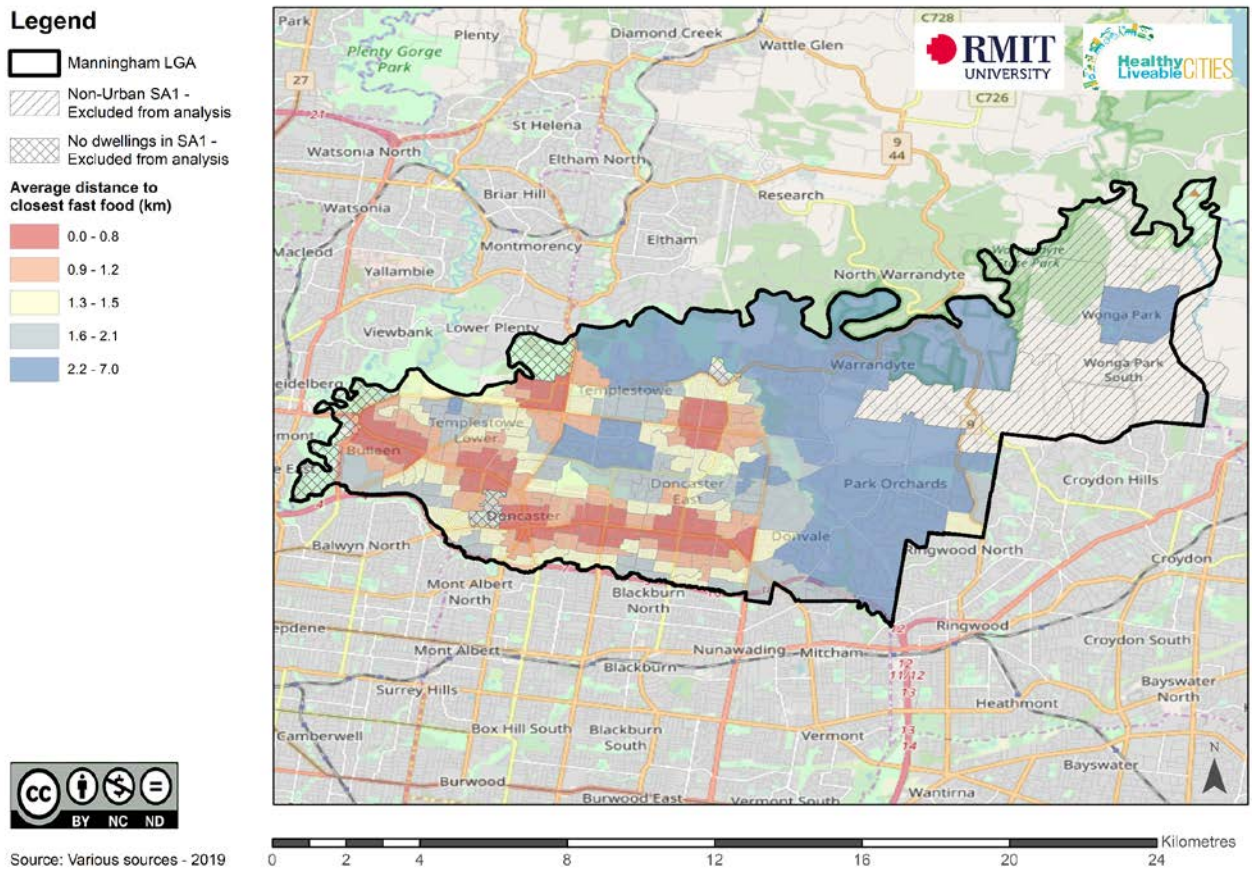
Figure 11: Average distance (km) to the closest location where unhealthy food can be purchased in Manningham

Major fast food providers are not easily accessed within the eastern and more rural suburbs of Wonga Park, Park Orchards, Warrandyte and selected neighbourhoods of Templestowe and Donvale. There areas are all shaded in blue in Figure 11 and represent neighbourhoods located up to 7.0km (2.2-7.0km) from a fast food venue. In comparison, red and orange shaded areas across neighbourhoods of Bulleen, Templestowe Lower, Doncaster and some neighbourhoods of Doncaster East and Templestowe are located 1.2km or less from major fast food retailers. Neighbourhoods located along Doncaster Road are clearly visible in Figure 11 with residents exposed to a number of fast food retailers in these areas between Williamson Road through to Mitcham Road.

Access to Food – Cafes by Distance
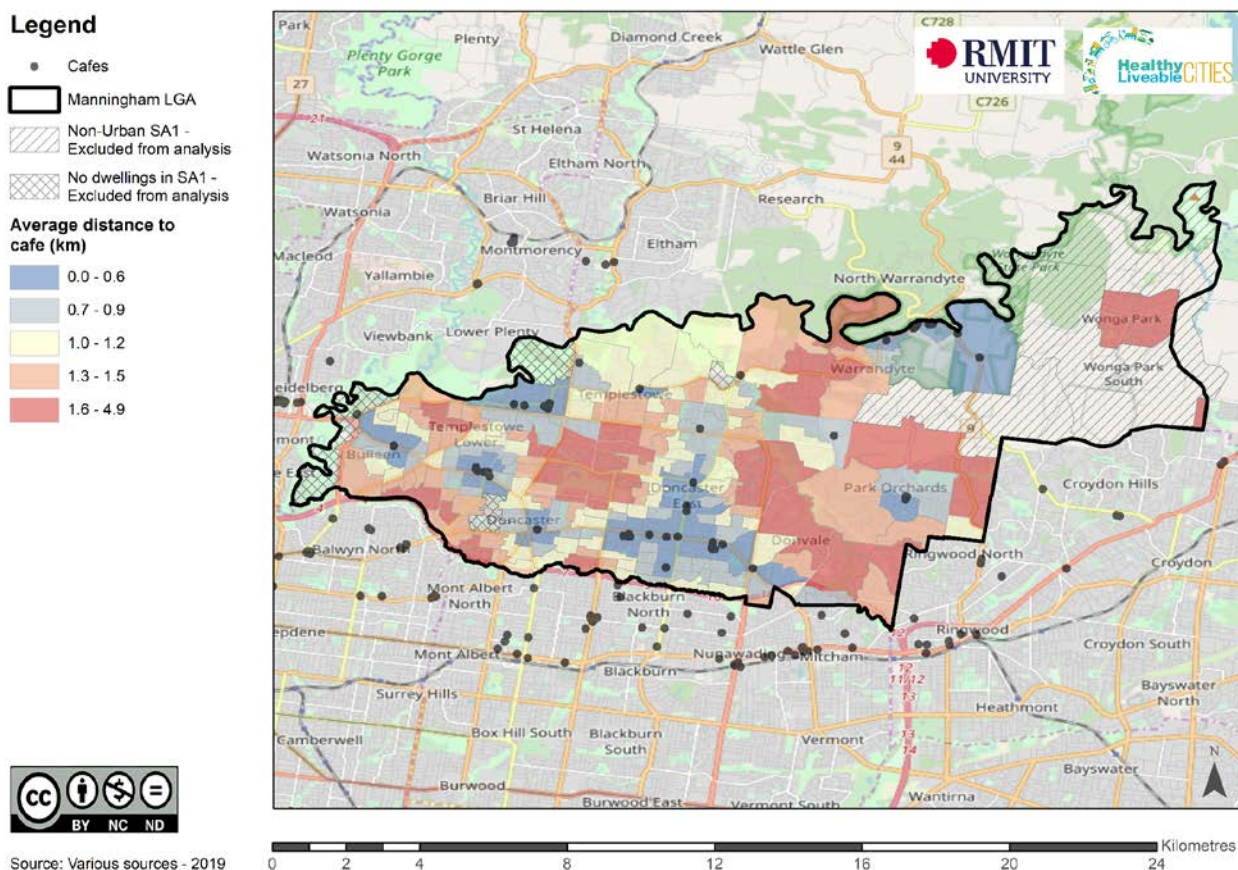
Figure 12: Average distance (km) to closest cafe in Manningham

This indicator has been developed as an experimental indicator following discussions with Manningham Council and DHHS about locations within the LGA that could provide opportunities for social interactions. Cafes provide important destinations for people to meet, interact and engage with friends and families across a municipality and earlier research with older people has demonstrated that shops are the most important local services available to older people (Lowen, Davern, Mavoa, & Brasher, 2015). Furthermore, cafes, and destinations in general, are an important component of walkability and providing opportunities for residents to socialise could have a positive influence on social isolation and the subjective experience of loneliness. The locations of cafes across the Manningham LGA are presented in Figure 12 and many neighbourhoods are well serviced with cafes accessible within 900m for all blue shaded areas. However, not all suburbs or neighbourhoods have close access to cafes. For example, cafés are located within 900m of many neighbourhoods in the central areas of Bulleen, Templestowe Lower and Doncaster but red shaded neighbourhoods are between 1.6-4.0 km from a closest café and on the periphery of these suburb boundaries. These red shaded areas are also visible in neighbourhoods on the boundary of the Manningham LGA near Balwyn North, as well as in the neighbourhoods between Templestowe and Doncaster, Donvale, Warrandyte, Park Orchards and Wonga Park. Land use planning analysis could be used to influence these results in the future.

Access to Food – Cafes within 1600m
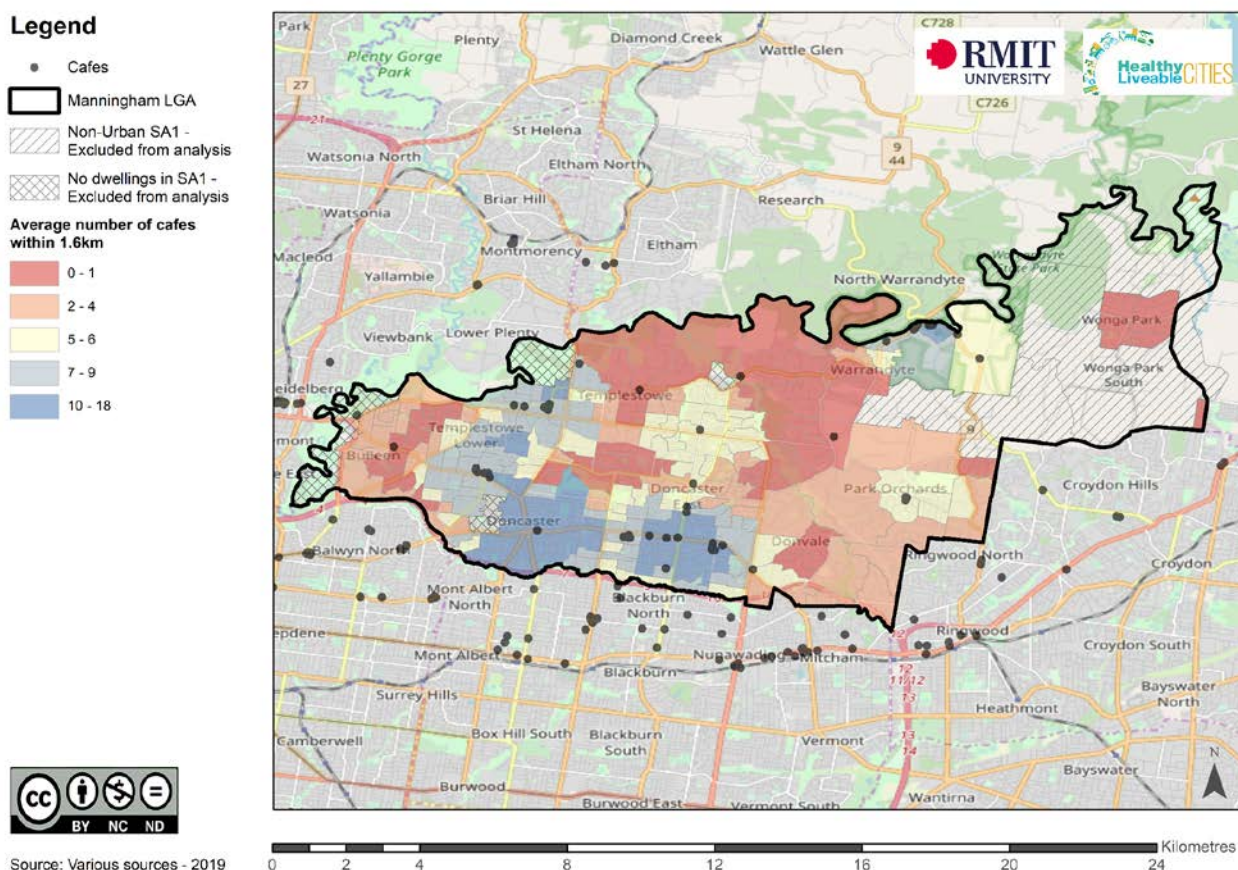
Figure 13: Average number of cafes within 1.6km across Manningham

Cafés are not evenly distributed or accessed across the Manningham LGA. Figure 13 describes the number of cafes available within each neighbourhood or SA1 with dot point locations marked in black to show the actual locations of cafes within these neighbourhoods. For example, the Westfield Shoppingtown in Doncaster has a number of cafes in a single location (between 10-18 cafes indicated by the blue shading). However, marked black point location shows that there are no cafes located in surrounding neighbourhoods of Westfield Shoppingtown and private vehicle travel is the most frequent mode of transport used to get to the shopping centre. Consequently, the surrounding neighbourhoods of Westfield Shoppingtown don't provide café locations for people to socialise or walk to outside of this car dependent major retail area. The highest concentration of cafes (9-18 cafes within 1.6km) can be found in Doncaster (Westfield Shoppingtown) and along Doncaster Road, at Macedon Square in Templestowe Lower and along Yarra Street in Warrandyte. There are significantly fewer café locations in Bulleen, Donvale, Wonga Park and the northern boundary of Templestowe with many neighbourhoods in these suburbs having between 0-1 cafes within a 1600m distance.

Access to Public Open Space – Nearest
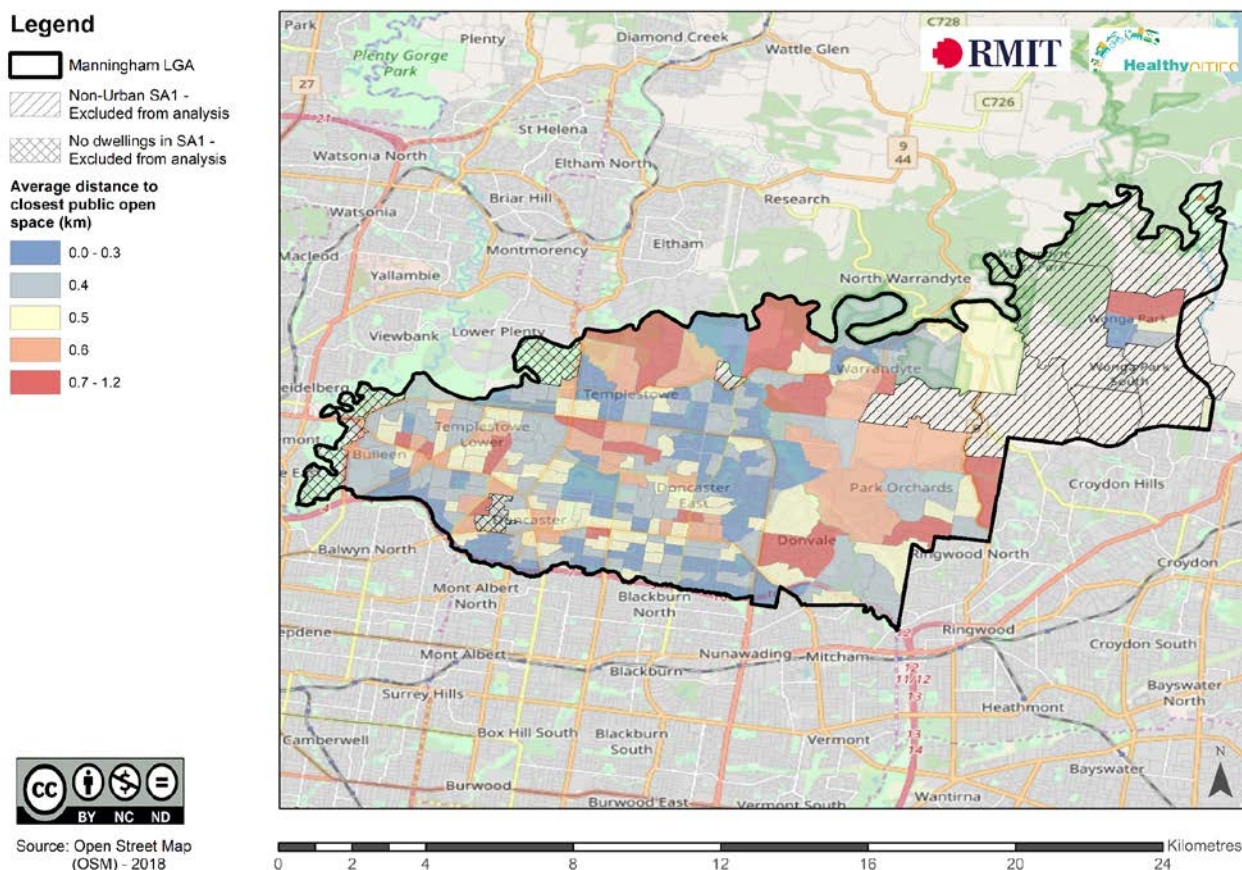
Figure 14: Average distance (km) to nearest Public Open Space in Manningham

Public open space is broad and can describe both vegetated (permeable) and non-vegetated (impervious) areas. In this report public open space was defined as: parks and gardens; natural or semi-natural open space; and sportsfield and organized recreation (recreation reserves). Many neighbourhoods across the Manningham LGA are located within 400m of public open space and represented as blue (within 300m) or yellow areas (400m) in Figure 14 but orange and yellow shaded areas represent neighbourhoods over 500m and up to 1km away from public open space. It is interesting to note more neighbourhoods in the rural areas of Donvale, Park Orchards, Warrandyte and Wonga Park have greater distances to travel for access to public open spaces with red and orange shaded neighbourhoods representing distances of between 500-600m and 700m-1200m to closest public open space. A number of these red and orange shaded areas are also located in neighbourhoods across Bulleen, Lower Templestowe, Doncaster, Templestowe and Doncaster East.

Public open space provision objectives 56.05-2 included in the Victorian Planning Provisions[6] state that public open space should provide local parks within 400m of safe walking distance to 95% of all dwellings and that local parks should be 1 hectare in size. Previous research conducted by the Healthy Liveable Cities Group has found that only two-thirds of dwellings in metropolitan Melbourne met this standard (Mavoa et al., 2015). Furthermore, people with closest public open space that was larger than 1.5 hectares were more than twice as likely to do any type of walking (Koohsari et al., 2018). Additional factors influencing open space usage and health outcomes includes amenities, vegetation types, shading, safety aesthetics and maintenance (McCormack, Rock, Toohey, & Hignell, 2010) which is a resource challenge for local government.

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[6] http://planningschemes.dpcd.vic.gov.au/schemes/vpps

Access to Public Open Space >1.5ha
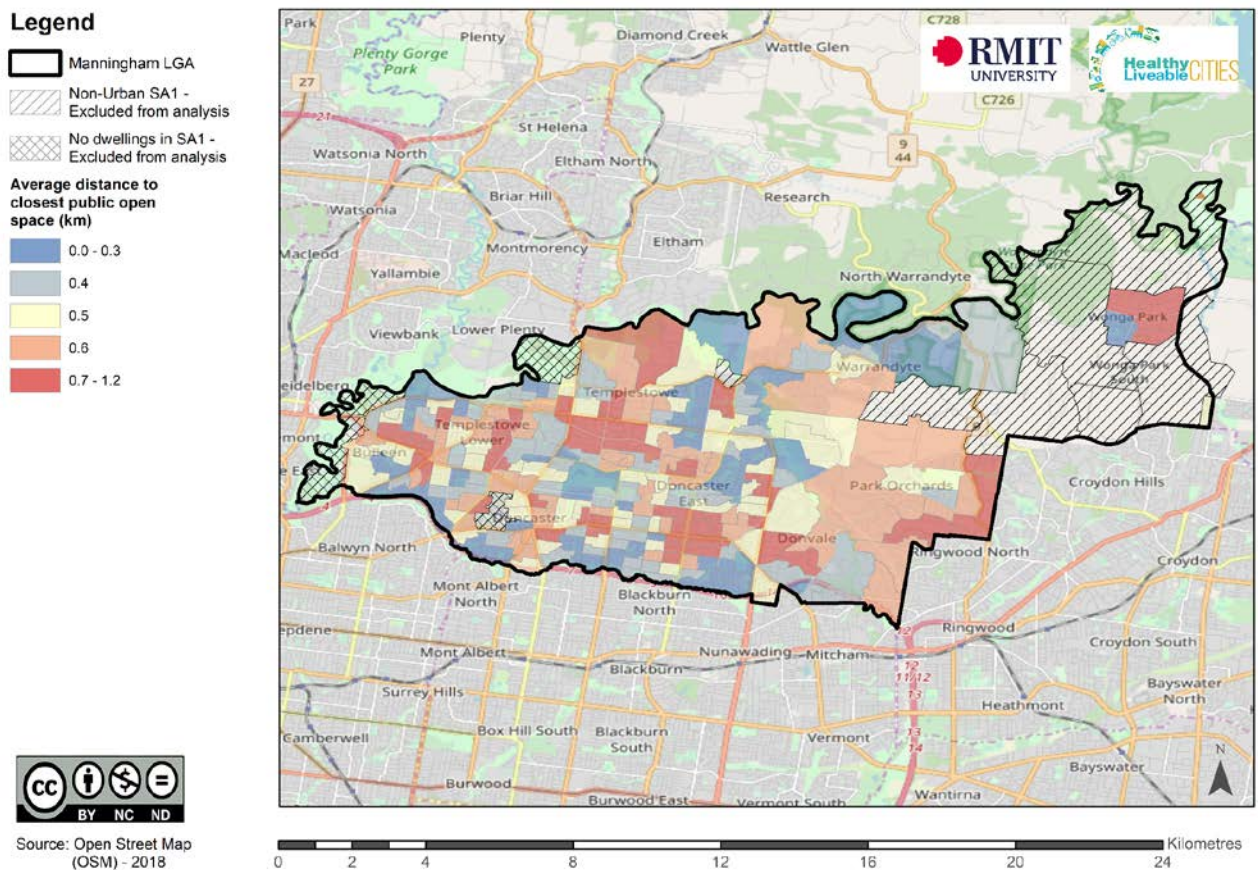
Figure 15: Distance to nearest Public Open Space >1.5ha in size (km)

As mentioned on the previous page, access to a close large public open space (>1.5 hectares) is associated with twice the likelihood of doing any type of walking (Koohsari et al., 2018). Access to large public open space (Figure 14) presents a different story to access to any public open space presented above. Shaded areas of orange are up to 600m from a large public open space and red shaded areas 700m – 1.2km from large public space with these areas visible across Doncaster East, Templestowe, Templestowe Lower, Bulleen, Park Orchards and Wonga Park. Although residents of Manningham have good access to natural spaces, these results suggest that many people are probably driving to them if they are being used for physical activity. Large residential lots are located across many areas of Manningham but previous research has found that large areas of public open space >1.5ha (not large residential parcels) are associated with increased levels of physical activity. Furthermore, shared use of public open space also has the added benefits of increased social contact with other residents and green urban areas are also associated with multiple physical and mental health benefits as well as biodiversity and ecosystem service benefits (Davern et al., 2016).
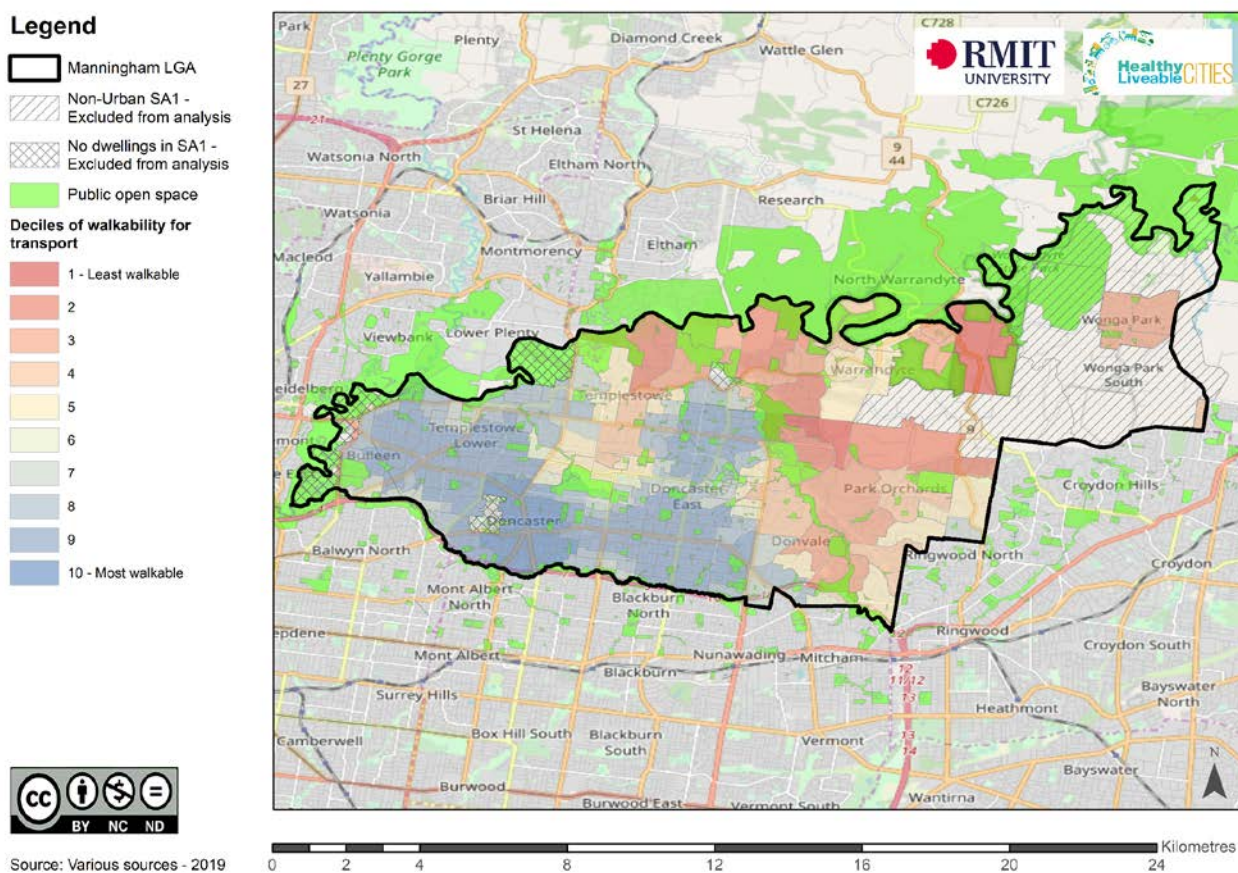
Figure 16: Location of Public Open Space overlaid with Transport Walkability Index

The LGA of Manningham benefits from by 3 major sources of public open space: spaces along the Yarra River (including Westerfolds Park); the Koonung Creek Linear Park; and the Mullum Mullum Creek Trail. These areas are obvious in Figure 16 with public open space represented in green shading. However, walkability to these areas is not available to all neighbourhoods or suburbs of the LGA. The suburbs of Donvale, Templestowe, Park Orchards, Warrandyte and Wonga Park have the lowest walkability of all areas of Manningham and despite the great provision of public open space in these suburbs, they are not easily accessed by walkable surrounding environments. Consequently, it is likely that many residents of these suburbs are driving to public open spaces within these areas where substantial natural resources are available. Further description and analysis on walkability for transport is available on page 45 and in Figure 34.
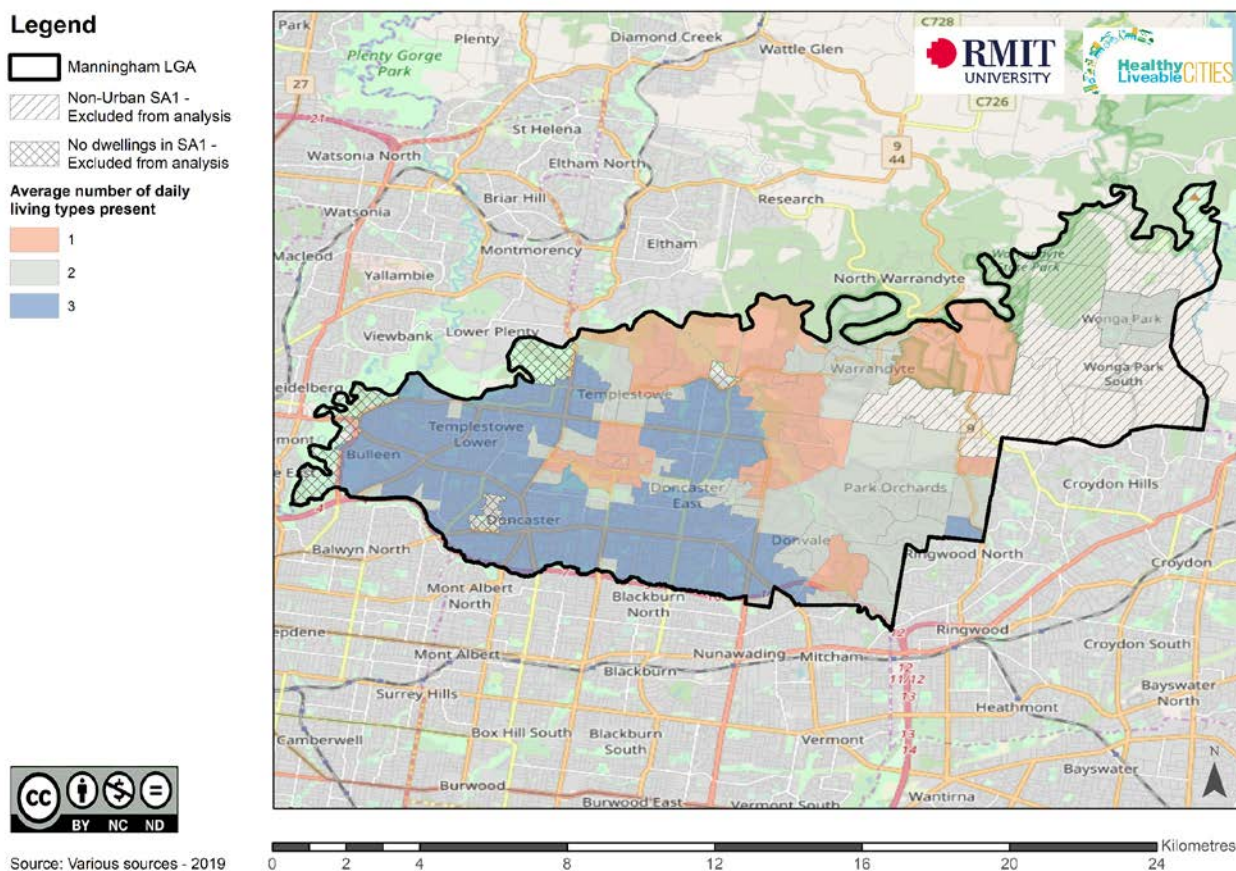
Figure 17: Average number of daily living types present across Manningham LGA

Services of daily living are important to meet the needs of residents and their everyday activities of daily life. The indicator of Access to Services of Daily Living has been defined as access to the following three types of services within a 1600m of a road network defined distance:

- convenience store/petrol station/newsagent;
- public transport stop;
- supermarket.

These services are needed for residents on a daily basis and the average number of daily living service types present are measured according to a score of 0-3 (minimum score of 0 and a maximum score of 3), with 1 point provided for each category present.

Some neighbourhoods of Bulleen, Templestowe Lower, Doncaster and Doncaster East have good access to services of daily living and shopping centres and supermarkets have a strong influence on these results. Neighbourhoods with reduced access to services of daily living include the large residential blocks between Templestowe and Doncaster and the residential area surrounding King Street Templestowe. Significant areas of the more rural suburbs of Donvale, Park Orchards, Warrandyte and Wonga Park have very limited access to services of daily living as indicated by the red shaded areas in Figure 17.
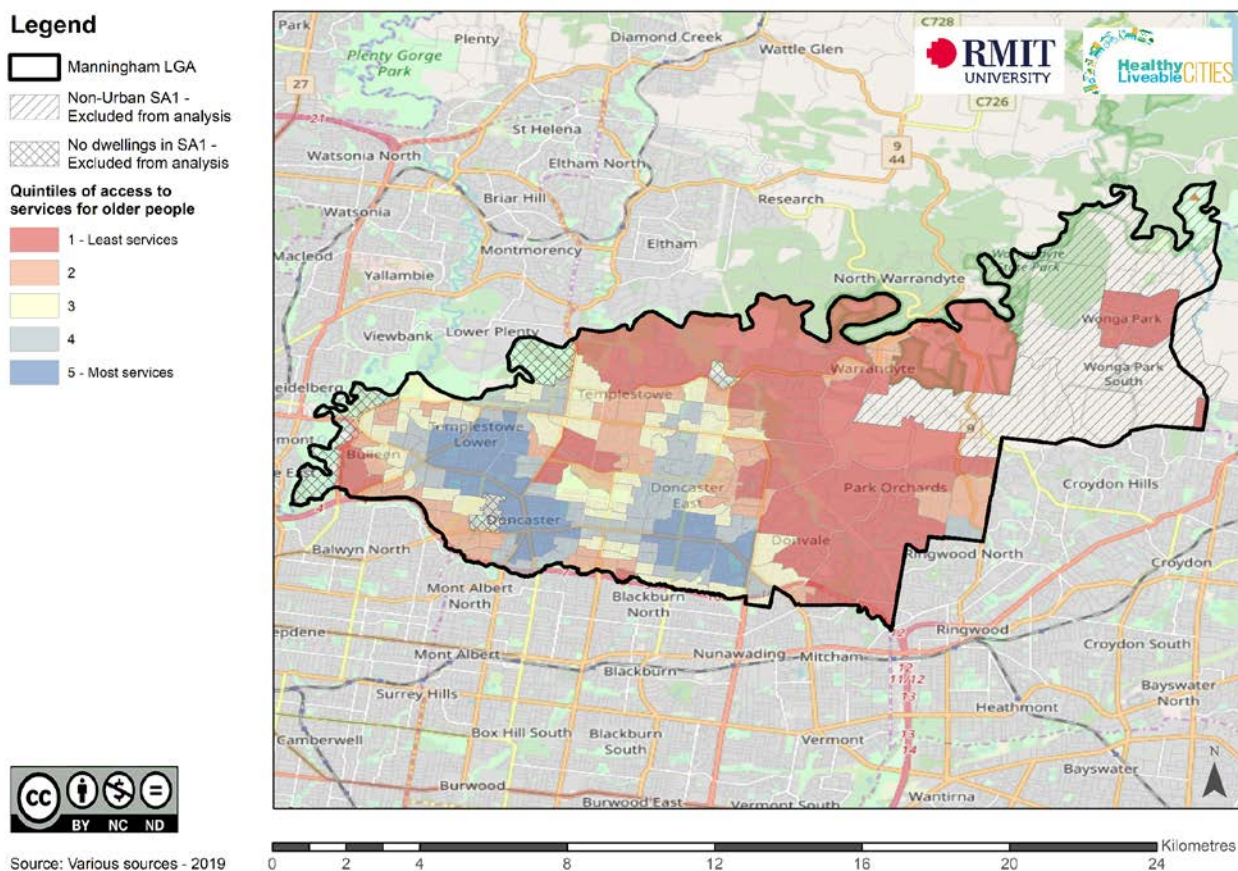
Figure 18: Manningham Index of Access to Services for Older People

Ageing in place and age friendly cities require community services, support and forward planning. Access to services for older people means access to relevant services including medical care, retail, recreation, affordable entertainment, social facilities, public transport, housing and age care facilities, home and community services and environmental facilities such as Public Open Space (Lowen et al., 2015). The specific measures used to represent these in this indicator of Access to Services for Older People include: community centres/neighbourhood houses/libraries, general practice clinics, hospitals, aged care services, aged care facilities, supermarkets, places of worship, University of the 3rd Age and public transport stops within 1600m of a residential dwelling. Access to these services are important for the social, economic, emotional and physical needs of an ageing population.

Neighbourhoods of Templestowe Lower, Doncaster and Doncaster East provide access to many of the services needed by older residents of Manningham with a high concentration of available services in these areas represented by blue shaded areas in Figure 18 above. In comparison, neighbourhoods of Bulleen have fewer services similar to many neighbourhoods of Templestowe, Donvale, Park Orchards, Warrandyte and Wonga Park.

Access to General Practitioners
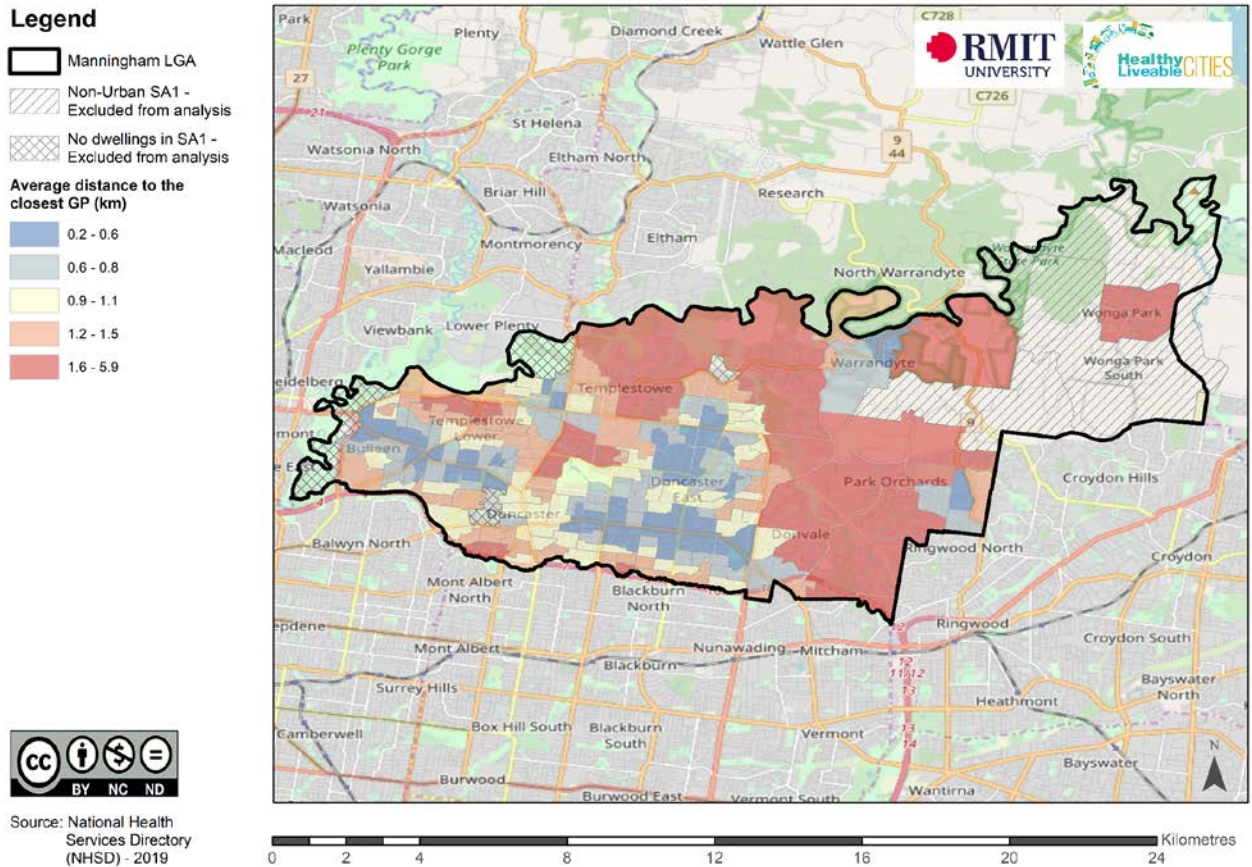
Figure 19: Average distance (km) to General Practitioners across Manningham LGA

Residents living in most neighbourhoods of Bulleen, Doncaster, Doncaster East, Warrandyte and most neighbourhoods of Templestowe Lower have good access to a General Practitioner (GP) within 1.5km in distance. Some neighbourhoods of Templestowe Lower and Templestowe are further distances of 1.6 – 5.9km from a GP while most neighbourhoods of Donvale, Warrandyte, Park Orchards and Wonga Park are all extended distances of 1.6 – 5.9km from a GP service.

Access to General Practitioners - Bilingual
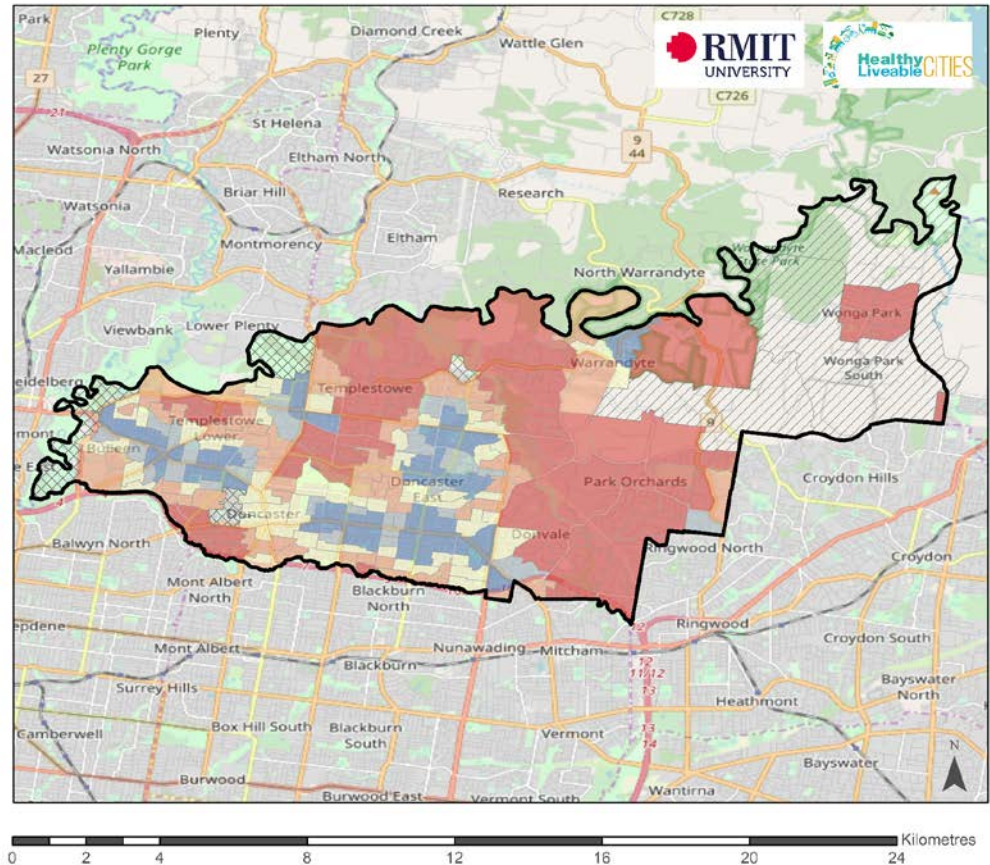
Figure 20: Average distance (km) to a General Practitioner with bilingual service

Not surprisingly, the average distance to a bilingual GP is very similar to access to any GP as presented in Figure 19 previously. Many neighbourhoods of Bulleen, Doncaster, Doncaster East, Warrandyte and most neighbourhoods of Templestowe Lower have good access to a bilingual GP within 2km. Residents living in neighbourhoods of Park Orchards and Warrandyte must travel further distances to access a bilingual GP compared to a GP providing non-bilingual services (1.8 – 5.9km) and very few bilingual GP services are available in Wonga Park.
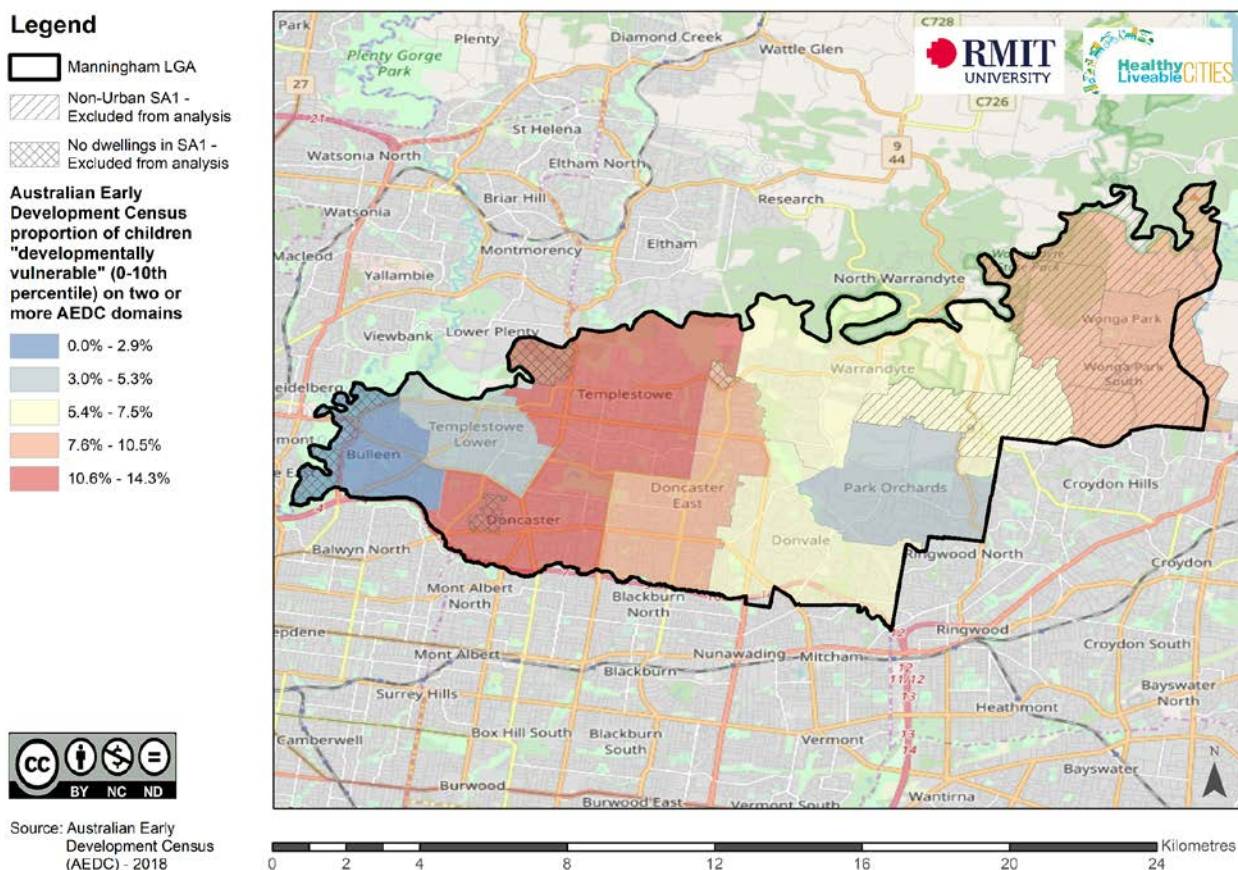
Education – Australian Early Development Census

Figure 21: Proportion of children "developmentally vulnerable" on two or more AEDC domains across the Manningham area (2018)

The Australian Early Development Census (AEDC) assesses the development of children as they begin their first year of school and requires a school teacher to complete a survey instrument. The AEDC measures five important areas of early childhood development: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school-based); and communication skills and general knowledge. Early childhood development was identified as important to the liveability assessment of Manningham. However, data are not available at the neighbourhood level: the AEDC is released at a larger unique geography similar to Statistical Area Level 2 (SA2).

AEDC results are summarised as indicators for areas graphically in Figure 21 and measure the proportion of children with completed AEDC results and classified as developmentally vulnerable[7] on two or more of the five domains. These AEDC data are collected at AEDC defined community levels[8] and data for the Manningham LGA have been customised and released by the AEDC at Statistical Area Level 2 (SA2s). In Victoria in 2018, 10.1% of children were considered developmentally vulnerable on 2 or more domains[9] while in Manningham 9.6% of children were vulnerable on 2 or more domains. Notably, the proportion of developmentally vulnerable children in Templestowe and Doncaster is above the Victorian average (10.6 – 14.3%) and the smallest proportion of developmentally vulnerable children are located in Bulleen (0 – 2.9%). The proportion of developmentally vulnerable children living within the Manningham LGA has also increased 1.9% since 2015.

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[7] www.aedc.gov.au/resources/detail/about-the-aedc-domains
[8] www.aedc.gov.au/resources/community-profiles
[9] https://www.aedc.gov.au/data/data-explorer?id=137581

Employment – Using Public Transport for Journey to Work
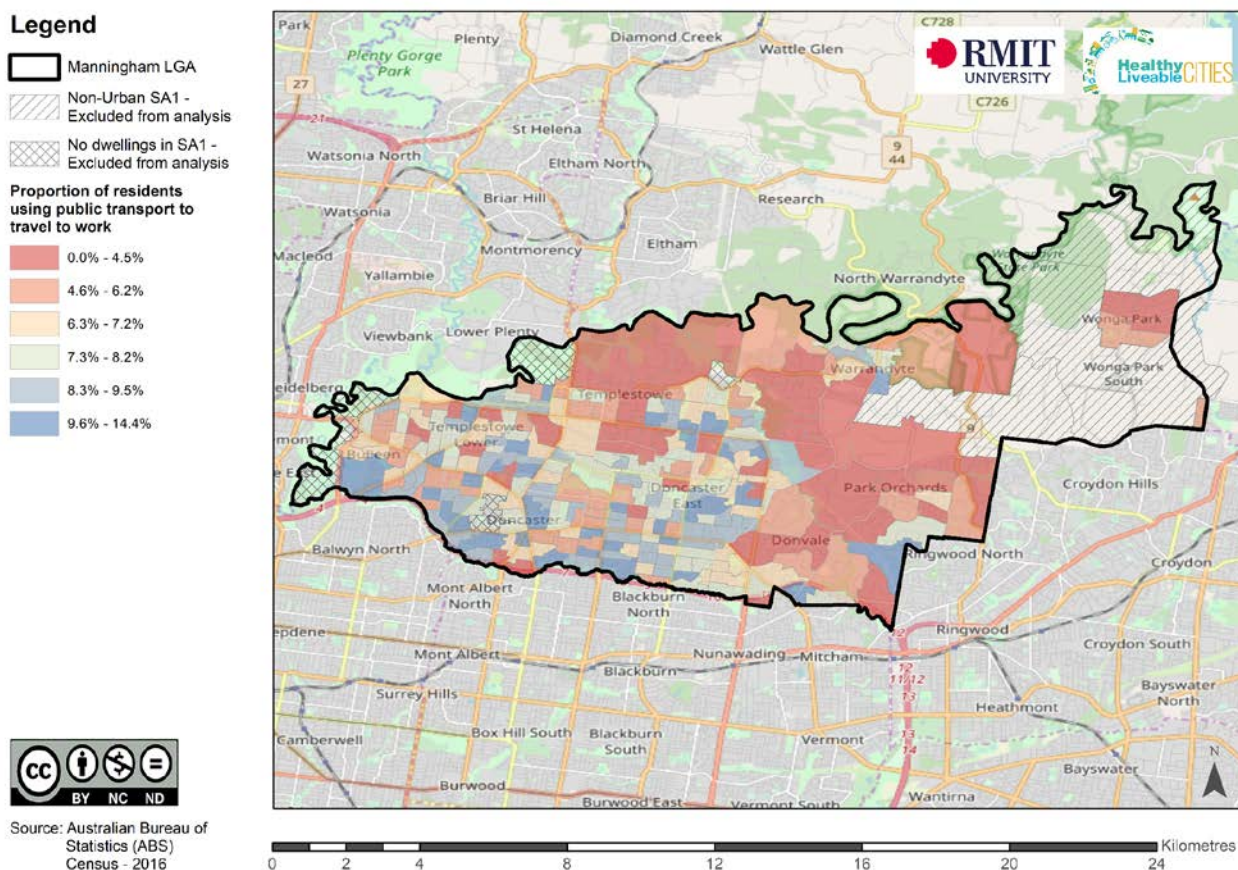
Figure 22: Journey to work travel mode using any public transport across Manningham

The majority of people living in the LGA of Manningham travel to work by car and 71% of people reported using a car (as a driver or passenger) to get to work in the 2016 Census[10]. This finding is consistent with the results presented in Figure 20 representing public transport usage at the neighbourhood level extracted from the 2016 Census journey to work data. The highest level of public transport use for journey to work was up to 14% in any single Manningham neighbourhood (9-14%) with these areas represented in darkest blue shading in Figure 22 and located across Bulleen, Doncaster, Doncaster East and sections of Bulleen and Templestowe Lower. Public transport patronage for journey to work drops significantly from Templestowe, Donvale and Park Orchards. The neighbourhoods shaded in orange represent public transport participation below 6.3% and are common across the outer suburbs and as well as neighbourhoods of Bulleen, Templestowe Lower, Templestowe and Doncaster closer to the city. The majority of residents using public transport travelled by bus (7%) which is the only form of public transport available within the LGA of Manningham and nearly 6% of residents worked from home according. Only 1% of residents used a train to get to their employment and fewer than 1% of residents travel over 50km to get to work. It is important to note that access to transport is an important social determinant of health and regardless of the demographic profile of the area, sedentary behaviour encouraged by motor vehicle travel is a longer term health risk for all individuals. Public transport is not only about convenience, but about improved levels of physical activity, health and sustainability.

10

https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA24210?opendocument

Employment – Using Public Transport Buses for Journey to Work and Distance Travelled
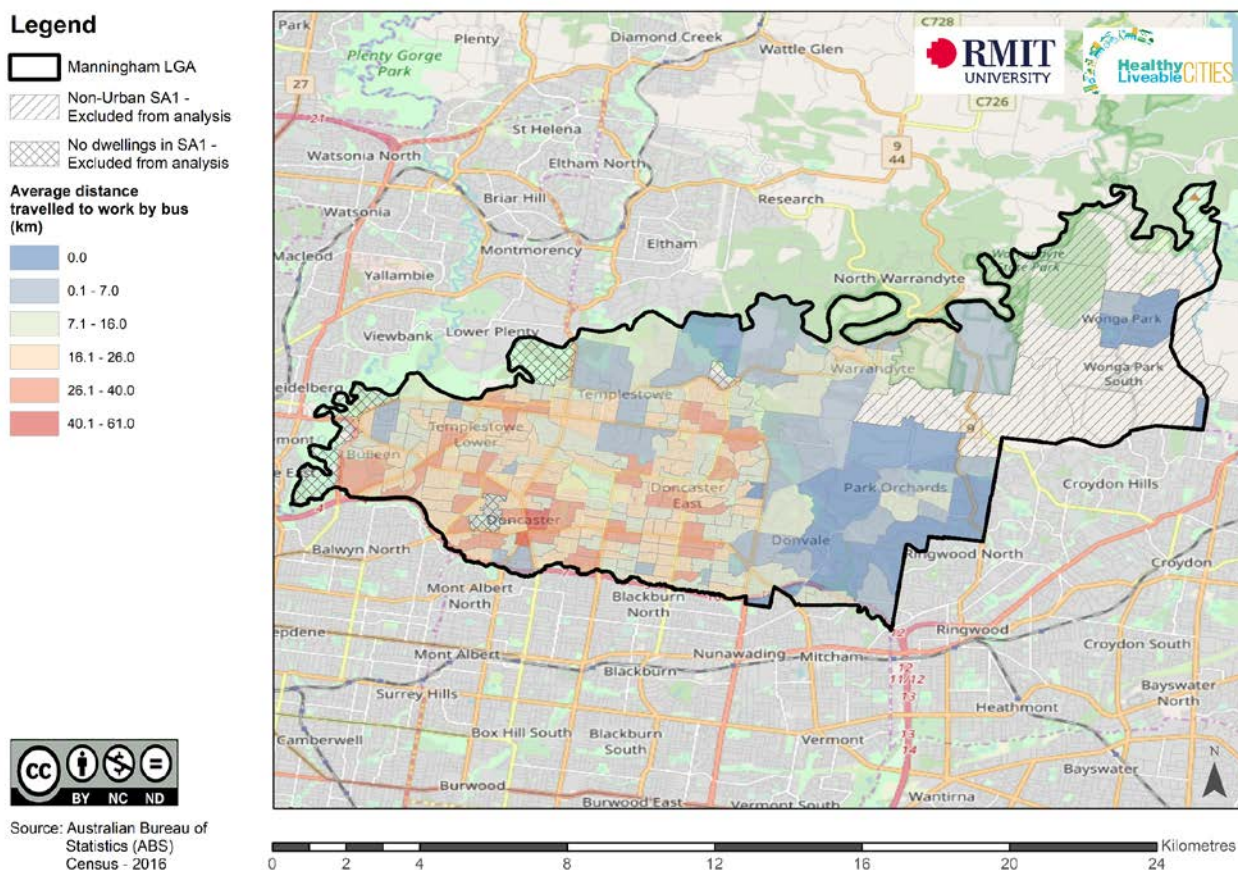
Figure 23: Residents using public transport buses to employment with distance travelled across Manningham

As described previously in Figure 22, the majority of Manningham residents who use any public transport to get to work use a bus (7%). Consequently, Figure 23 provides the average distance travelled on a bus for all neighbourhoods across Manningham. Residents travelling by bus living in the eastern neighbourhoods of the LGA travel distances between 16-40km to get to their place of employment. To place these distances in context, it is approximately 22km from Jacksons Court in Doncaster East to the Bourke Street Mall in Melbourne's Central Business District (CBD). However, distance in kilometres is all that can be ascertained from the Census data presented in Figure 23 and it is highly likely that residents from middle suburban areas of the Manningham LGA are not all travelling towards the CBD but also travelling across the city in multiple directions.

Employment – Youth Not Engaged in Work or Study
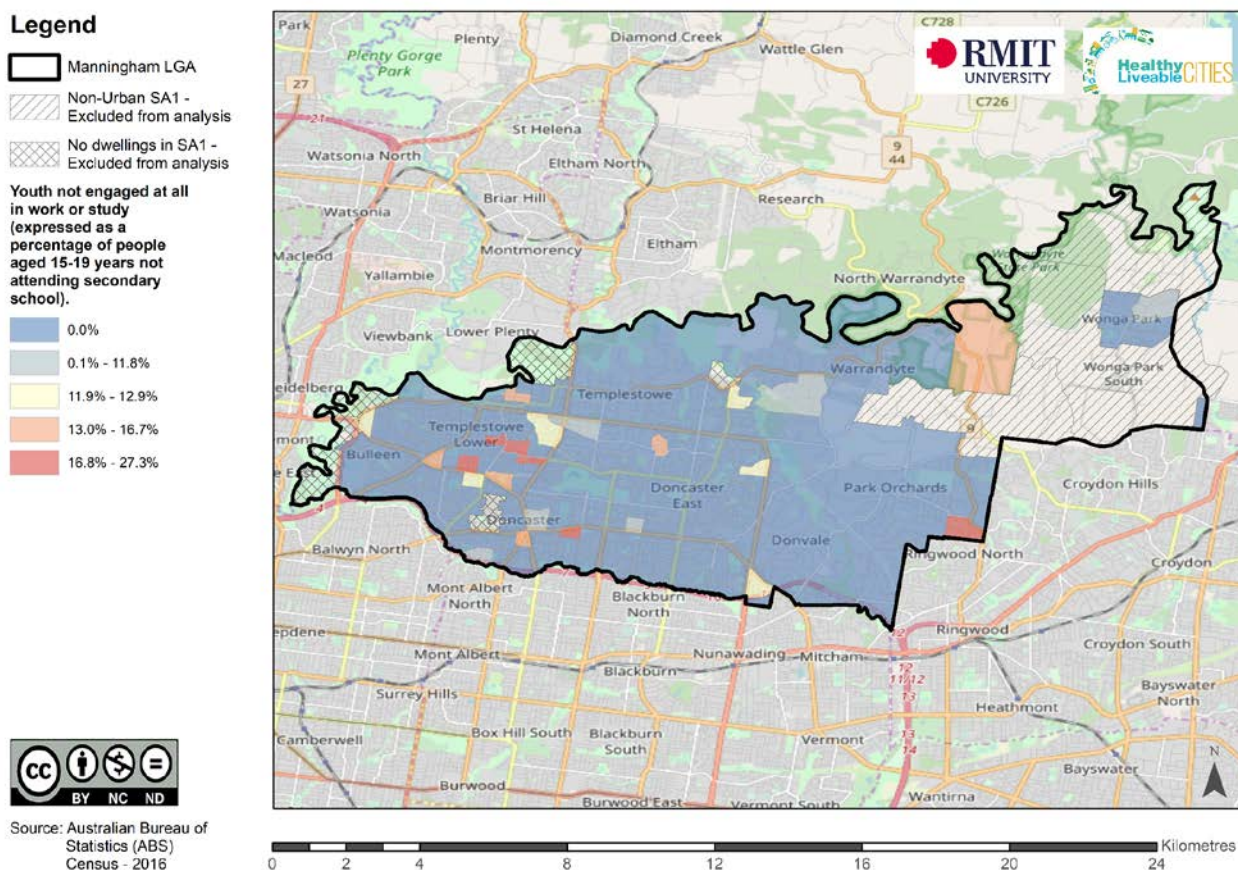
Figure 24: Youth not engaged at all in work or study across Manningham (expressed as a percentage of people aged 15-19 years not attending secondary school).

Disengaged youth describes young people aged 15-19 years who are not engaged in any work or study. Results for this indicator are presented in Figure 24 above and dark blue shaded areas cover the majority of Manningham where no youth are disengaged from work or study. However, there are some notable pockets of difference across neighbourhoods of Park Orchards, Templestowe Lower, Warrandyte and Doncaster where between 13-27% of youth are not engaged in work or study. These results should also be reviewed in context of Figure 21 that identifies neighbourhoods where children are developmental vulnerability on 2 or more domains of the Australian Early Development Census that similarly occur across areas of Doncaster and Templestowe Lower.

Family Violence
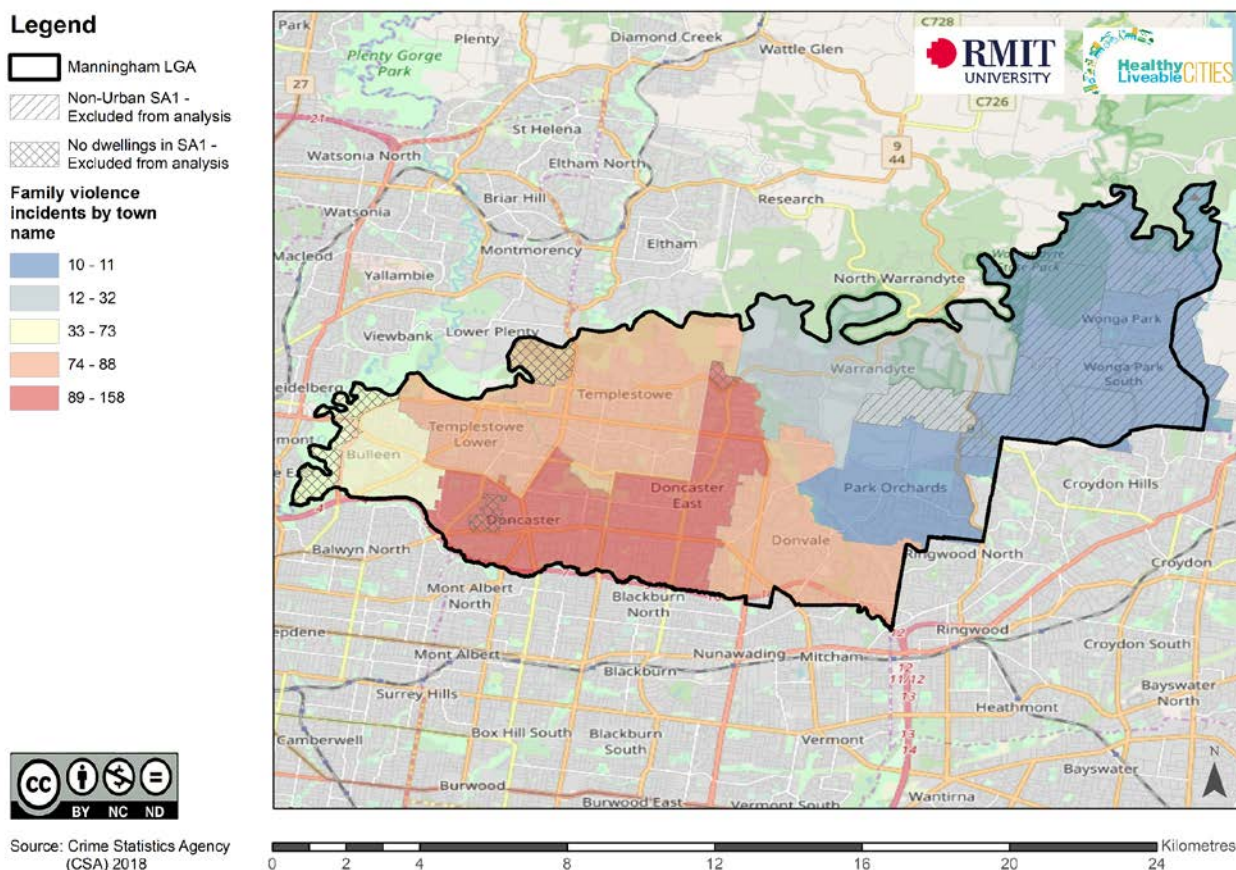
Figure 25: Family violence incidents across the Manningham (2018)

Family violence was identified as important to the liveability assessment of Manningham. However, data for family violence is only released at postcode or suburb level geography via the Crime Statistics Agency and presented and collated for the period of October 2017 – September 2018. Across Manningham, reported incidence of family violence is highest across the suburbs of Doncaster and Doncaster East (89-158 reports) compared to Templestowe Lower, Templestowe and Donvale (74-88 reports) and Bulleen (33-73 reports). The suburbs of Warrandyte, Parch Orchards and Wonga Park have the lowest reported incidence of family violence in Manningham with 10-32 reports made across the 12-month period to 2018.

It is important to note that these statistics describe the actual number of incidents of family violence while crime statistics are best interpreted according to a ratio of per 100,000 people based on Estimated Resident Population to account for incidence within population. These figures can be customised according per 100,000 people using ABS Mesh Block population density in future analyses. Crime Statistics Agency data for the entire LGA of Manningham reveals 558 incidents of reported family violence per 100,000 population which is the 5th lowest of all 79 Victorian LGAs[11].

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[11] https://www.crimestatistics.vic.gov.au/family-violence-data-portal/family-violence-data-dashboard/victoria-police

Gambling – Number of Machines
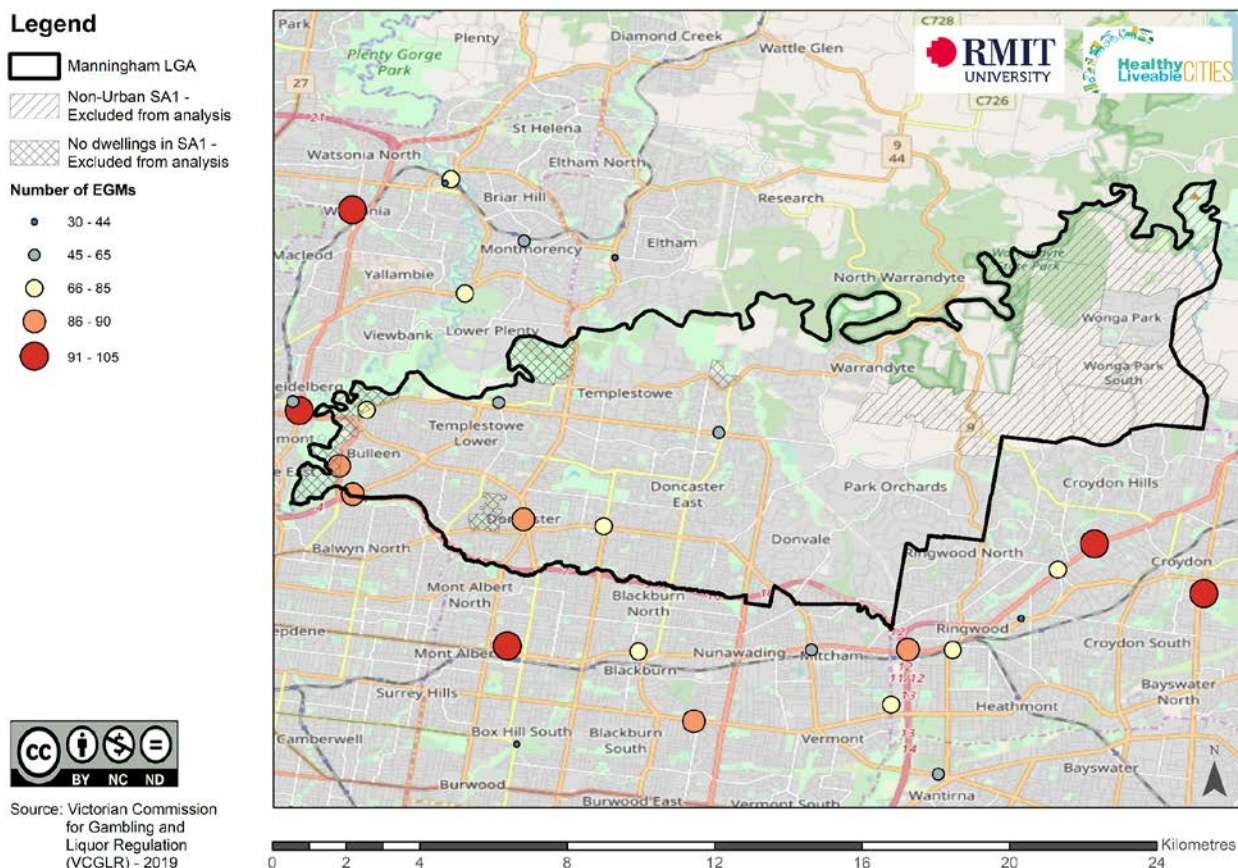
Figure 26: Number of Electronic Gaming Machines in Manningham

Gambling data on Electronic Gaming Machines (EGMs) is derived from the Victorian Commission for Gambling and Liquor Regulation (VCGLR) and presented in Figure 26. There are a number of venues that hold between 86-105 EGMs located close to the border of Manningham or within close proximity to neighbourhoods of Manningham. Three venues in Manningham have between 86-90 EGMs while 3 venues close to the border of the LGA have between 91-105 EGMs. It is important to note that Manningham has few EGM venues available in the municipality but many within close distance in neighbouring suburbs, particularly within the LGAs of Whitehorse, Maroondah and Banyule.

Gambling – Total Venue Expenditure on EGMs
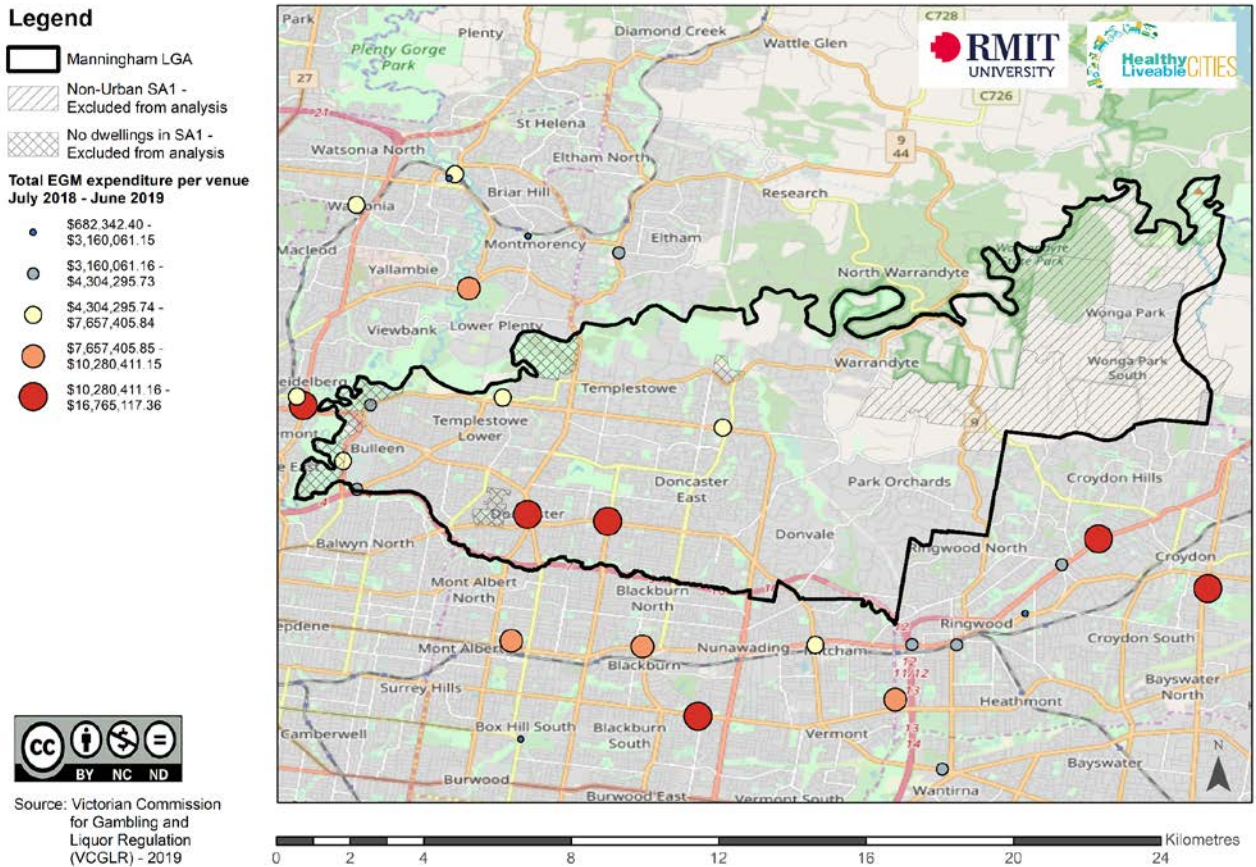
Figure 27: Total expenditure spent on EGM Gambling for venues in Manningham

Although there are few venues with EGMs available within Manningham, total expenditure spent on gambling at these venues is high (Figure 27). Between $10.3M – $16.7M was spent on EGM gambling at two venues in Manningham: the Shoppingtown Hotel and Doncaster Hotel. Notably the Veneto Club has 3 more machines (90 EGMs) than the Shoppingtown Hotel (87 EGMs) while total EGM gambling expenditure is higher at the Shoppingtown Hotel. Both venues with highest EGM expenditure are also located in Doncaster. These results suggest that total gambling expenditure and the number of EGMs, and the location of venues should be considered in future applications for additional EGMs across the LGA.

Gambling – Per Machine Expenditure
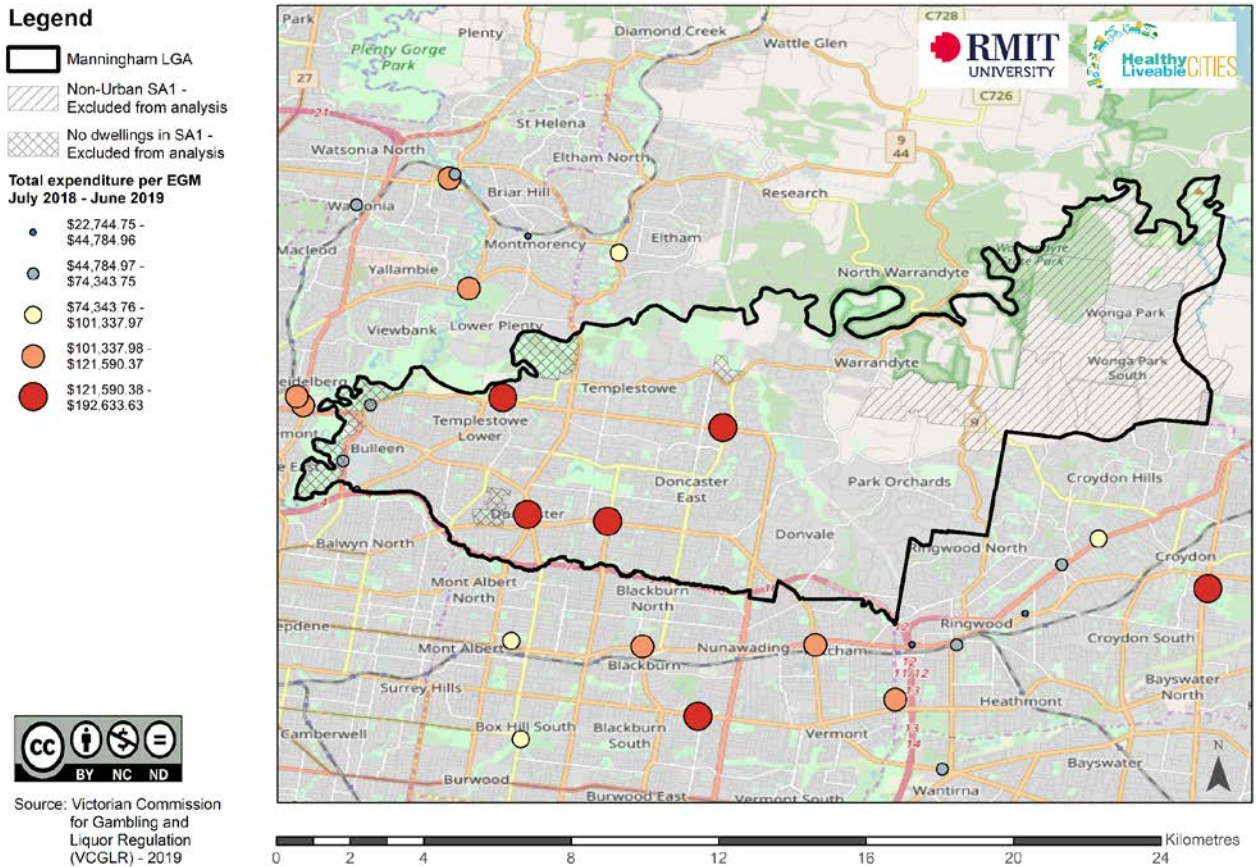
Figure 28: Per Machine EGM Expenditure in Manningham

Per machine EGM gambling expenditure varies across Manningham and is presented in Figure 28. Per machine expenditure is lowest at the Manningham Club and the Veneto Club ($23K-$45K per machine annually) while the Shoppingtown Hotel, Doncaster Hotel, Templestowe Hotel and Cherry Hill Tavern have the highest per machine EGM gambling expenditure ($122K-$193K per machine annually). The separate spatial analyses of EGM gambling presented in Figures 26-28 are indicative of the complexities of understanding gambling data across the community.

Housing Affordability – Mortgaged Households
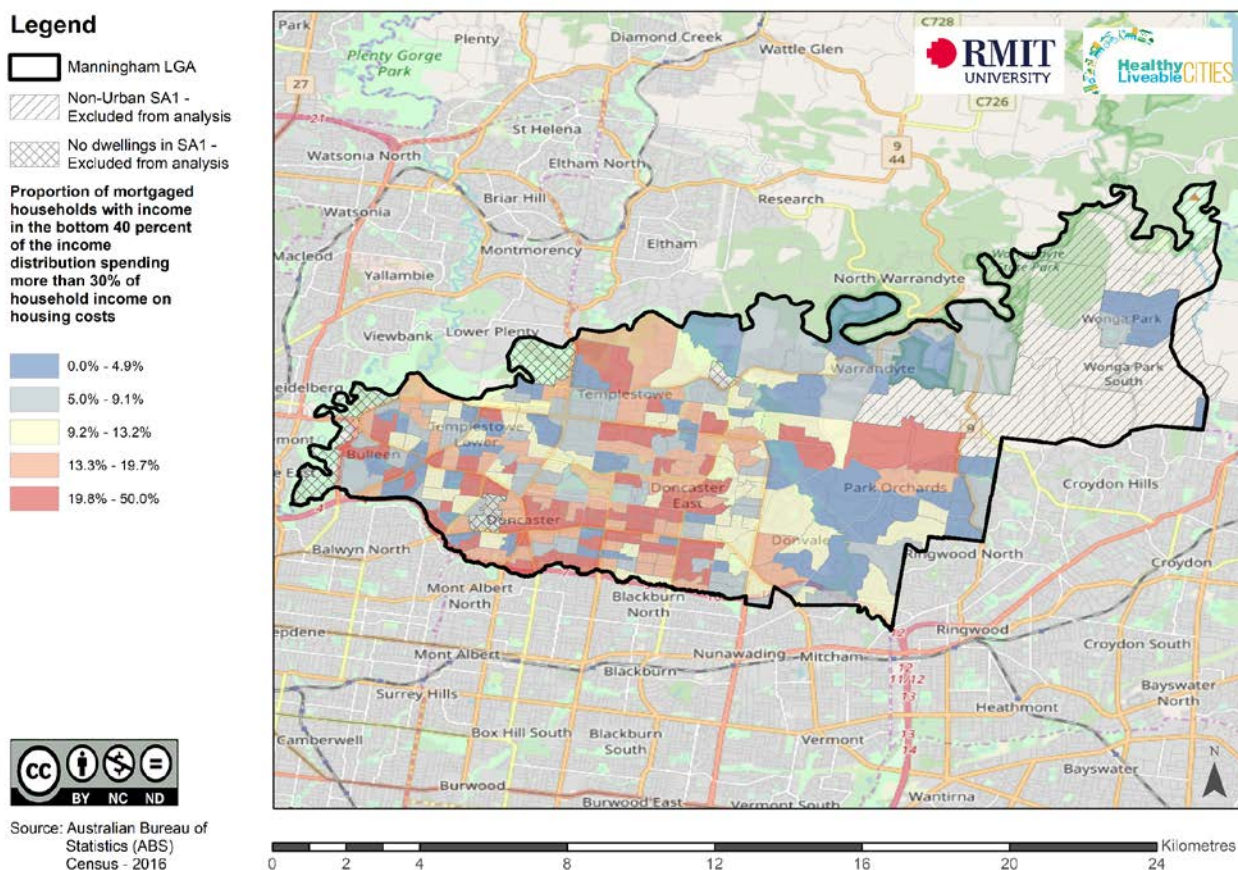
Figure 29: Proportion of home-owner households in the lowest 40% of incomes spending more than 30% on housing costs

Mortgage stress is defined according to households spending more than 30% of household income on housing costs and particularly hard for lower income households in the lowest 40% of household income distribution. The Planning and Environment Act 1987 was recently amended in 2018 to acknowledge moderate, low and very low household income definitions and the inclusion of low and very low income households in the indicator of housing affordability presented in Figure 29 is consistent with the bottom 40% of incomes. Mortgage stress for home owner households is generally low across the more eastern outer neighbourhoods of Manningham with the exception of two neighbourhoods surrounding Park Orchards. However, neighbourhoods located closer to the city, particularly in Doncaster and Doncaster East, have a greater incidence of low and very low income households experiencing housing stress as indicated by the red shaded areas where housing stress ranges from 20-50%.

The 2018 median house price in Manningham was $1,236,500 decreasing to $1,061,000 in 2019 while median units/apartment prices dropped from $626,000 in 2018 to $603,000 in 2019 according to current property data (30/7/19)[12].

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[12] https://www.propertyandlandtitles.vic.gov.au/property-information/property-prices

Housing Affordability – Rental Households
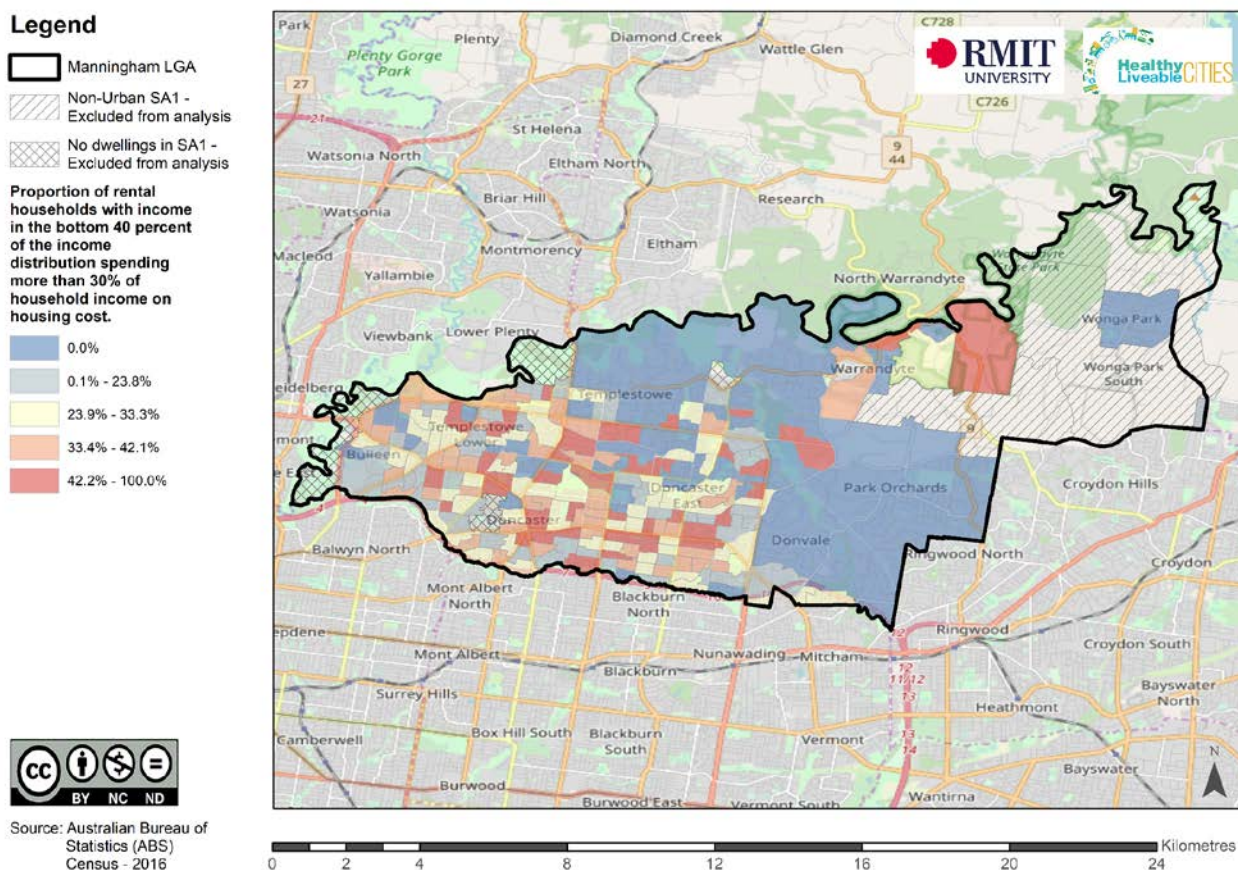
Figure 30: Proportion of rental households in the lowest 40% of incomes spending more than 30% on housing costs

Housing affordability for low income rental households is assessed in Figure 30 and presents a different result to home-owners presented previously in Figure 29. Red shaded areas represent neighbourhoods where between 42-100% of low income rental households are spending more than 30% of their income on housing costs. These neighbourhoods are dispersed across Manningham and concentrated in the neighbourhoods of Templestowe Lower, Doncaster, Doncaster East and even sections of Warrandyte and Park Orchards.
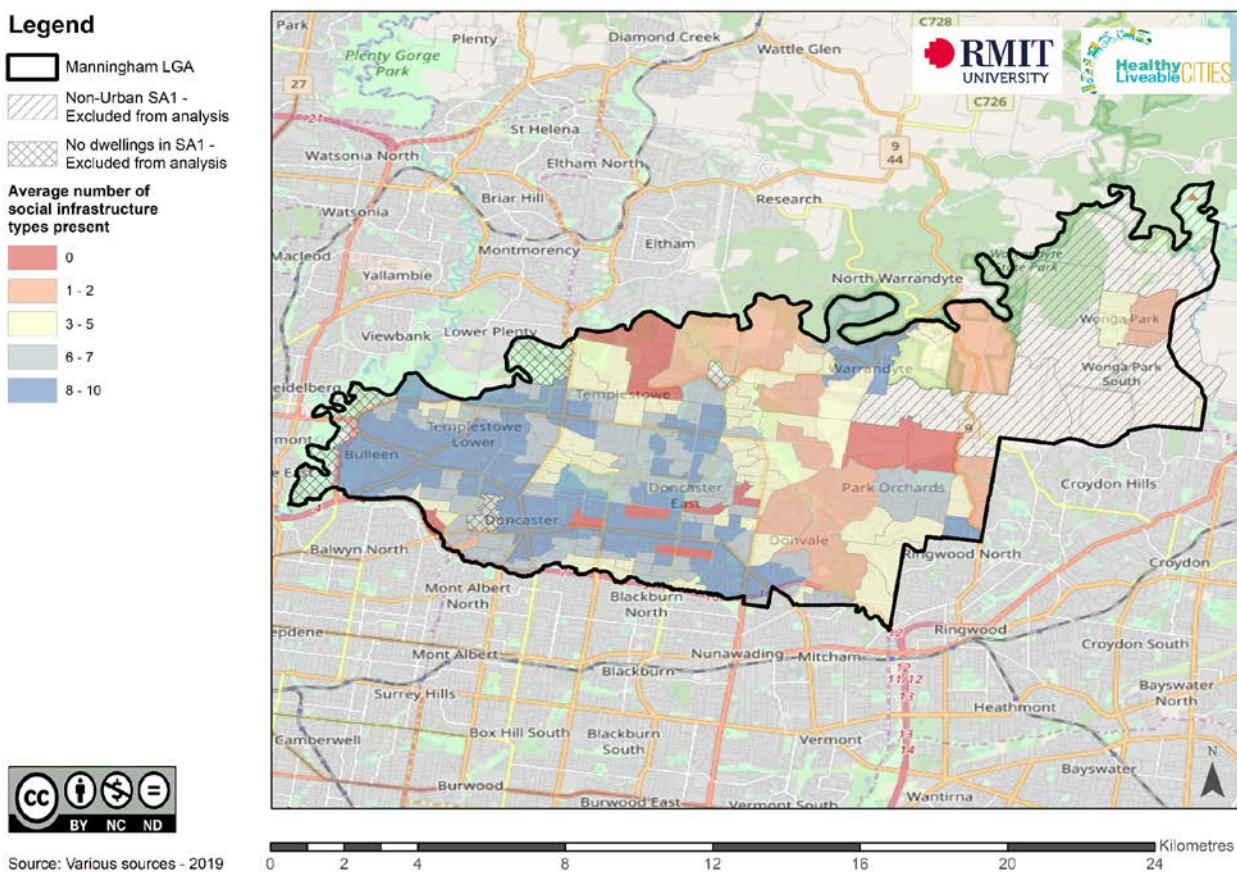
Social Infrastructure

Legend

- Manningham LGA
- Non-Urban SA1 - Excluded from analysis
- No dwellings in SA1 - Excluded from analysis

Average number of social infrastructure types present
- 0
- 1 - 2
- 3 - 5
- 6 - 7
- 8 - 10

Source: Various sources - 2019

Figure 31: Mix of social infrastructure - calculated based on 4 domains: Health and Social Services; Early Years; Culture and Leisure; and Community Centres. These domains were measured by 15 individual service types which were used to calculate the presence of service mix for each neighbourhood ranging from 0-15.

Social infrastructure addresses social service needs across the lifespan and includes a range of different services that are usually government funded. These essential services create the material and cultural living conditions and have been measured through the development of a social infrastructure index which assess the mix of a range of services (Davern, M. et al., 2017). Data included in this social infrastructure index were:

- Community centres/neighbourhood houses;
- General Practitioners and dentists;
- Government primary schools and secondary schools;
- Libraries;
- community health centres;
- Aged care facilities;
- maternal and child health centres;
- Childcare and out of school hours childcare;
- Cinemas, museums, art galleries;
- Swimming pools and sport and recreation facilities.

Access to a mix of social infrastructure is higher in the Bulleen, Lower Templestowe and Doncaster, and also across areas of Warrandyte and some sections of Park Orchards. Areas serviced less well by social infrastructure include Templestowe and Donvale and neighbourhoods between these suburbs shaded red.

Transport – Access to Public Transport Stops
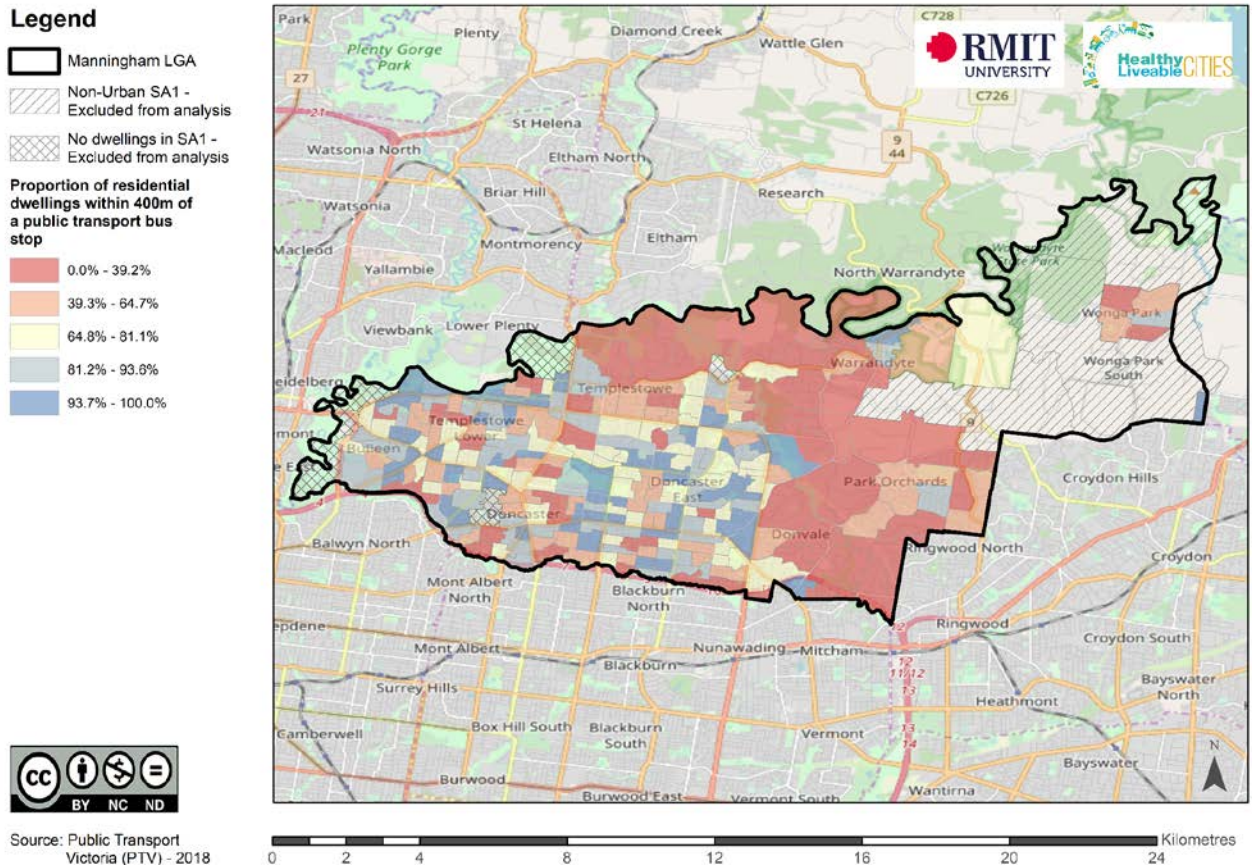
Figure 32: Proportion of residential dwellings in Manningham within 400m of a bus stop.

Bus travel is the only form of public transport in Manningham. Access to a public transport bus stops within 400m (a short walk) is provided in Figure 32 above. Red shaded areas represent neighbourhoods where less than 1/3 of residents have access to a bus stop within 400m and include the majority of Park Orchards, large sections of Warrandyte and Donvale and a number of neighbourhoods across the more inner suburbs of Doncaster and Templestowe Lower and the most southern sections of Doncaster East. Blue shaded neighbourhoods represent neighbourhoods where most residents have close access to a public transport bus stop. It is important to note that this indicator only provides a measure of distance to nearest bus stop and does not assess the frequency of public transport.

Transport – Frequency and Access to Public Transport
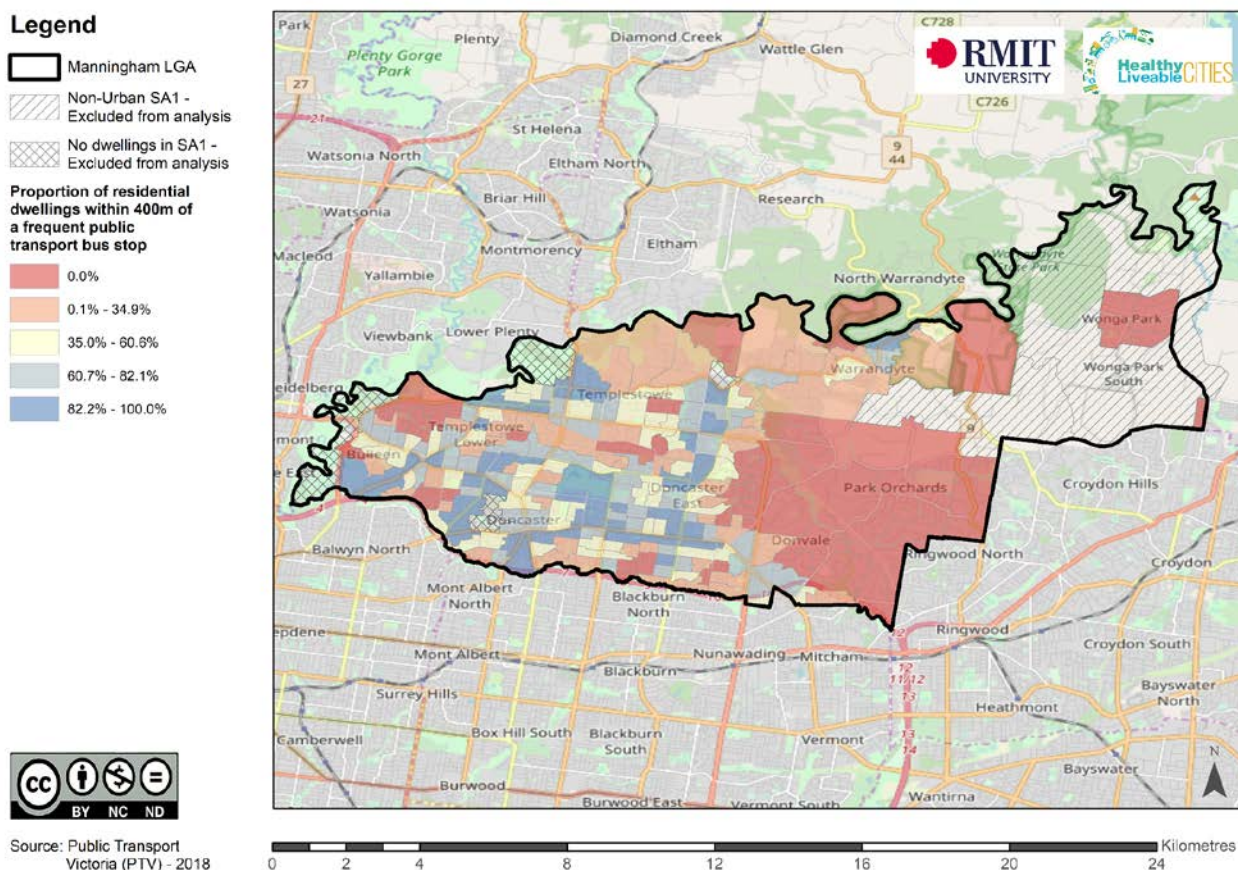
Figure 33: Proportion of residential dwellings in Manningham within 400m of a public transport stop and a frequent service.

Public transport service frequency is defined according as an available public transport service, every 30 minutes, on a weekday between the hours of 7:00am to 7:00pm. Access to frequent public transport is greatest in neighbourhoods of Doncaster, Doncaster East, Templestowe, Templestowe Lower and Bulleen where 82-100% of residents have access to frequent public transport represented in blue shaded areas. Park Orchards residents have no access to a frequent public transport service, nor do residents of Wonga Park and neighbourhoods of Templestowe Lower and those near the Blackburn North boundary. These areas are shaded in red in Figure 33 and located across neighbourhoods of the Manningham LGA.

Walkability
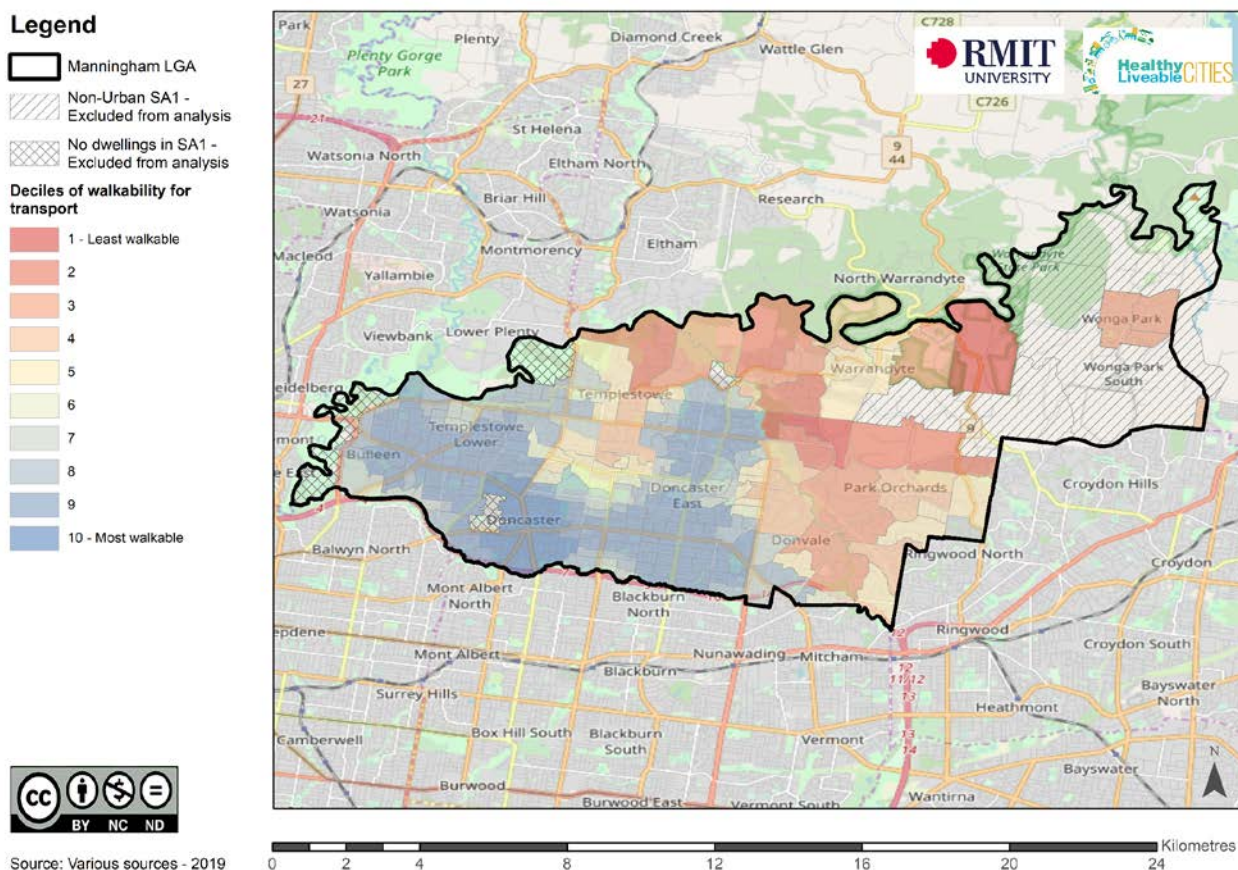
Figure 34: Walkability for Transport across Manningham

Walkability for transport for Manningham is presented in Figure 31 and is calculated based on three key factors: **land use mix and services of daily living** (*something to walk to*); **road connectivity** (*a way to get there*); **and housing density** (*higher population densities are associated with increased populations needed to supply services and different land uses*) (Giles-Corti et al., 2014). These factors influence how people move around their local neighbourhoods to complete everyday activities and the importance of access to supermarkets, convenience stores, petrol stations, newsagents and public transport stops in community design. An extensive research literature has consistently shown that local neighbourhood design is an important influence of physical activity, health outcomes, social connectedness and sustainability (Saelens, Sallis, & Frank, 2003).

The most walkable areas of Manningham include many neighbourhoods across Bulleen, Templestowe Lower, Doncaster East and Doncaster and central areas of the LGA. Lower levels of walkability are evident in Park Orchards, Templestowe, Wonga Park, Donvale and Warrandyte. It is important to note that Walkability for transport is calculated based on residential density and consequently population but all three aspects of destinations, road connectivity and housing density need to be present to achieve walkability for an area.

Walkability – Footpaths
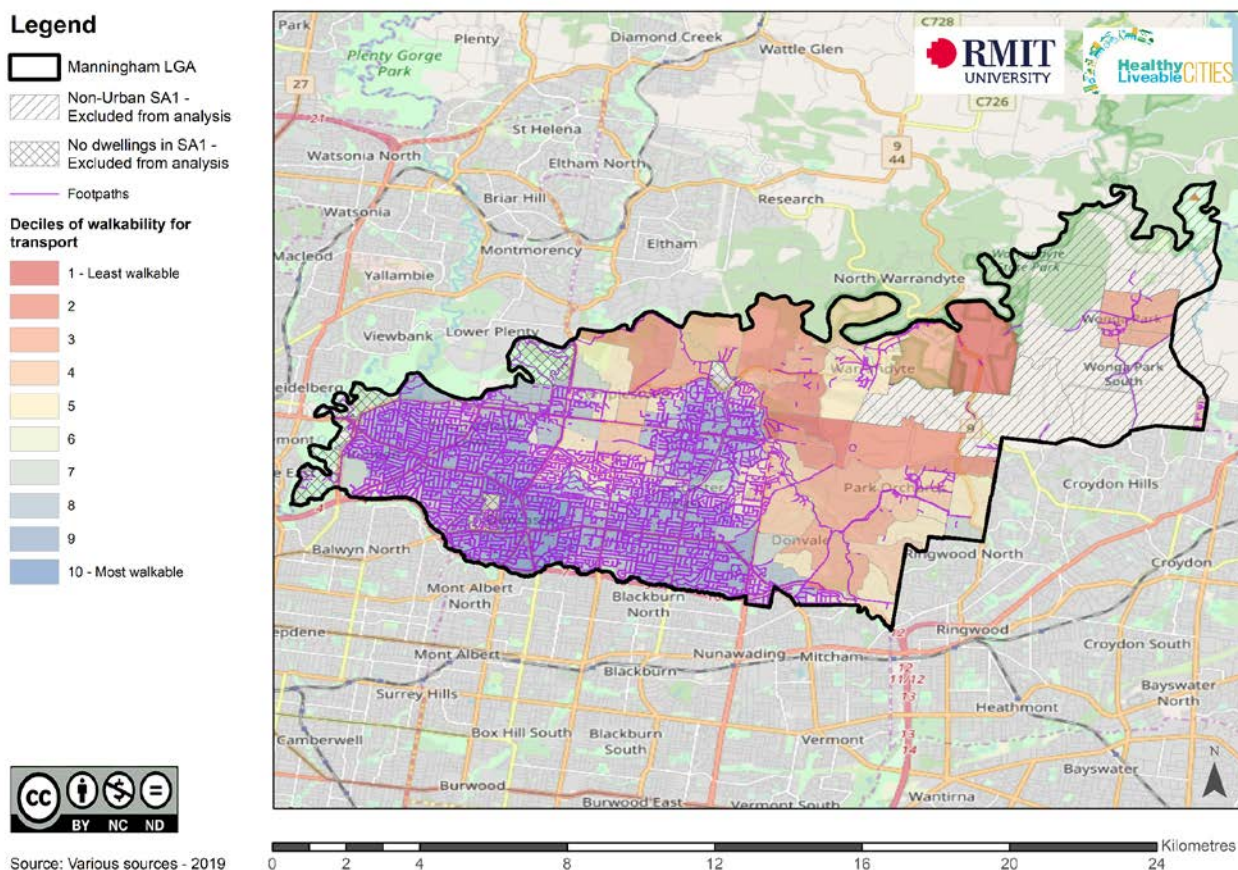
Figure 35: Walkability for Transport in Manningham overlaid with footpaths

Footpath data were provided by Manningham City Council to provide a better understanding of walkability for transport in conjunction with foot path assets. Footpaths are particularly important for the mobility of families with young children, people with disabilities and older people and support health outcomes, particularly with increased densities (Veerman et al., 2016). Footpaths also provide vital community infrastructure that support residents socialising, building community connections and creating safe environments for pedestrians separated from vehicles (Gunn & Giles-Corti, 2014).

Foot path supported walkability is heavily concentrated across the most walkable suburbs of Bulleen, Templestowe Lower, Doncaster East and Doncaster and central areas of the LGA. Footpath provision is provided in the most walkable areas of Manningham as revealed in Figure 34 on the previous page. Neighbourhoods of Park Orchards, Donvale, Warrandyte and Wonga Park have limited footpaths and the least walkable neighbourhoods which are most important for the most vulnerable members of community including young children, the elderly and people with a disability.

Walkability – With Elevation and Speed
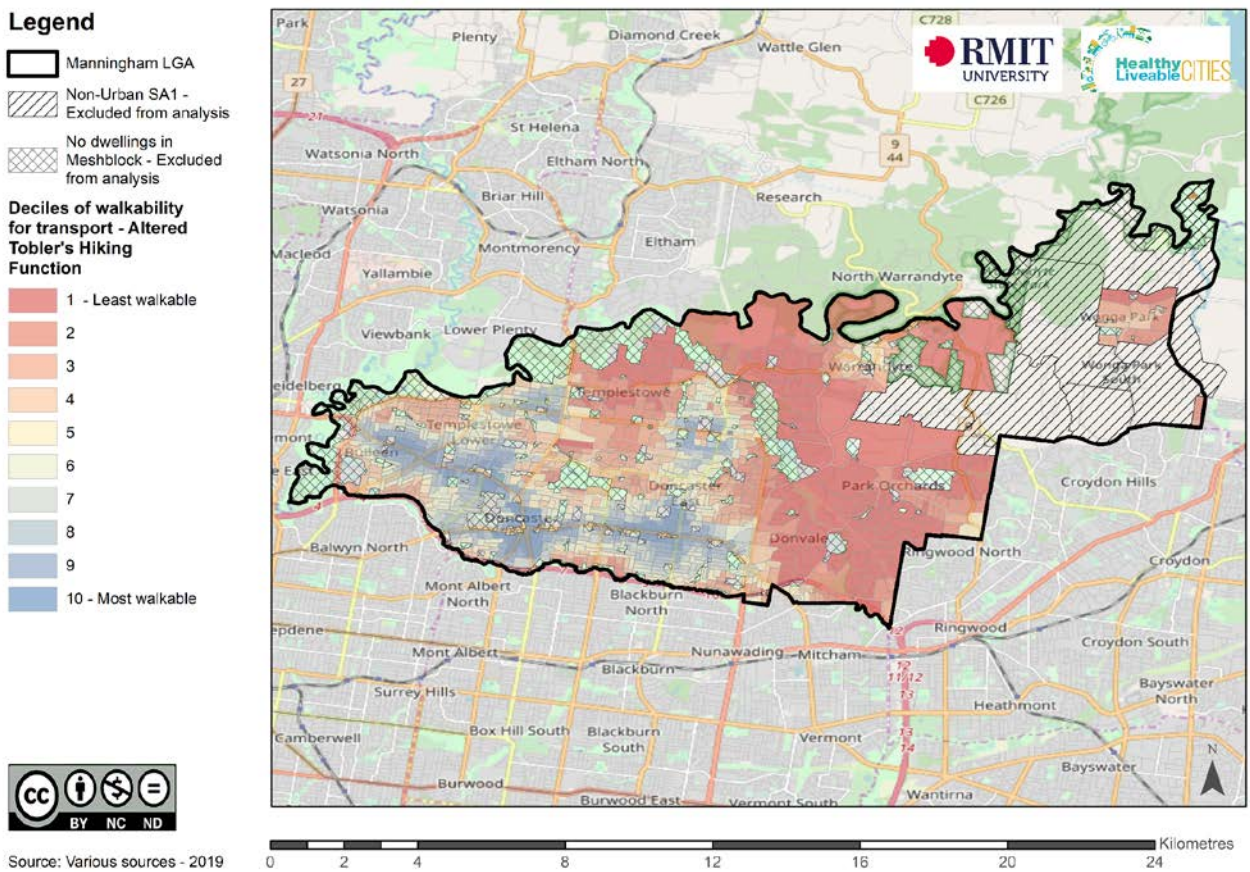
Figure 36: Walkability for Transport in Manningham calculated according to time with depth elevation modelling

This project created a new indicator of walkability to examine any potential differences in walkability across Manningham related to hilliness or the topography of the landscape. An altered version of Tobler's Formula was used and modelled based on speeds and distances extracted from existing travel diary data from the Victorian Integrated Survey of Travel and Activity. A model was created using Victorian Depth Elevation Models at a resolution of 10m so any change in elevation would be accurately reflected. This was combined with a constant velocity model (speed and distance) and both functions were optimized to develop the final model of walkability and topography presented in Figure 36. Similar patterns of walkability remain present to Figure 34. However, less highly walkable (dark blue) neighbourhoods are evident across Doncaster, Doncaster East and Templestowe indicative of hills across the area.

Walkability – Topography Modelling
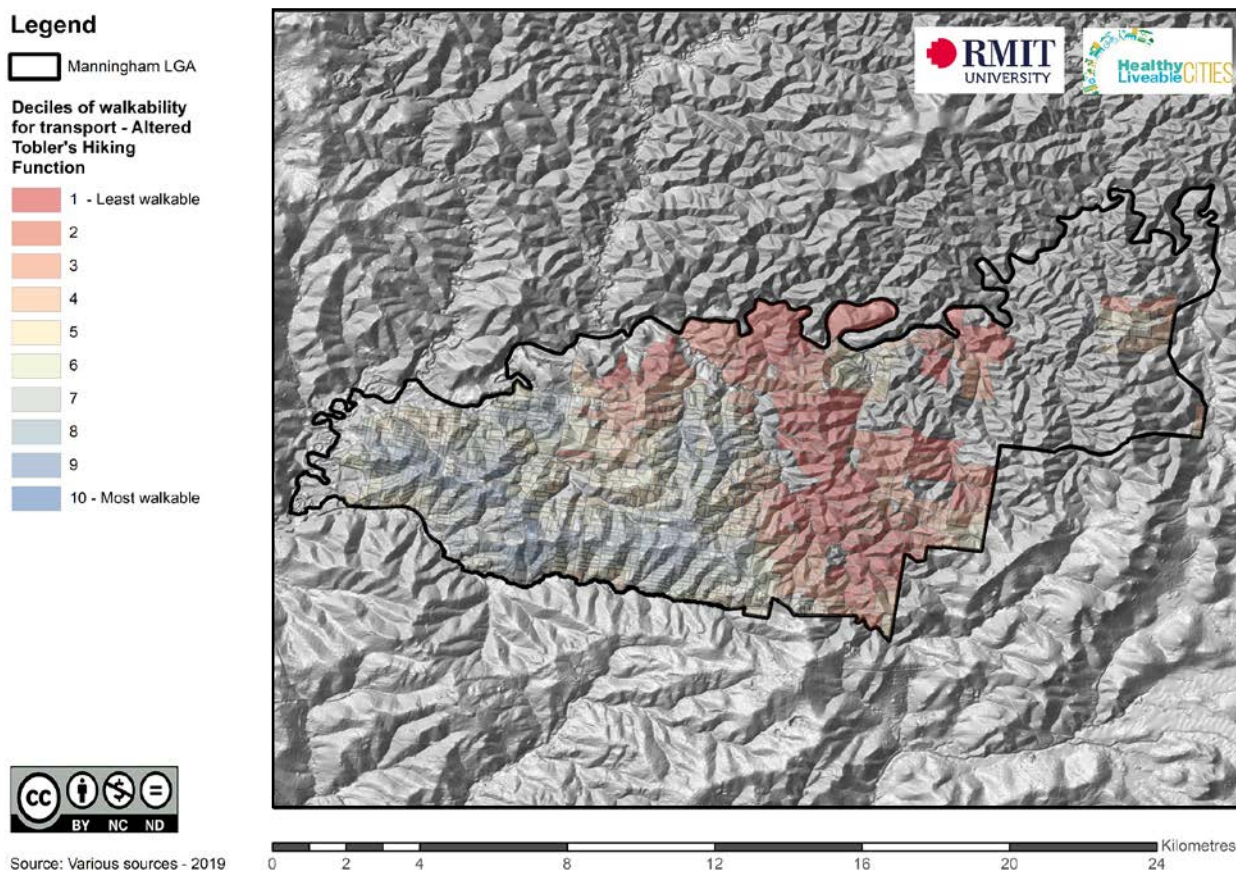
Figure 37: Walkability for Transport in Manningham calculated according to time with depth elevation modelling and shown with topography

A visual representation of topography is presented in Figure 37 along with walkability for transport factored according to depth elevation using a constant velocity model (speed and distance). These data have been previously presented in Figure 36 without the visual imagery of the depth elevation and show the hilliness across the Manningham municipality. Previous research indicates that people are most likely to walk with access to a reason to walk (destinations) using a supportive or connected road network and with people available to support the destinations (e.g. housing density). However, the hilliness of the LGA reinforces the need for better access to public transport bus services (Figure 32) specifically to address the transport needs of more vulnerable members of the community including older people and those with disabilities or mobility issues.

Conclusions and Implications

This Liveability Assessment of the Manningham LGA has been conducted by the *Healthy Liveable Cities Group* at RMIT University and funded by the DHHS. The liveability indicators selected for inclusion in the report have been identified in partnership with Manningham City Council, DHHS and RMIT University and the assessment reveals a range of strengths and challenges across a municipality with striking geographic and socio-economic differences. This Liveability Assessment provides an opportunity to measure and monitor the objectives identified in the Manningham City Council Plan 2017-2021 and the Manningham Healthy City Strategy 2017-2021 identified in the introductory section of this report. It also provides useful information for the preparation of new planning directions for 2022 and beyond. A summary of key findings is provided below together with a discussion on implications.

- Access to alcohol is within close distances to most neighbourhoods across Manningham particularly in the suburbs of Doncaster, Doncaster East, Templestowe and Bulleen. Access to Food presents a different story across the municipality.

- Access to healthy food requires further distances to be travelled for residents of the more socio-economically advantaged suburbs of Templestowe, Donvale, Park Orchards and sections of Warrandyte which further encourages car dependency. Health promoting environments should encourage easy access to healthy foods and the use of active transport modes and public transport to increase opportunities for physical activity. In contrast, access to unhealthy food is within close proximity to seven areas across the suburbs of Bulleen, Templestowe, Templestowe Lower, Doncaster and Doncaster East.

- Café locations, land use mix and the location of destinations should be investigated in future planning to encourage social contact and walkability of the municipality. One of the goals of the Manningham Healthy City Strategy, and consequently Council Plan, is a connected and inclusive community. This led to development of a completely new liveability indicator to investigate the availability of cafes across the municipality understood to be important for providing locations for social interactions and an important destination supporting walkability. Café locations are concentrated in select neighbourhoods across the LGA and residents must travel over 1.6km to reach a cafe in areas of Doncaster, Templestowe, Templestowe Lower, Donvale and outer areas of Park Orchards, Warrandyte and Wonga Park. The provision of one major location (e.g. Westfield Shoppingtown in Doncaster) also creates an environment that disadvantages other surrounding neighbourhoods to local cafes and opportunities to meet with friends and families or mix across generations which is also a priority in the Manningham Council Plan.

- Access to public open space is also of relevance to developing connected and inclusive communities, physical health and mental health. Numerous neighbourhoods across the LGA have close access (within 400m) to public open space, particularly the inner areas of Manningham. Neighbourhoods of Templestowe, Donvale, Park Orchards and Wonga Park are up to 1.0km from public open space. Furthermore, access to large public open space is associated with increased physical activity and not easily accessed in numerous neighbourhoods across a range of suburbs across the LGA. Car dependent access is also encouraged by large distances and poor walkability to these areas.

- Access to services for older people is better provisioned in the inner suburbs of Manningham and not well provided for in the outer eastern suburbs. This is an important finding that should be considered when providing for an ageing population that can age in place and future planning applications for residential aged care.

- Often residential aged care is considered the major infrastructure needed to support an ageing population when access to services is most important for promoting healthy ageing in place and contact with family and people across a range of life stages. Aged care should be located close to existing services to encourage generation friendly contact as identified in the Healthy City Strategy. Access to a mix of social infrastructure, General Practitioners and Bilingual General Practitioners are also important considerations for a multicultural community such as Manningham where only 56% of the population is born in Australia[13].

- Public transport use is low across the LGA of Manningham and barely used in the outer eastern suburbs with over 71% of residents using a private vehicle to get to work in the 2016 Census and in all neighbourhoods, public transport use did not exceed more than 14%.

- Bus travel is the only form of public transport in Manningham and frequent services were greatest in neighbourhoods of Doncaster, Doncaster East, Templestowe, Templestowe Lower and Bulleen where 82-100% of residents have access to frequent public transport. Park Orchards residents have no access to a frequent public transport service, nor do residents of Wonga Park and neighbourhoods of Templestowe Lower and those near the Blackburn North boundary. Public transport is important for social connectivity, supports incidental physical activity and particularly important for people who aren't financially or physically able to drive, including youth and older residents.

- The most walkable areas of Manningham are the neighbourhoods of Bulleen, Templestowe Lower, Doncaster East and Doncaster and central areas of the LGA which also have the best access to footpaths. Lower levels of walkability are evident in Park Orchards, Templestowe, Wonga Park, Donvale and Warrandyte. New investigative modelling walkability with topography or Depth Elevation Models resulted in the identification of slightly fewer highly walkable neighbourhoods across Doncaster, Doncaster East and Templestowe. Other outer areas had poor walkability for transport so the inclusion of topography made very little difference.

- Gambling results for Manningham identified the need for using multiple indicators to understand the influence of gambling expenditure. Over $20 million dollars a year was spent on EGM gambling at the Shoppingtown Hotel and Doncaster Hotel in the 2018-2019 period with both venues located in the suburb of Doncaster. The per venue gambling expenditure at the Shoppingtown Hotel also had greater gambling expenditure than the Veneto Club that had 3 additional machines. Both venues with high EGM gambling expenditure in Doncaster and within 2 km of each other. These gambling indicators results also need to be considered with home owner and rental housing affordability concerns for low and very low-income families in surrounding suburbs of Doncaster, Templestowe, Bulleen, Templestowe Lower, Doncaster East and Park Orchards. Gambling is resulting in significant economic and social loss across these communities.

- There is significant variation in early childhood development across Manningham. Doncaster and Templestowe revealed above state average proportions of children in their first year of school identified as developmentally vulnerable on two or more domains on the Australian Early Education Census.

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[13] https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA24210?opendocument

- Australian Early Education Census results across the LGA of Manningham are based on the assessments of 175 teachers from 90 schools, both public and private, and the results across Doncaster and Templestowe are a concern for longer term childhood development.

- This report provides a quantitative assessment of liveability across the LGA of Manningham and the included results provide a very useful tool for community engagement. It is recommended that this report is shared with the people who live and work across the municipality to begin a conversation about liveability based on evidence. Residents will be able to provide great insights about the presented findings which could help to drive a shared vision for community and council planning in the future.

- Importantly, is it recommended that a Liveability Assessment like this is completed again in 3-4 years aligning with the local government planning cycle to review and monitor changes and identify new planning priorities in neighbourhoods of Manningham over time.

Implications

This report has begun to identify linkages between the current Manningham City Council Plan and Healthy City Strategy. It is recommended that further analysis could be completed by Manningham City Council to identify how each of the indicator results included in this Liveability Assessment could be used for the evaluation of current strategies and priorities and inform future planning. Importantly, these results should be shared across multiple council departments to encourage further integration of health within planning which has maximum impact in the shaping of liveable places. Sharing the indicator results included in this Liveability Assessment with the broader Manningham community and community stakeholders could also provide an opportunity for those with an interest in the area to engage and co-design the future of a more liveable Manningham and support future advocacy actions.

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Appendix 1: Data Sources

Map Number	Data	Source
Figure 7: Manningham SEIFA Index of Relative Disadvantage (SEIFA-IRSD)	ABS SEIFA	Australian Bureau of Statistics 2016
Figure 8: Average distance (km) to premises with an on-license alcohol permit within Manningham **Figure 9: Average distance (km) to premises with an off-license alcohol permit within Manningham**	Alcohol – On licence Alcohol – Off licence	Geocoded National Address File 2018 Victorian Council of Gaming and Liquor Regulation 2019 Open Street Map 2018 Victorian Council of Gaming and Liquor Regulation 2019
Figure 10: Average distance (km) to the closest supermarket in Manningham **Figure 11: Average distance (km) to the closest location where unhealthy food can be purchased in Manningham** **Figure 12: Average distance (km) to closest cafe in Manningham** **Figure 13: Average number of cafes within 1.6km across Manningham**	Supermarkets Fast foods Café Cafe	Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks Store websites 2017: • McDonalds • KFC • Hungry Jacks • Dominoes • Red Rooster • Subway Online business directories 2019 Online business directories 2019
Figure 14: Average distance (km) to nearest Public Open Space in Manningham **Figure 15: Distance to nearest Public Open Space >1.5ha in size (km)** **Figure 16: Location of Public Open Space overlaid with Transport Walkability Index**	Public open space Public open space > 1.5ha Public open space Street connectivity	Open Street Map 2018 Open Street Map 2018 Open Street Map 2018 Open Street Map 2018 Open Street Map 2018

	Convenience stores, petrol stations and newsagents	
	Dwelling density	Australian Bureau of Statistics 2016
	Public transport stops	Public Transport Victoria 2018
	Supermarkets	Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks
Figure 17: Average number of daily living types present across Manningham LGA	Convenience stores, petrol stations and newsagents	Open Street Map 2018
	Public transport stop	Public Transport Victoria 2018
	Supermarkets	Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks
Figure 18: Manningham Index of Access to Services for Older People	Public transport stops Libraries GPs Hospitals Aged care services Ages care facilities U3A Places of worship Community centres	Public Transport Victoria 2018 Department Premier and Cabinet 2016 National Health Services Directory 2019 University 3rd Age website 2019 Open Street Map 2018 Council websites: • Manningham • Banyule • Boroondara • Yarra Ranges • Nillumbik • Whitehorse • Maroondah
	Supermarkets	Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks

Figure 19: Average distance (km) to General Practitioners across Manningham LGA	GPs	National Health Services Directory 2019
Figure 20: Average distance (km) to a General Practitioner with bilingual service	GPS (Bilingual)	National Health Services Directory 2019
Figure 21: Proportion of children "developmentally vulnerable" on two or more AEDC domains across Manningham	Australian Early Development Census	Australian Early Development Census 2018
Figure 22: Journey to work travel mode using any public transport across Manningham	ABS Census	Australian Bureau of Statistics 2016
Figure 23: Residents using public transport buses to employment with distance travelled across Manningham	ABS Census	Australian Bureau of Statistics 2016
Figure 24: Youth not engaged at all in work or study across Manningham	ABS Census	Australian Bureau of Statistics 2016
Figure 25: Family violence incidents across the Manningham	Family violence statistics	Crime Statistics Agency 2018
Figure 26: Number of Electronic Gaming Machines in Manningham	EGM	Victorian Council of Gaming and Liquor Regulation 2019
Figure 27: Total expenditure spent on EGM Gambling for venues in Manningham	EGM	Victorian Council of Gaming and Liquor Regulation 2019
Figure 28: Per Machine EGM Expenditure in Manningham	EGM	Victorian Council of Gaming and Liquor Regulation 2019
Figure 29: Proportion of home-owner households in the lowest 40% of incomes spending more than 30% on housing	ABS Census	Australian Bureau of Statistics 2016
Figure 30: Proportion of rental households in the lowest 40% of incomes spending more than 30% on housing	ABS Census	Australian Bureau of Statistics 2016
Figure 31: Mix of social infrastructure across Manningham	Childcare and out of school hours care	Australian Children's Education and Care Quality Authority 2018

	Government primary and secondary schools	Australian Curriculum, Assessment and Reporting Authority 2018
		Department Premier and Cabinet 2016
	Libraries	
	GPs Community health centres Aged care facilities Maternal and child health centre	National Health Services Directory 2019
	Sport and recreation facilities	Open Street Map 2018
	Cinemas, museums, art galleries	Open Street Map 2018
	Community centres and swimming pools	Council websites: • Manningham • Banyule • Boroondara • Yarra Ranges • Nillumbik • Whitehorse • Maroondah
Figure 32: Proportion of residential dwellings in Manningham within 400m of a bus stop. *Figure 33: Proportion of residential dwellings in Manningham within 400m of a frequent public transport service.*	Public transport stops Public transport stops GTFS data	Public Transport Victoria 2018 Public Transport Victoria 2018
Figure 34: Walkability for Transport across Manningham	Street connectivity Convenience stores, petrol stations and newsagents Dwelling density Public transport stops Supermarkets	Open Street Map 2018 Open Street Map 2018 Open Street Map 2018 Australian Bureau of Statistics 2016 Public Transport Victoria 2018 Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks
Figure 35: Walkability for Transport in Manningham overlaid with footpaths	Street connectivity Convenience stores, petrol stations and newsagents Dwelling density	Open Street Map 2018 Open Street Map 2018 Open Street Map 2018

	Public transport stops Footpaths Supermarkets	Australian Bureau of Statistics 2016 Public Transport Victoria 2018 Manningham Council 2019 Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks
Figure 36: Walkability for Transport in Manningham calculated with depth elevation modelling	Street connectivity Convenience stores, petrol stations and newsagents Dwelling density Public transport stops STRM-derived 1 second digital elevation model Supermarkets	Open Street Map 2018 Open Street Map 2018 Australian Bureau of Statistics 2016 Public Transport Victoria 2018 Geoscience Australia 2016 Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks
Figure 37: Walkability for Transport in Manningham calculated with depth elevation modelling	Street connectivity Convenience stores, petrol stations and newsagents Dwelling density Public transport stops Digital elevation model (DEM) Supermarkets	Open Street Map 2018 Open Street Map 2018 Open Street Map 2018 Australian Bureau of Statistics 2016 Public Transport Victoria 2018 VicMap Elevation 2008 Store websites 2017: • Coles • Woolworths • IGA • Aldi • Foodworks

All distance analyses were calculated using a 2018 Open Street Map pedestrian road network which was derived using OSMnx. https://github.com/gboeing/osmnx

Base map service credits: Open Street Map and Contributors.