Knox Mobility and Access Action Plan 2025–2036

BACKGROUND REPORT

knox

Knox City Council

Contents

1 Introduction

In 2011, Knox City Council (Council) endorsed the Knox Mobility Study which identified key improvements required to enable mobility aid users to access various destinations, facilities and services across the municipality. As part of the study, it was identified that the path network played a key role and at times substituted the use of public transport as it provided independent mobility while providing more direct and faster transportation routes.

The Knox Mobility and Access Action Plan 2025–2036 (KMAAP), an advanced iteration of the 2011 Mobility Study, focuses on identifying the current challenges faced by the community, especially people with disability (PWD), when travelling throughout Knox. The KMAAP also serves as a roadmap for the next decade, providing guidance on how we can improve Knox's infrastructure to be safer, more accessible, and more comfortable for those who experience mobility issues though provision and regulation, collaboration and partnership, advocacy and awareness raising.

The KMAAP primarily addresses the challenges faced by pedestrians with mobility challenges in the municipality's activity centres and community. The majority of these individuals are people using Mobility Devices (PMDs), while some don't. PMDs use electric and manual wheelchairs, long canes, walking sticks, walking frames and prams. While the research covered various transport networks, parking areas, footpaths and open spaces in the activity centres, Council's influence on improvements to these spaces and places is strongest in areas under Council ownership. Improving access for people with a physical disability via footpath and shared paths, connections to accessible car parking, and into public transport facilities and around their neighbourhood, can broaden inclusiveness and widen opportunities to fully participate in social activities.

This document, the Knox Mobility and Access Action Plan 2025–2036 Background Report (Background Report), provides evidence and data that underpin the strategies and actions outlined in the KMAAP.

THANK YOU

Knox City Council recognises the valuable contributions and dedication of individuals with mobility challenges, individuals of disability, parents, guardians and carers, in the engagement process. We are grateful for the insightful ideas and practical solutions shared by Knox Disability Advisory Committee and the members of the community.

We also appreciate the efforts of our consultants (Symplan and Accredited Solutions National (ASN)) in shaping the KMAAP and this Background Report. Symplan assisted with community consultation and report drafting, while ASN led the access audits for selected activity centres in the municipality.

2 What we mean by disability

2.1 Language and definitions

The choice of language used in this Background Report is based on the United Nations' *Disability-Inclusive Language Guidelines*.[1] This language emphasises the person, not the disability, by placing a reference to the person or group before reference to the disability. The term person or people with disability (PWD) is therefore used to refer to anyone who lives with a physical, mental and/or cognitive disability.

2.2 Disability

For the purposes of this study, the term disability is an umbrella term for both physical and mental or cognitive disabilities that result in permanent or episodic activity limitations and participation restrictions. The formal definition of disability is provided in the Glossary of terms, Appendix 3.

The six disability groups include sensory and speech (including loss of sight or hearing), intellectual, physical (including chronic or recurrent pain, incomplete use of limbs), psychosocial (including mental illness, memory problems and social or behavioural difficulties), head injury (including stroke or acquired brain injury) and other (including restrictions in everyday activities due to other long-term health conditions). The causes of disability are complex and often difficult to identify.[2]

2.3 Models of disability

The medical model of disability focuses on the person's impairments and differences rather than on what the person needs.[3]

The starting point of the social model of disability is that the 'problems' are the environments and circumstances in which people find themselves rather than their physical or mental status.[4] 'Fixing the problem' under the social model of disability focuses on addressing barriers and limitations in the person with disability's physical environment rather than trying to 'cure' or 'heal' their physical or mental health, which is the foundation of the medical model of disability.

The human rights model of disability focuses on achieving equity and inclusion and how the person's overlapping or intersecting forms of discrimination and vulnerability contribute to their unique experiences and sense of identity.[5]

The social and human rights models of disability recognise that each person will have varying levels of comfort[6] based on their mental and physical health and wellbeing status, and their individual experiences of how the environment enables or limits their capacity to reach their full potential.

The KMAAP is founded on the social and human rights models rather than the medical model of disability.

1 United Nations, Geneva (2019)
2 Australian Institute of Health and Welfare (2024)
3 Australian Federation of Disability Organisations (2021)
4 Victorian Government. (2022). *Inclusive Victoria: state disability plan (2022–2026)*
5 Victorian Government. (2022). *Inclusive Victoria: state disability plan (2022–2026)*
6 Victorian Government. (2022). *Inclusive Victoria: state disability plan (2022–2026)*

2.4 People with disability

For the purposes of this plan, people with disability (PWD) are pedestrians using powered or manual mobility devices (wheelchairs, canes and sticks, electric scooters and walking frames). These pedestrians would experience a range of physical and mental health conditions including visible disability such as poor balance, muscle weakness, para or quadriplegia, low or no vision, or hearing impairment. They are also likely to experience invisible disability including cognitive impairment, dementia, anxiety and neurodiversity. Anyone accompanying the person using the mobility equipment or pram, including parents, carers, family members and friends is also considered a pedestrian. PWD are diverse in their culture, language, sexuality, gender identity, age, ability, socio-economic status and life experiences.

2.5 Accessibility and mobility

Mobility refers to a person's ability to move in a physical space. It is influenced by their physical, mental and/or cognitive capacity factors such as strength, balance, stamina, coordination and ability to use their limbs.

Accessibility refers to an individual's ability to participate in day-to-day activities and use facilities and infrastructure in the public and private realms. The primary determination of accessibility is whether the design and function of infrastructure and activities enable a person to use, enjoy and participate in activities and services. Therefore, accessibility needs to consider the specific mobility needs and aspirations of PWD.

Whereas someone might be mobile, they may have limited accessibility due to structural and physical barriers to their full engagement in society. A focus on accessibility, rather than just mobility, is a prerequisite for an equitable and inclusive society.

2.6 Capacity, functionality and quality

PWD's abilities to use footpaths, accessible car parks, and supporting infrastructure comfortably, safely and conveniently depend on three intersecting factors: capacity, functionality and quality.

Capacity quantifies the availability and space of individual assets such as pathways, accessible car parks and toilets, measuring whether these assets meet demand. Footpath and shared path capacity is primarily a function of the width of the individual pathway and the ability of the network to provide connections between key places. The capability of accessible car parks and other supporting infrastructure depends on whether they are readily available for PWD.

Functionality refers to whether the pathways, accessible car parks and other supporting infrastructure serve their intended functions and accommodate universal access needs. Footpath functionality considers whether there is a clear path of travel available, the crossfall/gradient of the path and whether the surface matches the path hierarchy and specific needs and aspirations of the users. Car parking functionality considers whether the spaces are being used for their intended purposes.

Quality is the physical condition of the pathway network and car parks. Footpath quality and car park quality consider the presence of hazards that compromise the users' safety, comfort and convenience.

2.7 Walkability

Walkability is the ability of the environment to facilitate both mobility and accessibility. Walkable neighbourhoods enhance both real and perceived levels of safety and are interesting to move through. The assets and infrastructure in walkable neighbourhoods are connected, comfortable, convenient, accessible and efficient. Walkable neighbourhoods motivate and encourage people to select active and public transport over a private motor vehicle, where feasible.

Factors contributing to walkable environments are the availability of wayfinding signage, supporting infrastructure such as benches and drinking fountains, connections between paths, land use mix and diversity, level of traffic and absence of obstacles and impediments along the footpaths.

2.8 Mobility devices

Mobility devices are used to assist the movement of people over short to medium distances. They are typically used by people with a range of physical and cognitive disabilities but may also include devices used to transport babies and toddlers.

Mobility devices may be used for all or part of the journey and can be used in conjunction with one another.

For the purposes of this study, mobility devices include:

- wheelchairs (manual and electric)
- electric scooters
- walking frames
- long canes (for people with visual impairments)
- walking sticks
- prams.

2.9 Accessible public infrastructure

Public infrastructure includes footpaths and shared paths, public transport, parks and recreation, car parking, street furniture (benches, drinking fountains, signage) and toilets.

The ability of the neighbourhoods in which people live, play, learn, work and shop to support their needs and aspirations plays an important role in creating a sense of belonging and inclusion. Public infrastructure and amenities that are accessible to people of all abilities ensure that the community feels safe, secure and valid.[7]

A safe, accessible and comfortable path network connecting places and spaces within the neighbourhoods provides opportunities for people of all abilities to access services, connect with others, work and enjoy leisure time. It supports active transport and reduces reliance on private transport and has a range of health, economic and environmental impacts.
It also facilitates engagement with the natural environment.[8] Supporting infrastructure, such as benches, drinking fountains and wayfinding signage, makes a pedestrian's journey more comfortable, safe and convenient.

7 Knox Liveable Streets Plan 2012–2022.
8 op. cit.

3 Our community and infrastructure

This section describes community, health and land use context in which PWD live, work, shop, learn and play. Appendix 2 provides full details and sources of the community and health profile discussed below.

3.1 Disability

Nearly a fifth (17.2%) of Knox's population has a disability of some type, which includes all reported disability, including conditions without specific limitations or restrictions.[9]
Knox has a slightly higher proportion of people needing assistance with core activities compared to Greater Melbourne (5.8 % and 5.5 % respectively). Knox also has a higher proportion of people providing unpaid assistance to a person with a disability, long-term illness or old age compared to Greater Melbourne (13.3% compared to 12.6% respectively).

Regarding mobility and access planning:[10]

- An estimated 12.8% (20,720) of people in Knox households have a disability that in some way limits daily activity in relation to at least one of the core activities of mobility, communication or self-care
- 5% (8,130) of people in Knox have a profound or severe limitation requiring help sometimes or always, from others
- A further 7.8% (12,590) of Knox residents have a moderate or mild activity limitation. Those with mild or moderate disabilities do not need help from others, but may have difficulty with, or need to use, aids or equipment when communicating, getting around or looking after themselves. Those unable to perform tasks such as easily walking 200 metres, walking up or down stairs without using a handrail, or bending to pick up an object, are also classified as having mild limitations. Accessibility issues for this group also need to be acknowledged in mobility and access planning.

PWD experience a range of impairments including memory problems or periods of confusion, are slow at learning or understanding things, loss of hearing and chronic or recurring pain or discomfort.[11] More than three-quarters (78%) of PWD require assistance with mobility and more than a third of PWD living in households (39%) require assistance with private transport.[12]

Between 2016 and 2021:

- the number of people needing assistance with core activities in Knox increased by 1,751. The proportion of people needing assistance with core activities in Knox increased by 1% from 4.8% to 5.8%
- the greatest increase in the number of people needing assistance with core activities in Knox occurred in people aged 80 years and over, followed by people aged 20–59 years
- the number of people providing unpaid care increased by 2,490 and the proportion of people increased from 11.8% to 13.3%.

9 People that reported a disability of some type, with no detail on any limitation, difficulty, use of aids or school or employment restrictions
10 Survey of Disability, Ageing & Carers, ABS (2018)
11 Australian Bureau of Statistics (2020)
12 Australian Institute of Health and Welfare (2024)

The number of people in Knox with severe or profound disability is projected to increase from an estimated 8,500 in 2021 to 11,800 by 2031. This represents a 40% increase over 10 years, with the majority of growth in the population aged 65+ years as Knox's residents continue to 'age in place'. A similar increase might be expected in those with moderate and mild core activity limitations, given the strong association between disability and age.

3.1.1 Age profile[13]

The increased prevalence in disability with age, combined with an ageing population, leads to a large proportion (44%) of people with disability aged 65 and over.[14]

In Knox:

- the highest proportion of people requiring assistance with core activities occurs after the age of 65 years
- the need for assistance with core activities in children is highest among five to nine-year-olds and lowest among 30 to 34-year-olds
- compared to Greater Melbourne, Knox has a higher proportion of people needing assistance with core activities among people aged five to 44 years, and over 80 years compared to other age cohorts
- between 2016 and 2021 the greatest increase in the number of people needing assistance with core activities occurred in people aged 80 years and over, followed by people aged 20–59 years.

3.1.2 Mobility aids

The application of national data prevalence rates suggests that around 3,500 people (2.1% of the population) in Knox use at least one mobility aid at the following rates:[15]

- walking stick (50%)
- walking frame (47%)
- wheelchair, manual or electric (20%)
- cane, sonar (14%)
- scooter (10%).

3.1.3 Socio-economic and health status

Compared to Greater Melbourne and Victoria, Knox has a higher prevalence of all long-term health conditions, particularly with regards to arthritis, heart disease and mental health conditions. The most prevalent long-term health condition in Knox is arthritis (17.7% of the population), followed by mental health conditions (11.3% of the population – including depression and anxiety).

Age pensions in Knox represent a higher proportion of all welfare payments compared to Victoria, reflecting the municipality's ageing population. However, welfare payments for disability and caring represent a lower proportion of Knox's total welfare payments compared with Victoria.

13 In the absence of data on the number of people with disability living in Knox, the need for assistance has been used as a proxy
14 Australian Institute of Health and Welfare (2024)
15 National prevalence

People needing assistance with core activities are typically more socially and economically vulnerable compared to the general community. Relative to the general Knox community, people needing assistance with core activities are less likely to attend an educational institution, have a significantly lower level of educational attainment, a higher unemployment rate, have limited access to appropriate and affordable housing and are represented in the lowest and medium lowest household income quartiles. They also have lower rates of car ownership and are less likely to be attending an educational institution.

The incidence of long-term health conditions is significantly higher among people living in Knox's low-income households. There are higher proportions of people in low-income households living with arthritis, dementia, mental health conditions (including depression and anxiety) and experiencing another long-term health condition. The prevalence of dementia increases with age, with the condition very rare in those under 65 years of age (0.1%), increasing to over one-quarter (27.5%) of those aged 95 years and over.[16] In 2021, 1.1% of the Knox community were living with dementia, which is higher than the average for Australia (0.7%).[17]

3.2 Knox's infrastructure

3.2.1 Activity centres

Knox's 26 activity centres attract people for shopping, working, studying, recreation or socialising. They consist of a mix of retail, residential, commercial, educational, recreational, administrative, service, health, entertainment and cultural facilities that satisfy the community's day-to-day needs. They are typically served by public and active transport networks consisting of trains and buses, footpaths and shared paths.

The municipality has a hierarchy of activity centres, with the higher-order centres, such as the Knox Central Activity Centre and Bayswater and Boronia Major Activity Centres, serving a regional catchment while the lower-order neighbourhood activity centres provide access to local goods, services, and employment opportunities serving the needs of the surrounding community.[18]

3.2.2 Public, private and active transport

Public transport provides an alternative to private transport, for those with and without access to a private vehicle. Good public transport is an essential component of a liveable community, supporting participation and inclusion in society.[19]

Victorian residents with limited mobility are eligible for the following supported public transport which allows them to travel free on all metropolitan and regional trains, buses and trams:

- Access Travel Pass for people with a permanent physical disability, cognitive condition or mental illness that prevents them from using myki
- Scooter and Wheelchair Travel Pass for people relying on a scooter or wheelchair for mobility outside the home
- Companion Card for carers or companions travelling with PWD
- Multi-Purpose Taxi Program providing members with half price fares on taxis and some rideshare services (up to $60).

16 Australian Bureau of Statistics (2020)
17 op. cit.
18 Victorian Government (2017)
19 Department of Infrastructure and Regional Development (2017)

Knox is a car-dominated municipality with poor walkability in neighbourhoods.[20] Compared to Greater Melbourne, Knox has higher proportions of people travelling to work by car (as driver and passenger) and smaller proportions of people travelling by train, tram or walking to work.

The municipality is served by one train line between the Melbourne CBD and Belgrave. Four train stations along this line, Bayswater, Boronia, Ferntree Gully and Upper Ferntree Gully, have different levels of accessible transport facilities, such as station access, information screens, toilets, parking, and pick-up/drop-off.

Fifteen bus routes operate in Knox, two Smart Bus services, and three Telebus services. During peak periods, service is effective along Burwood Highway and Stud Road, but it is poor in parts of Scoresby, Knoxfield, Rowville and Lysterfield.[21] The NightRider bus also services parts of Knox. The 'Knox Transit Link' bus service connects the route 75 tram to Westfield Knox. Knox Transit Link buses operate at the same frequency and have the same hours of operation as the tram service.

The quality, quantity and functionality of pathways can influence how people use active transport to access work, education, leisure and shopping.[22] The typical width of a pathway is 1.5 metres, with shared pathways ranging from 2.5 metres to 3 metres.[23]

These pathways serve two important roles:

- Movement – providing a space for pedestrians to travel between places.
- Place – providing a space where people can stop to rest, chat, think and take in their surroundings.[24]

Pathways are an essential component of Knox's open space component, linking people to places. There are over 1,200 kilometres of footpath and 120 kilometres of off-road shared paths[25] which are maintained by Council. The vast majority of people in Knox prefer to cycle on a shared path facility with pedestrians rather than use bike lanes on the street.[26]

3.2.3 Accessible car parking

Knox's activity centres have large expanses of car parking, which are expected to satisfy the increasing and changing needs of the community, including PWD. Accessible car parking spaces are normally located near facilities such as shops and accessible toilets. A continuous path of travel connects the accessible car parking spaces and the facilities.

In Council-owned car parks, accessible spaces are maintained by Council, and the management of parking restrictions is regularly reviewed as part of the Knox Parking Management Plan. Meanwhile, accessible spaces in private car parks are owned and maintained by private operators.

20 Clause 28.01-1 Knox Planning Scheme.
21 Knox Integrated Transport Plan 2015–2025
22 Knox Open Space Plan 2012–2022
23 Personal comment, Knox City Council
24 Rossiter, B (2019)
25 Knox Cycling Action Plan 2024–2035 Background Document
26 Knox Cycling Action Plan 2024–2035 Background Document

3.2.4 Health and aged care facilities

Key facilities used by PMDs in Knox include:

- five major activity centres (Knox Central, Boronia, Mountain Gate, Rowville and Bayswater)[27]
- six neighbourhood activity centres (Studfield Shopping Centre, Scoresby Village, Wantirna Mall, Upper Ferntree Gully, Ferntree Gully, Wellington Village)[28]
- seven hospitals (Angliss Hospital, Eastern Health, Greater Knox Family Practice, The Melbourne Eastern Private Hospital, Knox Private Hospital, Wantirna Health, All Medical, and Wellness on Wellington)[29]
- 28 residential aged care facilities[30]
- 11 senior citizen centres.[31]

3.2.5 Accessible playgrounds and toilets

Knox has four accessible playgrounds in Bayswater (Marie Wallace Bayswater Park), Ferntree Gully (Ferntree Gully Community Centre and Wally Tew Reserve) and Rowville (Stud Park playground at the Rowville Community Centre). These playgrounds have extra features for children living with disability and offer play equipment for children of all abilities.[32]

Accessible toilets are found at most public places including train stations, shopping centres, parks and recreation centres, community centres, medical facilities and hospitals. Some accessible toilets are locked and fitted with a Master Locksmiths Access Key, providing PWD with dedicated access to these toilets.

Changing Places toilets[33] are larger than standard accessible toilets providing PWD and people with high support needs and their carers with extra facilities such as height-adjustable adult-sized change tables, ceiling track hoist systems, centrally located toilet, additional circulation space, automatic door and a privacy screen. There is a Changing Place toilet at Wally Tew Reserve.

27 Activity Centre and facilities
28 Activity Centre and facilities
29 Activity Centre and facilities
30 A-guide-to-disability-and-aged-services.pdf (knox.vic.gov.au)
31 A-guide-to-disability-and-aged-services.pdf (knox.vic.gov.au)
32 Rossiter (2019)
33 Changing Places, Transforming Lives

4 What guides us

This section describes strategic and other drivers influencing planning and designing for PWD (refer to Figure 1).

Figure 1 – Guiding framework

Statutory and stragetic	Drivers for change	Best practice
• International • National • State • Knox	• Social • Institutional • Movement • Asset Management • Technological	• Intersectionality • Universal design • Co-design

4.1 Statutory and strategic context

The hierarchy of statutory and strategic context guiding planning and designing for PWD in Knox is illustrated in Figure 2.

Figure 2 – Statutory and strategic instruments

International

Strategic

United Nations Convention on the Rights of Persons with Disabilities

Universal Declaration of Human Rights

United Nations Global Sustainable Development Goals

National

Statutory

Disability Discrimination Act 1992

Disability Standards for Accessible Public Transport 2002

Strategic

Australia's Disability Strategy 2021–2031

Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability 2023

National Urban Policy 2024 (consultation draft)

State

Statutory

Victorian Disability Act 2006

Equal Opportunities Act 2010

Charter of Human Rights and Responsibilities Act 2006

Local Government Act 1989

Public Health and Wellbeing Act 2008

Planning and Environment Act 1987

Road Management Act 2004

Transport Integration Act 2010

Strategic

Inclusive Victoria: state disability plan 2022–2026

Victorian Aboriginal Affairs Framework 2018–2023

Knox City Council

Statutory

Knox Amenity Local Law 2020

Strategic

Knox Community Plan 2021–2031

Council and Health and Wellbeing Plan 2025 – 2029

Knox Planning Scheme

Community Access and Equity Implementation Plan 2017–2022

Knox Connection, Access, Respect, Equality and Safety Strategy 2022–27

Knox Integrated Transport Plan 2015–2025

Knox Child, Youth and Seniors Plan 2021–2025

Asset Plan 2022–2032

Knox Liveable Streets Plan 2012–2022

Knox Cycling Action Plan (2025–2035)

Footpath and Shared Path Asset Management Plan 2016

Active Knox Plan 2024

Knox Parking Policy 2018

Knox Principal Pedestrian Network 2017

4.1.1 International

Charters such as the *United Nations Convention on the Rights of Persons with Disabilities*, the *Universal Declaration of Human Rights* and the *United Nations Global Sustainable Development Goals* reinforce the imperative to recognise the right of all persons with disability to live safely in the community without discrimination, and to have equitable access to opportunities, services and facilities that foster social inclusion and participation. Key to achieving this outcome is the right for people with disability to personal mobility and independence.

4.1.2 National

Statutory instruments such as the *Disability Discrimination Act 1992* and *Disability Standards for Accessible Public Transport 2002* outline Council's statutory responsibilities to ensure people with disability have the same access to public places including parks, shopping centres, public footpaths and walkways as the rest of the community. This may require making necessary modifications to infrastructure such as improving way-finding information, installing tactile markers and limiting gradients on footpaths.

The vision underpinning *Australia's Disability Strategy 2021–2031*[34] is for an inclusive Australian society that ensures people with disability can fulfill their potential, as equal members of the community.

Policy priorities in this Strategy under the 'Inclusive Homes and Communities' outcome area are that 'people with disability can fully participate in social, recreational, sporting, religious and cultural life' and 'the built and natural environment are accessible'.

The findings from the *Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability 2023* led to recommendations focusing on ensuring people with disability integrate and participate in safe, inclusive and diverse communities and have equal opportunities to contribute to communities that value their presence and treat them with dignity and respect.

The *Disability Standards for Accessible Public Transport* support the *Disability Discrimination Act 1992*. They provide clarity to providers and operators of public transport services and infrastructure about their responsibilities to make their services accessible and eliminate discrimination against people with disability. These Standards require all of Australia's public transport networks and associated infrastructure to be fully accessible by the end of 2022 (except for trains and trams, which have until the end of 2032). The Standards are supported by *The Whole Journey: A guide for thinking beyond compliance to create accessible public transport journeys*[35] which guides all built environment and transport planners and professionals in taking a holistic view of the whole journey through planning, implementation and operation.

The *National Urban Policy 2024* (consultation draft)[36] identifies several challenges facing PWD such as safety, income inequality and difficulties accessing social infrastructure. This draft strategy notes that walkability of an urban area is critical to community wellbeing, particularly for PWD and highlights the need for active travel infrastructure to be safe, accessible and well maintained.

34 Australia's Disability Strategy 2021-2031
35 Department of Infrastructure and Regional Development (2017)
36 Australia's National Urban Policy Consultation Draft

4.1.3 State

The intent of the *Victorian Disability Act 2006, Equal Opportunities Act 2010 and Charter of Human Rights and Responsibilities Act 2006* is to outline all agencies' responsibilities to prevent discrimination and ensure the inclusion and participation in the community of people with disability. These Acts reinforce the federal and international statutory and strategic imperative to safeguard the rights and responsibilities of people with disability and their equal opportunities to participate in community life.

Under the *Charter of Human Rights and Responsibilities Act 2006* it is not only Council's responsibility to understand and comply with the obligations under the Charter, but also to build a culture of human rights in the community.[37]

The purposes of the *Local Government Act 1989, Public Health and Wellbeing Act 2008 and Planning and Environment Act 1987* are to outline Council's responsibilities in promoting and upholding the community's safety, security health and wellbeing, and to ensure the municipality is administered and planned in an efficient, orderly and fair manner.

Statutory instruments such as the *Road Management Act 2004* and *Transport Integration Act 2010* define Council's roles as the Responsible Authority to manage local roads, including footpaths and shared paths, and manage the financial risk in relation to the management and maintenance of pathway assets.

4.1.4 Knox City Council

Council's roles

Council's roles in ensuring PMDs and PWD have equal access to services and facilities in the community are framed by international, federal, state and local statutory instruments and policies.

Figure 3 – Council's roles

Advocacy	Provision and regulation	Collaboration and partnerships	Awareness raising
• **Funding** • **Appropriate standards**	• **Maintenance** • **Retrofitting** • **New builds** • **Enforcing Local Amenity Law 2020**	• **People living with disability** • **Private property owners** • **State government** • **Trading associations**	• **Information dissemination**

These roles specifically include:

- ensuring spaces and places used by PWD and PMDs are safe, convenient and comfortable through enforcement and ongoing maintenance, renewal and new build programs
- supporting and addressing social equity issues affecting the City

37 Knox Community Access and Equity Implementation Plan 2017–2022

- ensuring every member of the municipality's diverse community can participate, contribute and access service
- undertaking targeted projects in response to the needs of groups and individuals experiencing disadvantage in the community
- advocating on behalf of PWD and PMDs to private property owners, the public sector and the business community
- raising awareness of the issues and challenges experienced by PWD to private property owners, key stakeholders and the business community
- fostering community cohesion and encouraging active participation in civic life
- planning for and providing services and facilities for the local community.

Plans and policies

Key focus areas of the *Knox Community Plan 2021–2031*[38] and *Council and Health and Wellbeing Plan 2025 – 2029*[39] are fostering connection, resilience and wellbeing and civic engagement. Health-related priorities within these plans are mental health, physical activity, safety and climate change. A key theme is accessibility of services and public places for people with disability.

'Walkability and walkable neighbourhoods' is a theme underpinning the Knox Planning Scheme. Strategies to achieve this outcome are promoting a safe, integrated and sustainable transport system; maximising access to social and economic opportunities; providing safe, direct and comfortable pedestrian routes that are accessible to all users, including wheelchairs, prams and scooters.

Schedule 12 to Clause 43.04 of the Development Plan Overlay in the *Knox Planning Scheme*, which is applicable to the Rowville Commercial Core including Stud Park Shopping Centre, requires the preparation of a Disability Access Audit Report which assesses the access requirements for people with disability.[40]

One of the initiatives under the 'social and economic inclusion' objective in the *Knox Integrated Transport Plan*[41] is to enhance access to meet the needs of people using mobility equipment. This recognises the critical role public transport plays in meeting the needs of those who don't have access to, or are not in a position to use, a private vehicle due to their life situation. It acknowledges that meeting the needs of this community segment is critical to achieving an inclusive community.

Key outcomes expressed in Council's integrated decision-making framework comprising other policies and plans include striving for inclusion and equity, acknowledging diverse needs, increasing access to services and facilities for people with restricted mobility and reducing car dependency.

Specific strategies to achieve these outcomes include providing well-designed shared paths, delivering sustainable transport options, ensuring equitable and appropriate use of available parking spaces, providing effective wayfinding, installing shelter and other amenities along the pathway network and advocating for transport that is accessible to different needs.

38 Knox Community Plan 2021-2031
39 Council and Health and Wellbeing Plan 2025 – 2029
40 Knox planning scheme
41 Knox Integrated Transport Plan 2015-2025

Knox Amenity Local Law 2020

The *Knox Amenity Local Law* aims to:

- provide for the peace, order and good governance of the district
- promote a safe physical and social environment, in which residents can enjoy a quality of life that meets the general expectations of the community
- prevent and manage nuisances which may adversely affect the enjoyment of life or health, safety and welfare of people within the district.

These objectives are to be achieved by:

- regulating and managing activities of people which may be dangerous, unsafe or detrimental to the quality of life of other people in, or around, the district
- regulating and controlling the use of Council land, roads and assets
- providing standards and conditions for specified activities to protect the safety and welfare of people within, and around, the district.

The Local Law plays an important role in promoting safe physical and social environments for the whole community, including PMDs. This is achieved by regulating and controlling the use of Council land, roads and assets to prevent and manage nuisances which compromise the community's enjoyment and safety. The Local Law is applicable to any area where public and private land intersect and to activities carried out on public places such as footpaths, shopping centres, parks and recreation areas. The Local Law is also applicable during major events in public spaces organised privately or by Council. Examples of issues regulated by this Local Law are abandoned shopping trolleys, overhanging vegetation, street trading (for example, A-Frames and outdoor dining furniture) and other footpath impediments such as dumped rubbish, building activities and bins, and cars.

Retailers require a permit to install structures associated with footpath trading in the municipality's activity centres. Local laws apply a *Disability Discrimination Act 1992 (DDA)* compliance lens during the assessment, granting and regulating these permits to ensure activities do not compromise the safety of PMDs. In the case of non-compliance with the relevant permit, Council will issue an infringement notice and, if necessary, rectify the issue at the retailer's expense.

Community organisations hiring Council facilities in the municipality's parks and recreation areas are required in terms of their lease agreements to ensure these facilities, and the areas surrounding the facilities do not compromise the community's safety or wellbeing. The Local Law has the capacity to deal with any breach of these lease agreements.

Council will notify private property owners of the need to remove any vegetation overhanging the footpath. If the issue is not addressed, Council will invoke the Local Law and remove this vegetation at the owner's expense. While the Local Law has specific control over footpath trading and overhanging branches, Council's other departments such as Building Services, Planning, Traffic Engineering and Engineering services share a collective responsibility for compliance and regulation of activities and events on Council-owned land in the municipality.

Equity Impact Assessment

The Knox Equity Impact Assessment process is a 'whole of Council' framework informing the development of Knox's policies and strategies and budgetary decisions. The process aims to respond to and avoid inequalities caused by factors such as gender, socio-economic and health status and cultural background. It is founded on the principle of 'intersectionality' which is the ways in which different aspects of a person's identity such as their disability can expose them to overlapping forms of discrimination or marginalisation.

4.2 Drivers for change

4.2.1 Social

Knox's community is both growing and ageing, indicating there is likely to be a continued growth in the number of PWD using mobility equipments in Knox's public places and spaces.

PWD experience physical barriers on a daily basis. They may also experience social, health and economic issues such as mental illnesses, incontinence, stigma and discrimination in the workplace, and vulnerability to the rising costs of living. These factors can lead to social isolation and disengagement from community life.[42]

PWD have limited access to transport, many of whom are entirely reliant on public and active transport such as walking because they are unable to drive a car, unable to afford the costs of running a car, or have relinquished their car due to age.

People living with cognitive impairment such as dementia are more likely to reside in the community than in residential care homes.[43] The neighbourhood's qualities and amenities therefore play an important role in supporting social inclusion and promoting independence and a high quality of life.[44]

'The pram ramp is very steep and narrow. I would have to cross in the driveway. I wouldn't be able to come [to the medical centre] alone, I'd have to be dropped off.'

While engaging in public life can be therapeutic for people living with cognitive impairment, the public realm can also be overwhelming and intimidating, heightening their already high levels of anxiety and confusion.[45]

These inequities are coupled with a trend in 'ageism' among some people which results in negative images of older people and the potential to overlook the ageing population's mobility and accessibility needs and expectations.

42 Knox Community Access and Equity Implementation Plan 2017–2022
43 Biglieri & Dean (2022)
44 Gan *et al.* (2021)
45 Sturge, J *et al.*, (2021)

4.2.2 Institutional

PMDs need to put in extra effort to conduct their daily activities; a factor often overlooked by policy makers and built environment professionals.

Disability may be viewed by some negatively as a cost, burden or bother with planning and designing for inclusion sometimes focusing more on compliance than comfort and convenience.[46] This is referred to as 'ableism'. Decisions in large organisations may be made in silos, and sometimes accessibility, equity and inclusion are not considered from the start in projects.

Able-bodied people tend not to notice or think about people with disability.

At the same time there is an increasing acknowledgement among built environment professionals of the role public places and pathways play in facilitating safe travel, engaging in physical activity and participating in community life for all people, including PWD.[47]

4.2.3 Movement

Regardless of the primary mode of transport, all trips begin and end with a walk. This has implications on all pedestrians, particularly PMDs who face specific challenges moving in Knox's public places and spaces.

Public transport networks play a critical part in the liveability of a city and its ability to be resilient to challenges such as population growth and an ageing population.[48] PWD and cognitive impairment may experience communication barriers making it difficult to hear or see public transport announcements and navigate the transportation network.

Knox has only one train line servicing the north-eastern and eastern part of the municipality. As a result, the community is heavily reliant on private transport for both long and short distances. While Knox's streets have traditionally been designed for cars, attitudes are changing, and streets are increasingly seen as multi-purpose public spaces.[49] This will require balancing the needs of movement and place in street design, prioritising the existing and changing needs of pedestrians.[50]

Although PWD are more reliant on public transport due to their physical or cognitive limitations, they are also 15 times more likely to find public transport inaccessible and unaffordable than those without disability.[51] Real and perceived challenges in using public transport are likely to limit their opportunities to participate independently in many social, economic or cultural aspects of the community.[52]

The major barrier to PWD accessing public transport is the surrounding built environment. This includes poor footpath and shared path connectivity and quality, difficulties reaching an access point such as a bus stop and train station, and dangerous crossings.[53]

46 Stafford *et al.* (2023)
47 Health and Wellbeing Engagement Report 2021
48 Knox Integrated Transport Plan 2015–2025
49 Knox Liveable Streets Plan 2012–2022
50 Knox Liveable Streets Plan 2012–2022
51 Asia-Pacific Economic Cooperation Transportation Working Group (2024)
52 Department of Infrastructure and Regional Development (2017)
53 Asia-Pacific Economic Cooperation Transportation Working Group (2024)

Footpaths and shared paths, like streets, are public places used by pedestrians of all abilities and cyclists. The travel experience of PMDs and other pedestrians and cyclists differs for several reasons:

- they may travel both faster and slower than other pedestrians, potentially causing conflict
- they may find it more difficult to avoid hazards as they have more restricted paths of travel and have physical and cognitive limitations
- they may take up more space along the path network due to the size of their mobility device and may be travelling with a support person
- they may experience more discomfort during their journey due to their disability
- they may travel in a seated position or experience muscle weakness and therefore experience difficulties using infrastructure such as bins, playground gates, drinking fountains and buttons at signalised crossings.

These differences can result in conflict between users, with PMDs the most vulnerable.

I would say cyclists are my number one challenge as they seem to not notice/not care about others using the shared pathways, and I feel very afraid using pathways when there are cyclists present. I usually try to use the pathways when there are few to no cyclists.

Obstructions along the pathway such as temporary signage (for example, A-Frames), parked cars, low and overhanging branches, commercial fittings such as café or retail display stands, construction works and other obstructions make it difficult for PMDs to move comfortably and safely along the path network.

Presently, I use a walker, soon to be assessed suitability to use a mobility scooter. I have found the footpaths very uneven, particularly where the bitumen has been used to try to level the concrete slabs.

Tree seeds and small broken branches are a continual hazard.

People use health and safety as an excuse to block roads and footpaths. They should have a permit and display it if they do so.

Some PWD can face multiple challenges and issues during their travel, compounding their discomfort and inconvenience.

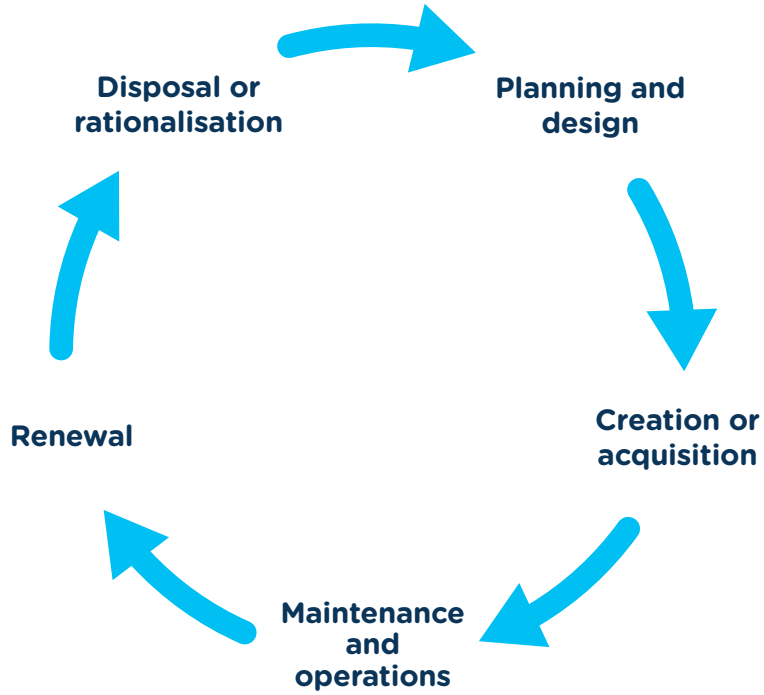
Uneven ground, narrow pathways, lifts with one door or no room to mobilise, loose bricks, lack of disabled parking, narrow doorways, all are very present issues to myself and other mobility aid users.

Even when public transport providers and operators comply with the relevant standards, PWD may face a range of barriers to a seamless journey.[54] They are more likely to need to plan their journey, with or without the use of public transport, than people without disability due to the different challenges they face. In their pre-journey planning they may have to consider factors such as weather, public transport and modal interchange availability, access to suitable paths and networks, availability of supportive infrastructure such as accessible bathrooms, vertical transportation (lifts, escalators), availability of toileting facilities for assistance dogs, service disruptions, accessible parking and continence aid change facilities, wayfinding, seating and shelter.[55]

4.2.4 Asset management

Long-term costs of owning and operating infrastructure assets involve a 'whole of life' approach of asset lifecycle management across the lifecycle phase (refer to Figure 4).[56]

Figure 4 – Asset management cycle



Source: Knox Asset Plan 2022–2032

Knox is located at the foothills of the Dandenong Ranges and is therefore a hilly municipality. Many of Knox's activity centres were built prior to the introduction of new standards and therefore may not meet the needs and expectations of PWD and PMDs. Factors such as steep slopes and crossfalls along many of Knox's footpaths and shared paths, steps at the entrances to some buildings, narrow footpaths through neighbourhoods and in shopping centres present challenges which in some instances are difficult and expensive to overcome.

54 Asia-Pacific Economic Cooperation Transportation Working Group (2024)
55 op. cit.
56 Asset Plan 2022–2032

The impacts of ageing population, climate change and increased residential density on Knox's liveability have raised awareness of the need to facilitate environmental sustainability across the community, including among PMDs. This, together with the increase in fuel costs and congestion, is likely to lead to a modal shift from the private vehicle to mobility devices and public transport within some sectors of the community. It is also likely to increase the demand for quality and well-maintained amenities and infrastructure, which protect pedestrians from heat and wet weather.

4.2.5 Technological

Assistive technology, such as mobility devices, is essential for PWD to achieve functional independence, improve quality of life, and lead normal lives.

Changes to the road rules in April 2023, which legalised private e-scooters on Victorian roads, bike and shared paths, has led to an increase in their use throughout the municipality. These personal electric devices (PEDs), together with recreational vehicles such as scooters, skateboards and roller blades pose a risk to PMDs due to the speed they can travel. The dockless hire system and parking of these PEDs can result in obstructions along the footpath, compromising the safety and comfort of PMDs.

Improved digital connectivity, such as the digitalisation of transport information, ticketing and services, is increasing reliance on technology and reduced staffing levels, which can be challenging for some PWD. On the other hand, the collection of data can assist staff in providing customer-focused assistance to people where needed and access to real-time public transport timetables.

4.3 Best practice

Three principles are identified underpinning this plan for developing best practice.

1. **Intersectionality** is a lens used to develop policies, programs and service delivery processes that recognise and address how systems, structures and attitudes can overcome multiple and overlapping forms of structural discrimination and disadvantage compromising mental and physical health and wellbeing.
2. **Universal** design embodies principles such as equitable and flexible use to ensure services and facilities are accessible to as many people as possible, regardless of age, ability, gender identity, culture, language and any other social characteristics.
3. **Co-design** is a 'nothing about us without us' approach involving partnering with PWD in service design and delivery to support increased inclusion and more informed decision-making and investment. Co-design avoids PWD feeling 'different' or receiving unwanted special treatment. It also involves collaborating with other stakeholders such as the retail, health, transport and business sectors, and the community to identify opportunities to address any conflicting interests

5 Engaging our community

Engaging with our community throughout the process ensured the research findings reflected the specific needs, fears and aspirations of individuals with mobility issues using Knox's public places and spaces.

5.1. Community engagement tasks

The methodology used to prepare the KMAAP consisted of three tasks: community consultation, experimental site inspections and access audits.

5.1.1. Community consultation

A community survey including a series of questions about travel patterns, key destinations and challenges was placed on Council's website between 30 April 2024 and 28 May 2024. Thirty responses to the survey were received.

A face-to-face community workshop was held at Council's office on 21 May 2024 and an online workshop was held on 18 June 2024. The participants provided an insight into their movement patterns and the main challenges they face when using infrastructure such as car parking, shared paths, benches, accessible toilets and shops. The participants gave examples of where 'best practice can be demonstrated both in Knox and elsewhere'.

A face-to-face workshop with Council officers involved in planning for, designing and regulating Council's public places and spaces was held on 21 May 2024. The purpose of this workshop was to understand competing priorities and issues reported by PWD.

The findings from the different community consultation activities are integrated in relevant sections in this Background Report and the KMAAP.

5.1.2. Site walkthroughs

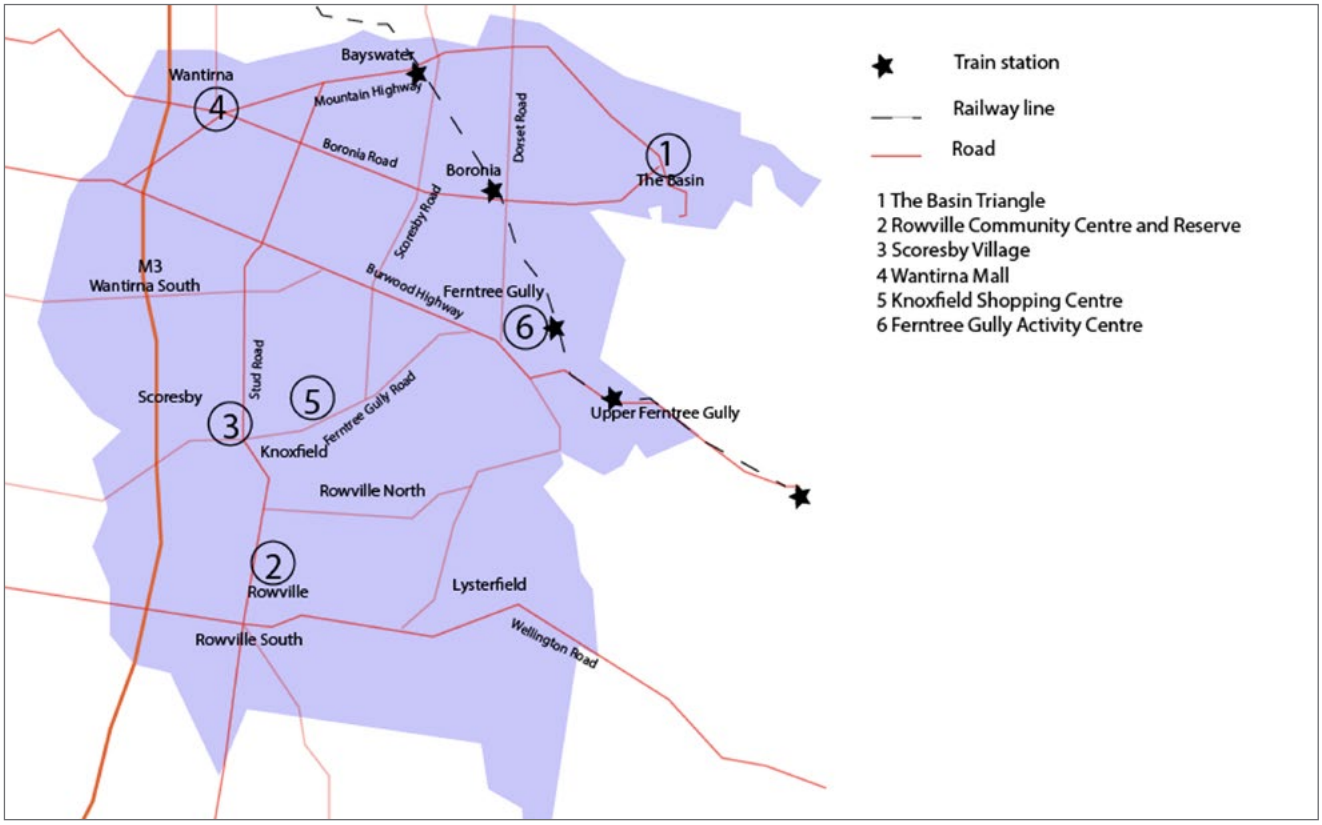
Site walkthroughs were conducted with PMDs in the following six sites (refer to Table 1 and Figure 5):

Table 1 – Experiential site inspections

Description and date of inspection	Community members and their mobility devices
1. The Basin Triangle 12 June 2024	
• Located at one of the tourist gateways to the Dandenong Ranges • Serves the local community • Co-located with several community facilities, including a playground, Hindu temple, community hall, special development school and seniors centre	A parent with a pram, who is an orientation and mobility officer, Guide Dogs Victoria, representing people with low/ no vision

Description and date of inspection	Community members and their mobility devices
2. Rowville Community Centre and Reserve 13 June 2024	
• Includes a community centre, accessible playground, reserve. • Co-located with Rowville Secondary College and Stud Park Shopping Centre	A person who uses a walking stick due to mobility restrictions caused by childhood arthritis
3. Scoresby Village 14 June 2024	
• Larger neighbourhood activity centre serviced by several bus routes • Part of the Scoresby-Rowville-Knoxfield industrial and commercial area • Co-located with Scoresby Recreation Reserve and a playground	A person using a walking stick
4. Wantirna Mall 17 June 2024	
• Part of the state-significant Wantirna Health Precinct, together with the Knox Private Hospital and Wantirna Health Hospital. Strategic directions focus on integrating employment generating uses with residential, hospitality, retail and community uses • Offers residents easy access to various amenities like retail, hospitality, and commercial activities. It has access to a SmartBus Route and a number of local bus routes	A person having cerebral palsy which impacts her balance, fatigue levels and hearing
5. Knoxfield Shopping Centre 3 July 2024	
• Plays a key role in offering convenience retail and commercial services that cater to the everyday needs of the local community and is well-served by multiple bus routes for easy access	A manual wheelchair user
6. Ferntree Gully Activity Centre 3 July 2024	
• One of four activity centres servicing local catchments in the Dandenong foothills. Neighbourhood/local centres provide a limited mix of uses for local convenience to service the basic needs of the immediate residents, important focal points for the surrounding neighbourhood, ideally located close to community services, as well as accessible by public transport • Well-served by public transport, with train services and a number bus routes	A partially vision-impaired person and a person in an electric wheelchair

Figure 5 – Location of experiential site inspections



Source: Symplan and .id consulting

The following criteria guided the selection of sites suitable for the experiential inspections:

- majority of public realm in Council ownership
- mixture of flat and sloping terrain
- distribution across the municipality
- diverse mix of uses (retail, health, service, community, education)
- proximity and connectivity with active and public transport, community, health, educational and recreational facilities.

5.1.3. Access audits

In order to understand the extent to which disability access provisions are applicable and the intent of such, a professional access auditor was engaged to undertake onsite inspections of Council-owned assets in the following precinct sites for the purpose of reviewing disability accessibility.

Priority precincts (refer to Figure 5)

- The Basin Triangle
- Rowville Community Centre and Reserve
- Scoresby Village
- Wantirna Mall
- Knoxfield Shopping Centre
- Ferntree Gully Activity Centre

Additional precincts

- Bayswater
- Boronia
- Knox Central
- Mountain Gate
- Upper Ferntree Gully.

The audit area for each activity centre can be found in Appendix 4. This audit was undertaken against the requirements of the National Construction Code and relevant standards (AS1428.1 and AS1428.4.1 mainly) within the Australian Standards framework to identify specific issues compromising the safety and comfort for people with disability with respect to the following elements:

- accessible car parking facilities
- pathway and accessways
- kerb ramps
- step ramps
- ramps
- walkways
- stairways
- street furniture
- tactile ground surface indicators (TGSI)
- wayfinding
- signage
- luminance contrast
- lighting
- finishes including abutments.

5.2. Limitations

The consultation was conducted within the following limitations:

- The response to the survey was limited.
- The stakeholder engagement focuses on the challenges and needs of PMDs and therefore does not specifically focus on the needs and challenges of other pedestrians and PWD who do not move within the public realm.
- Experiential site inspections were conducted in a sample of the municipality's activity centres. The findings may therefore not be entirely representative of the challenges experienced by PWD and PMDs in all the municipality's activity centres.
- Mobility devices not represented in the experiential site inspections included electric scooters, walking frames, long canes used by people with visual impairments.
- The volunteer with cognitive impairment was unwell on the day of the scheduled site inspection and was therefore unable to participate in the experiential site inspection.
- The experiential site inspections and accessibility audit was limited to activity centres and some of the immediate interfaces such as the road network and public transport infrastructure.
- The discussions focused on assets and infrastructure in Council ownership.
- The stakeholder engagement outcomes are not supplemented by a feasibility study which considers maintenance schedules, skills and experience of staff members and available resources.

6. What we discovered

This section integrates the findings from the anecdotal information gathered from all consultation activities.

6.1. Summary of community consultation

Participants used a range of mobility devices including manual and electric wheelchairs, walking frames, walking sticks and prams. One participant with limited mobility did not use any mobility device. Some participants travelled alone, and others travelled with a carer.

Transport mode

The most common form of transport was private car as a passenger with some participants driving themselves. The most common form of public transport was taxi with a few participants using trains, mostly to travel to the Melbourne CBD.

Most participants travelled along the residential footpaths and shared paths to neighbourhood activity centres on a regular basis. A typical journey using a mobility device is more than 30 minutes, with some indicating they travel between 20 and 30 minutes.

Key destinations in Knox

Key destinations people travelled to included train stations, medical centres, community facilities, open spaces and shopping centres including:

- Community facilities – Knox Swimming Centre, Ferntree Gully, Vermont Men's Shed.
- Medical facilities – Box Hill Hospital, Boronia Medical Centre/Imed radiology.
- Shopping centres – Westfield Knox Shopping Centre, Boronia Shopping Centre, Ferntree Gully Shopping Centre, the Basin Triangle, The Zone, Stud Park Shopping Centre, Wellington Village, Scoresby Village and Mountain Highway Shopping Centre.
- Public open spaces – Arboretum, Peregrine Reserve.

They also travel to the Melbourne CBD and more distant locations such as the airport.

Places respondents indicated they would travel to if they were more accessible are Boronia Shopping Centre, Mountain Gage Shopping Centre, Rowville Lakes and Quarry Park.

6.2. Summary of audit findings

Approximately 2,500 issues were identified through the access audits with multiple issues often occurring at the same location. For example, a non-accessible parking spot may have multiple issues such as incorrect line-marking, wrong signage and a missing kerb ramp. It's also important to note not all of the issues identified by access audits can/will be addressed due to site limitations and/or cost/benefit (e.g. topography, road reserve width). As with results of previous community audits, initiatives will be prioritised based on risk, deliverability, cost and benefits, seeking to ensure that identified issues do not compromise on mobility and accessibility, as defined through community feedback.

Below is the summary of key findings from access audits and the corresponding recommendations.

Issues and challenges	Recommendations
Kerb ramp design and location	
The transition from the kerb ramp to the roadway does not align with the required direction of travel and/or the roadway. This presents an access barrier for people with a vision impairment and people using mobility devices.	This can be rectified through retrofitting work or prevented during the road design phase as per AS1428.1 – 2009 Clause 10.7.
Gradients where there are significant topography constraints	
As the topography of land changes, it is not easy in all areas to meet the requirements, such as gradients. This makes it difficult for people with restricted mobility or who use mobility devices to travel in both directions as it is more tiring to navigate the uphill slope and more challenging to control speed when travelling downhill.	When building works are proposed within the pathway network, pathways are to have a maximum gradient of 1 in 20 with a flat landing every 15 metres when possible. If above is not possible to achieve, it is highly recommended to provide landings at greater frequencies than every 15 metres, as well as ensuring there are resting points along steep topographical areas. Resting points should also include compliant seating and room for a mobility device to be positioned.
Flora encroachments on the footpaths	
Travel along pathways can be impeded in the following ways: 1. Flora adjacent to the pathway is over-growing/hanging and encroaches the clear width of travel. 2. Grass-type flora is growing over grassed area edging and/or within the construction joint lines within the pathways.	Raise awareness of the need for land owners and occupiers to keep pathways clear of flora at all times. Maintain and clear grass type flora within the construction joints.
Abutments of surfaces	
Different levels between adjoining surfaces or cracks along footpaths cause tripping hazards.	Replace sections of the pathway. Reduce the height differences between adjoining surfaces.

Issues and challenges	Recommendations
Tactile ground surface indicators (TGSIs)	
Absent, cracked, broken TGSIs are a barrier to safe and comfortable navigation for people with a vision impairment.	It is highly recommended that all of the TGSIs be upgraded in a strategic approach. Instore durable TGSIs with a minimum of 30% luminance contrast within 300 millimetres from the hazard.
Wayfinding signage	
Absence of wayfinding signage with raised tactile characters makes it difficult for people, including those with a vision impairment, to navigate public places and spaces. Where there has been signage provided, very limited or none of the signage has raised tactile characters, symbols or Braille.	Install wayfinding signage with raised tactile characters at all key wayfinding decision points with at least 30% luminance contrast.
Car parking	
Poorly located and designed car parking restricts the ability of people with disability to use public places and spaces. Car parking bays with a steep gradient are unsafe and uncomfortable to use.	Provide bollard within the shared area. Provide a shared area. Ensure the car parking bay dimensions and delineations are compliant. Either relocate the bay to a more suitable position or rectify the gradient.

6.3. Challenges and issues

Some challenges raised during the consultation process are listed in detail below under three main components:

- Availability and safety of accessible parking
- Quality, capacity and functionality of footpaths and shared paths (including crossings, tactile markers, pram ramps, slope, impediments, obstructions, rails, conflicts with cyclists)
- Availability of supporting infrastructure and amenities.

The following abbreviations have been used for each of the experiential site locations:

WM Wantirna Mall	**RCC** Rowville Community Centre	**SV** Scoresby Village
FTG Ferntree Gully	**TBT** The Basin Triangle	**KF** Knoxfield Shopping Centre

6.3.1. Availability and safety of accessible parking

Difficulty finding an accessible car park due to inadequate provision and use by other vehicles such as delivery trucks, motorbikes and vehicles used by non-eligible drivers or passengers was one of the key issues expressed by the participants.

If there aren't enough, I have to park in the street, which is dangerous, go somewhere else or go home.

Factors such as absence of, obstructed or poorly located shared zones and inadequate space to safely exit and enter the car compromise the safety and convenience of people using accessible car parking.

Accessible car park has no connections to a safe pedestrian crossing. **SV**

Accessible car parks not located adjacent to footpath and have no shared zone. **RCC**

No shared zone and too narrow, therefore wheelchair user must travel in roadway to reach driver's side. **KF**

Accessible car park too short, therefore PMDs have to enter and exit the car in the roadway. **KF**

Accessible car park too short, therefore PMDs have to enter and exit the car in the roadway. **FTG**

Shared zone too narrow and does not have painted yellow lines. **KF**

Parallel parking makes it dangerous as PMDs have to use the roadway to enter and exit car and access the footpath. **WM**

Oblique accessible car park difficult to reverse into. **FTG**

No shared zone, no ramp onto footpath, too short. **WM**

Bollard has not been provided in shared zone. **SV**

Dedicated accessible parking space line markings are not yellow. **FTG**

Line markings are broken, faded or have sections missing. **FTG**

Diagonal strips within the shared area are not within 45+/- 10 degrees. **FTG**

Required kerb ramp has not been provided. **Boronia**

On-street parallel parking end bay is not long enough. **FTG**

6.3.2. Footpath and shared paths

Connectivity and quality were the two issues associated with footpaths identified during the experiential site inspections.

Surfaces and edges

Poor-quality surfaces cause tripping hazards and difficulties using wheeled devices. They can also cause discomfort for people with chronic pain. Edges that are uneven or not protected from the surrounding surfaces are dangerous as they can introduce tripping hazards.

If I tripped over the lip on the drain, my fall would be worse.

While the participants in the experiential site inspections indicated that surfaces do not necessarily have to be sealed, they must be compacted, free from debris and level.

Change in surfaces causes a potential tripping hazard. **TBT**

Uneven surface with debris. **RCC**

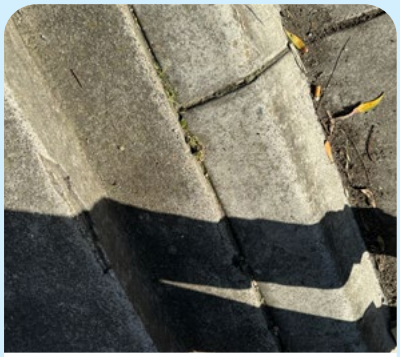
Uneven surface on sloping footpath is a potential tripping hazard. **SV**

Poorly maintained asset infrastructure causes tripping hazard. **SV**

Grated slotted openings are in the same direction as the dominant direction of travel, thus they are a tripping hazard. **KF**

Asset infrastructure a tripping hazard and obstruction. **KF**

Footpath edge higher, therefore presents as a tripping hazard. **WM**



Edge treatment (bullnose) presents as a tripping hazard and makes it difficult to access path. **WM**

Footpath edge at different level causes potential tripping hazard. **SV**

Drain at edge presents as a tripping hazard, especially as path has a steep slope and crossfall. **WM**

Uneven footpath surface and narrow footpath presents as a tripping hazard. **WM**

Grate slotted openings are in the same direction as the dominant direction of travel. **FTG**

Building and facility accessibility

It is estimated 30% of Australians living with disability experience difficulties accessing buildings and facilities.[57] The main difficulties include steps at the entrances to buildings, and surfaces at the entrances which cause tripping hazards or difficulties crossing.

Step obstructs entry. Mat causes wheelchair wheels to spin. **FTG**

Absence of handrails. **RCC**

Stairs very steep, steps narrow and have no contrast markings, handrail does not go to the bottom of the staircase. **WM**

Kerb ramps

Key issues with kerb ramps are slope and the use of bullnose edges.

Bullnose edges difficult to navigate. **KF**

Pram ramp too steep. **SV**

Pram ramp too steep. **WM**

57 Australian Institute of Health and Welfare (2024)

Alignment and connectivity

Paths with sharp curves and steep crossfalls are difficult for PMDs to navigate. Poor connections between individual path and shared paths, and between paths and shared paths and pedestrian crossings make it difficult and unsafe to move between key destinations and use facilities such as accessible car parking.

When paths just end that is really frustrating and sometimes dangerous.

Footpath terminates and does not connect to anything. **SV**

Footpath does not align with the desire line. **SV**

Step at end of footpath through gate difficult for PMDs to use. **SV**

Footpath not continuous. **RCC**

Footpath terminates and does not connect to anything. **KF**

Narrow paths just ‘end’. **KF**

Crossings

Specific issues associated with connectivity included paths not connecting on either side of the road, footpaths not connected with a zebra or signalised crossing, and footpaths that just 'end' or lead to unsafe places.

Pedestrian safety at crossings is compromised by a lack of signalised or zebra crossings, kerb ramps that are not aligned with pedestrian refuges, absence of pedestrian refuges in arterial roads, and footpaths that are not connected with one another at a crossing.

Issues at signalised crossings include signal cycles that are too short and difficulties reaching and using the buttons.

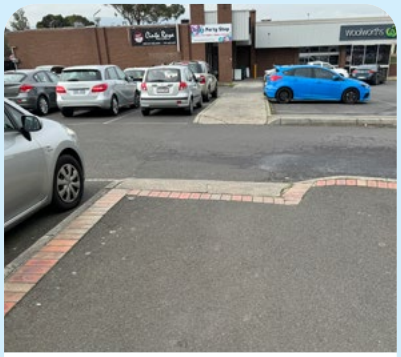
If I was by myself, I would rush across the pedestrian crossing which means I'm likely to fall. I would probably avoid the crossing.

There are a number of traffic lights where the button to press is difficult/ impossible to reach when in a wheelchair; for example, on the opposite side or around the side of the pole. Also a number do not have paved areas surrounding the light pole and wheelchair easily loses traction and gets stuck.

I can never get across the road in time before the light turns red. It's dangerous for elderly and disabled people. Most places do not have us in mind.

There are a number of traffic lights where the button is difficult to press or reach when seated in a wheelchair; for example, on the opposite side or around the side of the pole. Several traffic lights do not have paved areas surrounding the light pole, causing wheelchairs to lose traction and get stuck.

Centre line of kerb ramp and pedestrian refuge are not aligned. **FTG**



Steep pram ramp and not safe to cross. **SV**

Footpath leads into roadway and does not connect with another footpath. **RCC**

Width, slope and crossfall

The width, slope and crossfall of a footpath can influence how safe and comfortable footpaths are. Steep slopes in the municipality's hilly areas can be an issue but are to some extent unavoidable while narrow footpaths do not provide space for two pedestrians to walk alongside one another and can cause conflict between users of all abilities.

Sloping narrow footpath with curve makes it difficult to navigate. **SV**

Footpath narrows at the edge. **SV**

Footpath too narrow, difficult for carer to walk alongside person using wheelchair. **FTG**

Narrow footpath inaccessible for people using wheelchairs. **SV**

Narrow sloping footpath with no ramp makes train station inaccessible. **FTG**

Footpath just wide enough for one mobility device. **WM**

Path obstructions

Structures such as outdoor dining furniture, advertising signage, refuse bins, signage poles, bollards, overgrown vegetation, public transport infrastructure and cars overhanging the footpath can reduce the space pedestrians have to travel in, cause tripping and falling hazards and interfere with the ability of people with visual impairment to navigate.

Sign post obstructs footpath. **KF**

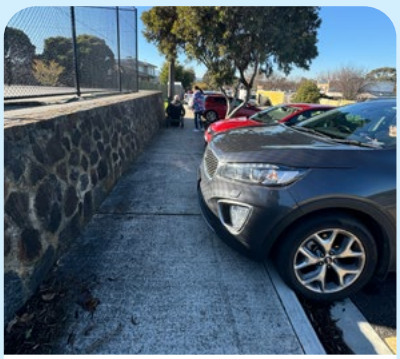
Bus stop infrastructure obstructs footpath. **SV**

Bus stop infrastructure obstructs footpath. **SV**

A frame and outdoor dining furniture obstruct the footpath. **WM**

Outdoor dining furniture obstructs footpath. **SV**

Outdoor dining furniture obstructs footpath and causes difficulties for people using a long cane to identify edges. **FTG**



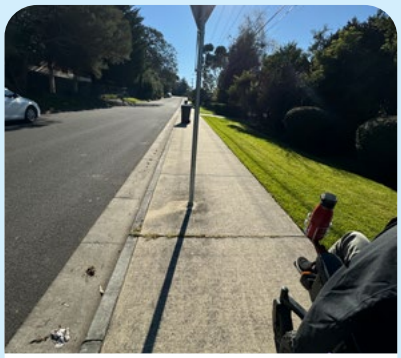
Overhanging cars obstruct footpath. **KF**

Retail merchandise obstructs footpath. **SV**

Bins obstruct footpath. **SV**

Poorly maintained vegetation narrows footpath. **FTG**

Bollard narrows footpath. **FTG**



A sign obstructs footpath. **FTG**

Tactile markers (TGSIs)

There was general acceptance that TGSIs are necessary to serve the needs of people with visual impairments. Key issues identified were broken markers, markers not orientated in the intended direction of travel, and markers that are not clearly visible.

It's okay as I know it has to be here for people who are visually impaired.

All people with disability have different needs, which makes it so hard to get it right.

It's a trip hazard for me but I know it has to be there. Unfortunately, we don't live in an ideal world.

I like the painted tactile – I can see it from a mile off.

TGSI does not align with safe travel direction and is same colour as path surface. **WM**

No TGSIs at pedestrian crossing. **FTG**

No TGSI in pedestrian refuges. **TBT**

Luminance

Luminance contrast raises awareness of potential hazards such as steps, changes in level, steep slopes and bollards for PWD.

Stair-nosing luminance contrast strip has not been provided. Compliance handrails have not been provided on both sides of the stairway. **FTG**

Stair-nosing luminance contrast strip has not been provided. **RCC**

Bollard does not have adequate luminance contrast painting. **FT**

Bollards do not have luminance contrast painting. Footpath surface covered in debris. **KF**

Bollards are a potential tripping hazard if there is no contrast painting. **SV**

6.3.3. Availability of supporting infrastructure and amenities

Benches that are not connected to an adequately compacted footpath, do not provide space for PMDs to sit, are difficult to get off and are not sheltered, reduce PMDs' comfort and convenience.

Benches without arms make it difficult for people with muscle weakness to use. Insufficient space between the bench and other structures such as picnic tables and other seating makes it difficult for people to park their mobility devices.

Drinking fountains with stiff buttons can be difficult to use for people with muscle weakness. Drinking fountains that are too high are difficult for people seated in wheelchairs to access.

Poorly located electric vehicle charging stations can prevent and restrict access for PWD.

Accessible toilets that are locked, used as storage or not well connected to footpaths make it uncomfortable for PWD to go about their day-to-day activities in public places and spaces.

No concrete pad around bench. No handrails to assist person getting up. **FTG**

Public art too close to bench which narrows space to manoeuvre a wheelchair. No space to park a wheelchair. **FTG**

Insufficient space on the concrete pad and under the picnic table to park a wheelchair. **RCC**

Seating too low and has no armrest. **WM**

Seating cover does not extend so PMDs would not be protected. **SV**

Difficult to park the wheelchair due to bench height and proximity to tree. **FTG**

Electric charging equipment difficult to access due to bollards, sign pole and absence of ramp. **FTG**

Buttons difficult to push due to muscle weakness. **RCC**

Drinking fountain is not DDA compliant. **FTG**

Accessible toilets make a huge difference to our ability to visit public places.

6.3.4. Specific sites with issues

The following direct quotations are drawn from the community's feedback on specific sites with issues.

*There is no pedestrian crossing at the corner of Quarry Road and Railway Avenue Upper Ferntree Gully which connects the **footpath between Upper Ferntree Gully Station and Ferntree quarry/footpath to Ferntree Gully shops**. It is a very dangerous intersection and those with mobility have to cross on the road through the train crossing. Please fix immediately!*

*There seem to be many areas around **Wellington Village** whereby there is only a footpath on one side of the road. This makes using a mobility scooter, wheelchair, pram or walking tricky.*

*The **shared path on Kellets Road between Lakesfield and Napoleon** has a section that is loose rocks instead of concrete and is impossible to push a pram over and is a tripping hazard*

Boronia shopping area *is divided by Main Road (Dorset) for parking and access to all shops.*

Boronia shopping area *– The parking is all over the place and the pedestrian areas are also all over the place and no consistent paths for pedestrians.*

Mountain Gate shops *– Most of the shops at Mountain Gate are not wheelchair accessible. I also want to be able to walk my dogs around our streets and up to the Mountain Gate shops. Council has addressed the footpaths being blocked by cars at the Fitzgerald Road end of Conn Street which I greatly appreciate, however the footpath at Silverton Drive is often blocked by cars as well.*

I want to be able to go to the ***Mountain Gate shops*** *safely in my electric wheelchair and not be limited to going into only a few stores because most are not wheelchair accessible. Using my electric wheelchair I have to go up Fitzgerald Road towards Burwood Hwy using the road because there are no footpaths. It is scary and dangerous as the cars speed up and down this road. If I use Silverton Drive the footpath out the front of numbers 26 and 24 is sloped towards the road. This slope in an electric wheelchair is accentuated, making it dangerous to navigate especially if the path is wet.*

I want to be able to access my local community without the limitations of stores not being accessible, or sloped footpaths.

Arboretum Ferntree Gully *needs easier access and more parking spaces off Francis Crescent.*

The Arboretum *is great but the access ramp alongside the disabled parking spaces has a small step in it that almost resulted in my elderly mother being tipped from the wheelchair.* ***Stud Park*** *the shops and* ***Centrelink centre*** *on Fulham Road Rowville need serious reviews for disabled parking and I cannot safely take my mother to this part of the centre due to the inappropriate accessible parking and the design of the footpath access*

Stud Park *– It is tricky to access by footpath: poor/no/limited lighting from Bergins Road to/from Stud Park at night. No footpath up along Chemist Warehouse building connecting to library/main shopping centre. No footpaths from along Churchill Park Drive from Bergins Road.*

Rowville Lakes *– Accessible roadside parking and access ramps would make it easier to visit the lakes and picnic area. Smooth pathways into the area would also be beneficial. Gravel paths and a transit wheelchair are quite dangerous. We currently stay in the car and have a coffee looking at the lakes and the other people enjoying the lakeside opportunities as it is too challenging to get to the walking paths.*

There are some parks that I find tricky as they don't have fences or are close to the road – for example, ***Marie Wallace in Bayswater.***

Knox Shopping Centre *can be hard as there are lots of high curbs or speed bumps with hard edges that are hard to get a pram or trolley over in the car park. I also struggle to get a double trolley there when I go to do the shopping.*

Quarry Park *– Paths away from top area are too steep with a wheelie walker to get back up (but accept that's not fixable).*

Tripping point between the road and access ramps near accessible parking spaces and entrances to public places. For example, ***Knox City Shopping Centre*** *undercover car park near the hand car wash there is a designated crossing from the car park to the footpath (Ozone end, but a small ridge from the roadside creates the possibility of tipping the wheelchair forward. We have to turn around on the roadside and come up the ramp backwards which is not really safe or easy for the carer to navigate*

Paths which 'just end', e.g. along Timmothy Dr to David Cooper Park and High Street Road shops.

6.4. Best practice

Through consultation, best practice principles are identified regarding accessible car parking spaces, footpath and shared path design, building accessibility and supporting infrastructure.

Accessible car parking

Good connectivity to footpaths, adequate space to manoeuvre around the vehicle and structures that prevent ineligible parking are key features that ensure PWD can park safely and conveniently.

Accessible car parking located at footpath into park and has shared zone (but no bollard). Arboretum **FTG**

Wide pathway next to the accessible car parking space. **SV**

Share zone adjacent to accessible car park which is connected to the footpath and protected by a visible bollard. **WM**

Footpath and shared path design

Well-maintained, wide and gently sloping footpaths with compacted surfaces and safe edges are key attributes of safe and comfortable footpaths.

The new park at Scoresby Village Shopping Centre gets a big tick from me – the footpaths are wide, there are good pram ramps, the layout is well done, there is sheltered seating including space for wheelchair users.

Path is wide and has sealed good-quality surface. Arboretum

Wide footpaths with good-quality surface and gentle slope. **KF**

Wide footpath with good-quality surface. **SV**

Gentle slope makes it comfortable to use. Arboretum

Surface of utility cover prevents trips and falls. **SV**

Asphalt and concrete grinding improve footpath quality. **KF**

Stairs have rail and tactile markers. **TBT**

Path surface good quality. And has edges and arm rests. Connects to car park. **RCC**

Wombat crossing improves safety and connectivity between footpaths. **SV**

Building accessibility

Ramps provide equitable access into buildings for PMDs.

Accessible car parking located at footpath into park and has shared zone (but no bollard). Arboretum **FTG**

Wide pathway next to the accessible car parking space. **SV**

Share zone adjacent to accessible car park which is connected to the footpath and protected by a visible bollard. **WM**

Supporting infrastructure

Benches placed at regular intervals are necessary to provide rest, particularly along footpaths in the municipality's hilly areas.

Handrails along steep slopes and staircases make it safer for PWD to use.

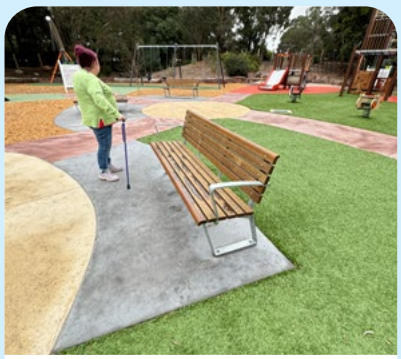
Space around benches enables PMDs to access the seating and table.

It would be great if picnic areas had a place where you could push a wheelchair up to a picnic table.

Drinking fountains with levers rather than buttons assist people with muscle weakness.

Bench has arm rests and is accessible from a sealed surface. Arboretum

Picnic table has space to park a wheelchair or pram and is under cover. **SV**



Bench installed on concrete pad, has arm rests and is connected to footpath. **RCC**

Drinking fountain operated with lever assists people with muscle weakness. **RCC**

Signage assists communication. **RCC**

Visual and tactile cues

TGSI tactile markers and luminance painting to identify changes in level and obstructions such as increase visibility and ensure safety, particularly for people with visual impairment.

TGSI tactile marker is well maintained, contrasts with footpath surface and angled towards direction of travel. **WM**

TGSI tactile marker colour contrasts with footpath surface. **TBT**

TGSI tactile marker good quality and high contrast with footpath surface. **RCC**

Contrast paint identifies potential hazard. **TBT**

Bollard colour increases visibility. **FTG**

6.5. Competing priorities/conflicts

Several competing priorities need to be considered when planning for, designing and maintaining the built environment to maximise accessibility and safety for PWD.

These competing priorities also need to be considered during the budget allocation processes.

- In some instances, compliance with parking standards may still not result in adequate parking for everyone, including PWD. This is a particular issue when accessible car spaces are used by ineligible vehicles.
- Biodiversity is essential to combatting climate change. Potential competing biodiversity priorities are the need to ensure adequate lighting while protecting fauna and landscaping and trees for shelter, and the need to prevent cracking and obstruction of footpaths. Addressing these competing priorities will safeguard both comfortable travel and a sustainable local ecosystem.
- For public transport infrastructure such as bus shelters and signage to be safe, it has to be placed on the footpath. However, poorly located public infrastructure can cause obstructions, particularly on narrow footpaths.
- Steps into buildings are sometimes necessary to provide adequate drainage and accommodate Knox's hilly structure. These can cause obstructions for PWD, preventing access into buildings which abut footpaths.
- Safety gates into children's playgrounds can be difficult to open for PWD, particularly for PMDs with wheels.

7. The Action Plan

This Background Report has highlighted specific issues in Knox's built environment that compromise the safety, comfort and convenience of pedestrians, particularly PWD. It has also identified a range of best practice examples that can inform Council's maintenance, renewal and new build processes over the next 10 years.

The KMAAP has been developed to address the findings identified in this Background Report. In this action plan, we will work towards:

- minimising physical barriers for people with disability in accessing goods, services, facilities and employment
- improving travel safety and comfort for people with disability across different modes of transportation
- implementing universal design principles in infrastructure project planning and upgrades to ensure accessibility for all, including individuals with disability.

Five action categories were developed under the theme of 'Action Today, Mobility Tomorrow'.

- Accessible car parking
- Pathways
- Connectivity
- Supporting infrastructure
- Working towards a better future.

Please refer to the Knox Mobility and Access Action Plan for the full list of actions in the above categories.

The delivery of those actions can support Council in its vision to assist PWD and the wider community in shifting from a car-dominated community to one with a more sustainable and healthy mix of active, public and private transport.

Improving infrastructure to suit the needs of PWD will also ultimately improve the experience of all users, and lead to greater walkability and health outcomes.

Appendix 1 – Bibliography

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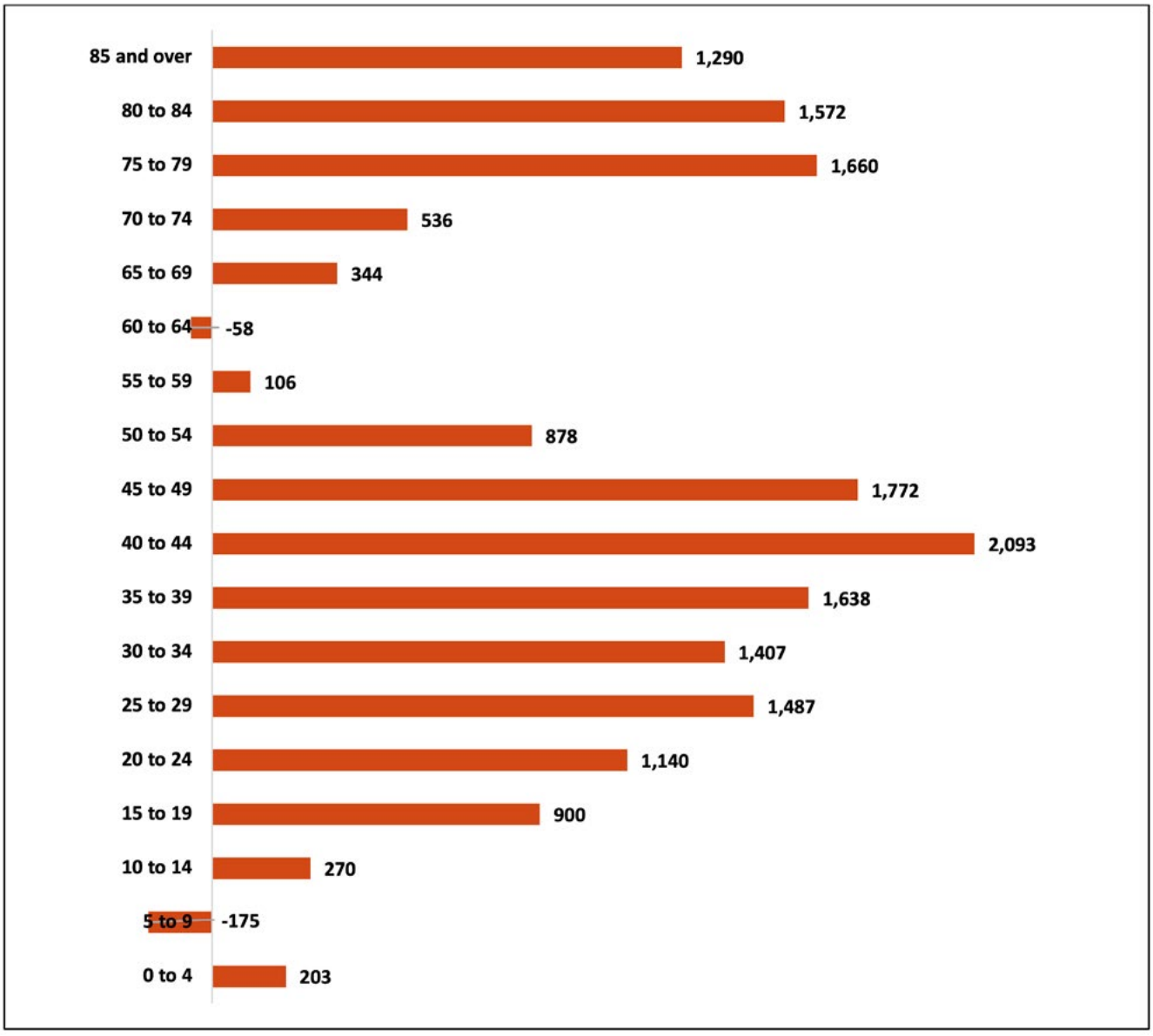
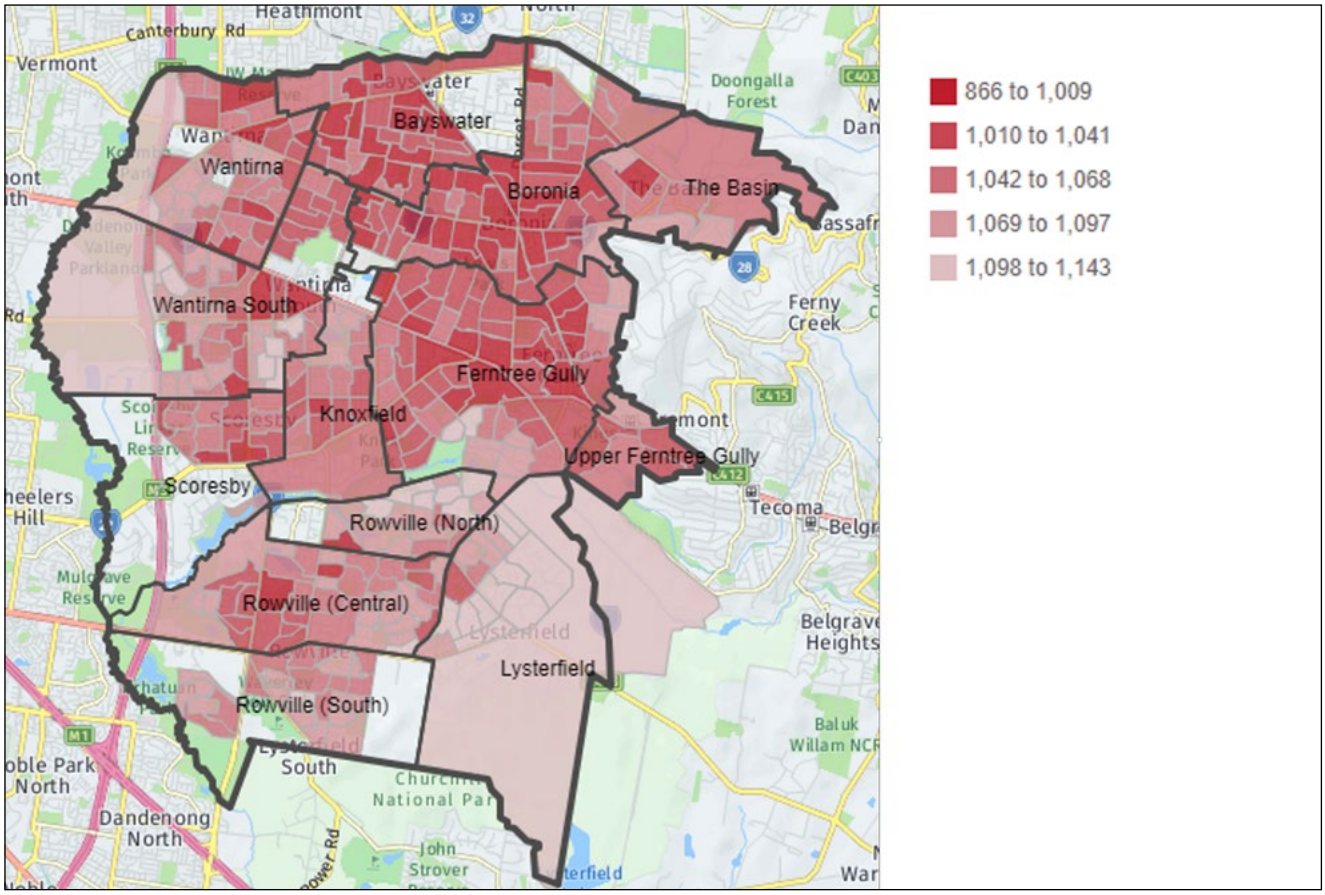
Appendix 2 – Socio-economic and health profile

Figure 6 – Projected population growth by age, 2021–2036



Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 7 – SEIFA Index of Relative Socio-economic Disadvantage, 2021



Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Table 2 – Assistance for core activities needed by age group (years), 2021

Age group	Knox 2021		Greater Melbourne 2021	Knox change 2016–2021
	#	%	%	#
0 to 4	107	1.3	1.3	-37
5 to 9	435	4.6	4.0	+104
10 to 19	733	3.9	3.5	+153
20 to 59	2,187	2.6	2.4	+319
60 to 64	471	4.8	6.5	+44
65 to 69	581	6.7	8.8	+32
70 to 74	753	10.2	12.5	+219
75 to 79	866	16.8	19.3	+174
80 to 84	1,134	30.3	32.2	+358
85 and over	1,868	53.4	53.7	+346
Total	**9,170**	**5.8**	**5.5**	**+1,751**

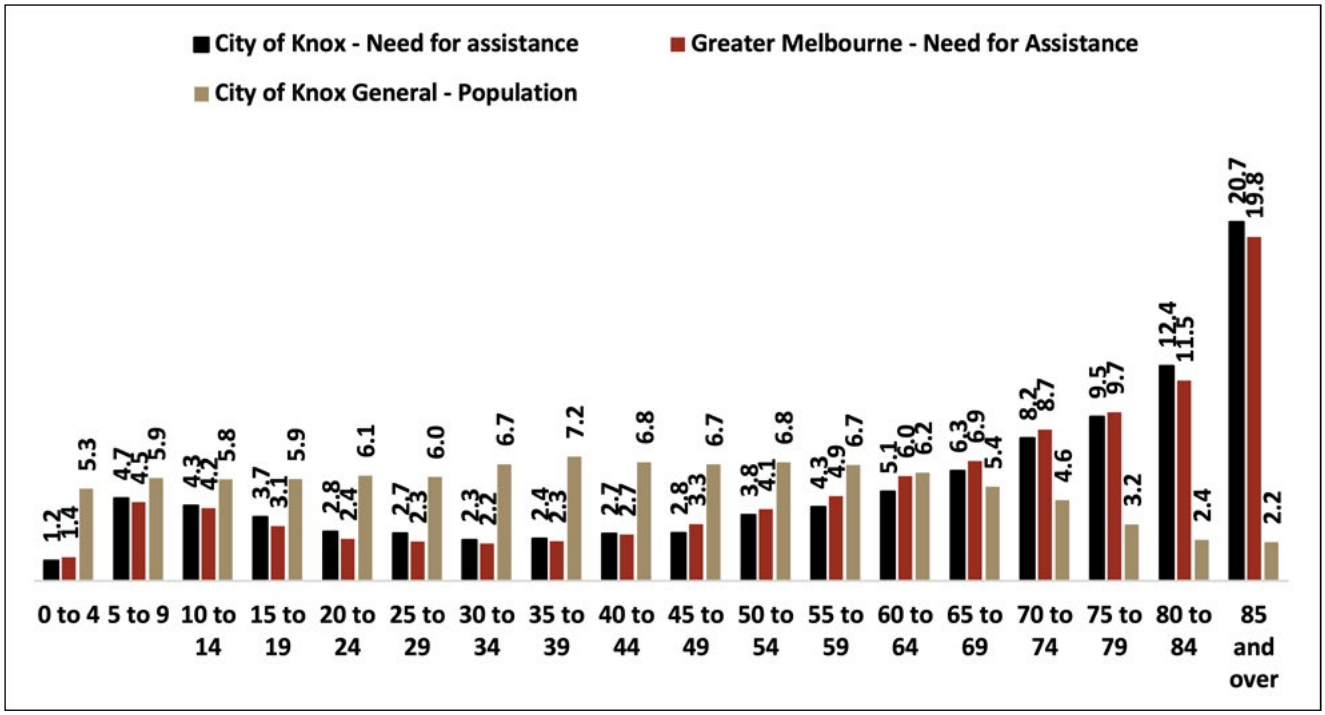
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Table 3 – People providing unpaid care to a person with disability, long-term illness or old age

Assistance to a person with a disability, long-term illness or old age	Knox 2021 #	Knox 2021 %	Greater Melbourne 2021 %	Change 2016–2021 #
Provided unpaid assistance	17,493	13.3	12.6	+2,490
No unpaid assistance provided	109,283	82.8	81.8	+4,584
Not stated	5,219	4.0	5.6	-2,135
Total persons aged 15+	**131,995**	**100.0**	**100.0**	**+4,939 (+3.9%)**

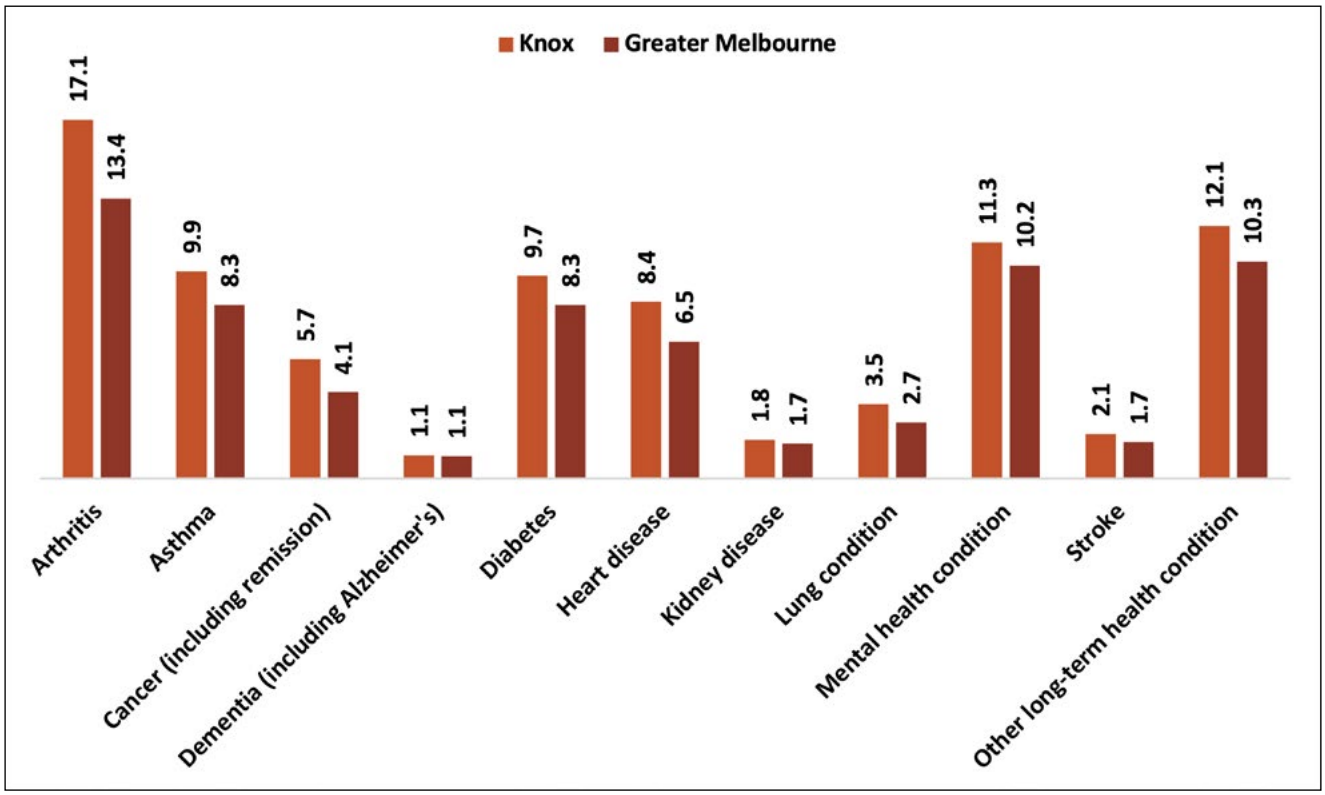
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 8 – Proportion of people needing assistance of total population by five-year age groups, 2021



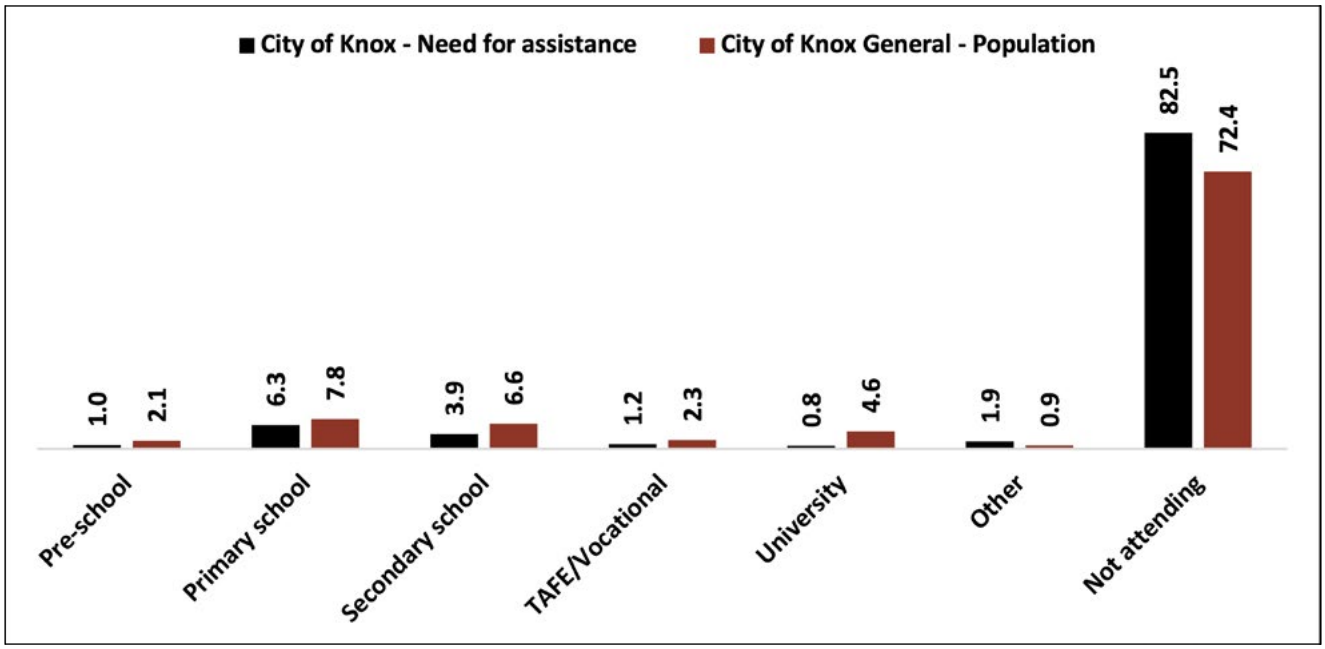
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 9 – Long-term health conditions, 2021



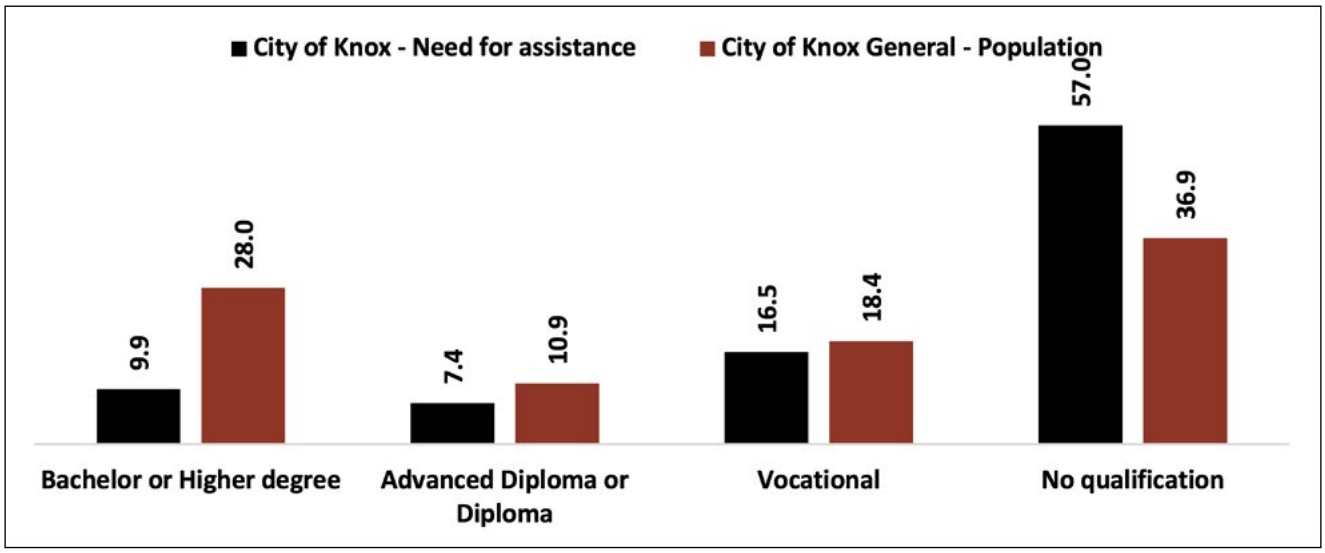
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 10 – Type of educational institution attending, people needing assistance 2021



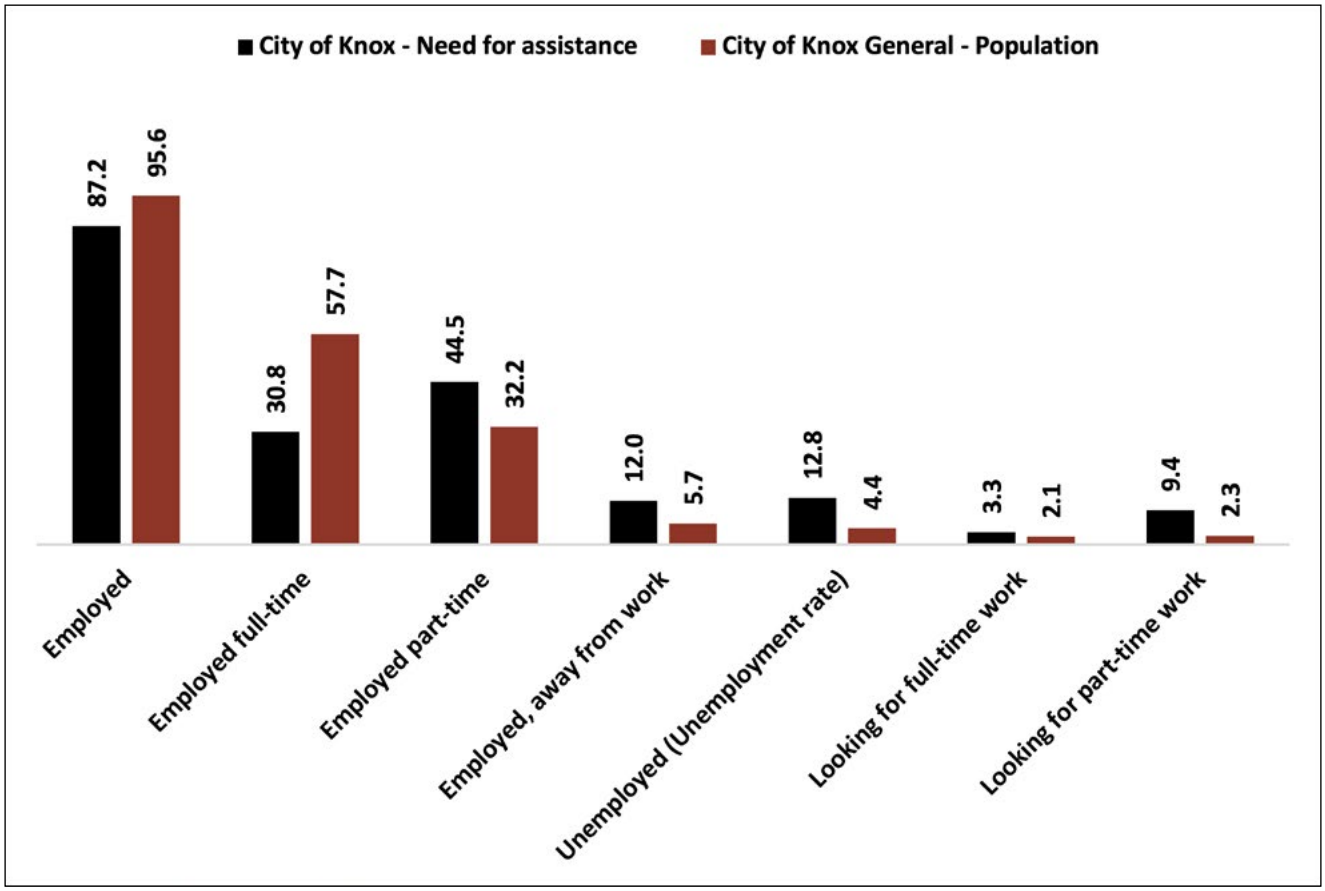
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 11 – Educational attainment, people needing assistance 2021



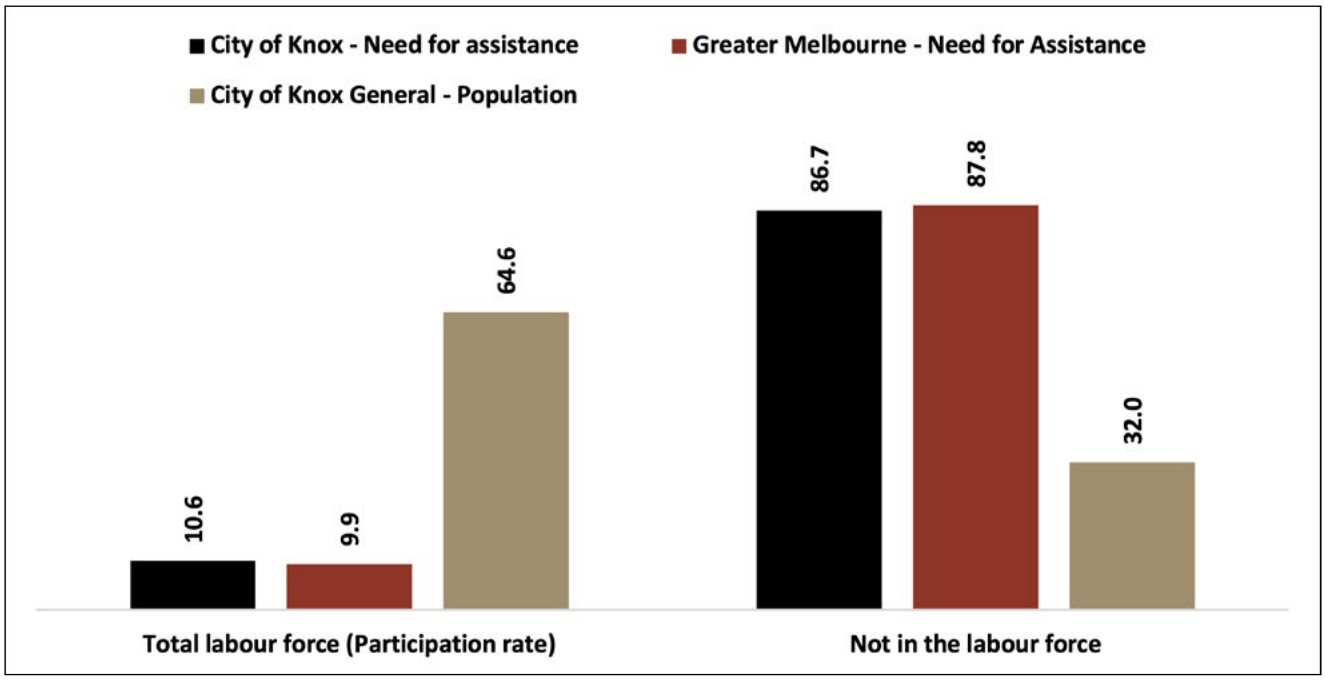
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 12 – Employment status, people needing assistance, 2021



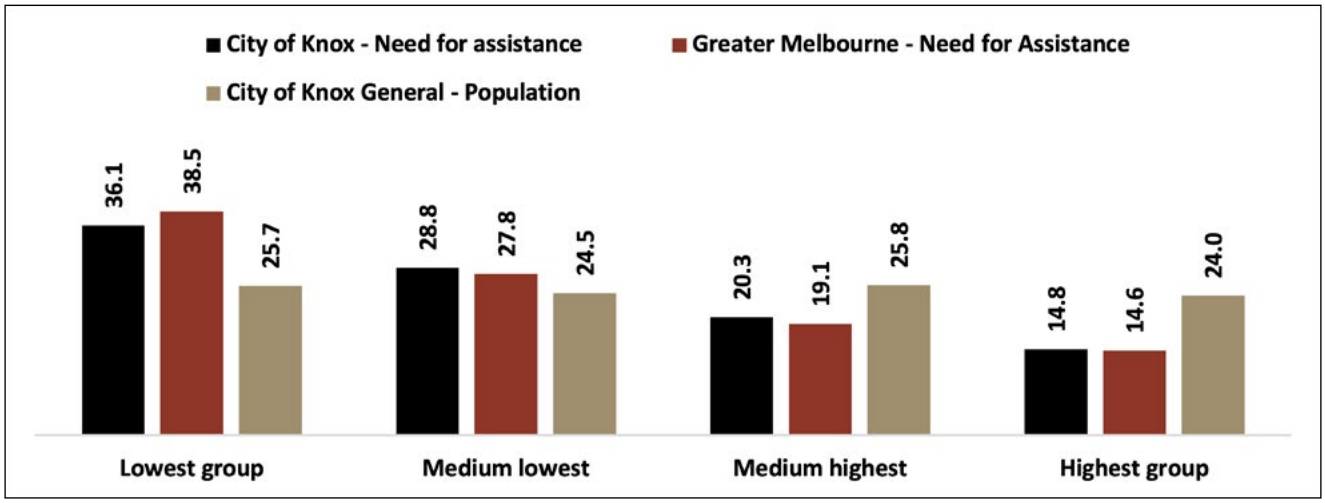
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 13 – Labour force participation rate, people needing assistance, 2021



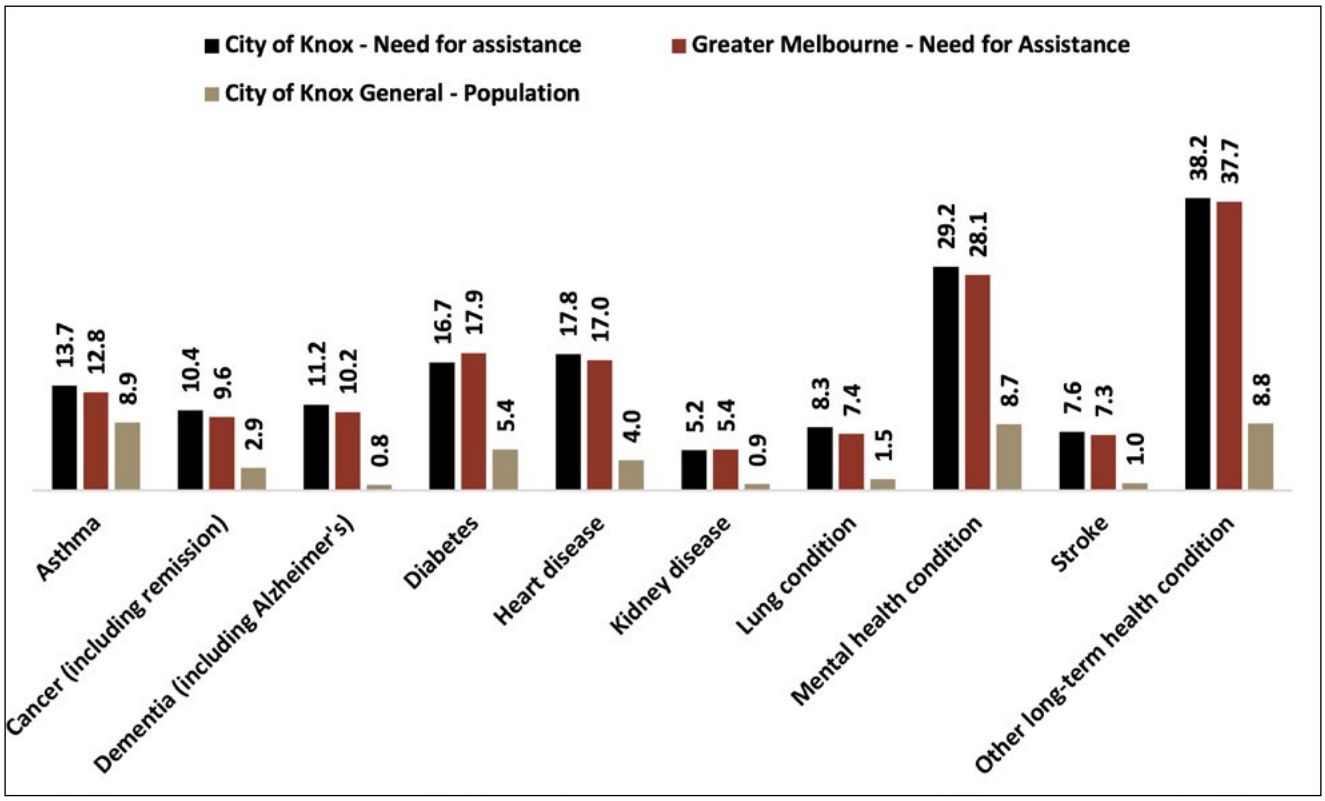
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 14 – Income quartiles, people needing assistance, 2021



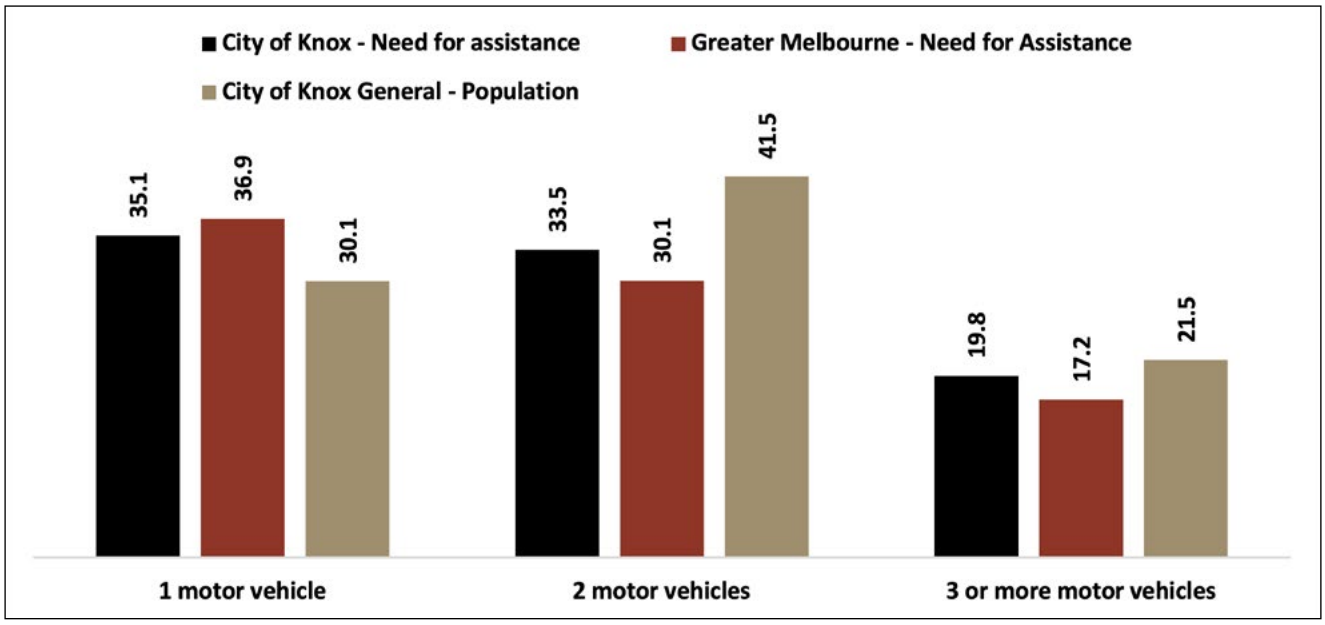
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 15 – Long term-health condition, people needing assistance, 2021



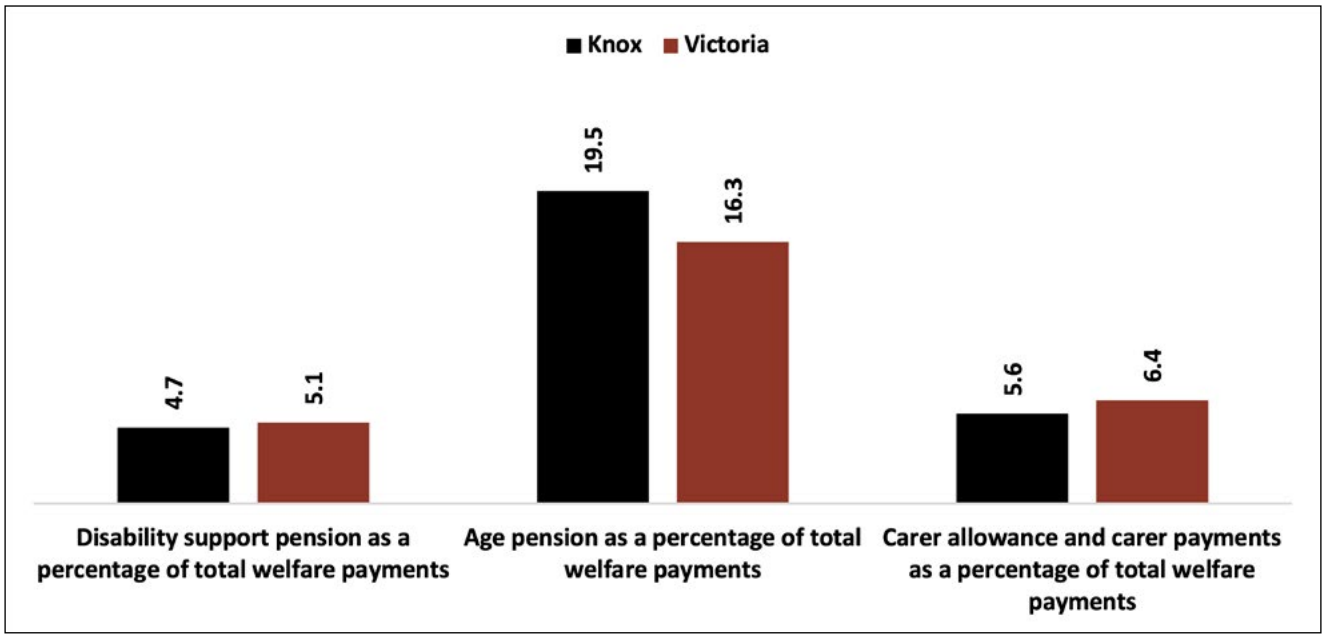
Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 17 – Car ownership, people needing assistance, 2021



Source: ABS Census of Population and Housing (2021), compiled by .id consulting

Figure 18 – Disability support, age and carer allowance pensions as a percentage of total pensions, Knox and Victoria, June 2024



Source: Department of Social Services

Table 4 – Core activity definition and prevalence

Level of core activity limitation	Definition	Population affected Australia/Victoria	Population affected Knox
Profound	Greatest need – always needs help with at least one core activity: communication, mobility or self-care	2.5%/2.3%	5% (Profound/severe) (n=8,130)
Severe	Needs help sometimes or has difficulty with a core activity	2.5%/2.3%	
Moderate	No need for help but has difficulty with a core activity task	2.5%/2.3%	7.8% (Moderate/mild) (n=12,590)
Mild	No help and no difficulty with core-activity tasks, but has other limitations, such as use of aids and equipment or inability to perform specific physical tasks.[58]	2.5%/2.3%	

Source: Australian Bureau of Statistics (2018)

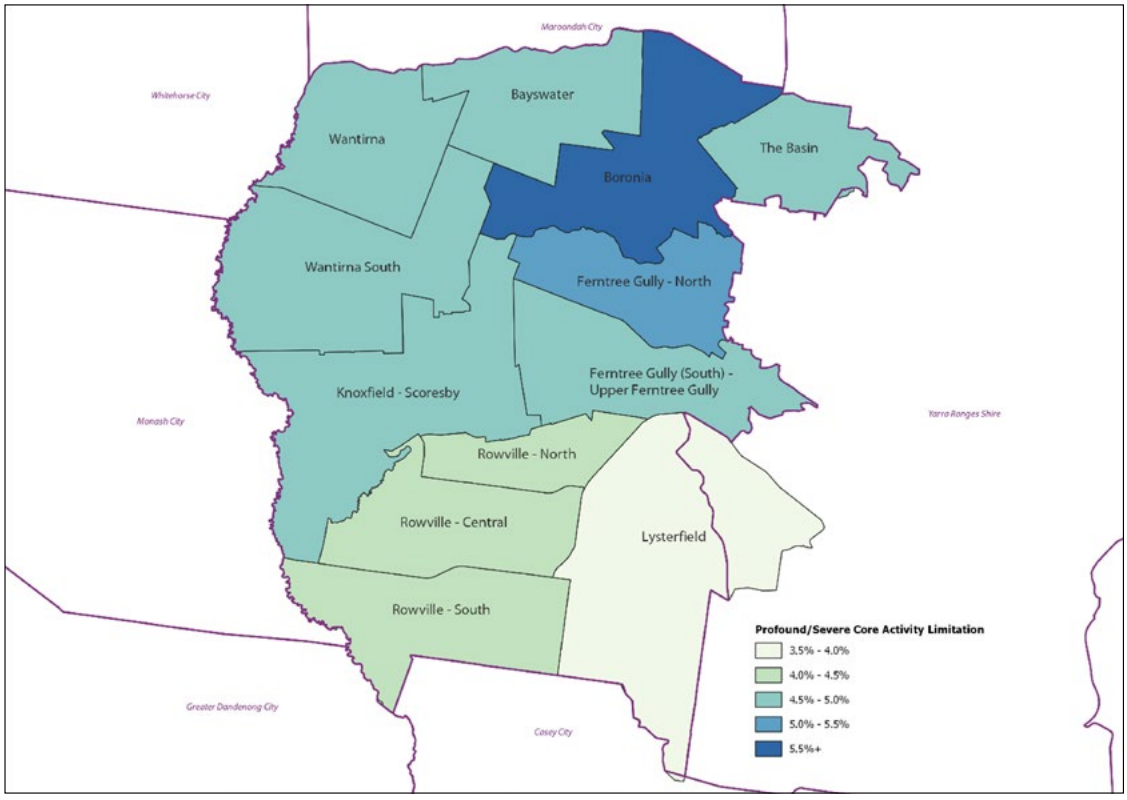
58 Easily walking 200 metres, walking up and down stairs without a handrail, bending to pick up an object

Table 5 – Disability estimates (physical or mental/behavioural condition), Knox suburbs, 2018

Suburb (SA2)	Profound/severe core activity limitation		Moderate/mild core activity limitation	
Bayswater	640	5%	1,059	8.3%
Boronia	1,648	7.1%	1,932	8.3%
Ferntree Gully North	727	5.2%	1,224	8.6%
Ferntree Gully South/UFTG	701	4.6%	1,231	8.1%
Knoxfield-Scoresby	838	5%	1,142	6.8%
Lysterfield	273	3.9%	448	6.4%
Rowville Central	703	4.4%	1,008	6.3%
Rowville North	360	4.3%	663	7.9%
Rowville South	450	4.1%	786	7.1%
The Basin	220	4.9%	356	7.9%
Wantirna	715	5%	1,110	7.7%
Wantirna South	842	4.6%	1,616	8.7%
Total	**8,130**[59]	**5%**	**12,590**[60]	**7.8%**

Source: Australian Bureau Statistics (2018)

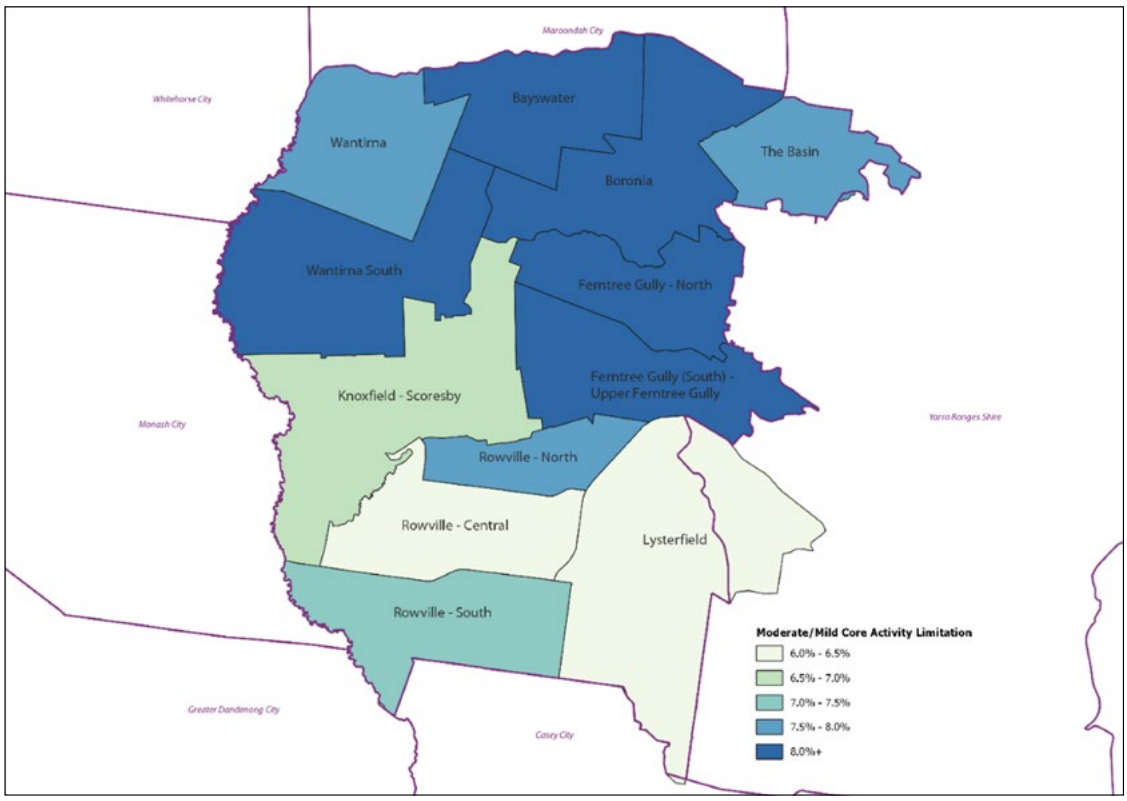
Figure 19 – Physical and mental/behavioural disability estimates (profound/severe activity limitation), as percentage of population, Knox suburbs, 2018



Source: Australian Bureau Statistics (2018)

59 Rounded to LGA total
60 op. cit.

Figure 20 – Physical and mental/behavioural disability estimates (moderate/mild activity limitation), as percentage of population, Knox suburbs, 2018



Source: Australian Bureau Statistics (2018)

Table 5 – Disability estimates (physical or mental/behavioural condition), Knox suburbs, 2018

Suburb (SA2)	Profound/severe core activity limitation		Moderate/mild core activity limitation		Estimated number using mobiliy aid
Bayswater	422	3.3%	900	7.1%	281
Boronia	1,088	4.7%	1,642	7.1%	655
Ferntree Gully North	480	3.4%	1,040	7.3%	337
Ferntree Gully South/UFTG	463	3.0%	1,046	6.8%	348
Knoxfield-Scoresby	553	3.4%	971	5.8%	324
Lysterfield	180	2.6%	381	5.5%	129
Rowville Central	463	2.9%	857	5.4%	279
Rowville North	238	2.8%	564	6.7%	168
Rowville South	297	2.7%	668	6.1%	177
The Basin	145	3.2%	303	6.7%	96
Wantirna	472	3.3%	944	6.6%	256
Wantirna South	556	3.0%	1,374	7.4%	404
Total	**5,360**[61]	**3.3%**	**10,700**[62]	**6.6%**	**3,460**[63]

Source: Australian Bureau Statistics (2018)

61 Rounded to LGA total
62 As above
63 As above

Appendix 3 – Glossary and acronyms

DDA Disability Discrimination Act 1992

PWD People with disability

PMDs People using mobility devices

TGSI Tactile ground surface indicator

Ableism[64]	Attitudes that motivate harmful or discriminatory behaviour toward people with disability. Describes the experience of people with disability of segregation, isolation, discrimination, prejudice, systemic bias and oppression. Identifies attitudes and behaviours that class people with disability as different, less than or inferior to people without disability, incapable of exercising choice and control, and a burden on society.
Accessibility[65]	The degree to which an environment, service or product allows access by as many people as possible.
Accessible parking	A car parking space that is accessible for people with a disability who are eligible for a permit. Users of these parking spaces must display a valid parking permit in their vehicle.
Asset	A physical item owned or controlled by Council which provides or contributes to the provision of services to the community (Community Facilities Plan 2021–2024).
Assistive technology	Equipment or devices that help someone do things as a result of a disability or assist someone do things more safely. Includes special equipment, mobility devices such as wheelchairs. Engineering that supports improved access for people with disability to complete tasks by increasing, maintaining or improving the functional capabilities and independence to facilitate accessibility and participation.[66]
Barrier	Factor in a person's environment that limits their functional ability through their absence or presence.
Built environment	All the structures built to support human activity – comprises everything physically part of a city such as buildings, roads, squares, parks, sidewalks, commercial signage and street furniture.
Crossfall	The slope of a path towards the edge such as a gutter on either side.
Dementia	An umbrella term used to describe progressive symptoms that affect cognition like impaired memory, confusion navigating space, inability to focus, reduced visual perception, and difficulty with communication, activities of daily living, reasoning and judgement.

64 Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability: *Final Report 2023*
65 World Health Organization (2023
66 Department of Infrastructure and Regional Development (2017)

Dementia-friendly community[67]	A dementia-friendly community is one where people living with dementia are integral in creating places and spaces that understand, respect, support and empower them.
Disability	Disability is an umbrella term for impairments, activity limitations and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors).[68] Disability in relation to a person means:[69] a) total or partial loss of the person's bodily or mental functions; or b) total or partial loss of a part of the body; or c) the presence in the body of organisms causing disease or illness; or d) the presence in the body of organisms capable of causing disease or illness; or e) the malfunction, malformation or disfigurement of a part of the person's body; or f) a disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction; or g) a disorder, illness or disease that affects a person's thought processes, perception of reality, emotions or judgement or that results in disturbed behaviour; and includes a disability that: h) presently exists; or i) previously existed but no longer exists; or j) may exist in the future (including because of a genetic predisposition to that disability); or k) is imputed to a person.
Discrimination[70]	Direct discrimination occurs if a person treats, or proposes to treat, a person with an attribute unfavourably because of their disability. Indirect discrimination occurs if a person imposes, or proposes to impose a requirement, condition or practice that could disadvantage a person with disability.
Footpath and shared path	Footpaths are sealed or unsealed surfaces intended for use by pedestrians only while shared paths are sealed or non-sealed surfaces intended for use by both pedestrians and cyclists. Both footpaths and shared paths may be aligned with a road or located within parks and reserves.
Human rights model of disability	The human rights model of disability focuses on the equal rights that all people have. This model presents disability inclusion as a vision we should all aspire to. The human rights model recognises an individual's experience of disability as being unique to them and as contributing to their sense of identity. The human rights model also acknowledges intersecting and overlapping forms of discrimination and how these contribute to a person's experiences.[71]

67 Australian Bureau of Statistics (2020)
68 World Health Organization (2023)
69 Section 4 *Disability Discrimination Act 1992*
70 *Equal Opportunity Act 2010*
71 Victorian Government (2022)

Individual mobility[72]	Individual mobility is defined as 'being able to safely and reliably go where you want to go when you want to go, and how you want to get there'.
Intersectionality	Refers to the multi-layered and intersecting experiences of people with disability. Recognises intersectional experiences as the complex, cumulative ways multiple forms of discrimination, disadvantage and oppression are experienced by people with disability based on their physical, socio-cultural and economic circumstances.
Medical model of disability	Based on the premise that people are disabled by their impairments of differences and considers what is 'wrong' with the person, not what the person needs.[73]
Mobility	Moving by changing body position or location or by transferring from one place to another; by carrying, moving or manipulating objects; by walking, running or climbing; and using various forms of transport.[74]
Mobility device	A device used by people with disability such as manual and electric wheelchairs, walking frames, walking sticks, scooters, canes, crutches.
Neighbourhood[75]	The environment within walking or short driving distance beyond one's home (or workplace) that is frequently visited and thus a meaningful part of one's life space.
Pedestrian	In addition to someone who travels by foot, a pedestrian includes: (a) a person driving a motorised wheelchair that cannot travel at over 10 kilometres per hour (on level ground); and (b) a person in a non-motorised wheelchair; and (c) a person pushing a motorised or non-motorised wheelchair; and (d) a person in or on a wheeled recreational device or wheeled toy.[76]
Permit holder	A person who holds a parking permit that entitles them to park in a location as specified on their permit (accessible parking bay).
Permit parking	Parking restricted to businesses or residents holding a valid parking permit for a given parking area or street. The area or street is designated by signage with the wording 'Permit Holders Excepted'.
Powered mobility device	Includes powered wheelchairs and motorises scooters.
Principal Pedestrian Network (PPN)[77]	A strategic network of pedestrian routes that encourage walking for transport.
Public health and wellbeing[78]	The absence of disease, illness, injury, disability or premature death and the collective state of public health and wellbeing.

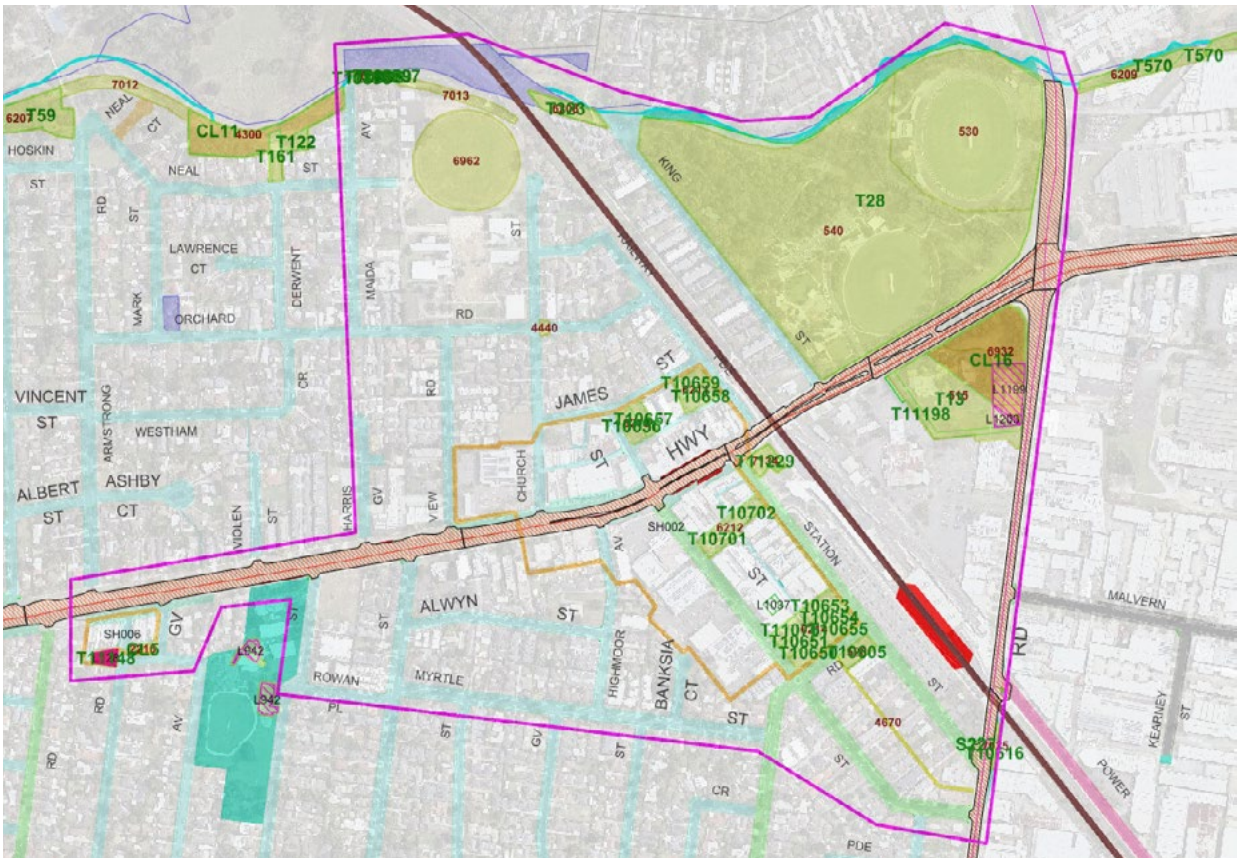
72 Biglieri, S., & Dean, J. (2022)
73 Australian Federation of Disability Organisations (2021)
74 World Health Organization (2023)
75 Gan, D *et al.,* (2021)
76 Vic Roads (2023)
77 Knox Principal Pedestrian Network 2017
78 *Public Health and Wellbeing Act 2008*

Public places[79]	Places used by the community to move about and interact such as public footpaths and walkways, educational institutions, shops and department stores, financial institutions, parks and recreational areas, community facilities, hospitality and entertainment venues, civic buildings, public transport infrastructure, medical and health centres.[80]
Services[81]	Includes access to and use of any place that members of the public are permitted to enter. Includes entertainment and recreation services connected with transportation or travel.
Smart technology	Technology including sensors and high-definition cameras that automatically adjust crossing times by detecting how many people are either waiting at a crossing or currently crossing the road.
Social model of disability	Based on the premise that it is society that places limits on a person, not their disability.[82] The social model rejects the assumption people with disability are a problem to be fixed or excluded. It insists that the problem is the environments and circumstances in which people find themselves. The model focuses on what people need rather than what is 'wrong' with them. Application of the social model of disability designs places and spaces with mobility equipment in mind, avoiding and eliminating existing and potential barriers.
Tactile ground service indicator	Areas of raised surface domes or cones on the ground designed to provide pedestrians who are blind or who have a vision impairment with warning information about features such as stairs, ramps or hazards.
Universal design[83]	Embedding principle of universal design means services and infrastructure are accessible to as many people as possible, inclusive of age, ability, gender, identity, culture, language and any other social characteristics.
Upgrade	Capital works undertaken to improve the condition and/or functionality of a facility.
Walkability	The ability to walk safely, comfortably and conveniently to services, facilities and activities in a neighbourhood.
Wayfinding signage	Signs with words or images directing people from point to point and confirming their progress along the way.
Wheeled recreational device	A wheeled device, built to transport a person, propelled by human power or gravity, and ordinarily used for recreation or play, and (a) includes roller blades, roller skates, a skateboard or similar wheeled device; but (b) does not include a golf buggy, pram, stroller or trolley, or a bicycle, wheelchair or wheeled toy. (a) includes roller blades, roller skates, a skateboard or similar wheeled device; but (b) does not include a golf buggy, pram, stroller or trolley, or a bicycle, wheelchair or wheeled toy.[84]

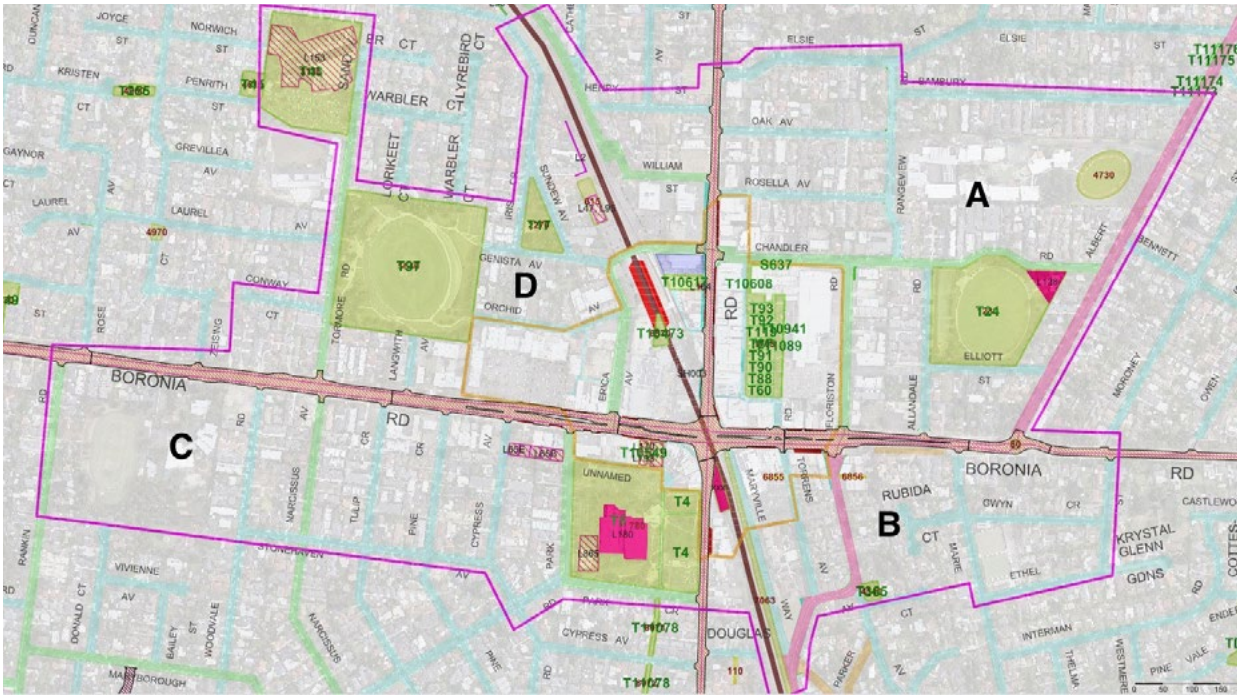
79 *D.D.A. guide.* [accessed 27 March 2025]
80 *D.D.A. guide.* [accessed 27 March 2025]
81 *Equal Opportunity Act 2010*
82 Australian Federation of Disability Organisations (2021)
83 Centre for Universal Design, Australia (2017)
84 Vic Roads (2023)

Appendix 4 - Access audit activity centre maps

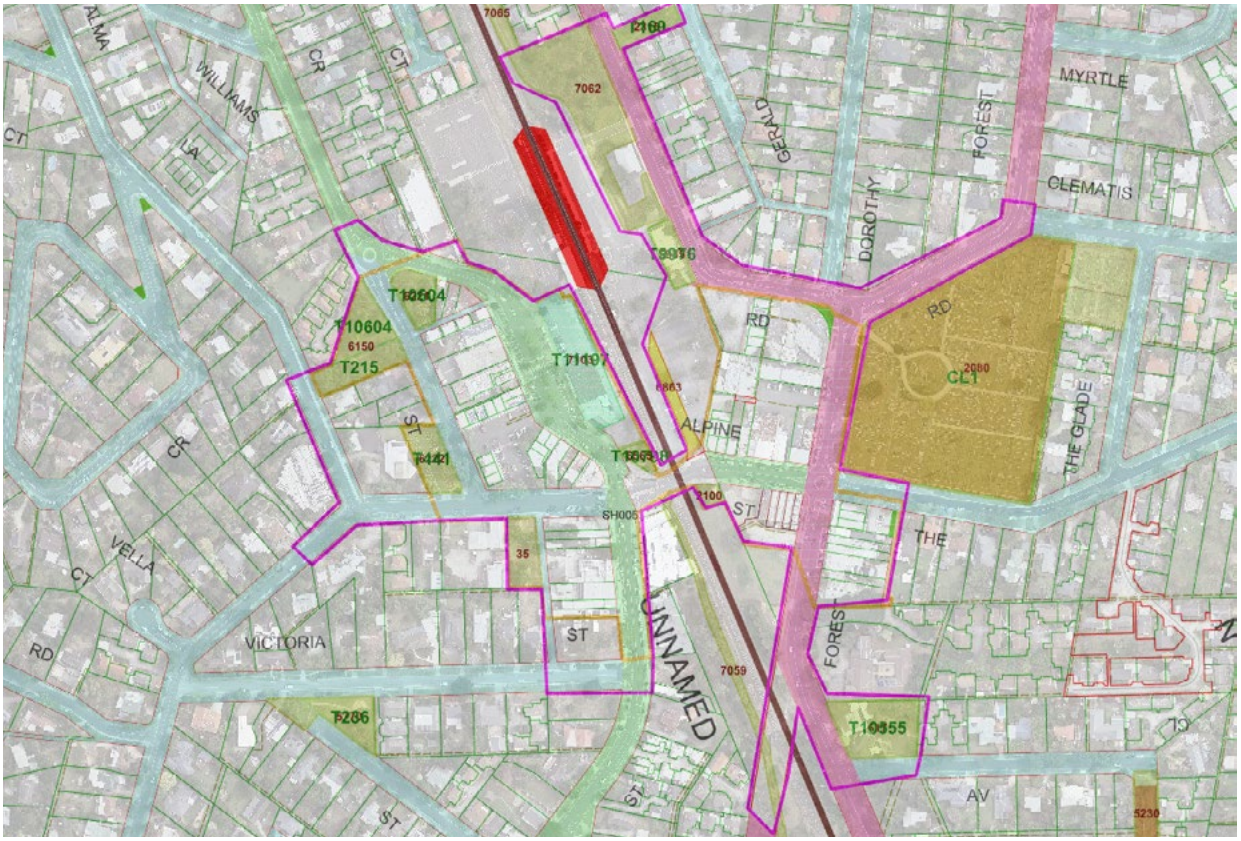
Bayswater



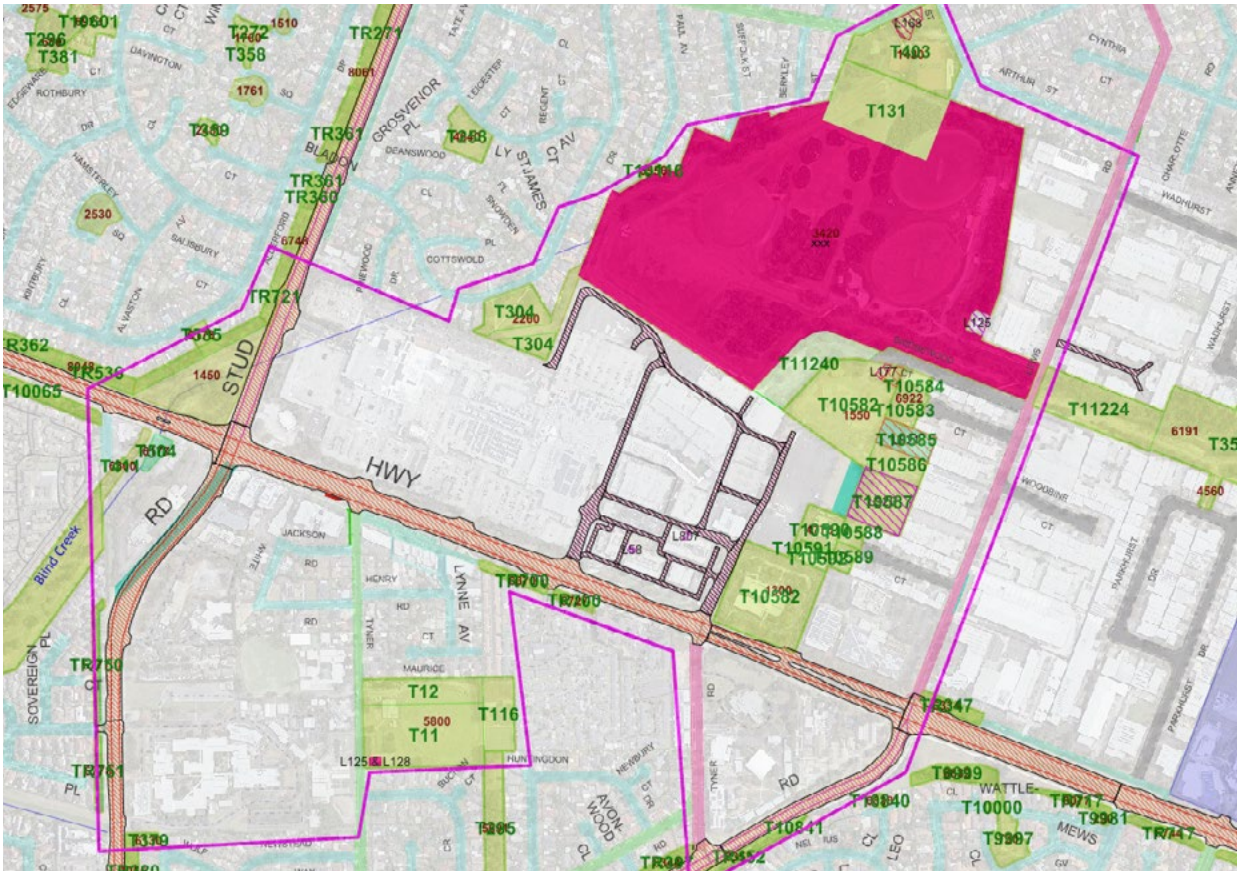
Boronia



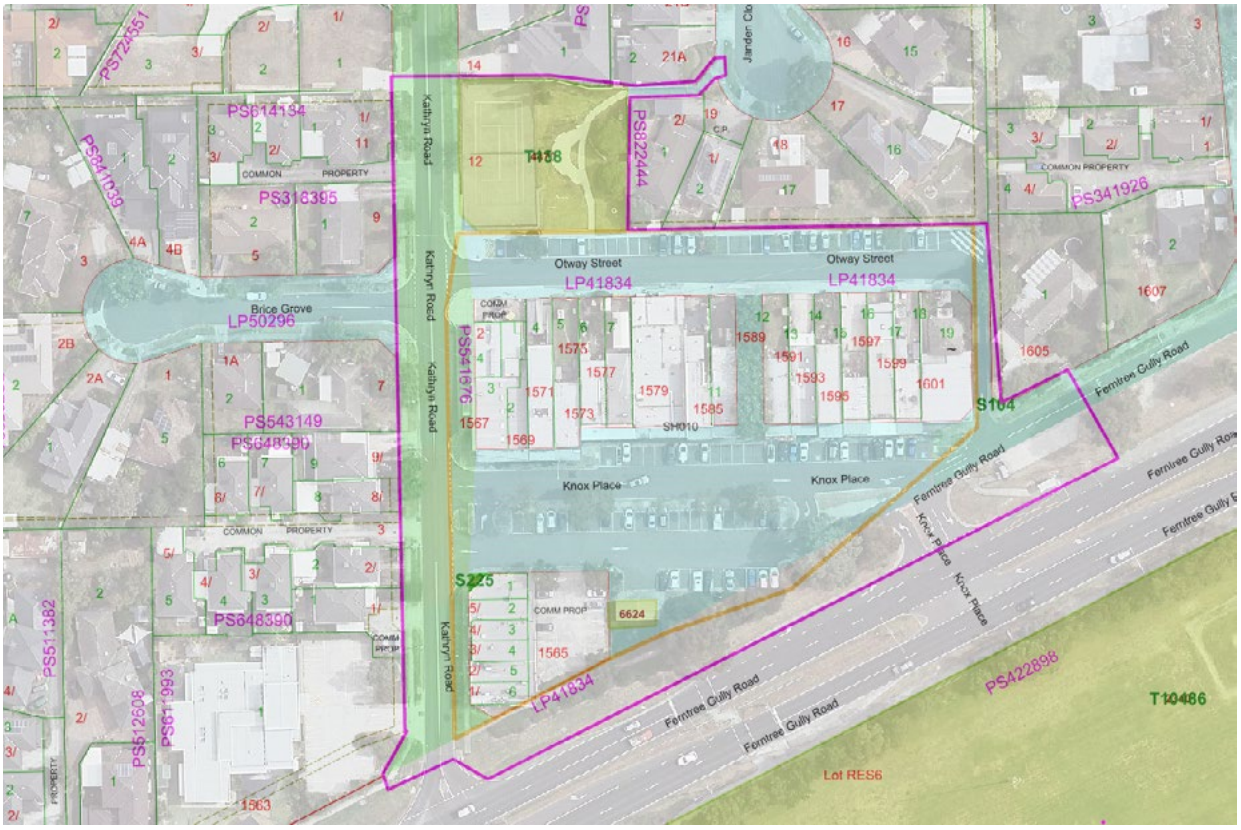
Ferntree Gully Activity Centre



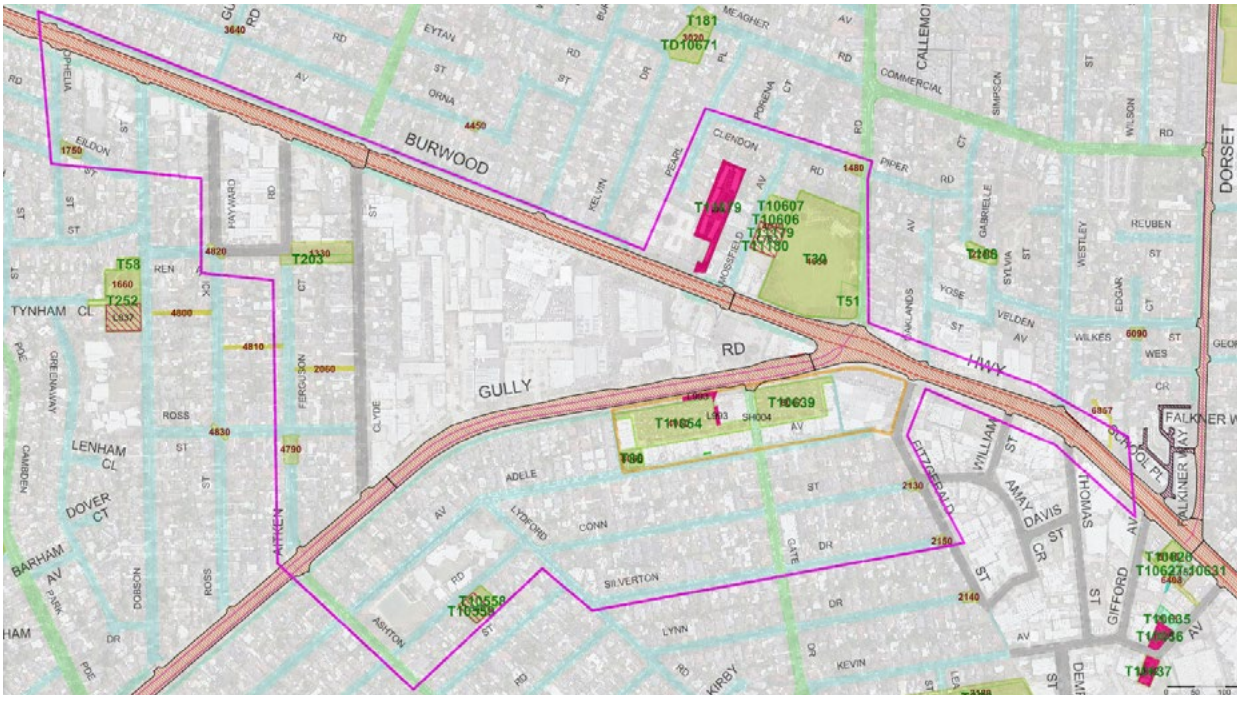
Knox Central



Knoxfield Shopping Centre

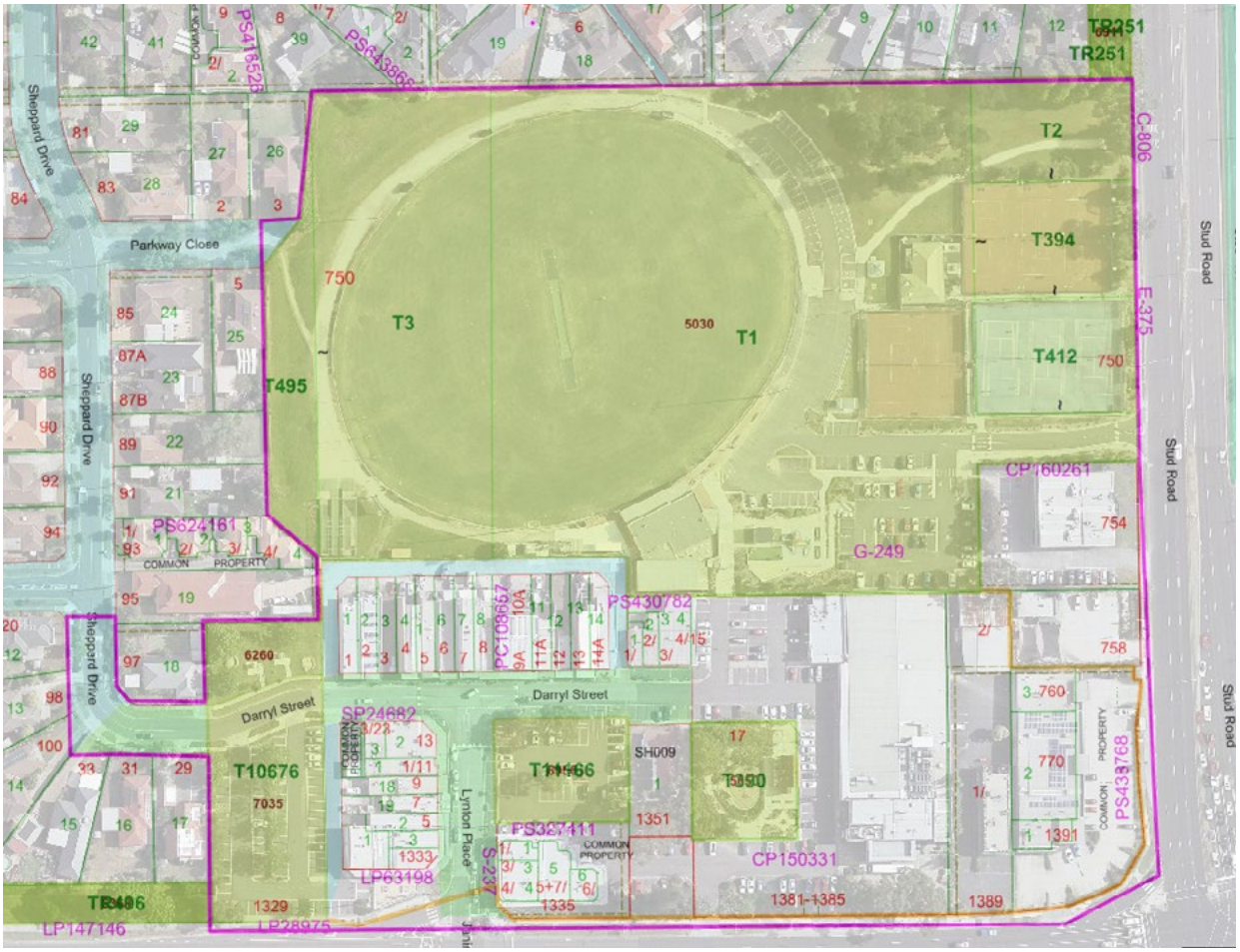


Mountain Gate

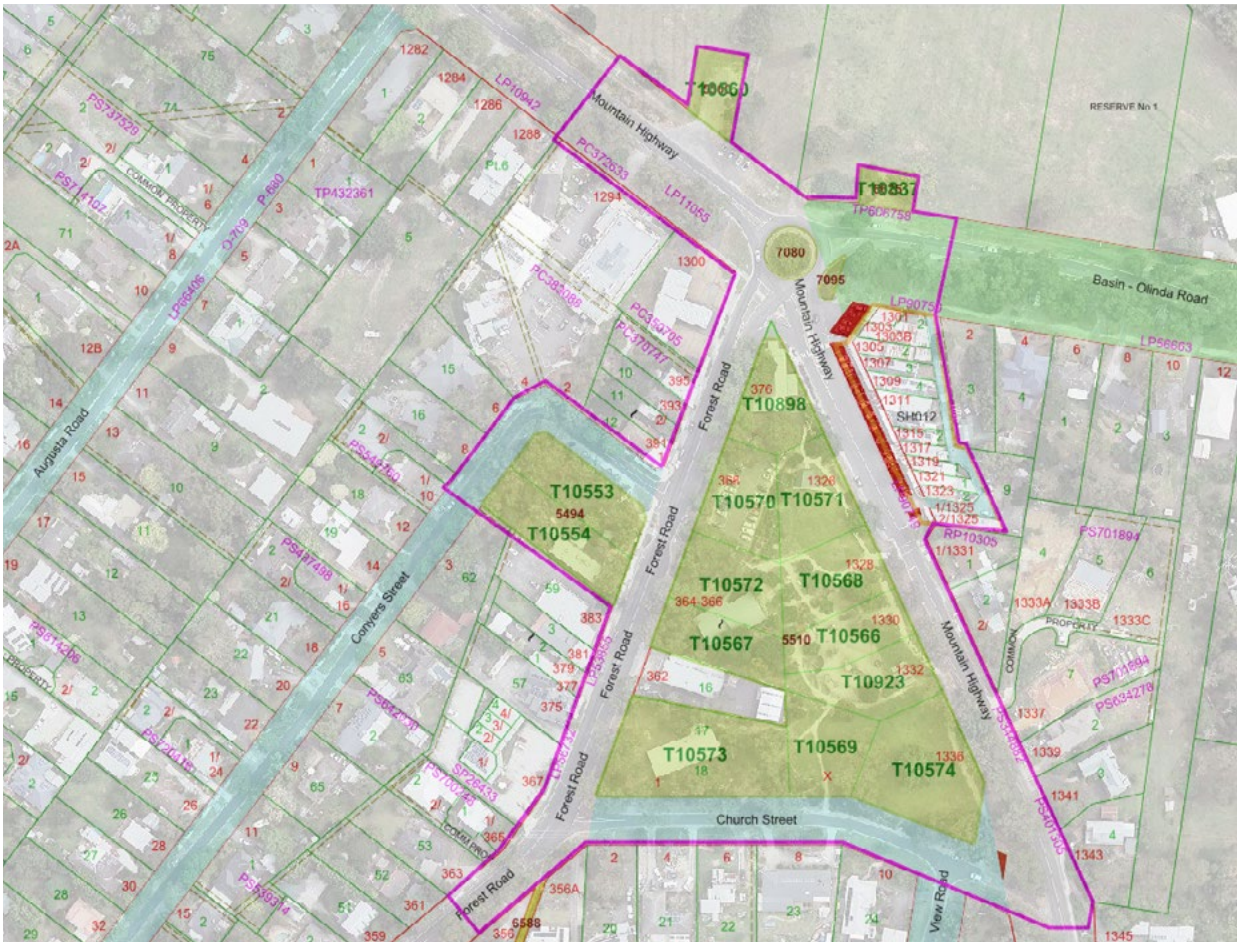


Rowville Community Centre and Reserve

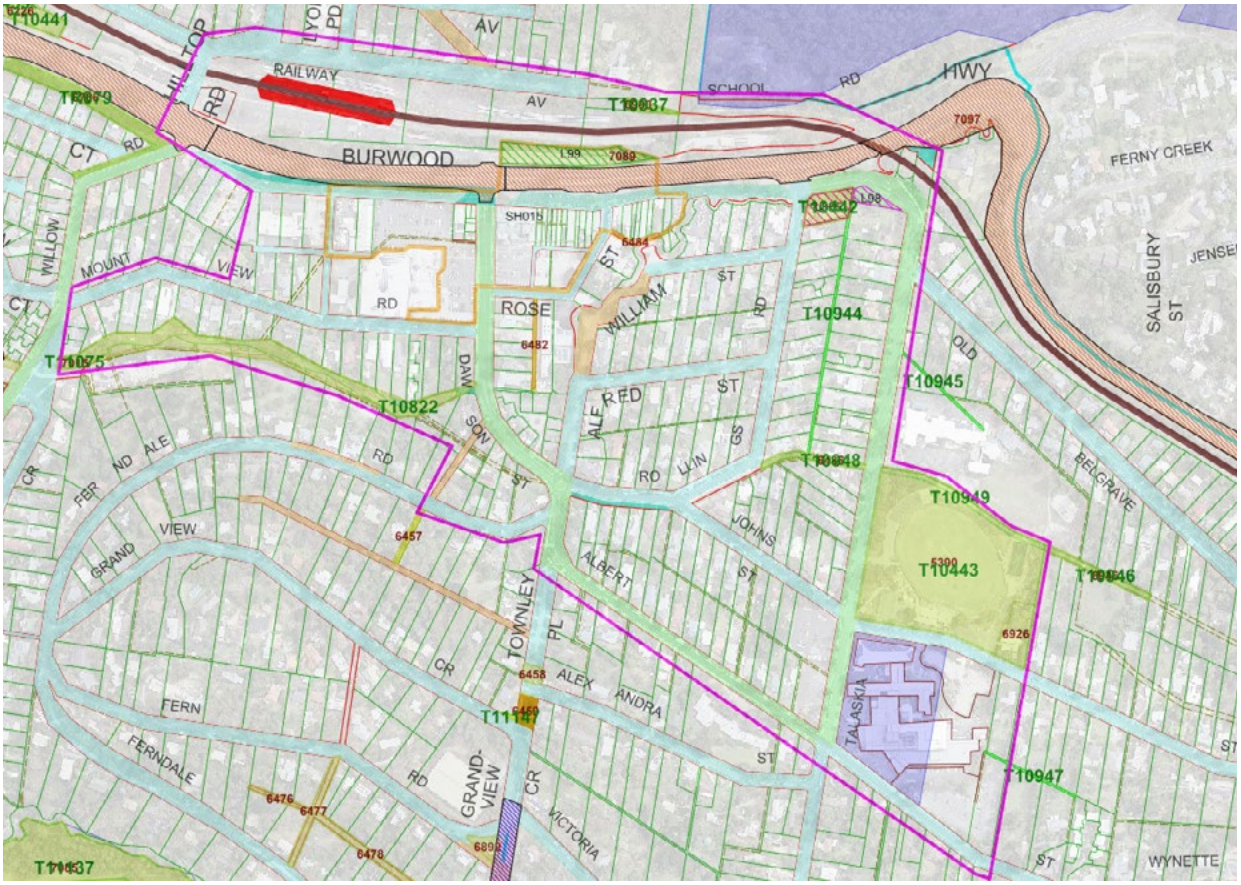
Scoresby Village



The Basin Triangle



Upper Ferntree Gully



Wantirna Mall