CITY OF BALLARAT

Draft Footpath Construction Strategy

CITY OF BALLARAT

Document Revision History

Version	Date	DOCUMENT Type
Version 3.1	14 May 2024	.docx
Version 2.0	18 April 2024	.docx
Version 1.0	14 April 2024	.docx

Addressee:
Attn: Matthew McNamara
City of Ballarat
PO Box 655
Ballarat VIC 3353

Another Project By:
Movement & Place Pty Ltd
ACN: 625 377 595

Trading As:
Movement & Place Consulting
ABN: 85 375 284 892
PO BOX 8101, DANDENONG VIC 3175
info@movementandplace.com.au
www.movementandplace.com.au

Acknowledgement of Country

The City of Ballarat acknowledges the Traditional Custodians of the land we live and work on, the Wadawurrung and Dja Dja Wurrung People, and recognises their continuing connection to the land and waterways. We pay our respects to their Elders past, present and emerging and extend this to all Aboriginal and Torres Strait Islander People.

Message from the Mayor

Footpaths are fundamental to our community. They play a vital role in keeping our residents and visitors active, safe and connected to others, as well as to community facilities, services, public transport and open spaces.

The City of Ballarat has 844 kilometres of existing footpaths. The Footpath Construction Strategy will guide how we prioritise and fund where new footpaths are built.

The strategy will outline a framework that prioritises where new footpaths are needed most, where sealing of existing unsealed footpaths should take place and identifying missing links in our footpath network.

Informed by our community's feedback, it prioritises footpath connections based on important links to residents and gaps in the footpath network that impact our community's footpath use.

The strategy will also improve accessibility for communities most in need including, but not limited to, carers, people with disability and those without access to private transport.

The strategy aligns with City of Ballarat *Council Plan 2021-2025* Goal 4 - 'A city that conserves and enhances our natural and built assets'.

We look forward to implementing the Footpath Construction Strategy and ensuring that our community has access to footpaths that encourages them to walk to local destinations and better connects them to all that our community has to offer.

Cr Des Hudson

Mayor, City of Ballarat

Executive Summary

The City of Ballarat is served by an extensive footpath network spanning almost 1,000 kilometres, including 45km of walking trails. The people of Ballarat have told us that promoting opportunities for active transport is a key priority, as expressed in the Ballarat Community Vision 2021 – 2031. However, with a road network extending over 1,500km, footpath coverage lags behind what is needed, to ensure safe and equitable opportunities for active travel and enjoyment of our municipality.

This Footpath Construction Strategy (the 'Strategy') develops a community-driven framework for prioritising the construction of new footpaths in a manner that maximises the benefits of each investment for the whole community. The Strategy focusses on prioritising footpath network connectivity improvements across the City of Ballarat to improve safety, transport choices, health and wellbeing and local economic activity.

It has been developed with the people of Ballarat and stakeholders from the City of Ballarat. Community consultation took place over two stages, first to understand how the people of Ballarat use the footpath network, and secondly to gather feedback on the proposed decision-making framework and Construction Plan.

What we heard was that footpaths are used in a variety of ways by the people of Ballarat. This feedback highlighted the importance of footpaths providing access to a variety of local destinations. That is why this framework has been developed to promote local living. Ballarat's Principal Pedestrian Network has been developed in parallel with this Strategy. We can now prioritise footpath gaps in a way that strives to provide a complete network between activity centres.

However, this is not enough. To ensure that footpaths are accessible to all, it is important to consider the range of user needs and remove barriers to access. This means prioritising footpath construction not only in areas where local connectivity is high, but also where coverage is poor and in locations with populations of users with strong reliance on footpaths for mobility.

For this reason, the decision-making framework developed as part of this Strategy prioritised footpath construction based on:

- Local connectivity: paths that serve destinations essential for daily living
- Pedestrian safety: paths in low-speed environments that provide opportunities for safe and comfortable path use
- Suburb and locality index of need: areas with poor coverage and relatively high numbers or proportions of populations who are more likely to rely on footpaths for mobility.

Footpath construction will first be prioritised where gaps coincide with the primary or secondary Principal Pedestrian Network, with small, isolated gaps given precedence. This Strategy will be used to develop a multi-year Footpath Construction Plan based on these principles to ensure that the benefits of investment in new footpaths are maximised while increasing equity of opportunity to use footpaths throughout the municipality.

Table of Contents

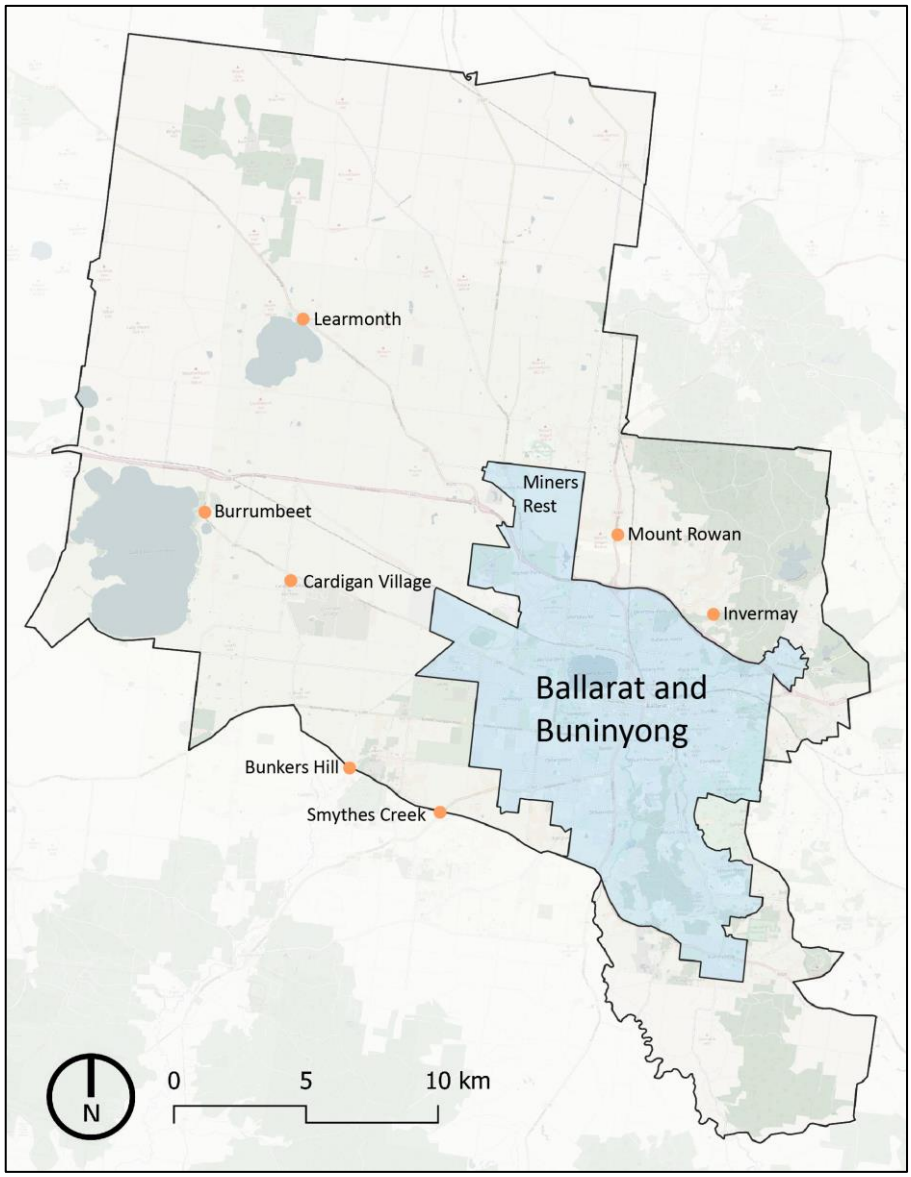
List of Figures

List of Tables

1 Introduction

The City of Ballarat is Victoria's third largest city with a population of around 116,000 residents in 2022[1]. The majority of the population lives within Ballarat's urban area, and various towns across the municipality. Key population centres are shown in Figure 1-1 below.

Figure 1-1: City of Ballarat urban area and towns



Source: M&PC (2024)

1.1 Background to this Strategy

The City of Ballarat is served by an extensive footpath network of almost 1,000 kilometres. However, with a road network extending almost 1,500km (not including highways), many roads are without footpath coverage. This Footpath Construction Strategy (the 'Strategy') develops a community-driven framework for prioritising the construction of new footpaths in a manner that

[1] *Australian Bureau of Statistics (2022) Estimated Resident Population – Ballarat, https://www.abs.gov.au/statistics/people/population/regional-population/latest-release, accessed 19 March 2024*

maximises the benefits of each investment for the whole community. The Strategy focusses on prioritising footpath network connectivity improvements across the City of Ballarat to achieve a range of benefits such as improving:

- Safety
- Transport choices
- Health and wellbeing
- Local economic activity and productivity.

The prioritisation framework outlined in this Strategy has been developed to assist decision-making for all footpath construction and sealing of unsealed paths. However, the construction plan intended to be produced from this first version of the Strategy will be based on available data for footpaths and therefore is limited in its application to paths adjacent to roads and does not include surfacing of unsealed paths.

Key factors that influenced the prioritisation framework include access to key destinations such as schools, shops and workplaces. Other attributes of footpath quality, including condition and supporting infrastructure, are also important for maximising access to footpaths among the community. The community was asked to value the importance of these other attributes; which although not part of the present Strategy, should be considered as part of a broader approach to remove barriers to footpath use in the City of Ballarat.

1.2 Report structure

The structure of this Strategy is as follows:

- Chapter 1: Introduction
- Chapter 2: Context
- Chapter 3: Prioritisation framework
- Chapter 4: Options
- Chapter 5: Recommendations and conclusion

Appendices included at the end of this document:

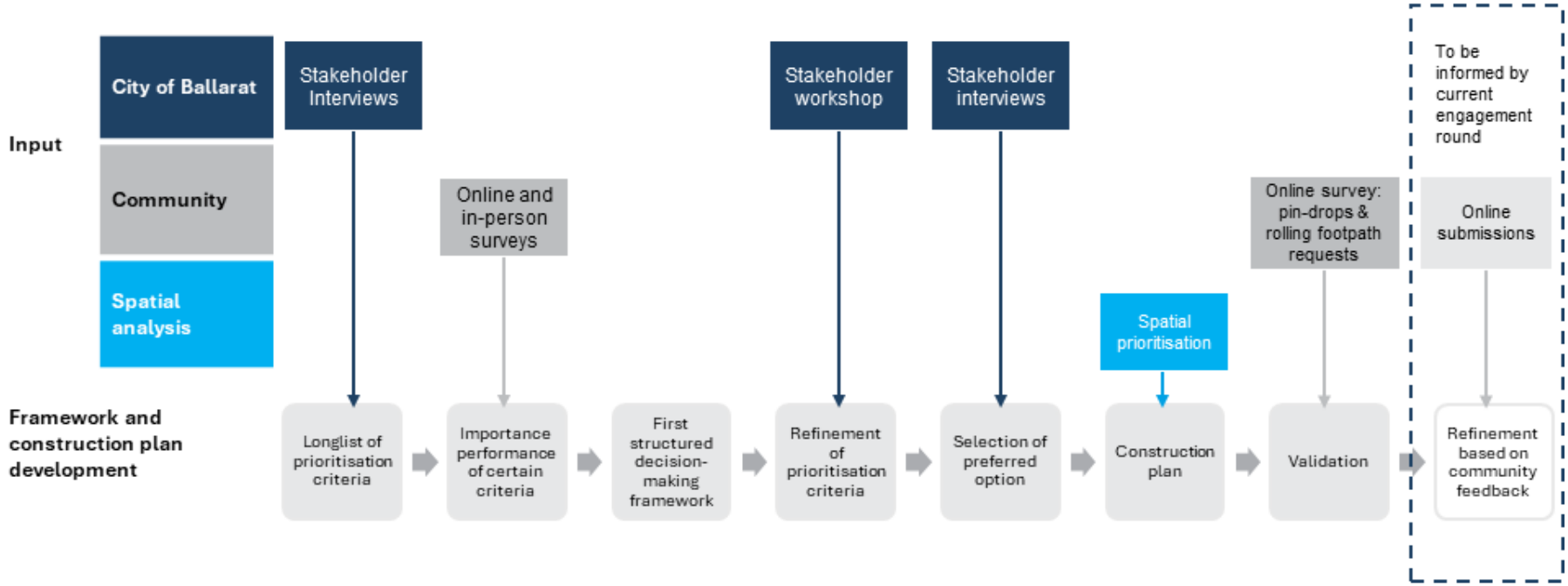
- Community engagement summary
- Proposed Construction Plan methodology

A separate Technical Appendix details the assumptions and approach to mapping and analyses.

1.3 Approach

This Strategy presents findings from community engagement (including stakeholder meetings), analysis of existing footpath conditions in the City of Ballarat and an exploration of the equity implications of Ballarat's demographic characteristics and the needs of different footpath users. These insights have been combined to produce a decision-making tool for prioritising investment in the construction of new footpaths. The prioritisation framework will be applied to known road-adjacent footpath gaps to produce a multi-year pipeline for construction. Figure 1-2 summarises the iterative nature of developing the prioritisation framework, drawing on evidence and feedback from the three key sources: community, internal City of Ballarat stakeholders, and spatial and demographic data.

Figure 1-2: Overview of inputs to the footpath construction prioritisation framework

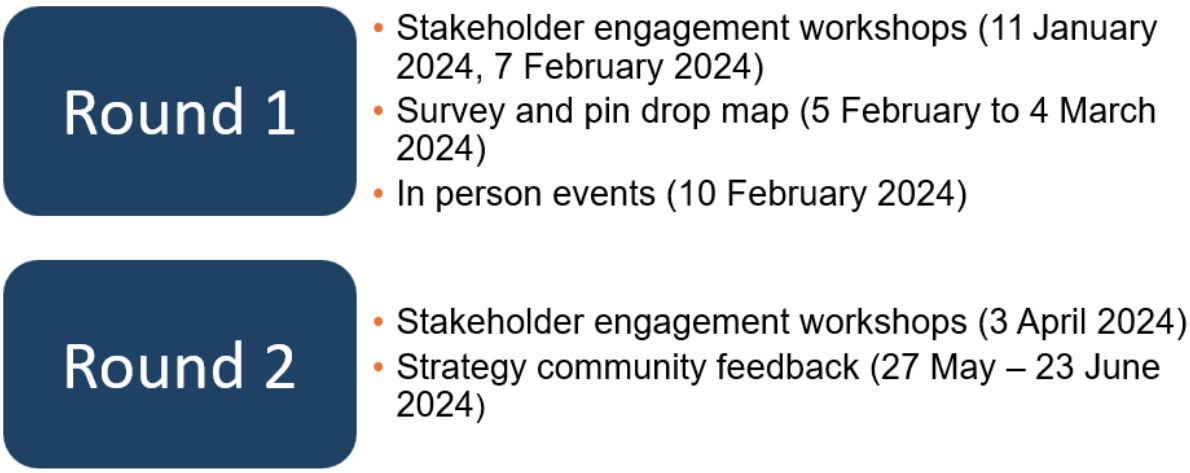


1.3.1 Community Engagement

Local knowledge of the municipality and key areas of need were explored through the community engagement activities, including user surveys, pin drop map, and stakeholder interviews.

Each round of engagement used different engagement touchpoints to gather different types of feedback from the community. Figure 1-3 below outlines the different touchpoints and dates for community and stakeholder engagement used in each round of engagement during the development of this Strategy.

Figure 1-3: Summary of engagement activities



Stakeholder engagement

Prior to the release of the survey, representatives of key stakeholder groups were met with to discuss the design of the survey and other engagement activities to maximise participation across the community. Stakeholders consulted were:

- City of Ballarat Ageing Well team
- City of Ballarat Community Inclusion team
- City of Ballarat LGBTIQA+ team
- City of Ballarat Youth Services team
- Wadawurrung Traditional Owners Aboriginal Corporation.

Round 2 engagement workshops were used to gain consensus around the design of the prioritisation framework and discuss any other relevant evaluation criteria which should be considered when evaluating options.

Survey and pin-drop map

The survey aimed to develop a strong understanding of:

- How the community uses the existing footpath network, including
    - Types of trips made using the footpath network
    - The destinations commonly accessed by the footpath
- Geographic areas of concern among the community
- Specific barriers to using the footpath network
- Actions or improvements which will encourage increased use of the footpath network.

The survey delved into the individuals' specific use of the footpath network, and their demographics which may influence how they use the network. Table 1-1 outlines the types of information collected and explains their use in developing the Footpath Construction Strategy.

Table 1-1: Summary of survey scope and purpose

Theme	Questionnaire	Relevance to Footpath Construction Strategy
Footpath use baseline	Q1 - Q2	Establishes how equitably the Ballarat footpath network is used and for what purpose (segmenting trip types by individual characteristics).
Propensity by trip type	Q3	Establish destinations by type that people access by using the footpath network. This information was used to prioritise footpath segments based on latent demand for using the footpath by user group.
Footpath quality importance	Q4	Establish factors that people value when considering using the footpath network. This information was used to assign relative importance to the footpath quality criteria for different user groups.
Individual characteristics	Q5 – Q15	Information is collected so that responses could be disaggregated and considered to ensure prioritisation reflects the needs of different population segments. This in turn ensures that benefits of investment are distributed equitably among the population.

Source: M&PC (2023)

Hard copies of the survey were provided at City of Ballarat sites across the municipality, including libraries and leisure centres. This survey was open to respondents from 5 February to 4 March 2024.

Staff of Movement & Place Consulting (M&PC) attended two in person community events on 10 February 2024, being the Ballarat Farmers Market at Lake Wendouree, and the Skate Parks League Competition at Ballarat Skate Park, Bakery Hill. Attendance to these events was designed to gather community feedback in person, complete the survey in-person, have conversations with the community and increase the visibility of the Strategy.

To complement the survey, a pin drop map was also provided so that respondents could provide location-specific feedback or comments about the footpath network. Pins could have one of three categories:

1. New path
2. Seal existing
3. Other.

The results from the online survey are summarised in Section 2.5 Footpath use in the City of Ballarat.

Summary of reach of community engagement

The first round of community engagement reached hundreds of residents across the City of Ballarat. Statistics of participation are as follows:

- Online survey: 264 (31% of total contributions)
- Pin drop: 580 (69% of total contributions).

A physical version of the survey was created and distributed across City of Ballarat sites such as City of Ballarat offices, libraries and community centres, however, no hard copy responses were received.

> *Recommendation #1:* Prioritise in-person assistance for those not able to participate online such as through focus groups or in-person event attendance.

1.3.2 Spatial analysis of footpath context and attributes

This Strategy used spatial information to increase visibility of existing footpath conditions and gaps; and to explore accessibility and safety features of the network to inform the indicative construction pipeline.

Footpath network data is not routinely mapped by jurisdictions across Victoria. The City of Ballarat has a spatial record of the footpath network; however the current file is known to be incomplete[2]. No complete record of existing paths, or aspirational (future) paths exists for the City of Ballarat. To facilitate identification of priority footpath gaps for construction, the City of Ballarat's road network was used as the basis of a complete network of road-adjacent footpaths. The City of Ballarat's road network is made up of individual road segments. These are used as the unit of analysis for the footpath network. Roads with signed speeds of 80km/h or above are not considered to be eligible for footpaths and are thus excluded from consideration for footpath construction. This assumption does not reflect nuances in the provision of footpaths that might be desirable, such as:

- Shared paths adjacent to arterial roads or highways connecting towns (speeds greater than 80km/h).
- Central or median-running paths on some roads, such as main streets.
- Locations where local character or other justification dictate that paths are not desirable on every street.
- Locations where the provision of paths conflicts with other kerbside or adjacent land use function and would not serve the community.
- Recreation trails and informal paths.

The process for identifying footpath gaps involved joining existing footpath data to the road network, and assuming provision in recently constructed new estates. A detailed methodology is outlined in a separate technical.

The prioritisation framework outlined in this Strategy can be reapplied as needed to update the Construction Plan, as data improves or new aspirational footpath links are planned. A few key steps could be followed to ensure that the Footpath Construction Plan reflects the aspiration for a complete network of road-adjacent and recreational paths in the City of Ballarat:

[2] Most of the unmapped footpath data is known to be located in estates built between 2019 and 2022. These estates are being built to design standards set out in the Infrastructure Design Manual (IDM), which ensures that footpaths are provided along traversable roads. To identify footpath gaps for this analysis, it is assumed that all roads within these estates are serviced by footpaths on both sides of the road.

- Ensure spatial data for existing footpath infrastructure is up to date
- Create an aspirational footpath network map that includes links that are currently missing and incorporates shared paths and trails. Ensure existing and aspirational surfaces are recorded in this file
- Track footpath gaps as the difference between existing and aspirational footpath networks

Recommendation #2: Reapply the prioritisation framework as data is updated and aspirations for footpath provision evolve.

1.3.3 Demographic inputs and equity assessment

Without clear and accessible public spaces, members of the community may be restricted from certain spaces and unable to move freely around the municipality. This discrimination extends to the design of public spaces, access into premises and footpaths[3].

A Gender Impact Assessment (GIA) was conducted alongside this project to:

1. Explore the extent to which the project benefits are accessible to members of the community irrespective of different mobility patterns and needs, and
2. Identify opportunities to promote equitable access to Ballarat's footpath network.

As a part of this GIA, demographic analysis of the City of Ballarat has been undertaken. The assessment considers gender and other attributes that may be associated with systemic barriers. This includes:

- Under 24-year-olds
- Over 65-year-olds
- Those with caring responsibilities[4]
- Those with physical or mental impairments
- Car ownership
- Relative socioeconomic advantage.

The results of this analysis are presented in Section 2.2- City of Ballarat demographic profile. The analysis of options for prioritising footpath construction, the focus of Chapter 4, was based on equity considerations and mirrors the options assessment approach applicable to Gender Impact Assessments, set out by Victorian Commission for Gender Equality.

[3] *The Disability Discrimination Act 1992 (DDA) makes it unlawful to discriminate against a person in public life based on their disability.*

[4] People with caring responsibilities is defined as persons completing unpaid domestic work, unpaid childcare and caring for others according to the 2021 Census.

2 Context

Footpath construction is a key service of all local governments. Footpaths provide significant benefits to the community in terms of health, access and inclusion. However, the ability of members of the community to access benefits can be affected by differences in mobility patterns and safety needs among other things.

2.1 Strategic context

Encouraging and prioritising active transport is a key priority for the City of Ballarat and its community. Strategies and Plans which highlight the need for accessible footpaths are highlighted below.

- Council Plan 2021 – 2025: Council identifies the need to move away from car travel and towards active travel to reduce emissions and increase physical activity. The Plan commits to deliver priority active transport infrastructure.
- Ballarat Integrated Transport Plan 2020: An immediate priority has been recognised to deliver footpath routes and pedestrian improvements throughout the municipality, with the incomplete footpath network identified as a key transport issue in Ballarat.
- Active Ballarat Strategy 2019: Seeks to improve participation in active recreation. This includes walking, which was the most popular activity for active recreation in 2019 (39,000 participants).
- Ageing Well Strategy 2022 – 2026: Transport is a key focus area to improve accessibility and independence of older people in Ballarat, with improving the pedestrian experience stated as a priority.
- Youth Strategy 2022 – 2026: Safe, affordable and convenient transport options is a key priority to ensure that young people can get to where they want to go, and that they are provided with opportunities to be active.

2.1.1 Community values

Engagement with the community for the Ballarat Community Vision 2021 – 2031 identified active travel as a key priority for the community. A key theme of the community vision is for a 'Well-planned and interconnected city', which includes well-connected active transport by 2031. According to the Vision, the community wants:

- Ballarat to become a sustainable city, with reduced transport emissions
- Compulsory infrastructure to be included with all new developments, including footpaths and kerb ramps
- Planning which supports active lifestyles.

2.2 Footpaths and Healthy Country

Representatives from the Wadawurrung Traditional Owners Aboriginal Corporation met online with consultant from the project team on 7 February 2024. This discussion brought to light many interactions between footpaths landmarks or sightlines of cultural significance. Many existing or potential tracks connect areas of cultural significance or sightlines, as well as waterways. It is important that the natural flow of waterways not be interrupted or degraded. The City of Ballarat's network of paths should consider ways to enhance community learning about the many culturally significant sightlines and songlines. The Woowookarung Regional Park dementia-friendly trail is a precedent for a high-quality path that uses art, signage, sculpture and information to help

connect people to place in an accessible way. The identification of appropriate sites and treatments is best achieved through regular consultation with Traditional Owners.

> *Recommendation 3:* Engage with the Wadawurrung Traditional Owners prior to confirming year-ahead construction plan to identify opportunities to:
>
> - Support increased awareness of significant cultural associations in the vicinity of planned footpath construction, and
> - Engage the community in the Wadawurrung Healthy Country Plan through ancillary features and information alongside footpath construction.

2.3 City of Ballarat demographic profile

The City of Ballarat is home to a diverse population. Certain sociodemographic characteristics, either at the individual or area-level, may relate to the potential access the people of Ballarat may have to footpaths. Individual needs can vary on the basis of certain economic, occupational, physical and identifying characteristics. Area-level trends in population may also correlate with footpath provision or overall access to services.

The tables that follow summarise the distribution of the population according to six attributes that influence way that residents or visitors may use footpaths. These factors may affect the physical mobility needs, access to alternatives or mobility patterns of users:

- Population age (under 24)
- Population age (over 65)
- Caring responsibilities
- Persons needing assistance
- Car ownership
- Socioeconomic disadvantage.

These summaries are based on the Australian Census of population and housing; which does not reflect the entire population. These categories are also not an exhaustive reflection of factors that might affect individual opportunities to benefit from footpaths, and measured by the ABS census area, Suburb and Locality (SAL). Table 2-1 below outlines the areas where the most residents under the age of 24 are located, in number and percent of population.

Table 2-1: Top 10 locations with people under 24 (total number and percent)

	Top 10 by segment population		Top 10 by share (%)	
Rank	SAL name	Pop.	SAL name	%
1	Alfredton	4403	Cardigan Village	47%
2	Wendouree	3098	Bunkers Hill	40%
3	Sebastopol (Vic)	2984	Cardigan	40%
4	Delacombe	1661	Scotsburn	39%
5	Ballarat East	1518	Winter Valley	39%
6	Ballarat Central	1437	Lucas	39%
7	Miners Rest	1420	Bonshaw (Vic)	38%
8	Brown Hill (Vic)	1380	Mount Helen	37%
9	Winter Valley	1337	Alfredton	37%
10	Mount Clear	1219	Miners Rest	37%

Source: M&PC analysis of ABS Census (2024)[5]

Table 2-2 below outlines the areas where the most residents over the age of 65 are located, in number and percent of population.

Table 2-2: Top 10 locations with people over 65 (total number and percent)

	Top 10 by segment population		Top 10 by share (%)	
Rank	SAL name	Pop.	SAL name	%
1	Wendouree	2557	Addington	41%
2	Sebastopol	2205	Burrumbeet	33%
3	Alfredton	1667	Lake Wendouree	32%
4	Ballarat East	1517	Mount Rowan	31%
5	Delacombe	1165	Lake Gardens	29%
6	Ballarat Central	1017	Mount Bolton	27%
7	Ballarat North	938	Invermay Park	26%
8	Lake Wendouree	932	Scotchmans Lead	26%
9	Buninyong	803	Ballarat East	26%
10	Canadian	801	Wendouree	25%

Source: M&PC analysis of ABS Census (2024)[6]

Caring activities influence the nature, frequency, location and needs that individuals have for transportation and access. Mobilities of care is defined to include travel that is in service of another, such as accompanying a dependent to an activity or undertaking an errand, including shopping, on behalf of another[7]. The Census collects information on three activities related to the definition of mobilities of care:

- Unpaid domestic work
- Unpaid assistance
- Unpaid childcare.

[5] *Australian Bureau of Statistics (ABS) 2021. Census General Community Profile 2021: G04 Age by sex,* https://www.abs.gov.au/census/find-census-data/datapacks. *Accessed 12 January 2024.*
[6] *Australian Bureau of Statistics (ABS) 2021. Census General Community Profile 2021: G04 Age by sex,* https://www.abs.gov.au/census/find-census-data/datapacks. *Accessed 12 January 2024.*
[7] *UN Habitat 2024. Mobility of Care,* https://unhabitat.org/mobility-of-care-ines-sanchez-de-madariaga. *Accessed 12 January 2024.*

Table 2-3 below outlines the areas where the most residents with caring responsibilities are located, in number and percent of population.

Table 2-3: Top 10 locations of people with caring responsibilities

	Top 10 by segment population		Top 10 by share (%)	
Rank	SAL name	Pop.	SAL name	%
1	Wendouree	10,855	Mount Pleasant (Vic.)	81%
2	Sebastopol (Vic.)	9,590	Scotsburn	77%
3	Alfredton	9,112	Mount Helen	76%
4	Mount Clear	6,378	Mitchell Park (Vic.)	56%
5	Mount Helen	5,314	Invermay (Vic.)	54%
6	Ballarat East	5,035	Winter Valley	53%
7	Mount Pleasant (Vic.)	4,428	Mount Clear	49%
8	Soldiers Hill (Vic.)	4,117	Soldiers Hill (Vic.)	49%
9	Winter Valley	4,090	Black Hill (Vic.)	42%
10	Ballarat Central	3,870	Warrenheip	41%

Source: M&PC analysis of ABS Census (2024)[8]

Table 2-4 below outlines the areas where the most residents who require assistance are located, in number and percent of population. To identify where populations of people who may have a mental or physical impairment are located, the Census classification of people who need assistance is used.

Table 2-4: Top 10 locations with people needing assistance (total number and percent)

	Top 10 by segment population		Top 10 by share (%)	
Rank	SAL name	Pop.	SAL name	%
1	Sebastopol (Vic.)	812	Winter Valley	18%
2	Wendouree	683	Mount Pleasant (Vic.)	18%
3	Ballarat East	639	Ballarat North	12%
4	Mount Pleasant (Vic.)	495	Mitchell Park (Vic.)	11%
5	Winter Valley	393	Invermay (Vic.)	11%
6	Lake Wendouree	347	Lake Wendouree	10%
7	Ballarat North	346	Mount Clear	10%
8	Mount Helen	330	Scotsburn	10%
9	Mount Clear	306	Sebastopol (Vic.)	8%
10	Ballarat Central	304	Mount Pleasant (Vic.)	8%

Source: M&PC analysis of ABS Census (2024)[9]

Table 2-5 represents the ten SALs with the greatest magnitude and share of households in the municipality without cars.

[8] *Australian Bureau of Statistics (ABS) 2021. Census General Community Profile 2021: G24 Unpaid domestic work: number of hours by age by sex; G25 Unpaid assistance to a person with a disability, health condition or due to old age by age by sex; G26 Unpaid child care by age by sex,* https://www.abs.gov.au/census/find-census-data/datapacks. *Accessed 12 January 2024.*

[9] *Australian Bureau of Statistics (ABS) 2021. Census General Community Profile 2021: G18 Core activity need for assistance by age by sex,* https://www.abs.gov.au/census/find-census-data/datapacks. *Accessed 12 January 2024.*

Table 2-5: Top 10 SALs by magnitude and share of households with zero cars

	Top 10 by segment population		Top 10 by share (%)	
Rank	SAL name	Pop.	SAL name	%
1	Wendouree	465	Redan	11%
2	Sebastopol (Vic.)	391	Wendouree	10%
3	Ballarat Central	215	Eureka (Vic.)	10%
4	Ballarat East	206	Golden Point (Ballarat - Vic.)	10%
5	Redan	155	Ballarat Central	9%
6	Ballarat North	154	Sebastopol (Vic.)	9%
7	Alfredton	131	Ballarat North	9%
8	Soldiers Hill (Vic.)	104	Soldiers Hill (Vic.)	8%
9	Golden Point (Ballarat - Vic.)	98	Ballarat East	8%
10	Delacombe	95	Mount Pleasant (Vic.)	7%

Source: M&PC (2024) Analysis of ABS 2021[10]

Table 2-6 below identifies the suburbs and localities with the lowest score on the Index of Relative Socioeconomic Disadvantage (IRSD), signifying the greatest levels of socioeconomic disadvantage.

Table 2-6: SALs with lowest Index of Socioeconomic Disadvantage (IRSD) score

Rank (ascending scores)	SAL name	IRSD
1	Wendouree	856
2	Sebastopol	877
3	Redan	900
4	Mitchell Park	930
5	Delacombe	930
6	Eureka	941
7	Mount Pleasant	942
8	Ballarat East	944
9	Golden Point	976
10	Burrumbeet	979

Source: M&PC (2024) Analysis of ABS 2021[11]

The location of population segments with higher need for the footpath network are often located in similar areas across the municipality. Areas where these population segments represent higher percentage shares of the population are often located in townships outside of Ballarat, such as Cardigan Village, Coghills Creek, and Scotsburn, or areas on the fringes of Ballarat, such as Bunkers Hill, Cardigan, Invermay, Mitchell Park, and Mount Helen. Some suburbs of Ballarat are also represented, such as Ballarat North, Invermay Park, Mount Pleasant, and Winter Valley, however these are less common than the areas listed above. The SALs with the greatest magnitude and share of households with zero cars were located more centrally than the spread of SALs across other categories, generally not outside of suburban Ballarat.

[10] *Australian Bureau of Statistics (ABS) 2021. Census General Community Profile 2021: G34 Number of motor vehicles by dwelling,* https://www.abs.gov.au/census/find-census-data/datapacks*. Accessed 12 January 2024.*

[11] *ABS 2021. Socio-Economic Indexes for Areas (SEIFA)* https://www.abs.gov.au/statistics/people/people-and-communities/socio-economic-indexes-areas-seifa-australia/latest-release#data-downloads*. Accessed 11 April 2024*

While some areas of Ballarat, such as Alfredton, Sebastopol, and Wendouree have higher populations of these segment groups, it is generally a smaller percentage of the total population. Areas where the percentage of the total population is highest should be recognised because these areas will have higher needs from the footpath network. These areas, particularly townships outside of Ballarat, also often have higher gaps in the footpath network as a proportion of their existing network.

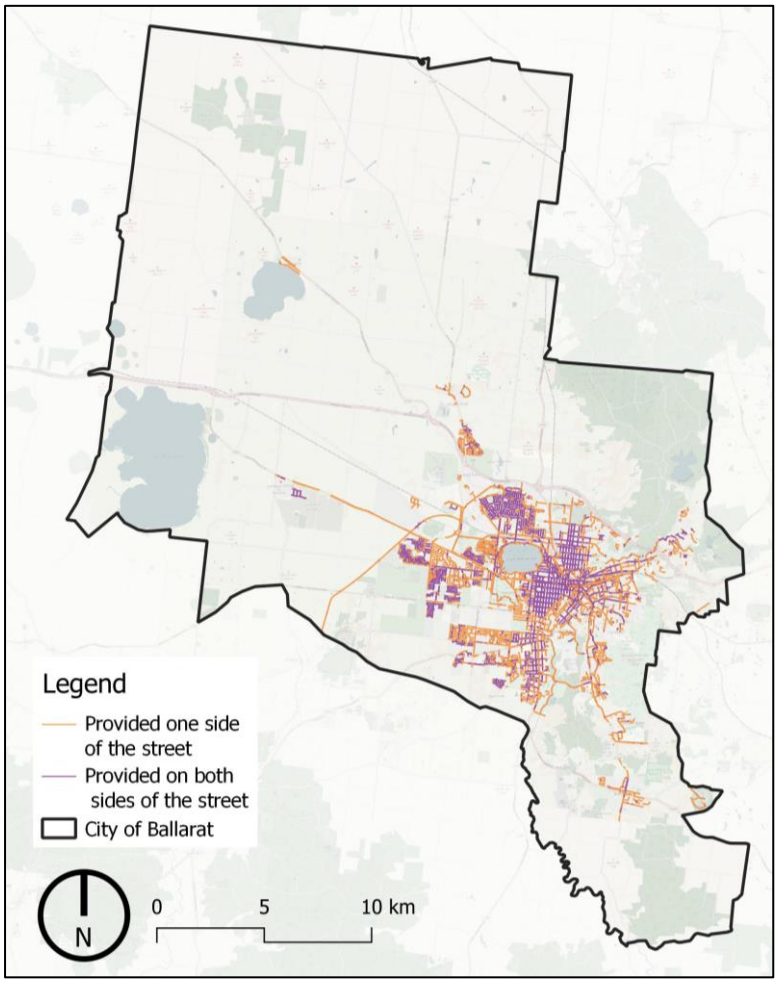
Due to the nature of this analysis, these findings will change over time as people move in and out of these areas. These figures are accurate as of April 2024.

> *Recommendation #4:* The City of Ballarat should undertake regular demographic analysis of population segments to ensure a clear understanding of which communities may have greater needs from the footpath network.

2.4 Existing footpath conditions

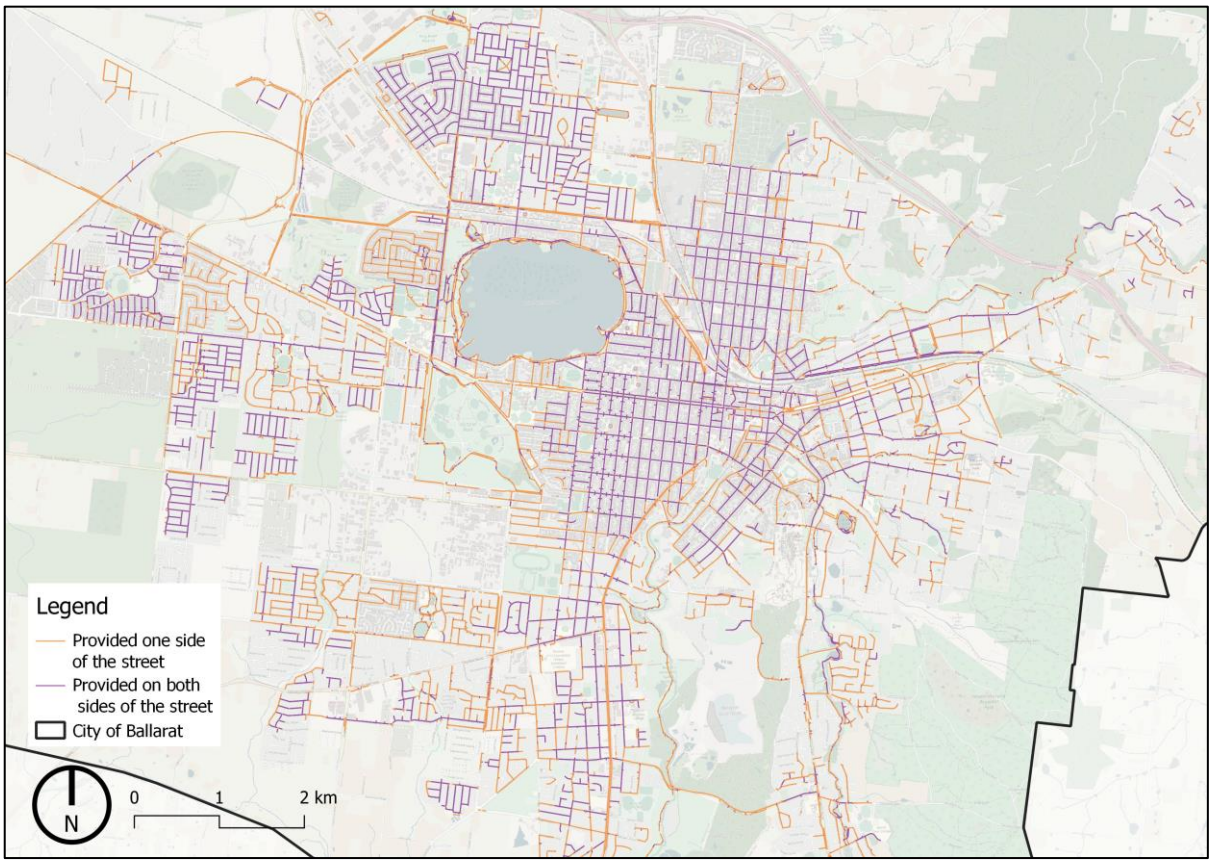
To inform the future multi-year Footpath Construction Plans, footpath provision across the City of Ballarat is shown in Figure 2-1and Figure 2-2 below.

Figure 2-1: City of Ballarat footpath provision



Source: M&PC (2024)

Figure 2-2: Central Ballarat footpath provision



Source: M&PC (2024)

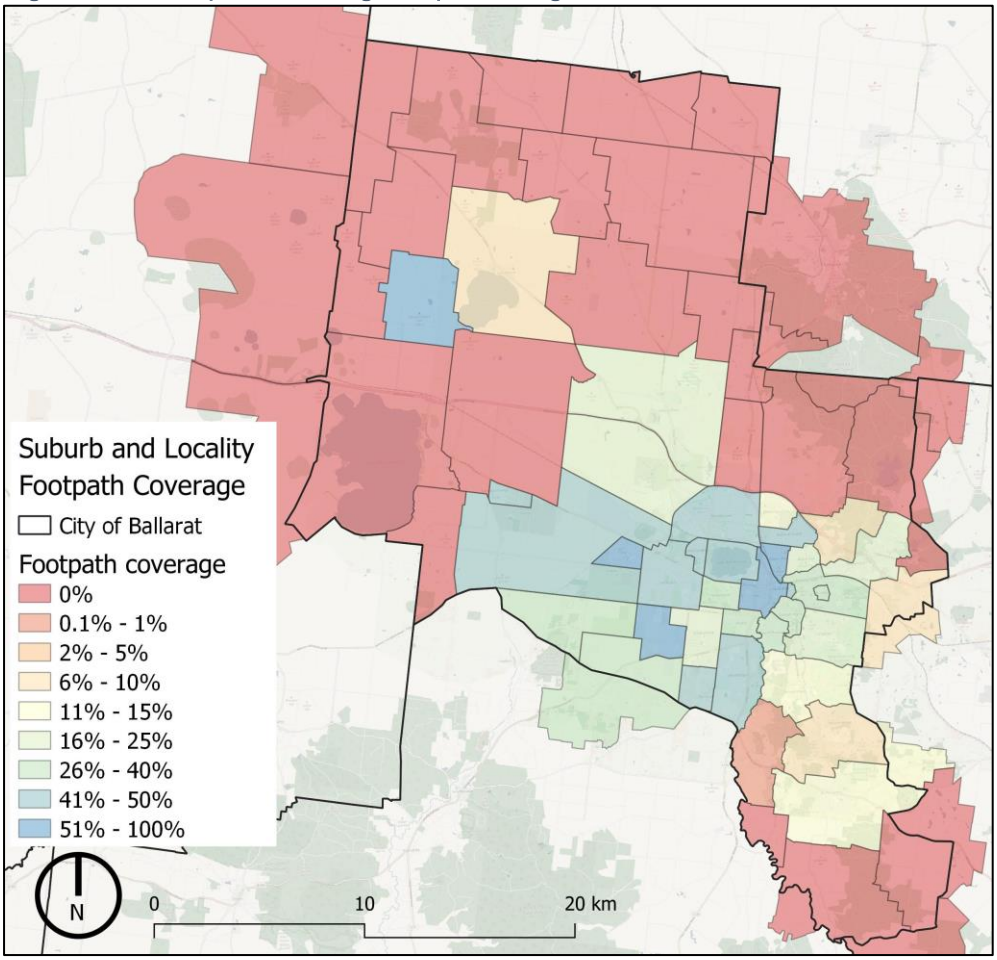
The images above suggest that footpath provision varies across the municipality. The majority of existing footpaths can be found within the township of Ballarat, with limited provision in outlying townships across the municipality. Areas where footpaths are provided on both sides of the street can be found generally in centralised suburbs such as Central Ballarat or Soldiers Hill and new subdivisions, such as Lucas, have greater dual-sided coverage of footpaths than other parts of Ballarat.

2.4.1 Footpath network gaps

A key component of this Strategy is to identify locations where footpaths *should* be. These locations are referred to as 'gaps' and will be the basis of a prioritised multi-year Construction Plan for new footpath delivery. Gaps can vary in scale; from a corner of an intersection to an entire street. To understand how gaps were identified for this Strategy, please refer to the separate Technical Appendix for more detail.

Figure 2-3 below depicts the share of footpath gaps in each suburb and locality throughout the City of Ballarat.

Figure 2-3: Footpath coverage as percentage of suburb network across the City



Source: M&PC (2024)

Areas with the highest footpath coverage in the City of Ballarat are:

- Soldiers Hill (66%)
- Lucas (59%)
- Ballarat Central (55%)
- Winter Valley (53%).

These figures show that inner Ballarat, where first development in Ballarat occurred, and new estates, where providing footpaths on both sides of each street is now mandatory, have the greatest provision of footpaths. Provision varies throughout suburban Ballarat, for example, Invermay Park has 13% coverage, whereas neighbouring Ballarat North has 41% coverage. Eastern suburbs of Ballarat, where the terrain becomes more varied and tree cover is higher have lower footpath coverage than the suburban west. For example, Canadian has 17% coverage compared to Newington's 30% coverage despite both being similar distances from the Ballarat CBD.

Most of the rural areas of the municipality have very low to no footpath coverage. These areas can be overlooked due to low population; however, footpaths play an important role in linking

these communities. Some communities, such as Miners Rest, have local destinations located on main roads, which can be dangerous for pedestrians to use without footpaths.

However, it is recognised that not all townships will want footpaths in all locations due to the valued country charm of wide footpath-less verges. The City of Ballarat will ensure that when footpaths are considered for construction in these townships, the community will be consulted to ensure the footpaths are wanted.

> *Recommendation #5:* Where the City of Ballarat is aware of community concern regarding the installation of footpaths in townships, these communities should be consulted if a new footpath is being considered for construction.

2.5 Footpath use in the City of Ballarat

Round one of community engagement on the Footpath Construction Strategy ran from 5 February to 4 March 2024, and gathered community thoughts and feedback through a survey and online pin drop mapping software. The survey has allowed an understanding of how the Ballarat community generally uses footpaths and what they need from a footpath network into the future.

Of the total 264 survey respondents, 66% identified as female, 31% identified as male, and 0.76% identified as non-binary. Majority of respondents were aged between 35 and 44 years old (36%), with 3% under 24 and 12% over 65 years old. Other key demographic statistics which have helped identify how different population segments use the footpath are:

- 57% identified as having caring responsibilities
- 29% identified as having a physical disability or mental health condition.

User groups and population segments used to analyse data from the engagement were:

- Gender
- Under 24 years old
- Over 65 years old
- Living with a physical disability or mental health condition
- Identified as having caring responsibilities.

2.5.1 How do we use footpaths?

Across all user groups, the most common uses for the footpath network are:

1. Exercise
2. Leisure, nature
3. Transport.

Those under 24 also identified as accessing public transport as the second most common use of the footpath network.

When using footpaths, the primary way people move is by walking. Excluding walking, the top three ways of travelling on footpaths generally are:

- Riding a (manual) bicycle: 36%
- Running (35%)
- Pushing a pram (31%).

Between different user groups, there was some change in way of travel, with other key insights being:

- Women are more like to travel with a pram then men (36% compared to 23%)
- Carers are the most likely user group to travel with prams (46%) and use manual bicycles (43%)
- Men are the most likely to run on the footpath network (46%)
- People with a physical disability or mental health condition are most likely to use walking aids, but also use other vehicles such as bicycles or scooters as or more often
- Under 24s are likely to use active transport vehicles such as bicycles, scooters, skateboards or rollerskates.

2.5.2 Where do we go on footpaths?

According to the survey, the top three destinations accessed by footpaths in the City of Ballarat are:

1. Shops and hospitality (87% of responses)
2. Nature, parks and open space (78% of responses)
3. Local food and fresh produce (62% of responses).

Across all user groups, there were some differences in key destinations accessed by footpaths, including:

- Carers and those under 24 are the most likely to use footpaths to access schools or places of work or study
- Those under 24 are the most likely to use footpaths to access public transport and sports and recreation facilities.

2.5.3 What do we prioritise in footpaths?

Respondents were asked to identify features which they prioritise when choosing to use footpaths. The top three features identified as most important when choosing to use footpaths were generally common across user groups:

- “Footpaths are available where I want to go”
- “Footpaths are in good condition”
- “Using footpaths feel safe”

Footpaths being sealed is also of importance, with it being the second most popular choice for under 24s, and generally in the top five responses across all user groups. However, for many residents and visitors to the municipality, the presence of a footpath alone may not be enough to enable its use. The condition of footpaths, proximity between origins and destinations and the feeling of personal security, are other factors that affect an individual’s opportunity to use a footpath.

Table 2-7 overleaf outlines the top survey responses from all respondents, and any differences in the population segments.

Table 2-7: Survey responses from all responses and population segments

	All respondents (top responses)	Over 65s	Carers	Mental or physical impairment	Youth
Access and use	• Exercise • Leisure, nature • Transport • Shops and produce • Nature, parks and open space	More than average: • Health services • Places to play, meet, and gather	More than average: • Schools • Childcare centres • Games/ play	More than average: • Health services • Community hubs • No specific destination	More than average: • Transport • Access public transport • Sport and recreation facilities • Places to work and study
Value	• Available • In good condition • Safe	More than average: • Cater to a variety of physical mobility requirements	Aligned with average	More than average: • Cater to a variety of physical mobility requirements	More than average: • Sealed footpaths
Ways to travel	• Walking • Running • Bicycle	More than average: • Walking aid • Assisting someone in a wheelchair	More than average: • Pushing a pram • Bicycle (manual)	More than average: • Walking aid • Wheelchair • Assisting someone in a wheelchair	More than average: • Bicycle (manual) • Scooter (manual) • Roller-skates • Skateboards
Barriers	• Lack of connectivity to key destinations such as schools • Poor condition of paths • Narrow width	• Poor condition restricts use due to reduced mobility	• Lack of connectivity and related infrastructure (pram ramps)	• Poor condition • Lack of connectivity	• Lack of connectivity to key destinations (recreation, open space, schools) • Unsealed paths restrict alternate micro-mobility

Source: M&PC (2024)

Individual characteristics are associated with different frequencies of access to various destinations. For example, respondents aged over 65, youth, carers or people identifying as having a mental or physical impairment are more likely to use footpaths to access key destinations, rather than just for leisure and recreation. Therefore, footpaths being available to access these key destinations is vital for these segments of the community.

Inclusivity of the design of the footpath network is critical for some users. Ensuring the network is surfaced and of a good quality allows people with increased mobility needs or who use additional devices, such as walking aids, prams, or skateboards, to also use the footpath network. Designing the network for these users will ensure that everyone can use the footpath.

Safety was another important feature for all population segments. Lack of footpath provision can force pedestrians to walk on the nature strip. Some users are physically unable to walk on the nature strip (such as those with physical impairments or people with prams), or the nature strip can often be damp, leading to an uncomfortable experience. This then forces pedestrians on to the side of the road, significantly impacting safety, and increasing the chance of a crash between a pedestrian and driver.

Personal security was not commonly recorded as one of the top features of the footpath network that users value. This may be due to a perceived lack of impact that footpath design can have on personal security. However, this may also be due to some users not considering personal security, as they have already changed their behaviour to avoid travelling when or where they feel their security is threatened. Therefore, it is important to always consider how the design and provision of footpaths impact personal security.

It is important that other factors which may cause systemic barriers to footpath use are addressed alongside footpath construction. This will ensure that individuals are not prevented from using footpaths based on physical characteristics, safety perception or location.

> *Recommendation #6:* The City of Ballarat should move toward an integrated approach to footpath provision that considers footpath construction alongside other planning decisions, such as the spatial distribution of services, security through passive surveillance and traffic

2.5.4 General feedback

Specific sentiments came across from the survey through individual comments. Key insights include:

- General concern around the lack of footpaths and related infrastructure throughout the City of Ballarat
- Poorly maintained footpaths create trip hazards and cause injuries
- Children should be able to access school safely using the footpath network
- Footpaths are too narrow, particularly in established areas around Central Ballarat
- Footpaths should be provided on both sides of the street.

These general comments reinforce the sentiment that footpath provision is not the only barrier to footpath use. While new footpaths will be built to standards pertaining to width and slope, legacy paths may not meet such standards of accessibility. The Draft Ballarat Road Management Plan sets in place a hierarchy of responses to maintenance requests of footpaths. It is important that this Strategy and the Road Management Plan collectively provide a mechanism to ensure accessibility issues associated with footpath condition and physical features are able to be addressed in a timely way. Furthermore, issues outside of the City of Ballarat's jurisdiction, such as maintenance of private gardens, also appears to affect footpath safety.

Recommendation #7: Ensure that the Footpath Construction Strategy and Road Management Plan provide for pro-active and strategic upgrades and maintenance of footpath condition to remove barriers to footpath use.

3 Prioritisation framework

This Strategy presents the basis and approach that the City of Ballarat will adopt to ensure future construction of footpaths maximises benefits in an equitable way. Central to this aim is a community-informed prioritisation framework for identifying which gaps in the footpath network should be prioritised first. The framework has been designed to ensure that the City of Ballarat is able to proactively allocate investment in new footpaths in locations where need is greatest and to ensure that benefits are equitably distributed across the municipality.

The prioritisation framework was developed in consultation with City of Ballarat representatives, community feedback and equity assessment underpinned by demographic analysis (See Section - 1.3.3). Key objectives considered in the design of the framework include:

- Transparent and easy to replicate with available data
- Does not contribute to further entrenchment of inequalities in access; and where possible, removes systemic barriers.

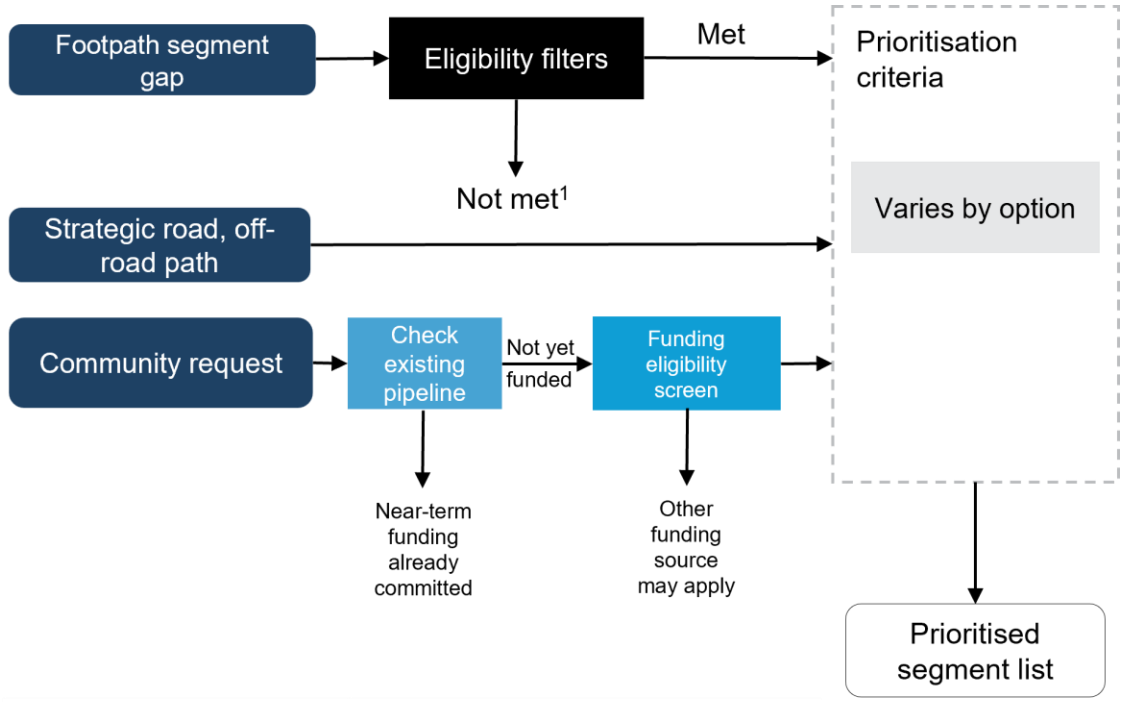
Figure 3-1overleaf presents the general structure of the decision-making process. The criteria used to prioritise gaps are detailed in the following section. Four options have been developed for the composition of the prioritisation criteria. These are evaluated according to their equity implications in Section 4, and the preferred set of criteria presented.

As of current writing, this framework has been applied to a dataset of footpath network gaps for footpaths adjacent to the road network. The method used to identify these gaps, including assumptions, is outlined in the technical appendix to this Strategy.

The framework itself is versatile in its applicability. A key recommendation of this report (Recommendation 2) is to reapply the prioritisation framework to a future aspirational footpath network for the municipality, as new data is obtained that captures the extent of possible paths in the municipality. Furthermore, as captured in Figure 3-1, the framework can also be applied to requests that are brought by members of the community or their elected representatives. If a footpath request brought by the community or their elected representative does not correspond to a gap that has been identified for near-term construction, other funding mechanisms could be considered to expedite construction. Many municipalities across Victoria have adopted special rate and charge schemes for footpath construction. Case studies are explored overleaf.

> *Recommendation #8:* Explore opportunities to apply special rate and charge schemes to footpath provision.

Figure 3-1: Decision-making framework for footpath construction



Legend	Approach
Trigger for review	
Eligibility criteria	Spatial analysis
Eligibility criteria	City of Ballarat strategic review
Prioritisation criteria	Spatial analysis

Source: M&PC in collaboration with City of Ballarat (2024)
Note (1) – Footpath segment gaps filtered to exclude new estates (missing data) non-traversable roads and suspected processing errors

Case Study: Special rate and charge schemes (SRC) for footpath construction

Should a footpath gap fall outside of the Footpath Construction Plan, one method to speed up its construction can be to develop a special rate and charge scheme (SRC) for the City of Ballarat. This will allow residents of a community to fund the construction of a section of footpath which may not be in the upcoming year's construction plan.

Many local governments across Victoria have already introduced an SRC, including:

- City of Greater Geelong
- Mitchell Shire
- Mornington Peninsula Shire
- Murrindindi Shire
- Strathbogie Shire
- Surf Coast Shire
- Yarra Ranges Shire.

These schemes allow for a co-funding arrangement between the local government in which the scheme takes place, and residents. It allows for both the local government and residents to fund the construction of a piece of infrastructure ahead of when it may have otherwise been constructed. Property owners are consulted as a part of this process, and pieces of infrastructure identified as possibly being funded by this scheme will generally come from resident requests which fall outside of the planned capital works program.

For example, when the City of Greater Geelong gets feedback from the community regarding a new footpath request, should the request not be programmed into the operational or strategic programs over the next five years, the City of Greater Geelong then assesses the willingness of residents in co-funding the footpath.

This has proved a success in places such as Ocean Grove, which had significant gaps in the footpath network. Residents agreed to fund 35% of this scheme being $333.87 per property, with the scheme as a whole totalling over $6 million. These funds have allowed for the construction of 24.3km of new footpaths, more than doubling the town's existing footpath network. As the City of Ballarat's current footpath construction budget is approximately $900,000, a scheme such as this could transform Ballarat's footpath network at a rapid rate.

3.1 Application of the prioritisation framework

The first step in applying the prioritisation framework is to filter out footpath gaps that are ineligible for works. These criteria may vary over time depending on financing mechanisms, scope of works being considered, and robustness of the data to which it is applied. Due to the assumptions associated with the development of the present dataset, the following filters will be applied to generate the multi-year Construction Plan:

- Gap is outside a new estate[12]
- Gap is larger than 10 metres[13]
- Road is considered traversable (Speeds <80km/h).

[12] *New estates presumed to have complete footpath networks but lack footpath network datasets.*
[13] *Gaps smaller than 10 metres may be attributable to spatial processing errors*

Gaps not meeting these criteria were excluded from ranking.

Subsequent prioritisation involves assessing the spatial context and properties of the road network to which the footpath is adjacent. Table 3-1 summarises the criteria considered for inclusion in the prioritisation framework.

Table 3-1: Summary of footpath construction prioritisation indicators

Indicator	Definition	Rationale
Local connectivity	Identifies whether a segment is within the catchment of a destination that is important for everyday life.	Footpaths that serve destinations that the community often use footpaths to access should be prioritised. The closer the link to the destination the more important.
Pedestrian safety	Speed zone in which the segment is located.	Pedestrians should have opportunity to travel adjacent to lower speed roads where safety and amenity are higher.
Local index of need	Combined indicator of relative local transport-related exclusion	Suburbs and localities with smaller or more sparse populations are more likely to have less complete footpath networks and may comprise high proportions of populations that face exclusion on the basis of social, mobility or economic factors; thereby justifying a high need for investment irrespective of other criteria.
Existing provision	Indicator of whether footpath gap is on one or both sides of the road.	Roads with no path on either side warrant priority over roads with a path on one side.
Principal Pedestrian Network (PPN)	Network of primary and secondary routes which support walking, wheeling and other modes of access via footpaths to key destinations[14].	A connected network of routes to destinations essential for meeting daily needs should be established first before filling in surrounding links.
Gap size and context	Indicator of gap isolation which size of individual segment gap and share of adjoining segments that are missing.	Smaller, more isolated gaps can bring greatest return on investment by virtue of removing a barrier to use of an area with otherwise well-connected footpaths.

Source: M&PC in collaboration with City of Ballarat (2024)

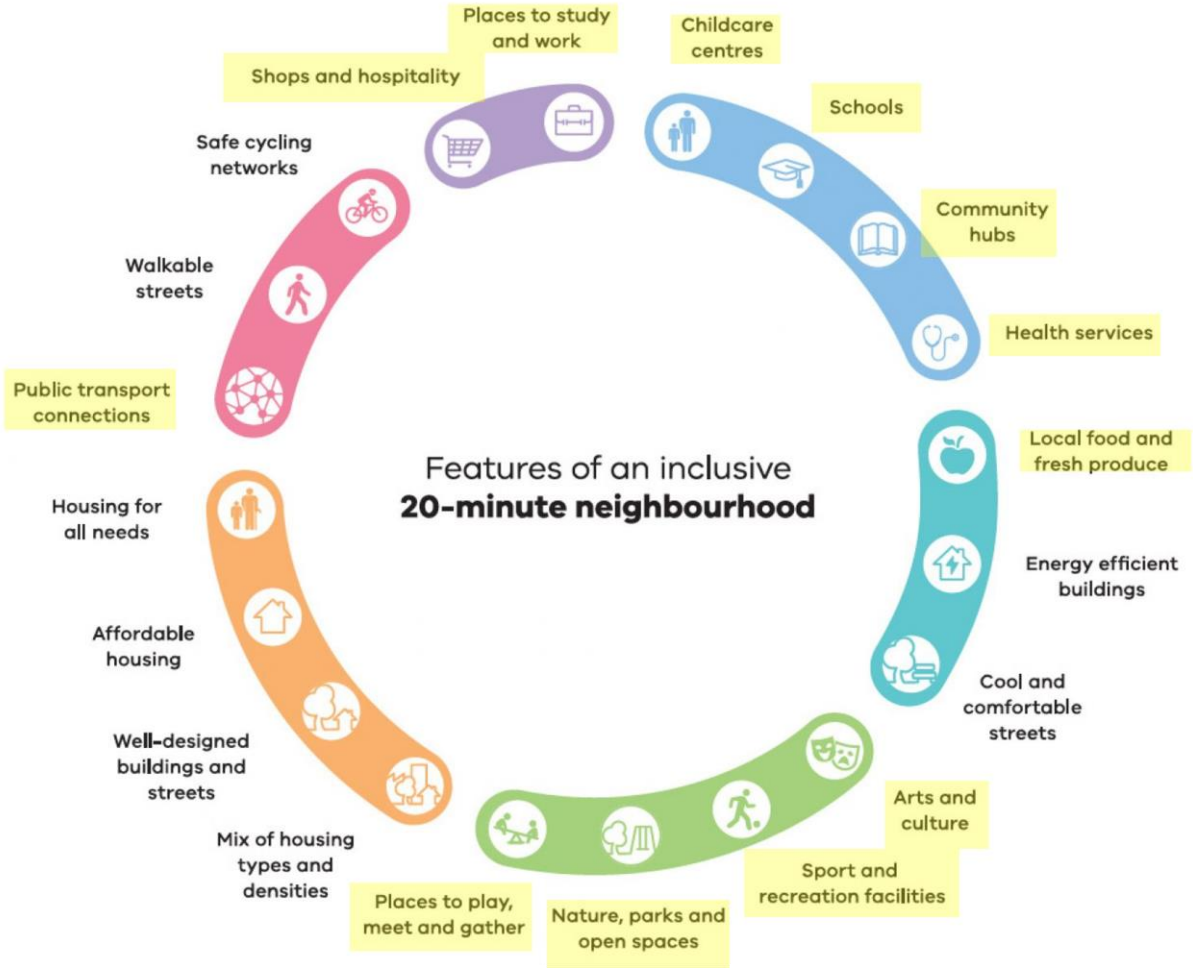
3.1.1 Local connectivity

Victoria's 20-minute neighbourhood framework identifies the suite of destinations that are necessary for meeting people's daily needs. Six themes are identified as essential to meeting

[14] *Definition adapted from State Government of Victoria, 2015. Guidelines for developing Principal Pedestrian Networks: July 2015.* https://www.victoriawalks.org.au/Assets/Files/PPN%20Guidelines%202015.pdf. *Accessed 9 April 2024.*

daily needs. Within these a range of destinations are identified, which collectively provide access to employment, education, social opportunities, leisure, healthy food and opportunities for exercise. Individuals should be able to access these destinations (highlighted yellow in Figure 3-2) within a 20-minute round trip. At an average walking speed, this equates to an 800 metre one way radius of walking distance to each destination.

Figure 3-2: 20-minute neighbourhood destinations relevant for local connectivity



Source: M&PC Analysis of DTP 2024[15]

The strategic importance of individual footpath segments for local connectivity can be estimated by counting the number of local destinations within walking distance. Place of interest data was used to quantify the number of features related to each 20-minute neighbourhood destination, within the vicinity of individual footpath segments. Following stakeholder input, fresh produce and shops and hospitality were merged into a single category. However, data for this category was lacking in the place of interest datasets available.

> ***Recommendation #9:*** Incorporate alternate sources of place data for shops and hospitality to provide a more complete picture of the provision of these types of destinations (including local food and produce) in the City of Ballarat.

[15] *DTP 2024. 20-minute neighbourhoods,* https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/20-minute-neighbourhoods, *Accessed 12 December 2023.*

The places of interest that were used to estimate local connectivity scores are summarised in Table 3-2 below.

Table 3-2: Destination types and associated features of interest

Destination type	Source	Features of interest subtypes
Shops and hospitality	1	Shopping centre
Places to study and work	1	Office, tertiary institution, university
Childcare centres	1	Child care
Schools	1	Education complex, primary school, primary/secondary school, secondary school, special school
Community hubs	1	Community centre, library, municipal office, senior citizens
Health services	1	Hospital complex, hospital complex, day procedure centre, disability support centre, general hospital, general hospital (emergency)
Local food and fresh produce	1	Not applicable
Arts and culture	1	Tourist attraction Showground, art gallery, historic site, monument, museum, tourist attraction, tourist information centre
Sports and recreation facilities	1	Athletic field, baseball field, basketball court, BMX track, bowling green, croquet green, equestrian facility, golf course, hockey ground, horse racetrack, motor track, netball court, racecourse, skate park, sports complex, sports ground, tennis court, training track, velodrome, club house, swimming pool, trailhead
Nature, parks, and open spaces	1	Conservation park, gardens, park, picnic site
Places to play, meet, and gather	1	City square, church, hall, playground, rest area, rotunda
Public transport	2 & 3	

Source: M&PC analysis of (1) DTP 2024[16].(2) Government of Victoria 2024[17], (3) Government of Victoria 2024[18].

Victoria's 20-minute neighbourhood policy suggests that local destinations should be accessible within a 20-minute round trip. However, the mode of access for destinations does vary under this policy. At an average walking speed, each destination would have to be accessible within 800 metres. Considering that not all City of Ballarat residents have access to private vehicles or public transport, an 800-metre walking catchment is assumed to be the preferred catchment for local destinations.

The Ballarat Housing Strategy provides an alternate grouping of strategic destinations and their accompanying maximum walking catchment. A summary of the alignment of 20-minute neighbourhood destination classes with the Housing Strategy destinations is provided in the

[16] *DTP 2024, Vic Map Features of Interest,* https://www.land.vic.gov.au/maps-and-spatial/spatial-data/vicmap-catalogue/vicmap-features-of-interest*. Accessed 12 December 2023.*
[17] *Government of Victoria 2024. PTV Regional Bus Stops,* https://discover.data.vic.gov.au/dataset/ptv-regional-bus-stops*. Accessed 25 March 2024.*
[18] *Government of Victoria 2024. Victorian Railway Stations,* https://discover.data.vic.gov.au/dataset/victorian-railway-stations*, Accessed 25 March 2024.*

technical appendix. The ‘policy relevant catchment’ is the smaller of that suggested by the Housing Strategy or 20-minute neighbourhood policy.

In addition to policy relevance, the size of the priority catchment buffer for local access has meaningful implications for community benefit. Members of the community arriving by alternate modes will interact with the footpath network within 400 metres of destinations. This could include members of the community with mobility impairments, for whom the absence of a footpath may cause a significant barrier.

As such, the 400-metre footpath catchment of destinations serves the largest share of the population and may create the most insurmountable access barrier. However, the 800-metre footpath catchment is important for providing the opportunity for people to travel safely on footpaths for more door-to-door journeys. Safe, independent opportunities for physical activity are out of reach for many in the community due in part to a lack of footpath infrastructure.

Therefore, the 800-metre catchment is necessary for enabling a greater share of the population to participate in physical activity by accessing footpaths to travel from their home to their destination. With these considerations in mind, both the 800 and 400-metre connectivity scores were used to rank each footpath gap; with the 400-metre score assigned higher precedence to reflect the greater short-term priority.

A second consideration in formulating the local connectivity indicator was the weighting of destination type. The online survey of footpath use in Ballarat asked respondents to indicate which local destinations they had accessed using footpaths in the past week.

The most common response was shops and hospitality (87% of respondents indicated they had accessed shops and hospitality using footpaths in the past week), followed by nature, parks and open space (78%) and local food and fresh produce (62%). Sports and recreation facilities (44%); places to play, meet and gather (44%); places to study and work (41%); schools (39%) and health services (38%) were accessed by footpaths by slightly less than half the respondents in the past week.

Slightly different patterns emerge when segmenting responses by population segments that may have particular mobility needs such as youth, carers and people with physical or mental impairments. For example, according to different identifying characteristics of the respondents. Table 3-3 overleaf outlines the findings of destinations accessed by population segment.

Table 3-3: Share of sample reporting access to destinations by footpath in past week

Destination type	Share of respondents							
	All respondents	Carers	Mental or physical impairment	Over 65	No Car	Under 24	Women	Weight
Sample size	264	151	78	32	6	9	174	
Shops and hospitality	*87%*	*87%*	*87%*	*78%*	*83%*	*78%*	*84%*	*1*
Places to study and work	*41%*	*45%*	*40%*	*13%*	*33%*	*67%*	*43%*	*1*
Childcare centres	*16%*	*28%*	*13%*	*3%*	*0%*	*0%*	*20%*	*1*
Schools	*39%*	*53%*	*40%*	*9%*	*50%*	*56%*	*41%*	*1*
Community hubs	*16%*	*15%*	*23%*	*28%*	*67%*	*0%*	*15%*	*1*
Health services	*38%*	*44%*	*47%*	*31%*	*33%*	*33%*	*43%*	*1*
Local food and fresh produce	*62%*	*61%*	*68%*	*59%*	*67%*	*33%*	*64%*	*1*
Arts and culture	*19%*	*21%*	*29%*	*16%*	*17%*	*11%*	*22%*	*1*
Sports and recreation facilities	*44%*	*46%*	*46%*	*34%*	*33%*	*78%*	*43%*	*1*
Nature, parks, and open spaces	*78%*	*78%*	*79%*	*78%*	*83%*	*89%*	*77%*	*1*
Places to play, meet, and gather	*44%*	*51%*	*53%*	*41%*	*17%*	*44%*	*17%*	*1*
Public transport	*26%*	*25%*	*31%*	*28%*	*67%*	*67%*	*22%*	*2*

Source: M&PC (2024)

Variability is most pronounced for childcare centres, schools, and places to study and work. These three types of destinations can be associated with particular life stages. A much larger share of respondents under the age of 24 accessed sport and recreation facilities via footpaths that the rest of the population.

Sixty-seven percent of people with no car accessed community hubs, whereas the sample average response was just 16%. Individual circumstances and characteristics are related to the types of destinations that individuals access frequently by footpaths. This data does not account for trips not made due to barriers; nor does it provide a representative picture of population trends due to the relatively small sample. However, what it suggests is that varying importance is placed on all 20-minute living destinations.

Noting some variation based on individual attributes, there is reasonable grounds to consider all destinations as important. However, public transport connectivity has strategic importance for its role in expanding the accessible catchment of all destinations without relying on private vehicle use.

Promoting active and sustainable travel choices through intermodal connections between footpaths and public transport aligns with Ballarat's strategic priorities. As such, public transport stops are assigned twice the weighting of other destination types in estimating the local connectivity score.

For ranking purposes, scores for each destination type were normalised before being added together. The formula for estimating local connectivity is denoted below.

$2^{*}(\in \hat{X}_{i,400m} + 2\hat{X}_{PT,400m}) + (\in \hat{X}_{i,800m} + 2\hat{X}_{PT,800m})$

Where:

- $\hat{X}_{i,400m}$ is the standardised weighted count of destination i within a 400m buffer
- $\hat{X}_{i,800m}$ is standardised weighted count within 800m buffer
- $\hat{X}_{PT,400m}$ is the standardised weighted count of public transport points within a 400m buffer
- $\hat{X}_{PT,800m}$ is standardised weighted count of public transport within 800m buffer.

3.1.2 Pedestrian safety

Pedestrians should be able to use footpaths in comfortable and safe environments. Footpath users should be available to travel on footpaths adjacent to low-speed roads where possible. Road hierarchy and road speed were both considered as possible indicators of the road speed and traffic environment. Of these two indicators, road speed was chosen as the preferred indicator of pedestrian safety. Road speed for individual footpath segments was obtained from Victoria's speed zone data[19].

Segments with a speed zone of 999 were assumed to be shared or emergency access; however the speed value was not adjusted for this analysis. Segments are ranked from smallest (lowest speed) to highest (highest speed).

3.1.3 Principal Pedestrian Network

Principal Pedestrian Networks (PPNs) aim to identify routes within the built environment that are likely and have the potential to carry more pedestrians walking to key destinations and improve the quality of these routes to encourage more walking. A PPN is an important planning and policy tool for the development and promotion of walking as a mode of transport, recognising that walking has a valuable role to play in creating a more effective and resilient transport system.

The identification and delineation of PPNs enables effective, strategic network planning for pedestrians in the broader context of transport and land use planning. PPNs can reinforce the strengths of existing land use and transport patterns by encouraging pedestrian movement in desired areas. A PPN provides pedestrians with a higher level of service by making the shortest route also the highest quality route, and thereby encouraging walking trips. PPNs are intended to assist and guide investment in and development of pedestrian infrastructure in the public realm over several years.

Some elements that constitute a PPN and contribute to attractive walking environments are:

- Accessible footpaths

[19] *Data Vic 2024. Speed Zones February 2024,* https://discover.data.vic.gov.au/dataset/speed-zones. *Accessed 11 March 2024.*

- High quality public spaces and streetscapes
- Pedestrian crossings and signage
- Street furniture
- Street lighting
- Trees and vegetation

The following elements frame and guide the development of a PPN:

- Destinations (amenities and facilities), such as activity centres, retail, transport hubs, employment clusters, education and health facilities, etc.
- Definition of a catchment
- Population density and likely pedestrian activity/intensity on the routes
- Current and future land uses
- Prioritisation of pedestrian links, delineated in two levels – primary and secondary pedestrian routes. Primary routes generate regular and high levels of travel demand daily, such as to residential, retail, educational and commercial destinations. The balance of the walkable catchment is categorised as a secondary route.
- The quality of the pedestrian environment and pedestrian priority

3.1.3.1 Draft Ballarat Principal Pedestrian Network (BPPN)

Ballarat's Council Plan 2021 – 2025 outlines a community vision of leading the way as a sustainable, innovative and inclusive community, with ecologically sound neighbourhoods where people can:

- Meet their daily needs within a short walk, ride or bus trip.
- Have easy access to parks and gardens, community facilities and education for all ages.

Additionally, Goals 1 and 2 from the Council Plan reinforce the aim to move away from car travel to active transport (cycling and walking), encouraging the community to use walking and cycling paths more often and feel safe to do so. Also, a key indicator of the plan is an increase in community satisfaction for how easy it is to walk and cycle in Ballarat.

Further, the Integrated Transport Action Plan emphasises the aim to build and manage places for people, considering walking as an important part of the transport mix, and sets an action (2.1) to establish a PPN. According to the plan, planning and constructing a PPN with routes that pedestrians use more often will improve connections to key destinations and would also assist with potential new funding sources.

The Draft Ballarat Principal Pedestrian Network (PPN) is a strategic network of pedestrian routes that encourage walking for transport, the key goal of which is to increase walking trips. It was developed alongside the Footpath Construction Strategy to help identify the links that are most important to the community, and through the Strategy, channel funding to footpaths with the greatest benefit to the community.

The methodology applied to develop the first stage of the Draft Ballarat PPN followed the guidance provided in the document Guidelines for Developing Principal Pedestrian Networks, from the former Department of Economic Development, Jobs, Transport and Resources, available here:

https://www.victoriawalks.org.au/Assets/Files/PPN%20Guidelines%202015.pdf

The Draft Ballarat Principal Pedestrian Network (PPN) comprises three separate categories of routes:

1. Primary Network – These are the key links (primary routes) around the city and link up all our most important destinations. These form the backbone of the PPN with the intent in the long term to provide a higher standard for the pedestrian experience on these routes, looking at walkability, comfort, and safety for pedestrians.
2. Secondary Network – These are the secondary routes that link the primary routes back towards secondary destinations. The intent is to link important routes within residential areas and connect to infrastructure such as bus stops.
3. Off Road Network – These links comprise of the existing off-road trails around the municipality. These routes are separated from the road and provide a higher quality experience for most pedestrians and serve as great strategic links. These paths are pre-existing and will not come up for construction under the Footpath Construction Strategy, which is for new paths in areas that have none currently. However, the PPN recognises their strategic importance where funding may be available from other sources. It is also recognised that these trails are often harder to traverse for people with disabilities. As such, parallel routes on the Primary Network, adjacent to the road, will aim to provide more suitable disability access.

This first iteration of the PPN is a great tool to assist in selection of footpath projects that will have the greatest positive impact for the community. This network is intended to be a living document and will be updated in line with the needs of the community as they change over time.

3.1.4 Suburb and Locality Footpath Need Index

A combined index of footpath need was developed for suburbs and localities, to explore the spatial interaction between population characteristics and footpath coverage.

The index is defined using the equation below.

$$Suburb\ and\ Locality\ Footpath\ Need\ Index = \frac{\sum \widehat{Tot} + Share}{10} + \frac{Rank_{IRSD}}{62}\ (1 - \%FP)$$

Where:

- The expression $\sum \widehat{Tot} + Share$ represents the sum of the normalised total plus the share of the population within each SAL identifying as a person in each of the five user categories outlined in Table 2-1 to Table 2-6 above.
- $Rank_{IRSD}$ is the rank of each SAL when ordered from highest IRSD score to lowest (greatest disadvantage), with a higher rank signifying greater disadvantage.
- %FP, or footpath coverage, is the proportion of traversable roads within the SAL that have an adjacent footpath

Segments located within Chapel Flat automatically received a score of 0 due to no population being reported on Census night (2021).

3.1.5 Gap size and context

Three prioritisation criteria relate to gap size and isolation:

- Eligible context gap length: Prioritises gaps that are small and isolated, in terms of the sum of gaps on adjoining segments. Sort in ascending order of context gap size.

- Eligible gap on both sides: Prioritises segments that have sections with no footpath on either side of the road. A categorical variable is created to denote whether a segment has any sections missing footpaths on both sides (1) or not (0). Sort in descending order.
- Total eligible segment gap length <50m: Prioritises segments with total gap length less than 50m first. A categorical variable denotes whether the total gap length is below 50m (1) or not (0).

'Eligible' gap values represent single-sided segment gaps greater than or equal to 10 metres in length. Total and context gaps are then the sum of individual eligible segment gaps.

4 Options assessment

This Strategy considered four possible sets of criteria that could be used to prioritise footpath construction. These are referred to as options. The four options in the context of the prioritisation framework are shown in Figure 4-1 overleaf. The numbering of prioritisation criteria refers to the order in which each is applied. The criteria applied last is given precedence over preceding criteria.

4.1 Evaluation approach

The options were evaluated based on their anticipated ability to deliver the objectives of the project and meet the functionality requirements for the prioritisation framework. The evaluation criteria include:

1. **Replicability:** Transparent and easy to replicate with available data
4. **Benefit:** Maximises the benefits of each investment
5. **Equity:** Benefits are distributed equitably across the community.

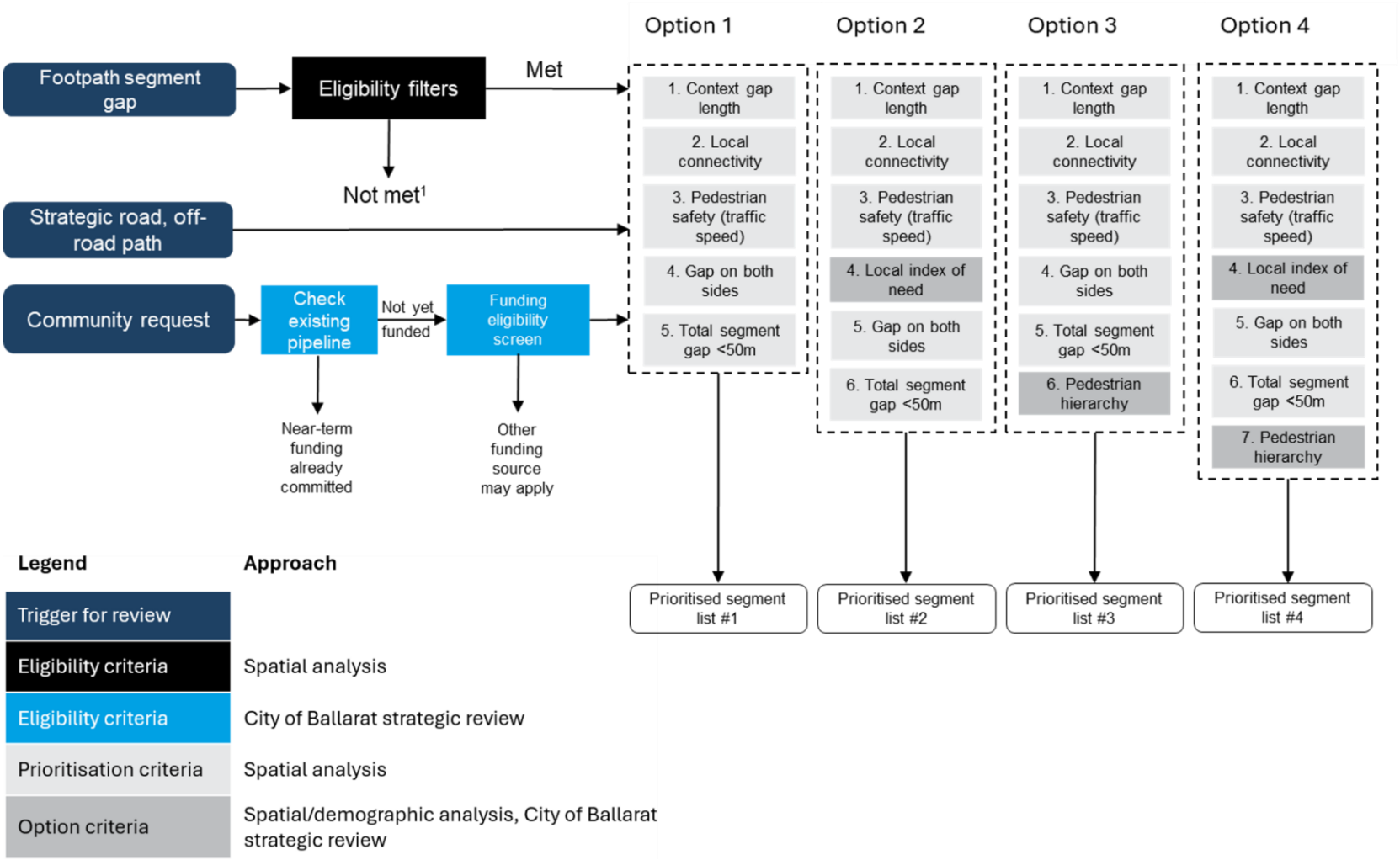
The four options were developed and discussed in consultation with City of Ballarat stakeholders over a series of workshops and discussions. During these engagements, the merits and drawbacks of each option were discussed relative to the three objectives listed above. Feedback from these discussions was a contribution to the options assessment. This was supplemented by an analysis of demographic characteristics and user needs, compiled from community feedback and a review of evidence for differences in footpath mobility needs. This information is presented in Section 2.3.3 - City of Ballarat demographic profile and 2.2.5 - Footpath use in the City of Ballarat.

Two questions guided assessment of the extent to which each options delivered equitable benefits across the community[20]:

- How well does each option meet the needs of different users?
- Which option distributes benefits most equitably among different population groups?

[20] *Commission for Gender Equality in the Public Sector 2020. Gender Impact Assessment Toolkit,* DPC 2011 CGEPS_GIA-Toolkit_FA-Web_0 (4) (6).pdf (content.vic.gov.au). *Accessed 7/10/2023.*

Figure 4-1: Four decision-making framework options for prioritising footpath construction



Source: M&PC in collaboration with City of Ballarat (2024)
Note (1) – Footpath segment gaps filtered to exclude new estates (missing data) non-traversable roads and suspected processing errors

4.2 Discussion of options and relative performance

The four options are distinguished by the inclusion of one or more prioritisation criteria, as follows:

- Option 1 prioritises footpath gaps that are isolated and small, in areas with good connectivity to local living destination
- Option 2 balances the accessibility imperative of Option 1 by including the local index of need
- Option 3 focusses on local connectivity with an added strategic overlay to prioritise a connected network of primary and secondary footpaths
- Option 4 includes all criteria: gaps size and isolation, local connectivity, local index of need and strategic pedestrian hierarchy.

4.2.1 Replicability

Option 1 is the simplest in its formulation and therefore the easiest to replicate. Nevertheless, the gap context and size estimates require complex spatial assumptions and processes. The replicability of all options could be improved by developing a dedicated footpath network dataset (Recommendation 2).

The local index of need is a composite indicator of sociodemographic attributes (described in Section 0), requiring up to date Census data. In contrast, the pedestrian hierarchy criteria, which is based on the Principal Pedestrian Network, would be subject to change only as the City of Ballarat evolves its Principal Pedestrian Network. Therefore Option 3 is likely to be simpler in terms of application than Option 2. Option 4 is the most complex option, comprising all criteria featured in Options 1 – 3.

4.2.2 Benefits

Benefits pursued through the Strategy include safety, transport choices, promotion of health and wellbeing and local economic activity and productivity. Feedback from the online community engagement survey suggests that there are a range of destinations that the people of Ballarat choose to access using footpaths every week; and that these destinations vary by user group. For this reason, local connectivity is embedded across all four options.

Similarly, all options give priority to streets with lower stress traffic environments, measured in terms of inverse speed. The benefits vary across the options in terms of the precedence ascribed to providing a connected network of paths. Options 3 and 4 give priority to routes that are recognised as primary pedestrian corridors under the City of Ballarat's Principal Pedestrian Network; followed by the secondary network of footpaths. In this way, Options 3 and 4 maximise walking connectivity to key destinations.

Prioritising the interconnected network of pedestrian routes first is likely to maximise the size of the population catchment that receives the above listed benefits. Therefore Options 3 and 4 are likely to maximise the project benefits slightly more than Options 1 and 2.

4.2.3 Equity

The ability of members of the community to access benefits can be affected by differences in mobility patterns and safety needs among other things. A review of global evidence for differences in potential usage patterns and barriers to footpath use among women, gender diverse people and users whose identifying characteristics may affect the way they travel, is provided below.

Four key characteristics of gender-equitable footpath provision emerge:

- Connectivity: Women's travel patterns are more likely to consist of short, interconnected trips related to household and caring responsibilities. Paths should maximise convenient and effective movement between local destinations[21].
- Accessibility and inclusivity: Paths should be wide, clear, accessible, and well-paved enough to allow for the comfortable movement of people who are accompanied by adult dependents or children and people who are performing household errands that involve carrying shopping bags or other goods[22].
- Safety from accidents: Women are generally more perceptive to threats to their own or their dependent's safety and tend to be more risk averse[23]. Therefore, close attention should be paid to minimise potential stress to footpath users by ensuring footpaths are provided in low-speed environments with good separation from traffic.
- Personal security: Women often change route choice due to issues of safety and harassment[24]. Access to a range of different paths should be prioritised and these should be clearly signposted and connected to one another. Paths should be provided in areas with active frontages that offer natural/passive surveillance. Art installations can increase feelings of safety.

The Gender Impact Assessment completed for this project revealed considerable variability in the spatial distribution of population segments with needs that are not presently met by footpath infrastructure. This includes carers, young people and people aged over 65, people with a need for assistance, people without access to a car and areas of high socio-economic disadvantage. The different needs of these user groups can, to some extent, be understood in the Ballarat context by examining responses to the online survey, segmented by identifying characteristics of survey respondents. Responses to the online community survey were segmented by a range of identifying characteristics.

To inform this assessment, an understanding of the needs and barriers of footpath use for specific user segments is also needed. Evidence was collected through surveys of the residents of the City of Ballarat. These results are detailed in Table 2-7 of Section 2.5.3, which describes footpath use in Ballarat. Findings from population segments which were above the average from all survey responses are also listed in this table to highlight the unique needs and responses from each segment. These findings show that while the community value different things about

---

[21] Cahill, R. et al. (2020). *Travelling in a Woman's Shoes*. Transport Infrastructure Ireland; Burns, T., Oram, M.-Y. M., & Claris, S. (2020). *Cycling for everyone*. Sustrans, Arup; Perez, C. C. (2019). *Invisible Women: Exposing Data Bias in a World Designed for Men*. Abrams Press.

[22] Australian Human Rights Commission. (2018). *Face the Facts: Gender Equality 2018*. Sydney: Australian Human Rights Commission. Buehler, R., & Pucher, J. (2008). *Cycling for Everyone: Lessons from Europe.* Transportation Research Record Journal of the Transportation Research Board 2074 (1), 58-65. Terraza, H.et al. (2020). *Handbook for Gender-Inclusive Urban Planning Design*. Washington, DC: World Bank; Kunieda, M., & Gauthier, A. (2007). Module 7a- Gender and Urban Transport: Smart and Affordable in *Sustainable transport: A Sourcebook for Policy-makers in Developing Cities*. Deutsche Gesellschaft Fur Internationale Zusammenarbeit (GIZ).

[23] Aldred, R. et al. (2017). *Cycling Provision separated from motor traffic: a systematic review exploring whether stated preferences vary by gender and age*. Transport Reviews , 29-55; Pearson, L. et al. (2022). *The Potential for bike riding across entire cities: Quantiifying spatial variation in interest bike riding*. Journal of Transport and Health; AitBihiOuali, L., & Klingen, J. (2022*). Inclusive roads in NYC: Gender differences in responses to cycling infrastructure.* Cities.

[24] Burns, T., Oram, M.-Y. M., & Claris, S. (2020); Matthews, A., Carey, K., & Evans, R. (2012). *Getting Home Safely.* Australian Journal of Dementia Care; Terraza, et al. 2020

footpaths, the need for them to be available, connected to where they want to go, and safe to move on were found across all segments.

The Suburb and Locality Footpath Need index, outlined in Section 0, was developed to summarise the prevalence of need based on the distribution of these population segments; combined with current footpath coverage. Table 4-1 below provides a ranked summary of suburb and locality footpath need index in order of highest to lowest need.

Table 4-1: Ranked Suburb and locality footpath need index (highest to lowest)

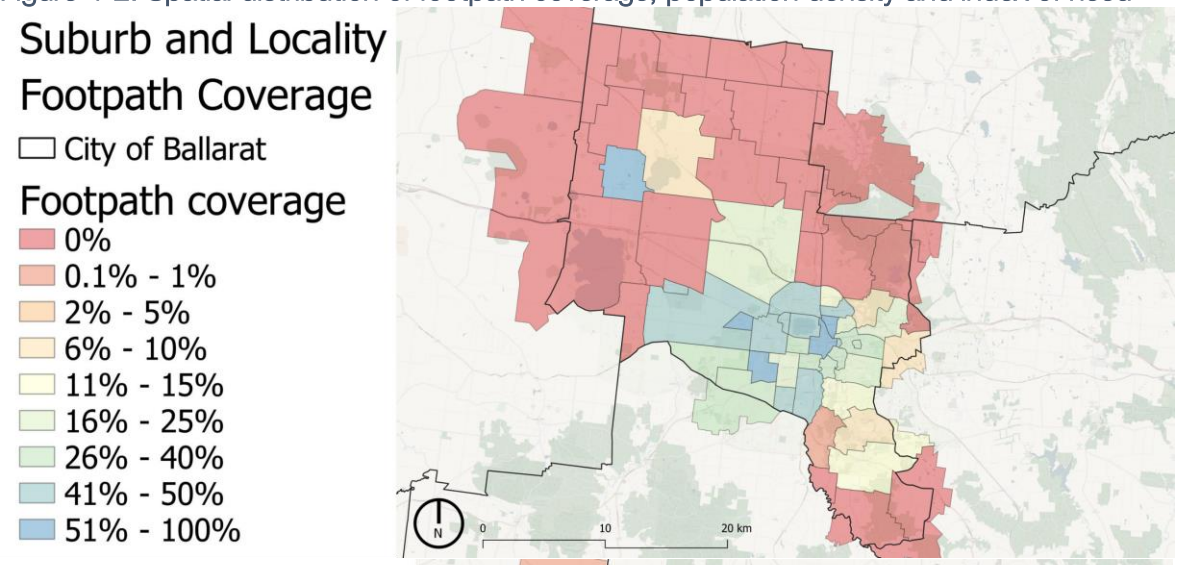
Rank	Suburb Name	Index Score	Population density (p/sqkm)	Footpath Coverage (approx.)
1	Wendouree	63.0	1091.3	50%
2	Sebastopol	62.0	1196.2	47%
3	Redan	60.8	1364.6	38%
4	Mitchell Park	60.0	44.8	17%
5	Delacombe	59.1	1017.3	20%
6	Eureka	57.8	1491.7	33%
7	Mount Pleasant	56.9	1091.8	28%
8	Ballarat East	56.0	991.8	32%
9	Golden Point (Ballarat - Vic.)	52.8	1196.9	32%
10	Burrumbeet	52.1	4.6	0%
11	Bo Peep	51.0	2.4	0%
12	Black Hill	49.9	1209.0	23%
13	Ballarat North	48.9	1519.3	41%
14	Mount Clear	48.1	361.5	12%
15	Canadian	47.1	525.3	17%
16	Bakery Hill	45.6	745.3	46%
17	Ercildoune	45.1	8.3	0%
18	Warrenheip	44.0	103.3	8%
19	Ballarat Central	42.7	1422.6	55%
20	Learmonth	42.0	11.4	10%
21	Soldiers Hill	40.5	1832.0	66%
22	Alfredton	40.0	1476.4	46%
23	Bonshaw	38.6	294.1	46%
24	Winter Valley	37.6	700.7	53%
25	Lucas	36.6	1304.9	59%
26	Brown Hill	36.0	605.4	23%
27	Mount Rowan	35.1	34.2	0%
28	Durham Lead	34.1	21.5	0%
29	Miners Rest	32.9	127.4	24%
30	Invermay Park	32.0	673.8	13%
31	Scotchmans Lead	31.1	24.9	0%
32	Bunkers Hill	29.8	21.7	28%
33	Tourello	29.1	2.5	0%
34	Mount Bolton	28.1	1.0	0%
35	Glendonald	27.0	0.4	0%
36	Glendaruel	26.1	3.5	0%

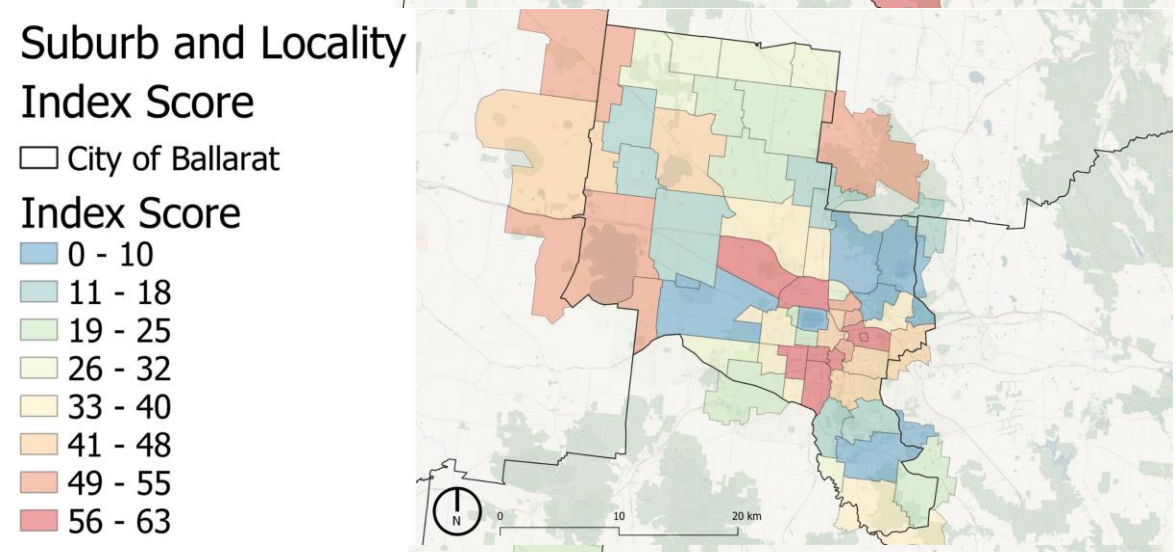
Rank	Suburb Name	Index Score	Population density (p/sqkm)	Footpath Coverage (approx.)
37	Coghills Creek	25.1	4.7	0%
38	Ascot (Ballarat - Vic.)	24.1	2.6	0%
39	Lake Gardens	22.7	1501.9	42%
40	Newington	21.9	770.3	30%
41	Scotsburn	21.1	18.8	0%
42	Smythes Creek	19.8	209.9	36%
43	Blowhard	19.1	2.9	0%
44	Wattle Flat	18.1	118.8	0%
45	Sulky	17.1	45.1	0%
46	Bald Hills	16.1	10.0	0%
47	Windermere	15.1	2.2	0%
48	Addington	13.1	3.7	0%
49	Weatherboard	13.1	3.4	100%
50	Mount Helen	12.1	244.2	7%
51	Magpie	11.1	37.1	0%
52	Lake Wendouree	9.8	631.0	49%
53	Buninyong	9.1	189.3	10%
54	Cardigan Village	7.6	552.2	47%
55	Cardigan	6.7	26.1	43%
56	Nerrina	6.0	143.2	9%
57	Invermay	5.1	40.2	0%
58	Gong Gong	4.0	2.6	0%
59	Glen Park	3.1	6.7	0%
60	Chapel Flat	-	No recorded population	0%

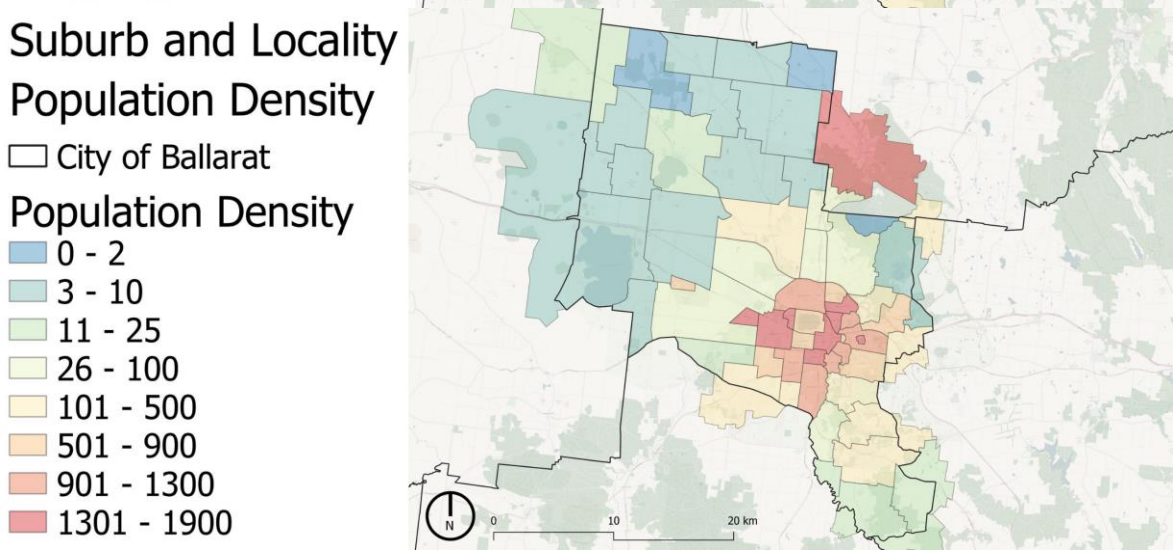
Source: M&PC (2024)

The distribution of footpath coverage, population density and footpath need index is illustrated in Figure 4-2 overleaf.

Figure 4-2: Spatial distribution of footpath coverage, population density and index of need







Source: M&PC (2024)

It is evident from the figures that there is not a linear relationship between footpath needs, coverage and population density. The index of need can therefore ensure that footpath construction does not further entrench disadvantage in areas where accessibility is poor. Whereas options 1 and 3 might herald considerable benefits to the Ballarat community, they may also reduce equity by further disadvantaging users who already face complex barriers. Options 2 and 4 are more likely to distribute benefit equally among the population.

The prioritisation criteria is limited by data that cannot capture the nuances of individual users. It is for this reason that it remains important for the City of Ballarat to proactively solicit and address individualised needs and requests for footpath.

> *Recommendation #10:* Where certain needs are not able to be met by the existing Strategy, consider alternate funding mechanisms to prioritise footpath provision.

Furthermore, the scope of the Footpath Construction Plan will not include features of the footpath which may present barriers to some users, such as pedestrian crossing points.

> *Recommendation #11:* Investigate opportunities to improve personal security, physical safety, accessibility and connectivity of footpaths to ensure women have equal opportunities to benefit from footpath construction.

4.3 Summary of assessment

The options and their performance against the three criteria are summarised in Table 4-2 below. Options 1 and 3 are the most replicable options, however the benefits associated with Option 1 are anticipated to be relatively lower than Option 3 due to the introduction of the Principal Pedestrian Network (PPN) to Option 3.

Although Option 3 also scores highly for benefit delivery, it may exacerbate inequalities in footpath access due to the emphasis it places on proximity to destinations. Although Option 4 demands more regular data updates, it is anticipated to maximise benefit delivery in a way that improves equity of access to footpaths for the people of Ballarat.

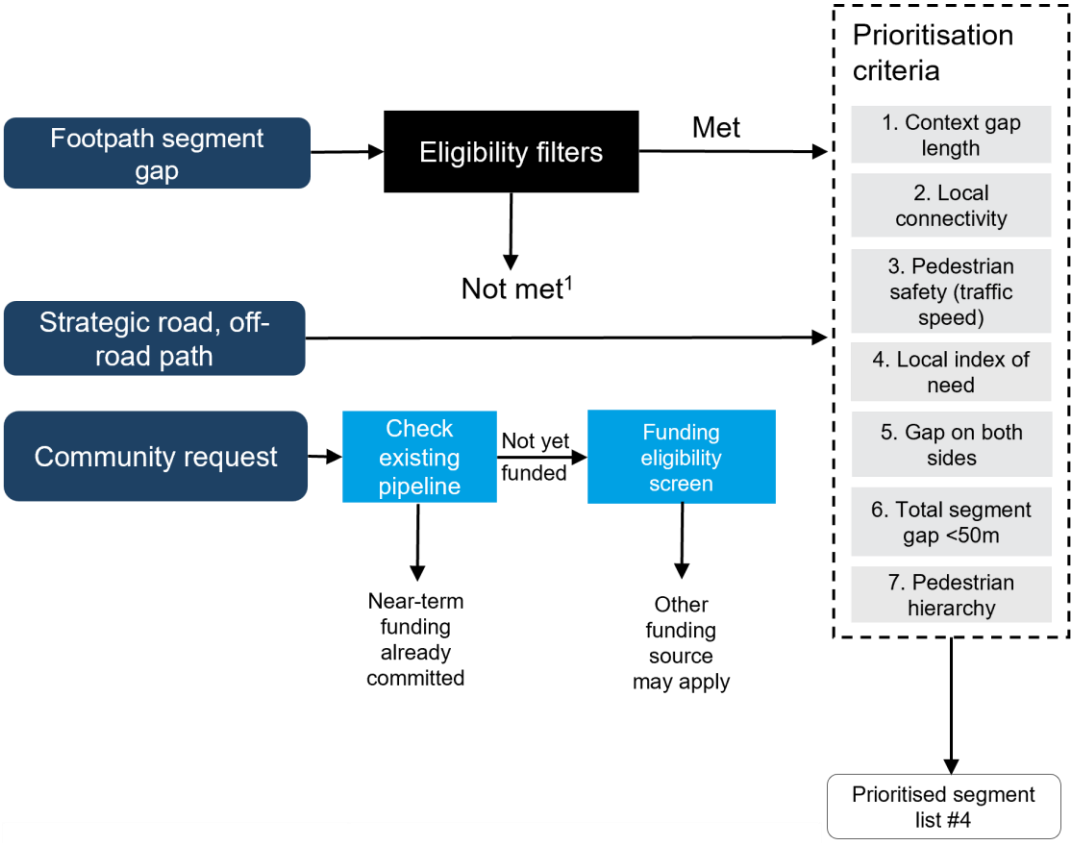
Table 4-2: Summary of options assessment

		Option 1	Option 2	Option 3	Option 4
Criteria included	Local connectivity	✓	✓	✓	✓
	Pedestrian safety	✓	✓	✓	✓
	PPN			✓	✓
	Index of Need		✓		✓
	Gap size and context	✓	✓	✓	✓
Replicability		Moderate	Low	Moderate	Low
Benefits		Moderate	Moderate	High	High
Equity		Minor negative impact	Minor positive impact	Minor negative impact	Minor positive impact

Source: M&PC (2024)

> *Recommendation #12:* Gaps in the City of Ballarat's footpath network should be prioritised for construction according to a decision-making framework that prioritises primary and secondary pedestrian routes aligned to the Principal Pedestrian Network, as well as local connectivity, adjacent road speed and suburb and locality footpath index of need (see Figure 4-3 below).

Figure 4-3: Preferred decision-making framework showing prioritisation criteria



Source: M&PC in collaboration with City of Ballarat (2024)
Note (1) – Footpath segment gaps filtered to exclude new estates (missing data) non-traversable roads and suspected processing errors

Option 4 will be adopted to develop the multi-year Footpath Construction Plan.

5 Recommendations

Recommendations have been provided throughout this Strategy to suggest ways to continue to improve the provision of footpaths in a manner that is efficient and reflects the needs and desires of the community. The twelve recommendations are summarised below.

- *Recommendation #1:* Prioritise in-person assistance for those not able to participate in online consultation, such as through focus groups or in-person event attendance.
- *Recommendation #2:* Reapply the footpath prioritisation framework as data is updated and aspirations for footpath provision evolve.
- *Recommendation #3:* Engage with the Wadawurrung Traditional Owners prior to confirming year-ahead construction plan to identify opportunities to: support increased awareness of significant cultural associations in the vicinity of planned footpath construction and engage the community in the Wadawurrung Healthy Country Plan through ancillary features and information alongside footpath construction.
- *Recommendation #4:* The City of Ballarat should undertake regular demographic analysis of population segments to ensure a clear understanding of which communities may have greater needs from the footpath network.
- *Recommendation #5:* Where the City of Ballarat is aware of community concern regarding the installation of footpaths in townships, these communities should be consulted if a new footpath is being considered for construction.
- *Recommendation #6:* The City of Ballarat should move toward an integrated approach to footpath provision that considers footpath construction alongside other planning decisions such as the spatial distribution of services, security through passive surveillance and traffic calming.
- *Recommendation #7:* Ensure that the Footpath Construction Strategy and Road Management Plan provide for pro-active and strategic upgrades and maintenance of footpath condition to remove barriers to footpath use
- *Recommendation #8:* Explore opportunities to apply special rate and charge schemes to footpath provision.
- *Recommendation #9:* Incorporate alternate sources of place data for shops and hospitality to provide a more complete picture of the provision of these types of destinations (including local food and produce) in the City of Ballarat.
- Recommendation #10: Where certain needs are not able to be met by the existing strategy, consider alternate funding mechanisms to prioritise footpath provision.
- *Recommendation #11:* Investigate opportunities to improve personal security, physical safety, accessibility and connectivity of footpaths to ensure women have equal opportunities to benefit from footpath construction.
- *Recommendation #12:* Gaps in the City of Ballarat's footpath network should be prioritised for construction according to a decision-making framework that prioritises primary and secondary pedestrian routes aligned to the Principal Pedestrian network, as well as local connectivity, adjacent road speed and suburb and locality footpath index of need.

5.1 Conclusion

This Strategy develops a framework for prioritising the construction of new footpaths in a manner that maximises the benefits of each investment for the whole community. It has been developed with the people of Ballarat and stakeholders from the City of Ballarat. Community consultation took place in two stages - first to understand how the people of Ballarat use the footpath network, and secondly to gather feedback on the proposed decision-making framework and Construction Plan.

What we heard was that footpaths are used in a variety of ways by the people of Ballarat. This feedback highlighted the importance of footpaths providing access to a variety of local destinations. That is why this framework has been developed to promote local living. Ballarat's Principal Pedestrian Network has been developed in parallel with this Strategy. Footpaths can now be prioritised in a way that strives to provide a complete network between activity centres.

To ensure that footpaths are accessible to all, it is important to consider the range of user needs and remove barriers to access. This means prioritising footpath construction not only in areas where local connectivity is high, but also where coverage is poor and in locations where there are higher than average populations of users with strong reliance on footpaths for mobility.

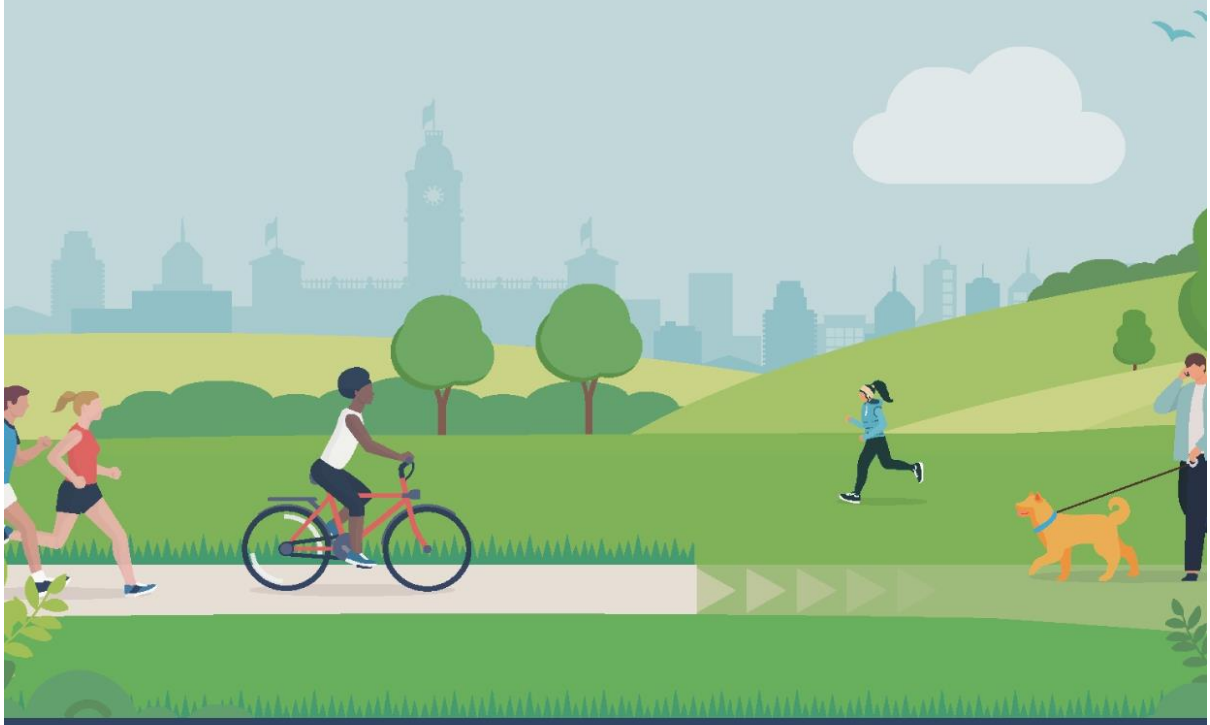
Four sets of prioritisation criteria were discussed with stakeholders and evaluated to assess their **replicability**, and extent to which the resulting multi-year Footpath Construction Plan would **maximise benefits** while improving **equity of access** to footpaths. The key recommendation of this Strategy is to prioritise the construction of footpaths according to the combination of:

- Alignment to the Principal Pedestrian Network
- Local connectivity
- Pedestrian safety (adjacent road speed)
- Suburb and locality footpath index of need.

This framework ensures that benefits are maximised while increasing equity of opportunity to use footpaths throughout the municipality.

Appendix A Community engagement summary

Footpath Construction Strategy
What We Heard



The Ballarat Footpath Construction Strategy prioritises future footpath network improvements across the municipality. Access to key destinations such as schools, shops, meeting places and playgrounds are considered by the Strategy. Improving connections, community health, economic activity and safety are key outcomes of the Strategy.

The City of Ballarat gathered community insights about the use of footpaths in Ballarat to inform its first Footpath Construction Strategy, to better understanding the needs of the community.

This document provides an overview of the responses we received.

What's next?

The draft Footpath Construction Strategy will be a robust evidence-based framework for prioritising future footpath improvements. The aim is to maximise the community benefit from each investment Council makes in Ballarat's footpath network.

Following public exhibition, the Strategy will be revised based on community feedback and presented to Council for adoption in July/August 2024.

Customer Service: 25 Armstrong Street South, Ballarat
(03) 5320 5500 ballarat.vic.gov.au

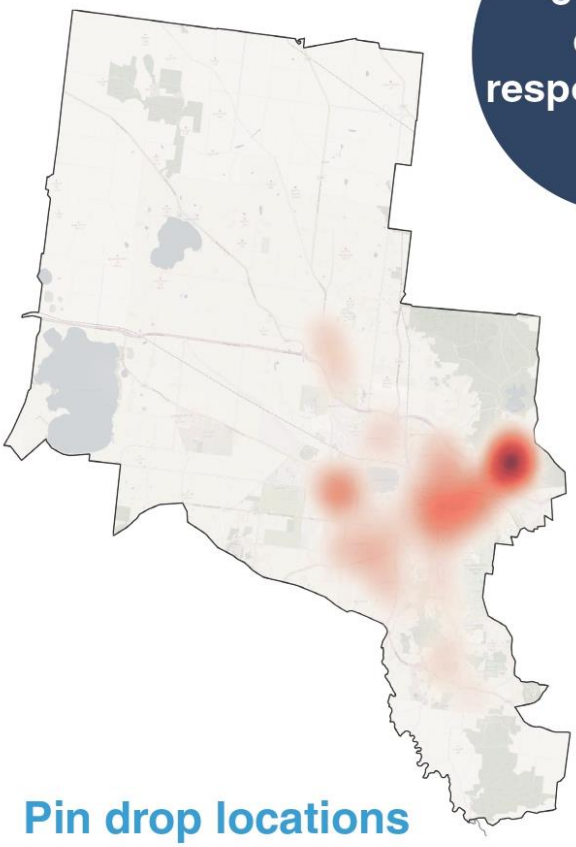
CITY OF BALLARAT

Footpath Construction Strategy - What We Heard

465 Ballarat residents shared their thoughts on the footpath network

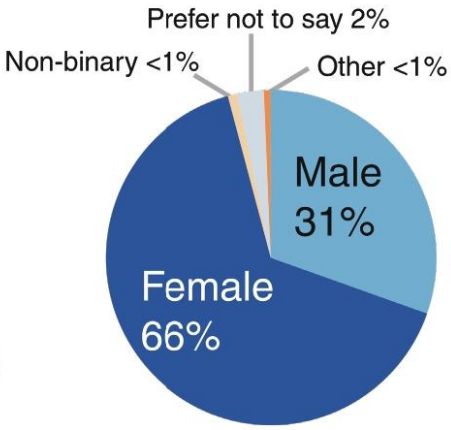
57% had caring responsibilities

46% had a physical impairment or mental health condition

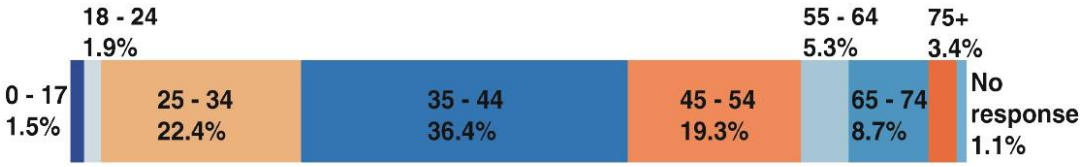


Pin drop locations

Gender



Age groups



Footpath Construction Strategy - What We Heard

Top 5 ways we move

- Walking
- Bicycle (manual)
- Scooter (manual)
- Running
- Pushing a pram

Why we use footpaths

Exercise

Leisure, Nature

Transport

Parents and carers of children often use footpaths for games and play

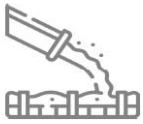
Those under 24 very often use footpaths to access public transport

Top features we value in footpaths

The Footpath Construction Strategy is about gaps

Although connectivity is a key issue, there are other issues which affect the network

Condition



Surface

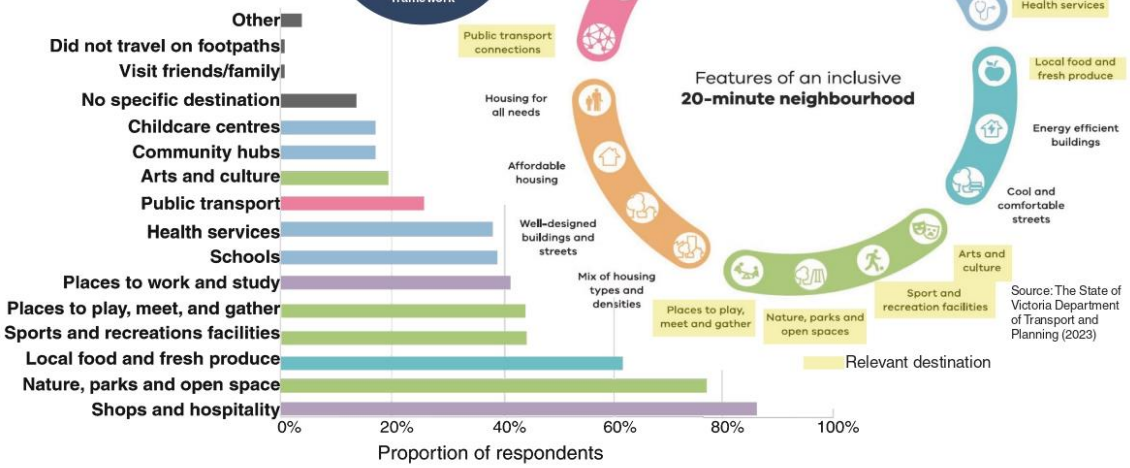
Proximity

Safety

Footpath Construction Strategy - What We Heard

Where we go

We heard that you regularly travel to a variety of destinations on the footpath, consistent with the Victorian Government's 20-Minute Neighbourhood framework



Source: The State of Victoria Department of Transport and Planning (2023)

Other comments we heard

Streets that do not have footpaths in the immediate vicinity of aged care, and similar facilities, and that create a link to facilities, shops, and parks need to have a high priority

We have very limited access to footpaths in Warrenheip. Considering how dangerous people drive around our area, I just want to feel safe when I walk the dog and pushing my daughter in the pram.

People should have the option to choose walking wherever they go in our city - and it should be a safe option

Footpaths need to be both sides of the street, sick of crossing the road to use the footpath

It's imperative that all schools have safe footpath access if we are to keep our children fit, healthy, and to reduce our environmental impact

I feel that paving missing links between populated/residential areas and shopping centres is important

We encourage physical activity and would like all children to have the best opportunities to getting to and from school in a safe way

How we reached the community

31% survey
264 contributions

69% social map
580 contributions

Appendix B Proposed construction plan methodology

B.1 Ranking of segment gaps

A multi-year Footpath Construction Plan will be identified by applying the prioritisation framework illustrated in Figure 4-3, and then identifying annual tranches of construction according to the ranking of segment gaps. Table 5-1 below outlines the procedure followed to rank segments in order of priority for footpath construction to address gaps.

Table 5-1: Ranking procedures and order of application by indicator

Order applied	Indicators (unit if applicable)	Function
1	Gap overlapping estate (m)	Filter (exclude if >0)
2	Speed (km/h)	Filter (exclude if 80<=x<999)
3	Any gap > 10 (1 = TRUE, 0 = FALSE)	Filter (exclude if = 0)
4	Context gap length (m)	Sort: ascending
5	Local Connectivity Score	Sort: Descending
6	Pedestrian safety – speed (km/h)	Sort: Ascending
7	Local index of need	Sort: Descending
8	Existing provision – eligible gap both sides (1 = TRUE, 0 = FALSE)	Sort: Descending
9	Total segment gap <50 (1 = TRUE, 0 = FALSE)	Sort: Descending
10	Principal Pedestrian Network (PPN) (Values of 0, 1, 2, 3)	Sort: Ascending
11	Part of the PPN? (1 if PPN = 1, 2, 3, 0 if PPN = 0)	Sort: Descending

Source: M&PC (2024)

B.2 Construction tranches

Once segments are prioritised, the total eligible segment gap length (sum of eligible gaps on one or both sides) will be used as the input to identify tranches for construction. As construction costs vary, an approximate annual quota in construction length of 6km is anticipated to be used. However, this overestimates the current deliverable path length based on annual budget. Segments will be added to the pipeline in order of priority, and in keeping with the 6km per year construction quota.

B.3 Manual checks

The procedures described so far are automated based on assumptions outlined in this document and a separate technical appendix. As noted in Recommendation 2, the prioritisation framework can be readily applied to new data for footpaths as more nuanced network information is made available. In the absence of complete data for footpaths, manual checking of the Construction

Plan is required to validate footpath gaps. Following are some considerations that require manual checking for each gap in the pipeline before finalising construction planning:

- Is the gap real? In cases where there is a centre-running path, a median or a service road, there may not need to be footpaths on each side of the road 'segment'.
- Is a footpath desirable? In some townships there are local character considerations that may warrant rerouting pedestrian right of way to alternate roads.
- Gap start- and end- location. The Construction Plan will identify gap-containing segments, defined by a road name and XY coordinates at the start and end of the segment. However the specific location of gaps is not set out in the plan and must be determined by manual inspection.

The Phoenix | 25 Armstrong Street South, Ballarat, VIC 3350
City of Ballarat | PO Box 655, Ballarat, VIC, 3353

03 5320 5500 ballarat.vic.gov.au