City of Ryde Council

Meadowbank Station West
Pedestrian Access and Mobility Plan (PAMP)

5 December 2017

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Executive Summary

Purpose and Scope

The purpose of this Pedestrian Access and Mobility Plan (PAMP) is to review the current pedestrian needs in the Meadowbank Station West area, to improve the walking environment for all pedestrians.

A PAMP provides a list of prioritised pedestrian infrastructure improvements for safer, more attractive transport choices for residents and visitors, to increase pedestrian activity, and to improve the amenity for all in the Meadowbank Station West area. The specific objectives of a PAMP are to:

- increase use of the pedestrian network for short trips (0 – 2 kilometres)
- reduce the number of missing links within the pedestrian network
- reduce the number of pedestrian crashes
- improve pedestrian connectivity with other transport modes, primarily train, bus, bicycle, and car
- provide pedestrian facilities which cater for the needs of all pedestrians, including people with disabilities, commuters, children, seniors and recreational walkers
- complement existing and planned pedestrian and bicycle facilities

This PAMP has been prepared in accordance with the Roads and Maritime guidance document *How to Prepare a Pedestrian Access and Mobility Plan* (Roads and Maritime, March 2002).

Existing Conditions

Meadowbank is located approximately 12 kilometres north-west of Sydney CBD, and has a resident population of approximately 5,460 people, based on preliminary information from the Australian Bureau of Statistics.

A key issue for pedestrians within the study area is conflicts with vehicles at the existing pedestrian crossings on both sides of Meadowbank Station (at Bank Street on the western side and Railway Road on the eastern side). The current arrangement can cause long delays to traffic, particularly during the weekday PM peak when large numbers of people are alighting from trains and walking across the crossing in large groups. Drivers were observed to be impatient at both crossings, resulting in an increased safety risk for pedestrians.

Other existing issues generally include poor footpath quality or lack of footpaths and kerb ramps.

Ensuring a High Quality Walking Environment

This PAMP has been prepared for the City of Ryde Council (CoR) to provide a framework for existing pedestrian needs, future management, use and enhancement for pedestrians of all ages and mobility.

A PAMP is a strategic document that identifies the pedestrian network hierarchy and associated action plan for management. The strategic, high-level, objectives of this PAMP are based around:

- Integrating walking into the transport system as the first and last leg of all transport journeys to encourage people to walk more often and further

- Providing appropriate pedestrian facilities where required, enhancing accessibility and mobility
- Identifying clusters and patterns of pedestrian crashes, to address safety issues,
- Developing and integrating pedestrian concentration routes that complement *Safer Routes to School* projects and Local Area Traffic Management schemes

A review of previous relevant planning policies was conducted to:

- Ensure that this PAMP aligns with National, State Government and Local Council policy directions in relation to the development of not only pedestrian access and mobility plans, but also the wider context of transport and urban planning
- Identify any deficiencies within the current network and develop a strategy that will guide the importance of the proposed measures to improve the access, amenity and safety for pedestrians

Recommendations

The study found many locations within the Meadowbank Station West study area, which require improved pedestrian infrastructure. This includes upgrades to existing infrastructure that are either of poor quality/damaged or have non-standard design, additional pedestrian crossing facilities and new footpath connections.

Major Projects

Two locations were identified as requiring a major upgrade to improve amenity and safety for pedestrians and drivers. These two locations play a significant role in the local community. These were:

- Bank Street/Constitution Road West intersection:
  - Non-standard pedestrian crossing (zebra crossing) is provided, which crosses two approach lanes in a northbound direction.
  - The pedestrian crossing impacts traffic operations, resulting in long queues along Bank Street (northbound) and Railway Road.
  - Poor quality footpath surfaces and kerb ramps exist at this location.
  - The community consultation process and site audits identified the intersection as an issue for both pedestrians and drivers
- Railway Street / Constitution Road intersection:
  - Located in Meadowbank Station precinct.
  - The pedestrian crossing impacts traffic operations, resulting in long queues
  - The community consultation process and site audits identified the intersection as an issue for both pedestrians and drivers

Pedestrian Routes

A hierarchy of pedestrian routes has been established based on observed pedestrian demand and proximity to pedestrian attractors, such as the train station, commercial land uses, schools/TAFE, and key walking routes. This walking route hierarchy was used as part of the scoring method to determine the priority for proposed pedestrian infrastructure upgrades.

Footpath Works

Identified locations for new footpath connections at 10 locations as shown in Figure 0-1.

Identified locations for new footpath connections include:

- Grand Avenue
- Federal Road
- Mons Avenue
- Station Street
- Macpherson Street, between Mellor Street and Forsyth Street
- Maxim Street, west of Union Street
- Deakin Street
- Huxley Street
- Darwin Street
- Hibble Street
- Angus Street

Pedestrian Crossings

Upgrade or provide new pedestrian refuges/kerb blisters (extensions) at the following locations:

- Bank Street, south of Meadowbank Station
- Constitution Road West/Ross Smith Avenue intersection
- Constitution Road/Federal Road intersection
- Constitution Road/Adelaide Street intersection
- Adelaide Street/Andrew Street intersection
- Adelaide Street/Andrew Street intersection
- Bank Street/Union Street intersection
- Andrew Street, west of Adelaide Street

Figure 0-1 Location of Proposed Footpaths

Priorities

The *How to Prepare a Pedestrian Access and Mobility Plan* (Roads and Maritime, 2002) provides guidance on what is important in providing pedestrian infrastructure upgrades. This method was used to determine the priority of the proposed improvements.

Table 0-1 provides a summary of the high priority proposed upgrades that were identified, with scores of 60 or higher.

Table 0 - 1 PAMP High Priority Projects – Proposed Upgrades

PAMP ID	Location (Street / Intersection)	Description of Proposed Treatment	RMS Priority	RMS Rank
106	Constitution Road/Railway Road	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location	76	1
34	Meadow Crescent, west of Bank Street	Re-design the intersection and resurface footpaths	74	2
33	Meadow Crescent (western side)	Resurface the footpath (approximately 80m in length)	62	3
65	Maxim Street, west of Union Street	Pedestrian crossing is to be replaced with a new crossing in 2017/18 (Roads and Maritime grant). Introduce AS.1428 compliant ramp on the northern side of the crossing	60	4

Cost

Where possible, unit rates provided by CoR have been used directly. For items where costs were not available, previous studies, estimation and professional judgement have been used. These costs are indicative and are subject to change and make no allowances for contingencies or actual site design and installation (including site establishment, excavation and disposal).

The total costs for the proposed upgrades for the PAMP is in the order **of $1,321,230** including:

- $894,020 for footpath reconstruction and improvements
- $427,210 for PAMP works

Additional studies would be required for intersection re-design projects. The costs for these projects are not included in the above costs.

The cost breakdown for high, medium and low priority projects is as follows:

- $18,000 for high priority works (note, this does not include costs associated with intersection re-design projects, as further investigations would be required)
- $429,260 for medium priority works
- $873,970 for low priority works

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1. Introduction

1.1 Background

Walking is a fundamental and direct means of access to most places and to the goods, services and information available at these places. Those creating public and private space or facilities must give priority to 'walk in' access, which is attractive, safe, convenient, and accessible for everyone. All responsible agencies should respect the pedestrians' inalienable right-of-way on footpaths and recognise the importance of constructing and maintaining them for transport, health, safety, leisure and social purposes. In recent years the City of Ryde (CoR) has prepared Pedestrian Access and Mobility Plans (PAMPs) for key centres namely:

- Eastwood
- Macquarie Park
- Gladesville
- Top Ryde
- North Ryde Small Centres

The Meadowbank Station West PAMP is a continuation of that work. This PAMP focuses on the western side of Meadowbank train station, due to the extensive development taking place on the eastern side of the station, and the expectation that any new pedestrian infrastructure associated with that development will comply with the appropriate standards.

Meadowbank Station West Pedestrian Access and Mobility Plan (PAMP), has been prepared for CoR to provide a framework for existing pedestrian needs, future management, use and enhancement for pedestrians of all ages and mobility. This *PAMP* is a strategic document that identifies the pedestrian network hierarchy and associated action plan for management.

The strategic, high-level, objectives of this *PAMP* are to:

- Integrate walking into the transport system, as a legitimate form of transport to encourage more walking
- Provide appropriate pedestrian facilities where required, to enhance accessibility and mobility
- Identify clusters and patterns of pedestrian crashes, to address safety issues
- Develop and integrate pedestrian routes that complement *Safer Routes to School* projects and Local Area Traffic Management schemes

An important function of the Meadowbank Station West PAMP is to identify pedestrian needs and clearly indicate CoR's direction for the management and improvement of pedestrian needs within the Meadowbank Station West study area.

Different land uses require pedestrian facilities for a range of users. Pedestrians, including commuters and recreational walkers, need to be catered for as well as the elderly, the mobility and visually impaired, residents, school children, and tourists.

The guidance document *How to Prepare a Pedestrian Access and Mobility Plan* (Roads and Maritime, March 2002) states that:

'A PAMP is a comprehensive strategic and action plan to develop pedestrian policies and build pedestrian facilities. PAMPs aim to co-ordinate investment in safe, convenient and connected pedestrian routes. A PAMP provides a framework for developing pedestrian routes or areas identified by the community as important for enhanced, sustainable safety, convenience and mobility.'

1.1.1 Definition of Pedestrian

A pedestrian is (for the purposes of this PAMP):

- A person driving a motorised wheelchair that cannot travel over 10 km/h on ground level
- A person in a non-motorised wheelchair
- A person pushing a motorised or non-motorised wheelchair
- A person in or on a wheeled recreational device or toy

1.2 Purpose and Scope

The purpose of this PAMP is to review the current and future pedestrian needs in the Meadowbank Station West area to provide facilities for pedestrians. This PAMP provides a list of prioritised pedestrian infrastructure improvements for safer, more attractive transport choices for residents and visitors. This comes with the aim of increasing pedestrian activity and improving the amenity for all local residents and visitors to the study area.

The Meadowbank Station West PAMP has been prepared in accordance with the Roads and Maritime guidance document *How to Prepare a Pedestrian Access and Mobility Plan* (Roads and Maritime, March 2002).

This study has focused upon reviewing the existing and proposed pedestrian network, with the aim of extending and improving the existing network of pedestrian facilities. As part of this report, it is recommended that CoR develop a program for the maintenance of existing facilities. This study therefore aims to add greatest value to Council's strategies and works program by identifying the gaps in existing networks and extending the networks where appropriate.

1.2.1 PAMP Objectives

The objectives of PAMPs are:

- To facilitate improvements in level of pedestrian access and priority, particularly in areas of pedestrian concentration
- To reduce pedestrian access severance and enhance safe and convenient crossing opportunities on major roads
- To identify and resolve pedestrian crash clusters
- To facilitate improvements in the level of personal mobility and safety for pedestrians with disabilities and older persons through the provision of pedestrian infrastructure and facilities which cater to the needs of all pedestrians
- To provide links with other transport services to achieve an integrated land use and transport network of facilities that comply with best technical standards
- To ensure pedestrian facilities are employed in a consistent and appropriate manner throughout NSW

- To link existing vulnerable road users plans in a co-ordinated manner, such as bike plans, maintenance programs and accessible public transport
- To ensure that pedestrian facilities remain appropriate and relevant to the surrounding land use and pedestrian user groups
- To accommodate special event needs of pedestrians
- To meet obligations under the *Commonwealth Disability Discrimination Act* (1992)

1.2.2 Study Area

Meadowbank is located approximately 12 kilometres north-west of Sydney CBD, and has population of approximately 5,460 people, based on preliminary information from the Australian Bureau of Statistics.

The study area for this PAMP is shown at Figure 1-1, which includes:

- An approximately two kilometre walking catchment to the west of Meadowbank Railway Station
- Local businesses, TAFE Meadowbank campus and Meadowbank Park to the west of the station.

The study mainly focuses on the pedestrian network located to the west of Meadowbank train station, due to the extensive urban renewal taking place on the eastern side of the station.

Figure 1-1 Study Area

1.3 Study Limitations

The study has been limited by the following:

- Crash data sourced from the Transport for NSW Centre for Road Safety website http://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tablga=4
- Traffic count data obtained from Roads and Maritime Services
- Cost estimates for proposed infrastructure are strategic only, and are based on unit rates provided by CoR (where available)

1.4 Consultation

Consultation for this PAMP included the following:

- Community surveys, that were available through Council's website between December 2016 and February 2017
- A Social Pinpoint website, which enabled members of the community to map current issues and ideas for improving walking in Meadowbank, which were accessible through Council's website from December 2016 until February 2017
- A Footpath Pop-up Session, which was held on 24 October 2016, at Bank Street adjacent to Meadowbank Station
- A community workshop in March 2017
- Additional feedback sent from members of the community by email to CoR
- Exhibition of the draft PAMP report for a period of four weeks in October and November 2017

1.5 Report Structure

The remaining sections of this report are structured as follows:

- **Section 2** – *Background Review:* provides a summary of the previous pedestrian planning and related polices from Council and various NSW Government agencies
- **Section 3** – *Existing Pedestrian and Mobility Audit*: provides a detailed list of the issues, constraints and opportunities for pedestrian access and movement
- **Section 4** – *Planning for Pedestrians*: provides an overview of best practice standards that apply to the treatment of pedestrian facilities
- **Section 5** – *Proposed Pedestrian Improvements*: a list of potential pedestrian improvements is given with the different types of infrastructure to improve safety, amenity, and access for pedestrians
- **Section 6** – *Priorities for Pedestrian Improvements*: an assessment of the pedestrian requirements was conducted and is provided with short, medium and long term infrastructure projects. An indicative cost and level of difficulty to implement them is included
- **Section 7** – *Conclusions and Recommendations*: provides the key findings in the *PAMP*, with a list of recommendations and priorities in the *PAMP* for the pedestrian access and mobility improvements

2. Background Review

This section includes a review of existing relevant State and Federal Government planning documents, Council's disability and access policies and reports and other relevant Council policies including the Local Environmental Plans (LEP), and Development Control Plans (DCPs).

A summary of the demographic, transport and pedestrian crash statistics and the existing land use and transport infrastructure for the Meadowbank Station West area was also used to show the strategic context, relevance and importance for the PAMP.

2.1 Planning Review

The review of previous relevant planning policies was conducted:

- To ensure that the PAMP aligns with National, State Government and Local Council policy directions in relation to the development of not only pedestrian access and mobility plans, but also the wider context of transport and urban planning.
- To identify any deficiencies within the current network and strategy that will guide the importance of the proposed measures to improve the access, amenity and safety for pedestrians.

These policies provide a strategic framework to improve the pedestrian network so that it encourages and supports walking within, to and from the study area.

2.2 National

2.2.1 Australian Transport Assessment and Planning Guidelines

The Australian Transport Assessment and Planning Guidelines (ATAP) provide a comprehensive framework for planning, assessing and developing transport systems and related initiatives. This document has been considered in the preparation of this PAMP, to ensure that the PAMP aligns with national policy directions.

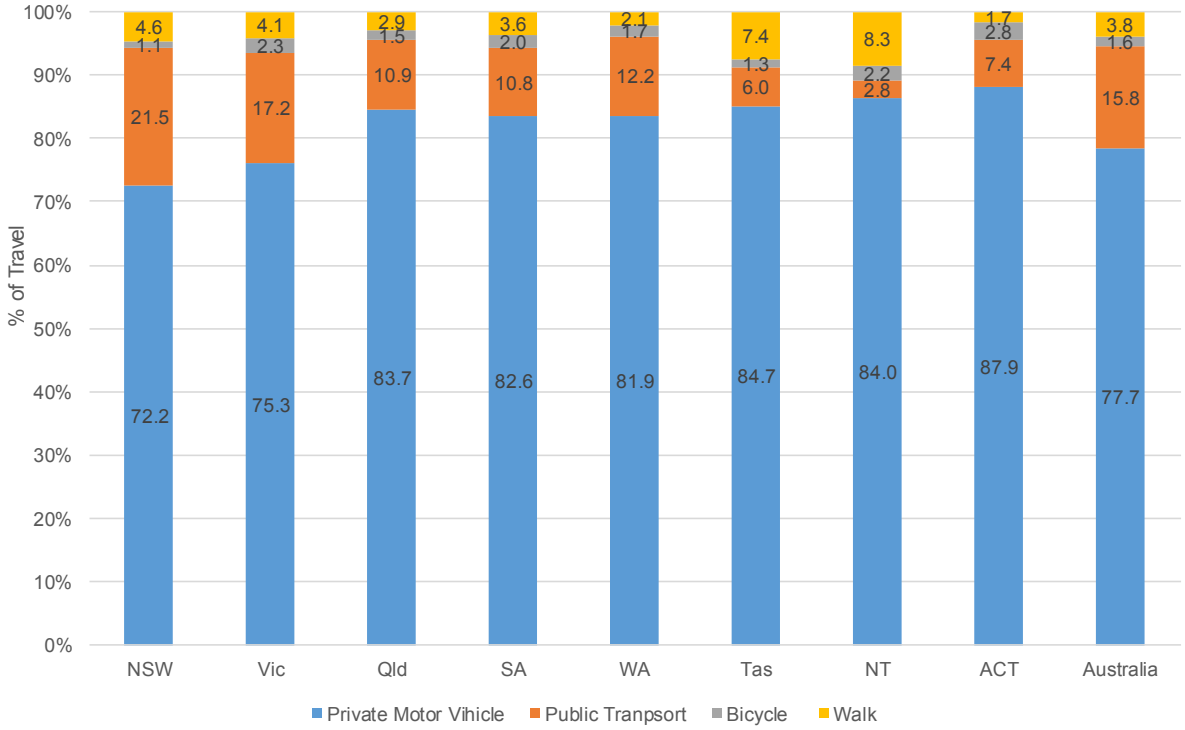
ATAP identifies that walking is probably the most common form of travel as it is involved to some degree in all trips undertaken by all other modes. However, only about four percent of work or study trips in Australia rely solely on walking - making it the third most common mode, as indicated at Figure 2-1.

ATAP also identifies a number of factors that are likely to determine the propensity for people to choose walking and cycling over other modes, including:

- Infrastructure: Good quality, appropriately designed active travel infrastructure with meaningful network connectivity will maximise levels of active travel and improve safety, given the underlying demand for walking and cycling
- Land use: some land uses tend to have a higher incidence of walk trips, for example, outdoor recreation facilities, indoor sports facilities, schools, and public transport interchanges
- Complementary uses/facilities: propensity for active travel can be enhanced by the proximity of complementary land uses and facilities, such as a public transport interchange located close to a regional shopping centre or university
- Scale and proximity: the propensity for active travel would be expected to increase with the scale of development, while active travel would be expected to increase with the proximity of related uses

- Safety: such as trip hazards, inadequate path width, location of power/light poles and paths not navigable by wheelchairs, prams and the elderly
- Security: personal security can be a major factor in limiting walking and cycling
- Topography and climate: hot or cold temperatures, humidity, steep hills and rain can make walking and cycling less attractive compared to other travel modes
- Ancillary infrastructure: including seating, drink fountains, shade planting, and directional signage
- Awareness: potential active travel users might be unaware of the availability and advantages of active travel networks
- End of trip facilities: including bicycle parking/storage and showers could make bicycle riding more appealing

Figure 2-1 Main Mode of Travel to Work



Source: http://atap.gov.au/mode-specific-guidance/active-travel/files/m4_active_travel.pdf

The ATAP provides a framework for planning and developing transport systems and identifies key factors that are likely to encourage people to walk more for short trips. These factors have been considered in the development of this PAMP.

2.2.2 Australian Model Code of Residential Development

Australian Model Code of Residential Development (Commonwealth of Australia, 1997) was produced to advance the planning, design, assessment and implementation of residential development. It is for use by designers, builders, developers and government officers responsible for housing development. It states that:

In the planning of residential areas there must be a careful balance between transport needs and protection of the environment. There should be accessibility, choice in mode of transport (private vehicle transport, public transport, walking and cycling).

The guide identifies that a well-defined community should feature design principles including reduced travel to local employment and activities (e.g. interconnected street networks and local activity centres within walking distance). One of the key performance criteria in relation to travel mode choice is that street networks facilitate walking and cycling within the neighbourhood and to local activity centres. *Source: http://www.creationcorporation.com.au/AMCORD/AMCORD/AMCORD.PDF*

The *Australian Model Code of Residential Development* identifies that planning for residential development should consider sustainable transport options, including walking, which have social and environmental benefits.

2.3 State

Sydney's Walking Future, released in 2013 is the strategic transport document for walking in NSW. It aims to promote and improve the safe, convenient and efficient movement of walking in Sydney. *Sydney's Walking Future* is a subset document of the *NSW Long Term Transport Master Plan. NSW 2021* sets out NSW Government's objectives for increasing walking to achieve improved environmental outcomes, health benefits and to reduce traffic congestion.

The NSW Government has also prepared two state-wide strategies for road safety and transport that have implications for pedestrian planning and strategies for the CoR.

The proposed improvements to the walking network identified as part of this PAMP will help support the State Government's objectives for increasing walking for short trips.

The proposed improvements to the walking network identified as part of this PAMP will help support the State Government's objectives for increasing walking for short trips.

NSW 2021

NSW 2021 is the NSW Government's ten-year plan to guide policy and budget decision making and to deliver on community priorities. It sets long-term goals and targets, and outlines actions that will help achieve these goals.

The key objectives for transport outlined in *NSW 2021* are to:

- Reduce travel times
- Grow patronage on public transport by making it a more attractive choice
- Improve customer experience with transport services
- Improve road safety

The *NSW 2021* plan identifies increasing walking and cycling as active modes of transport that will help reduce road congestion and promote healthy lifestyles.

The target for walking set out in the *NSW 2021* plan is to increase the mode share of walking trips made in the greater Sydney region, at a local and district level, to 25 per cent by 2016. In order to achieve the targets for increasing walking and cycling, the plan states that the NSW Government will develop and implement a *NSW Walking Strategy* to encourage and promote walking for travel and recreation, and to enhance walking environments in NSW.

The recommendations developed for this PAMP will help support the objectives of the *NSW 2021 State Plan* for increasing the travel mode share by sustainable transport options, including walking.

A Plan for Growing Sydney

A Plan for Growing Sydney, released in December 2014, is the NSW Government's plan for the future of the Sydney metropolitan area over the next 20 years. The plan provides key directions and actions to guide Sydney's productivity, environmental management, and liveability – including the delivery of housing, employment, infrastructure, and open space.

To support the actions outlined in *A Plan for Growing Sydney*, this PAMP will align with the NSW Government's direction for improving accessibility and liveability in an area of mixed land uses.

North District Plan

The draft North District Plan is one of six draft District Plans developed by the Greater Sydney Commission for each of Sydney's districts. To achieve the vision for the North District, the draft plan sets out priorities and actions that will shape the district's future and guide policy decisions.

The Plan states that: '*better connections will reduce the commute time to work, and allow people living in the District's communities to live closer to great places for shopping, lively main streets, sporting facilities and some of the best that nature has to offer*.'

The vision for the plan also includes that community facilities, open space and cultural facilities will be available to all, linked by more public transport options, safe walking and cycling routes.

The vision of the *North District Plan* for providing safe walking access, including to public transport facilities and community facilities will be delivered through the development of active travel plans including PAMPs.

NSW Long Term Transport Master Plan, Transport for NSW

The *NSW Long Term Transport Master Plan*, released by Transport for NSW in December 2012 has objectives for increased walking, particularly for short local trips, to achieve improved environmental outcomes, health benefits and to reduce traffic congestion.

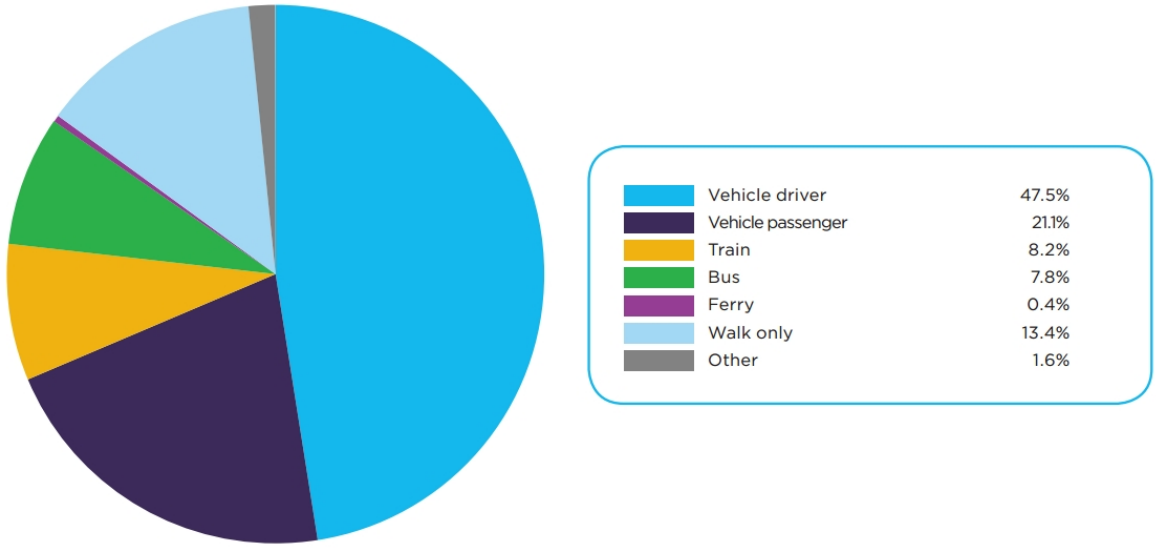
Since many transport journeys start and end with a walk trip, walking helps to reduce traffic congestion. When homes and jobs are within walking distance of each other and within easy walking distance of public transport, accessibility to jobs and services increases and commuting is easier. More people walking to catch the train, bus or ferry also means less pressure on town centre streets, busy bus services and commuter car parking.

When planning new developments, the surrounding transport infrastructure should have a network of pedestrian connections that consider:

- Personal safety and security, including adequate lighting and activated public spaces
- Adequate footpath widths
- Safe and convenient pedestrian crossings of roads at intersections and mid-block crossings
- Convenient and legible access to public transport stations or bus stops
- Good signage and wayfinding to support efficient pedestrian movement

Walking accounts for 13.4 per cent of all daily trips in the greater Sydney area as shown in Figure 2-2. Across the city, mode share for walking is highest in inner Sydney (39 per cent) and lowest in outer Sydney (10 per cent in outer South West Sydney, 12 per cent in the outer Western Sydney and 13 per cent in Liverpool/Fairfield).

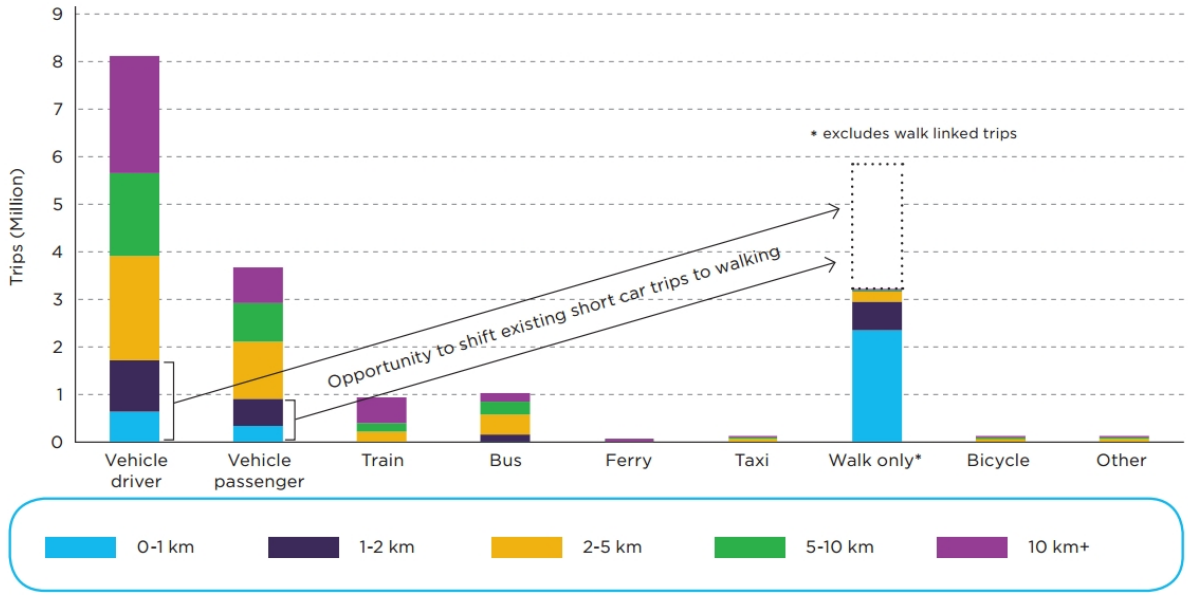
Figure 2-2 Walking as a Mode of Travel in Metropolitan Sydney



Source: TfNSW, 2012

More than two million of the daily car trips in Sydney are less than two kilometres long, which is generally considered a comfortable walking distance for most people. Therefore walking instead of driving, could be significantly more popular as shown in Figure 2-3.

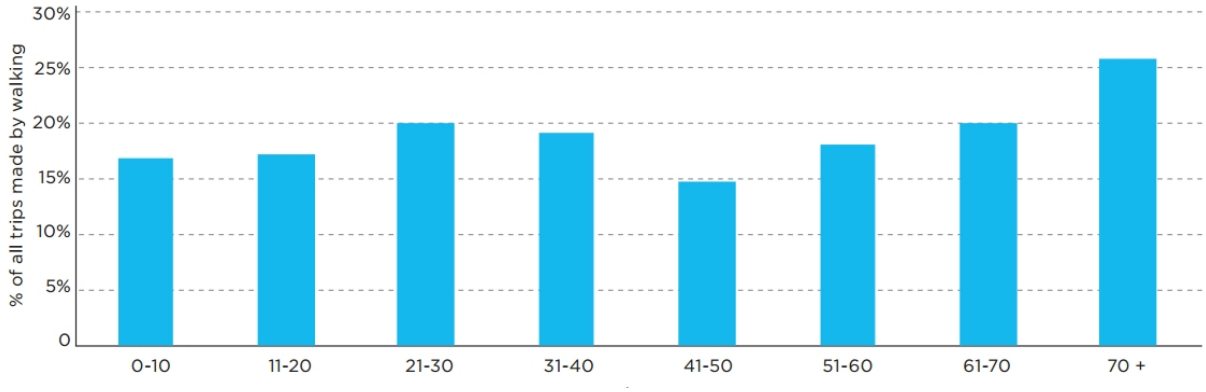
Figure 2-3 Opportunity for Growth in the Walk Mode Share in Sydney



Source: TfNSW, 2012 (statistics from 2010-2011)

Walking mode share by age group in Sydney is shown in Figure 2-4. These statistics show that walking is most popular with the over 60 age group, which suggests that walking may increase as the population ages. Therefore, it is even more important to provide safe and convenient facilities for elderly pedestrians. Other statistics show that fewer school children are walking and cycling compared to 20 years ago.

Figure 2-4 Walking Mode Share by Age Group in Sydney



Source: TfNSW, 2012 (statistics from 2010-2011)

The proposed improvements to the walking network identified as part of this PAMP will help support the State Government's objectives for increasing the number of people walking for short trips.

Sydney's Walking Future

The actions set out in *Sydney's Walking Future* aim to encourage people to walk by making walking a safer, more convenient and better connected mode of transport. The key objective of the walking strategy is for walking to be the primary transport choice for trips under two kilometres. It aims to encourage walking as part of the public transport journey by improving pedestrian access and amenity at interchanges.

Sydney's Walking Future aims to support the integration of walking into the transport system through three pillars of activity:

- Promote the benefits of walking and provide quality information to customers, which includes but is not limited to:
  - Increase walking trips to schools, workplaces and universities through programs that encourage more sustainable transport
  - Enhance online trip planner walking options and provide more information about walking at www.transportnsw.info
  - Improve the quality and consistency of wayfinding and signage for pedestrians.
  - Continue to support the Road Safety Education Program
- Connect communities by delivering safe walking infrastructure and completing networks, which includes but is not limited to:
  - Help councils deliver missing links to connect local centres through the Walking Communities Program
  - Improve pedestrian access to and amenity around interchanges, particularly through the Transport Access Program
  - Provide walking links through bridges at key locations
- Engage with partners across the NSW Government, with local government, non-government organisations and the private sector to develop initiatives and policies, which includes but is not limited to:
  - Adopt a whole-of-government approach to increasing rates of walking across Sydney
  - Develop policies to ensure places and major transport developments are designed around safe walking
  - Support programs that promote walking from a health and community perspective

The actions set out *Sydney's Walking Future* to integrate walking into the transport system are directly supported the development of PAMP and Walking Plan strategies developed by local councils.

NSW Road Safety Strategy

Transport for NSW prepared the *NSW Road Safety Strategy* in 2012. The potential to address fatal and serious injury crashes on the road network exists through improved intersection design, eliminating or shielding road users from roadside objects or from opposing vehicles, and by considering pedestrians, particularly in urban areas. Implementing the Safe System approach will bring positive road safety outcomes.

Pedestrians are considered at risk road users due to the lack of protection provided in the event of a crash, which results in more severe outcomes. Pedestrians account for 14 per cent of the NSW road toll and are a significant group among road users killed in the Sydney region. At least 33 per cent of pedestrian fatalities between 2008 and 2010 were alcohol impaired and 40 per cent of pedestrian fatalities were aged 60 years or more. A strong desire for pedestrian safety exists across the road network. This includes the provision of 40 km/h High Pedestrian Activity Areas which are being progressively rolled out at identified locations and 10 km/h Shared Use Zones, pedestrian fencing and other infrastructure treatments, along with safer vehicles which are pedestrian friendly. These will all contribute to the achievement of the targets of this strategy.

The key measures in the *NSW Roads Strategy* to improve pedestrian safety are:

- Improve pedestrian crossing safety, including reviewing signal phasing for pedestrians
- Work with local government to undertake road safety audits to address the maintenance and upgrade of pedestrian facilities
- Support the *NSW Long Term Transport Master Plan* and the walking investment program to address the infrastructure needs of pedestrians
- Trial innovative technology solutions to address pedestrian safety, including vehicle to person systems and vehicle based pedestrian detection systems
- Land use planning guidelines to consider pedestrian requirements, especially at transport hubs, new residential developments
- Research pedestrian distraction devices and the effects within the road environment
- Develop communications and awareness campaigns to promote safety with pedestrians and other road users
- Review the application of shared paths and safer interaction between pedestrians and bicycle riders

A strong need to maintain mobility and access for older road users is required with a large proportion living in suburban locations. Some of the proposed measures are to:

- Work with road authorities to provide facilities for older road users including improved pedestrian access, longer green light phasing and local education campaigns
- Deliver communication campaigns to target the safety of older pedestrians
- Utilise lower speed limit schemes for high pedestrian activity areas and roads with high volumes of on-road cyclists
- Improve the safety of pedestrians and bicycle riders through the utilisation of lower speed limit schemes, including 40 km/h high pedestrian activity areas and shared zones

These key measures for improving pedestrian safety should to be considered when developing PAMP strategies.

2020 Aging Strategy

Older pedestrians are over represented in fatal crashes. This is due to frailty and a reduced tolerance from the force of a crash, rather than risk taking. Therefore, it is critically important to promote safe walking routes that are designed with consideration for the older age groups.

The *NSW Ageing Strategy,* released in 2012 identifies that the fastest growing population group in NSW is the cohort of people aged over 65. In NSW, an estimated two million community transport trips are provided each year to help older people access recreation, shopping, medical care, community services, and social activities. This travel demand will continue to growth with this population group forecast to double by 2050.

PAMP strategies need to ensure that the walking network is designed to support active lives as people age and this part of the population increase.

2.4 City of Ryde Council Planning

The following documents provide the local planning context for the pedestrian access in Meadowbank.

Ryde 2025 Community Strategic Plan (2013)

The *Ryde 2025 Community Strategic Plan* was prepared in 2013, to provide direction and long-term planning for the economic, social and environmental growth for Ryde. The aims of the plan are to:

- Protect and enhance natural and built environments
- Address social inclusion and community needs
- Plan for well designed and welcoming neighbourhoods
- Stimulate economic growth and local job opportunities
- Provide sustainable infrastructure and development

The second goal of the plan is to provide a 'city of connections' so 'our community has the option to safely and conveniently drive, park, cycle or walk around their city.'

The *Ryde 2025 Community Strategic Plan* provides Council's direction for implementing sustainable infrastructure in the LGA, including for walking and mobility access.

Integrated Transport Strategy (2016-2031)

CoR developed the *Integrated Transport Strategy* (ITS), which provides a framework to plan for an integrated transport network to support the growth in residents and jobs. The ITS is an update to Council's existing Integrated Land Use and Transport Strategy. The ITS is shaped around five key policy positions relating to integrated land use, parking, active transport (walking and cycling) public transport, roads, and freight.

The strategy identifies that "*walking and cycling will be encouraged for commute to work or to travel for education or recreational purposes. Pedestrian and cyclist safety will be paramount, and better connections will link facilities provided for each user group."*

The *Local Centres Strategy* for Meadowbank identifies that the Constitution Road corridor is evolving into a key supporting traffic link, as the connection across the railway line currently has limited capacity and is a key pinch point for traffic. In addition, the Shepherd's Bay development is changing the character of Meadowbank and changing its traffic, transport and parking needs.

The strategy identifies the following recommendations for the *Meadowbank Station West PAMP* study area:

- Investigate signalising the intersection of Bowden Street with Constitution Road
- Investigate signalising the intersection of Railway Road and Constitution Road
- Investigate a pedestrian priority scheme through the locals roads in Shepherd's Bay and through to the Meadowbank Station

These proposed recommendations have been reviewed in the development of this PAMP.

CoR Integrated Land Use Strategy (2007)

The *Integrated Land Use Strategy* is a strategic plan integrating transport options with land use planning requirements. It provides a series of actions and recommendations, structured around the City of Ryde and six key centre reports.

The actions listed in the strategy in relation to walking in Meadowbank include:

- Improve pedestrian and bicycle linkages between Meadowbank Station and foreshore path
- Potential new footpaths at:
  - Station Street (west side) between Rex Street and Constitution Road
  - Sherbrooke Road (on both sides) between Mons Avenue and Station Street
  - Grand Avenue (on both side) between Constitution Road and Annie Lane
  - Union Street (north side) between Maxim and Bank Streets
  - Bowden Street (east side) between Meadowbank Wharf and Constitution Road
- Potential for new pedestrian connections between:
  - Porter Street and Belmore Street
  - Church Street and Porter Street
  - Nancarrow Avenue and Rothesay Avenue
  - Belmore Street and Nancarrow Avenue
  - Nancarrow Avenue and Rothesay Avenue
  - Avenue as detailed in *Meadowbank Employment Area Masterplan*
  - Improving pedestrian connection and visual connectivity from ferry wharf to train station
- Developing a cycle link from Meadowbank Station to West Ryde Station

The recommendations by CoR in the *Integrated Land Use Strategy* have been considered in the development of this PAMP, including potential new footpaths and pedestrian connections

Local Environmental Plan (2014)

The *Ryde Local Environmental Plan (LEP) 2014* is the statutory planning tool that establishes what forms of development and land use are permissible and/or prohibited on all land within the City of Ryde. The provisions are made in accordance with the relevant standard environmental planning instrument under section 33A of the Act.

The particular aims of the plan include the following:

- To foster the environmental, economic, social and physical development of Ryde so that it develops as an integrated, balanced and sustainable city
- To improve access to the city, minimise vehicle kilometres travelled, facilitate the maximum use of public transport and encourage walking and cycling
- To preserve and improve the existing character, amenity and environmental quality of the land to which this plan applies

The current zoning in the study area include Business Development, Infrastructure, Low and High Density Residential and Public Recreation. Objectives of the various land use zones under the new LEP applicable to this study include:

- Business Development (Zone B5)
  - To enable a mix of business and warehouse uses, and bulky goods premises that require a large floor area, in locations that are close to, and that support the viability of, centres
- Infrastructure (Zone SP2)
  - To provide for infrastructure and related uses
  - To prevent development that is not compatible with or that may detract from the provision of infrastructure
  - To ensure the orderly development of land so as to minimise any adverse effect of development on other land uses
- Low Density Residential (Zone R2)
  - To provide for the housing needs of the community within a low density residential environment
  - To enable other land uses that provide facilities or services to meet the day to day needs of residents
  - To provide for a variety of housing types
- High Density Residential (Zone R4)
  - To provide for the housing needs of the community within a high density residential environment
  - To provide a variety of housing types within a high density residential environment
  - To enable other land uses that provide facilities or services to meet the day to day needs of residents
- Public Recreation (Zone RE1)
  - To enable land to be used for public open space or recreational purposes
  - To provide a range of recreational settings, activities, and compatible land uses
  - To protect and enhance the natural environment for recreational purposes

The land use zoning information in the LEP has informed the development this PAMP, including the prioritisation of proposed pedestrian infrastructure.

Ryde Development Control Plan (2014)

The *Ryde Development Control Plan 2014* (DCP) is a statutory planning document, which came into effect in September 2014. It provides guidelines, objectives and controls for persons wanting to carry out development on land in the City of Ryde. The DCP is to be read in conjunction with the LEP and together they form the framework for how the LGA will develop.

The objectives of the DCP include:

- To achieve a responsible development control system that has sustainable environmental outcomes
- To enhance the existing amenity and character of the City of Ryde
- To create vibrant, viable and economically sound employment and living centres
- To ensure new development is appropriate for its site and context
- To ensure that urban centres and special areas are identified and their special qualities protected and enhanced
- To provide guidelines for specific development types and development sites to ensure appropriate high quality development

The DCP also provides guidance to the requirements for access by people with disabilities to and within buildings, the streetscape and open areas in the City of Ryde. The objectives of which include the following:

- Ensure that builders, developers and others provide access for people with disabilities in new and refurbished premises as required by the *Disability Discrimination Act 1992* and the new *Commonwealth Disability (Access to Premises-Buildings) Standards*
- Provide design criteria that achieves access for people with disabilities
- Promote the concept of an accessible environment for the entire community

In accordance with the DCP, PAMP strategies need to ensure that an accessible environment for the community can be achieved through the implementation of appropriate pedestrian infrastructure.

City of Ryde Bicycle Strategy (2014)

The *City of Ryde Bicycle Strategy* is a plan that intendeds to improve the environment for people who cycle for transport, health and fitness. This strategy consolidates and updates all previous plans associated with cycling and aims to increase bicycle use in the City of Ryde over the next decade.

The strategy is a two-point action plan comprising a bicycle network plan and a bicycle-use support plan. The aims of which include the following:

- Build a coherent network of bicycle routes: regional routes for quicker, longer trips; local routes for shorter, localised trips; and, low-traffic local streets for easy access to all destinations
- Make recommendations on integrating ongoing network development with Council's asset management systems and wider planning processes
- Improve station accessibility and rider and walker safety around station entrances in conjunction with Council traffic calming programs

The proposed Ryde Bicycle Network is made up of a series of interconnected bicycle routes, which provide access to residential areas and trip generators within the City of Ryde and surrounding region. The routes are categorised into three types; they include the following:

- Regional routes
- Local routes
- Local links

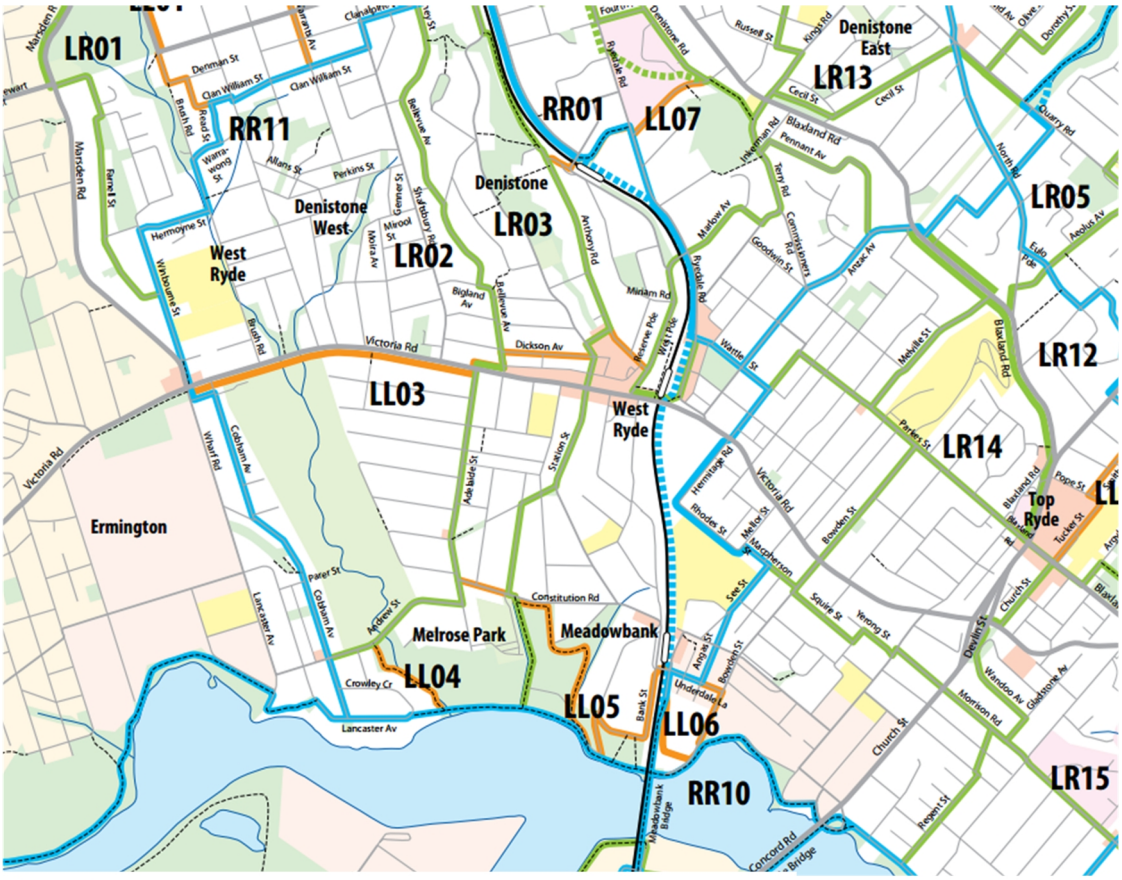
Table 2-1 summarises the routes from the strategy that are applicable to the Meadowbank Station West PAMP study area.

Proposed bicycle network improvements identified in Bike Plans needs to be considered in the development of PAMP strategies, to ensure a consistent and integrated approach to the planning and implementation of active transport infrastructure.

Table 2-1 City of Ryde Bicycle Network – Bicycle Routes

Link name	Route	Description	Links in Study Area
Hornsby to Strathfield Rail Trail	RR01	Via the northern railway corridor between Eastwood and Meadowbank. Ryde Council will progress the construction of the proposed Eastwood to Strathfield Rail Trail between Eastwood and Meadowbank in or beside the rail corridor with an on-road alternative to be developed in the interim	Via Bay Drive, Railway Road, Underdale Lane, Angas Street, See Street, Macpherson Street, Mellor Street, Rhodes Street, Hermitage Road, Wattle Street, Ryedale Road
Parramatta Valley Cycleway (PVC)	RR10	Via Wharf Road, Lancaster Avenue, Parramatta Valley Cycleway, Waterview Street, Delange Street, Pelliser Road, Jetty Road, Morrison Road, Meriton Street and Ashburn Place	Via Lancaster Ave, Meadowbank Park, Bowden Street
Eastwood to Parramatta River	LR02	Via Rowe Street, Trelawney Street, Bellevue Avenue, Victoria Road, Adelaide Street and Andrew Street	Via Andrew Street, Adelaide Street, Victoria Road, Bellevue Avenue
Eastwood to PVC via West Ryde	LR03	Via West Parade, Railway Corridor, Anthony Road, Betts Street, Chatham Road, Station Street, Rex Street, Federal Road and Meadowbank Memorial Park Paths	Via Meadowbank Park, Federal Road, Rex Street, Station Street, Chatham Street, Betts Street, Anthony Road
Meadowbank Memorial Park Links	LL05	Via Constitution Road, Meadowbank Memorial Park paths and Bank Street	Via Constitution Road, Meadowbank Memorial Park paths and Bank Street
Meadowbank Station Eastern Links	LL06	Bay Street (and ramp to Meadowbank Bridge), Bowden Street and Underdale Lane	Bay Street (and ramp to Meadowbank Bridge), Bowden Street and Underdale Lane

Figure 2-5 City of Ryde – Bicycle Network



Source: City of Ryde Bicycle Strategy

Travel Plan Guidelines (2015)

The *Travel Plan Guidelines* outline the requirements for the preparation for Travel Plans. These plans aim to effect a shift away from single occupancy car use towards more sustainable forms of transport for the benefit of the community. It does this by outlining a range of actions and incentives to increase the uptake of walking, cycling, public transport, car-sharing and car-pooling to reduce dependency on private cars.

These plans can have significant benefits including:

- Reducing congestion and pollution in the local area
- Reducing greenhouse gas emissions
- Reducing costs associated with car parking, fleet maintenance and travel
- Reducing journey times
- Increasing physical activity, leading to greater productivity, and improved health and wellbeing
- Increasing accessibility to a site.

A Framework Travel Plan is required for all developments that exceed 10,000 square metres of new floor space. This includes residential developments. The Travel Plan should be submitted along with the Development Application. Conditions of consent may also require that a Travel Plan be provided for any new development that Council believes has the potential to generate significant traffic and transport impacts.

The proposed improvements to the pedestrian network identified as part of this PAMP will help encourage people to walk more for short trips, which is in accordance with the objectives of Travel Plans.

Infrastructure improvements such as new footpaths and pedestrian crossing facilities can help encourage people to walk more by making walking routes safer and more convenient. This aligns with the overall objectives of a Travel Plan, which is to promote and encourage sustainable modes of travel to access employment, educational and residential development. .

Local Planning Study (2015)

The *Local Planning Study* (LPS) was developed to help guide the preparation of the LEP for CoR. Objectives of the study include:

- Articulating a vision for land use planning in the whole of the City of Ryde
- Providing a single mechanism that coordinates and focuses Council's planning activities

Part of the LPS involves the assessment of transport options. The assessment involved a focus on the implementation of transport integration and land use principles; and accessibility planning at a local level across the City of Ryde. Accessibility planning seeks to encourage travel by environmentally sustainable modes, such active transport. This includes walking and cycling - forms of transport that are based on human propulsion.

Sustainable modes of transport are those that have lower environmental, economic and social impacts than single occupant, private use vehicles. PAMP recommendations will help to encourage travel by environmentally sustainable modes, which is an objective of the *Local Planning Study*.

2.5 Existing Travel Characteristics and Demographics

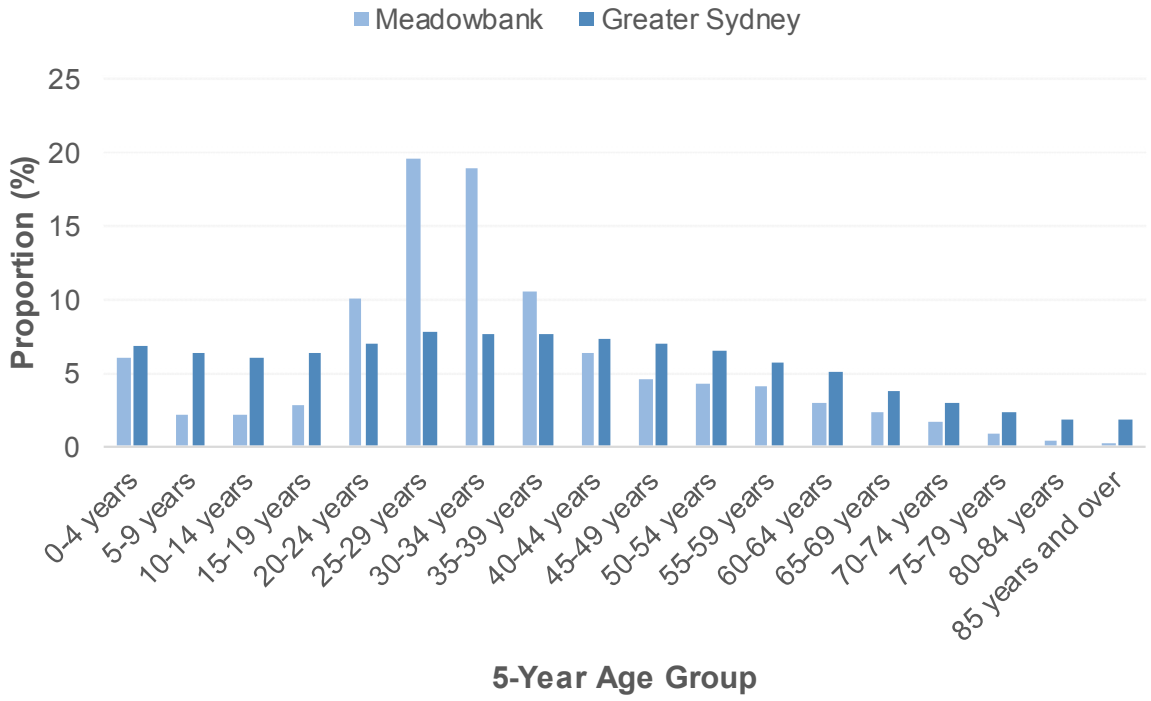
2.5.1 Population

The population of the study area was 5,152 in 2011. The current population estimate (2017) is 5,467. This represents eight per cent of the total City of Ryde population (at 64,514 people). This is a relatively small proportion of the total population of the City of Ryde LGA.

2.5.2 Age Group Demographics

The age group profile of Meadowbank and the average age profile of Greater Sydney is shown in Figure 2-6, which is based on 2011 census data as 2016 census data was not yet available at the time this plan was developed.

Figure 2-6 Comparison of Age Profiles in Meadowbank and Greater Sydney (2011)



Source: Australian Bureau of Statistics, Census of Population and Housing 2011

These population statistics show:

- The proportion of age groups between 20 to 39 years old in Meadowbank is significantly greater than compared to the Greater Sydney average, with this age group consisting of 59 per cent of the population and 30 per cent of the population in Greater Sydney
- The proportion of people in Meadowbank aged between five and 19 is significantly lower than that of Greater Sydney, with this age group consisting of seven per cent compared to 19 per cent in Greater Sydney. This indicates that there is a lower proportion of primary and secondary school students.
- The proportion of people in Meadowbanks aged 45 and over is lower than that of Greater Sydney. The proportion of people in Meadowbank within this age group is 21 per cent, while the proportion in Greater Sydney is 37 per cent.

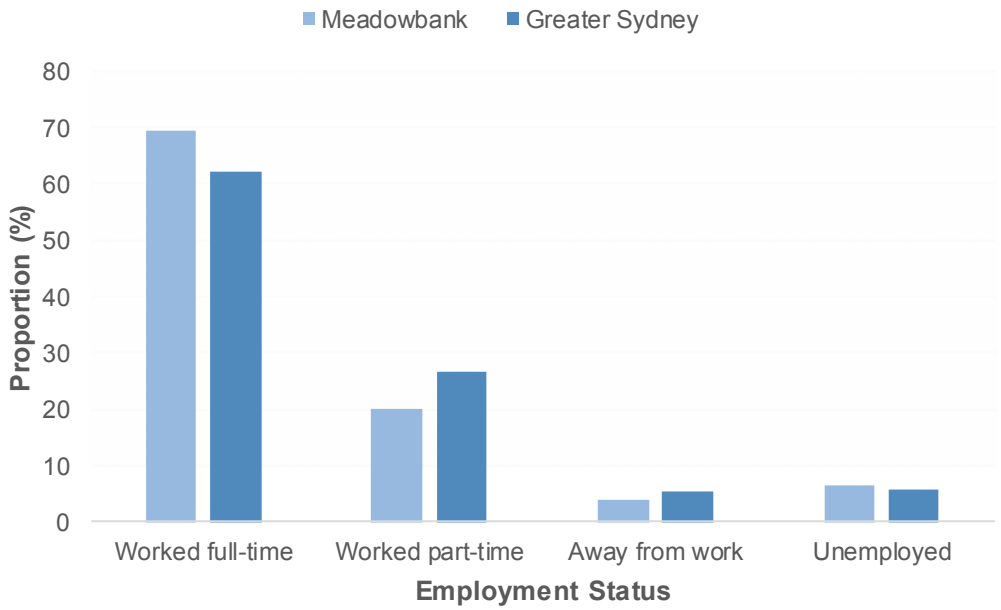
2.5.3 Employment in Meadowbank

A comparison of employment rates for the population aged above 15 years old in Meadowbank and the Greater Sydney area is provided at Figure 2-7.

According to the 2011 Australian Bureau of Statistics data for Meadowbank, Code SSC11502 (SSC) 2,331 people were identified as being in the labour force. Of these, 69 per cent were employed full time, which is greater than the 62 per cent in Greater Sydney. 20 per cent were employed part time which is less than the 27 per cent in Greater Sydney.

The level of unemployment in Meadowbank is slightly greater at seven per cent compared to the six per cent in Greater Sydney.

Figure 2-7 Employment Status for Workers Residing in Meadowbank

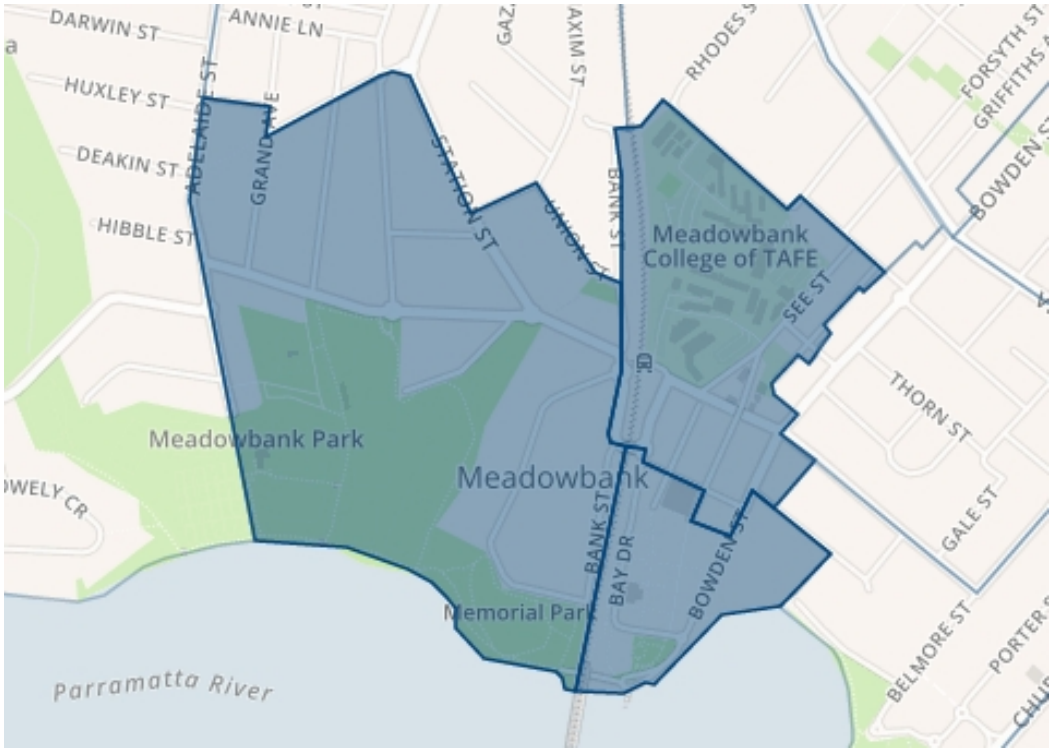


Source: Australian Bureau of Statistics, Census of Population and Housing 2011

2.5.4 Journey to Work Data

Data from the Transport for NSW *Transport* Performance and Analytics (TPA) website was obtained and assessed for the Meadowbank area. Travel Zones 1589, 1590 and 1591 were used to estimate the employment demography in the study area and their commuting behaviour as shown in Figure 2-8.

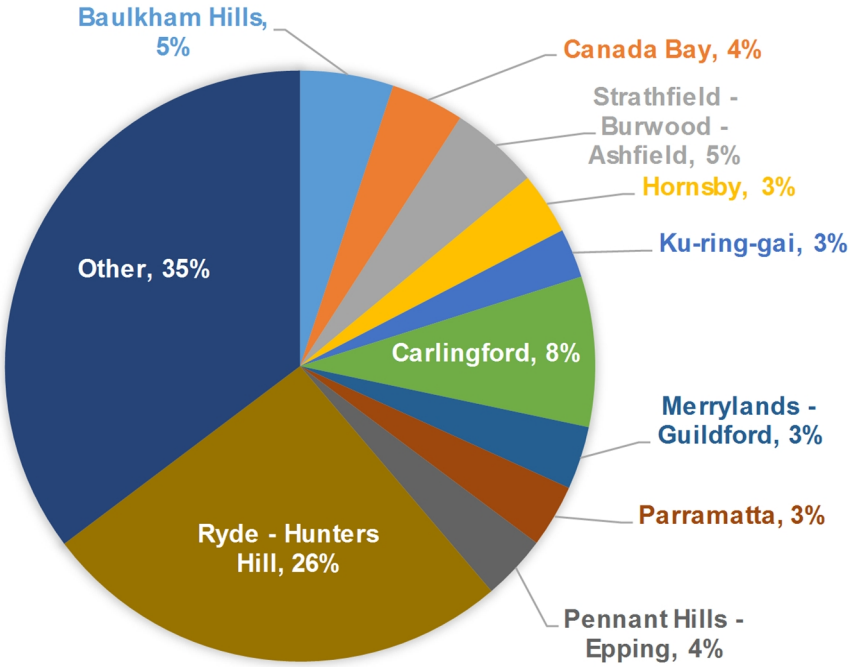
Figure 2-8 Location of Travel Zone 1589, 1590, 1591



Source: http://visual.bts.nsw.gov.au/jtwbasic/#1589,1590,1591

According to the 2011 Australian Bureau of Statistics Journey to Work data, a total of 1,741 people work in the selected travel zones. Of this total, the greatest proportion (26 per cent) live in Ryde – Hunters Hill as shown at Figure 2-9.

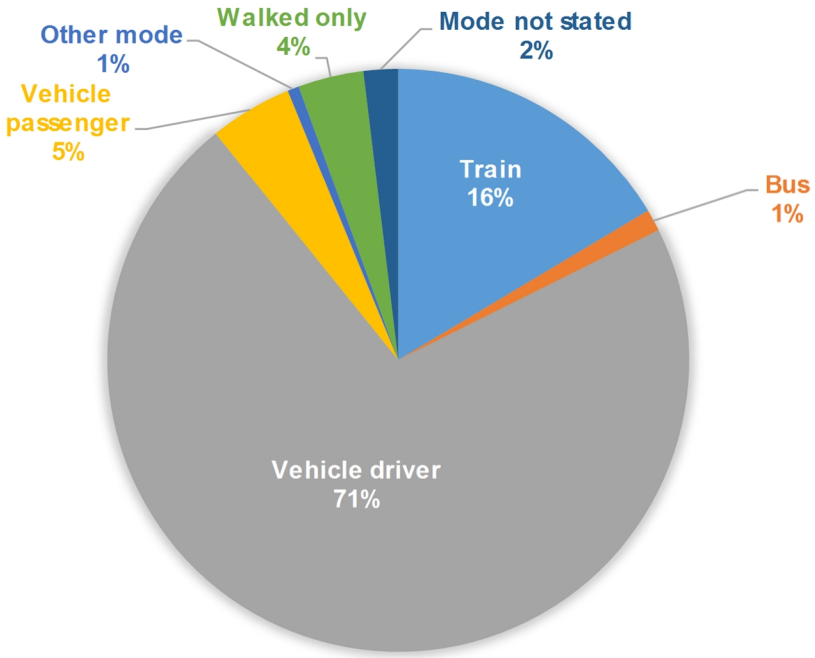
Figure 2-9 Resident Locations of People Employed in Travel Zone 1589, 1590, 1591



Source: http://visual.bts.nsw.gov.au/jtwbasic/#1589,1590,1591

Journey to work data of the 1,741 people working in the selected travel zones was also analysed and is shown at Figure 2-10. The most common form of transport is driving to work, with 76 per cent making up this proportion (car driver or passenger). The next most common form of transport was train with 16 per cent. This emphasises the need to create an efficient pedestrian network for the Meadowbank area and enable better connectivity to the train network.

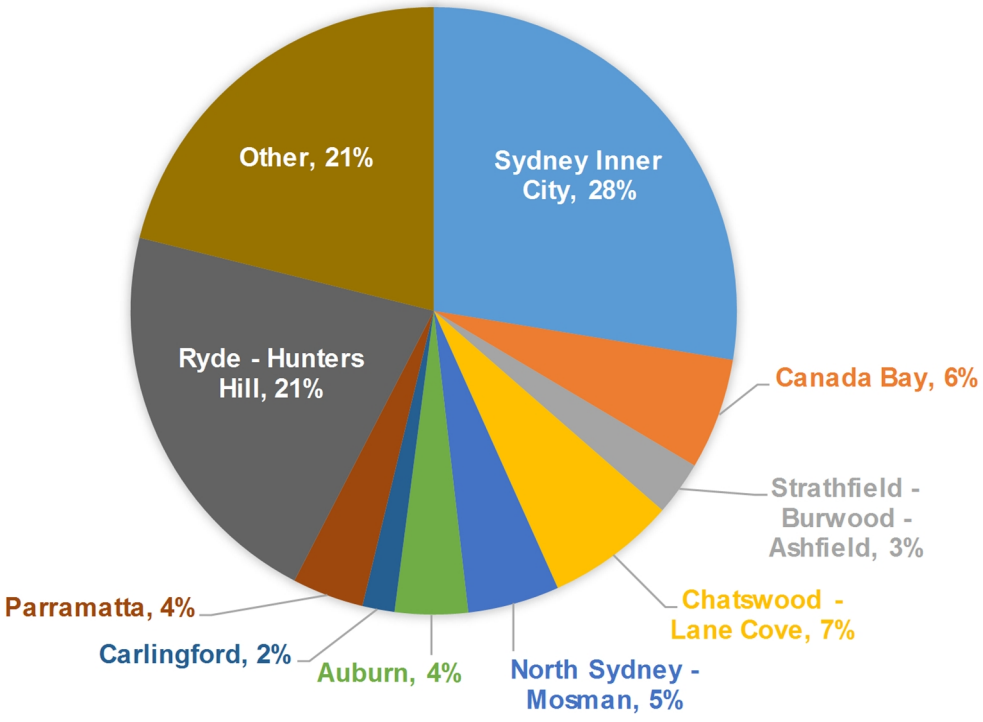
Figure 2-10 Journey to Work Method of People Employed in Travel Zones 1589, 1590, 1591



Source: http://visual.bts.nsw.gov.au/jtwbasic/#1589,1590,1591

Of the residents within the selected travel zones, 2,802 were employed. As shown at Figure 2-11, the highest portion of employees worked in Sydney Inner City. The next highest portion worked in the Ryde and Hunters Hill (21 per cent).

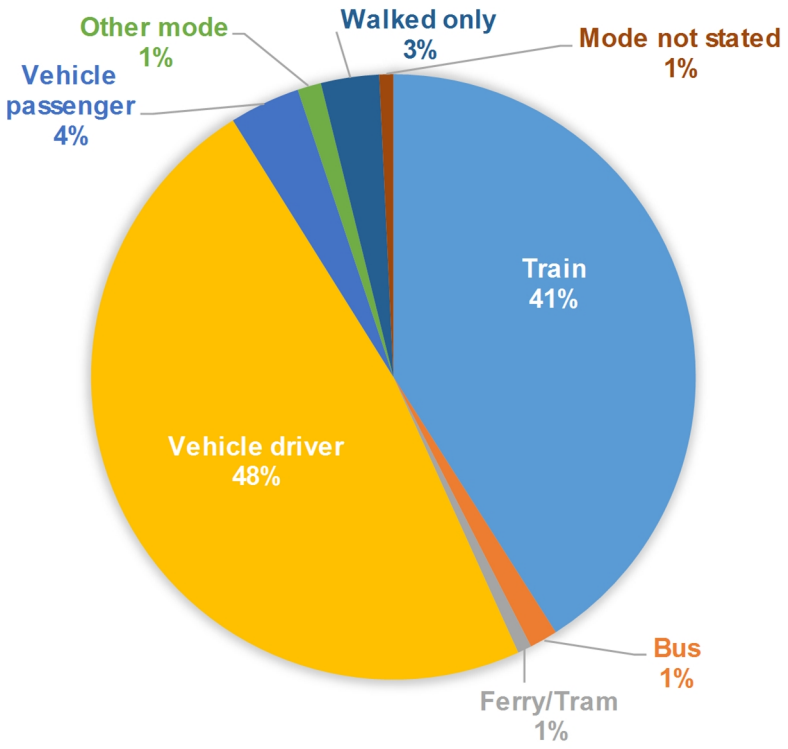
Figure 2-11 Work Places of People Living in Travel Zone 1589, 1590, 1591



Source: http://visual.bts.nsw.gov.au/jtwbasic/#1589,1590,1591

Journey to work mode share data for the resident workers is shown at Figure 2-12. The data indicates a significant mode share for private vehicle, with 52 per cent of all journeys to work taking place by motor vehicle, and only four per cent of the workers travelling as a car passenger, there is a low effective utilisation of the road capacity. Train as the main mode was the only other significant mode. There is a low rate of walking only for the journey to work at three per cent which is representative of the low employment within the area.

Figure 2-12 Journey to Work Method of People Living in Travel Zone 2004



Source: http://visual.bts.nsw.gov.au/jtwbasic/#2004

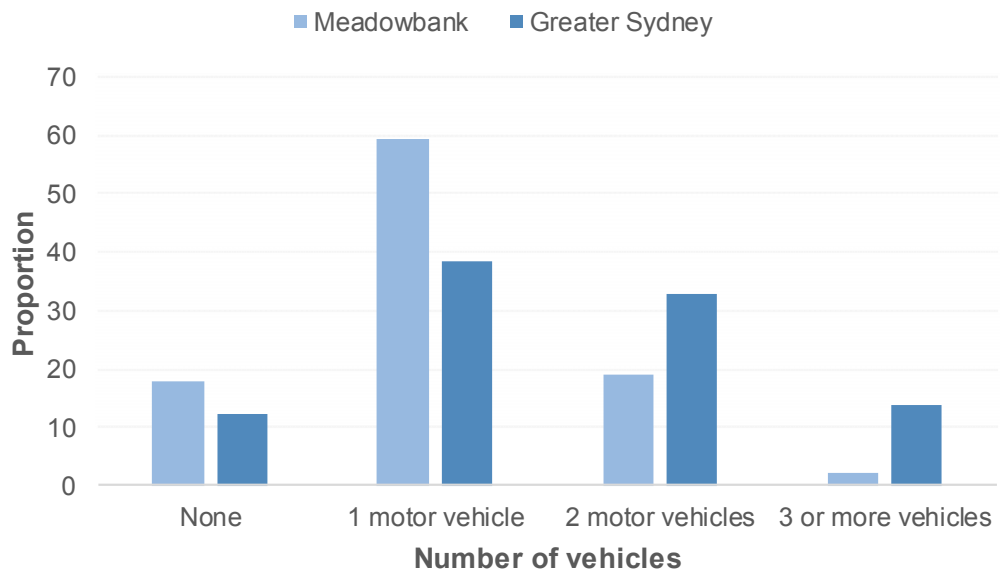
The low walking mode share for journeys to work in the local area reinforces the need to improve the environment for pedestrians and integrate land use and transport planning to provide more jobs closer to home.

2.5.5 Car Ownership

Data for the number of motor vehicles parked at residential addresses in Meadowbank and Greater Sydney (from the 2011 Census) is summarised in Figure 2-13. This indicates the following:

- 18 per cent of households in Meadowbank do not have a motor vehicle, compared to 12 per cent in Greater Sydney
- 59 per cent of households in Meadowbank have one vehicle, compared to 38 per cent in Greater Sydney, 21 per cent of households in Meadowbank have two or more vehicles, compared to 50 per cent in Greater Sydney

Figure 2-13 Motor Vehicle Ownership



Source: http://visual.bts.nsw.gov.au/jtwbasic/#2004

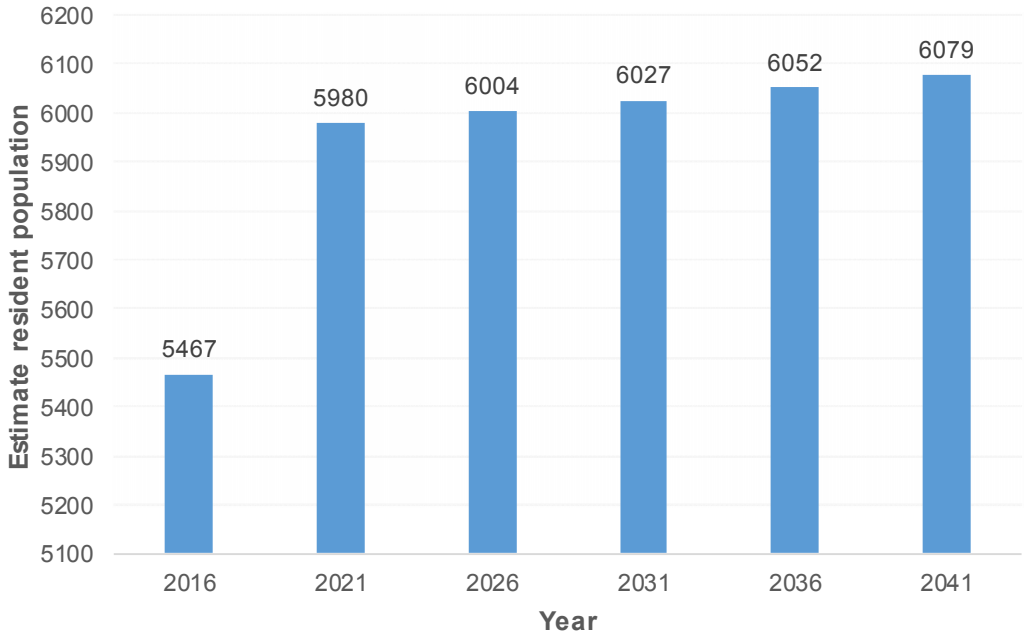
The lower than average car ownership provides an opportunity to encourage the usage of modes other than driving for getting to work and other trips.

2.5.6 Future Population and Employment

Population Forecast

Approximately 5,467 people currently live within the Meadowbank travel zones. This is forecast to grow to around 6,079 people by 2041, as shown in Figure 2-14. This is an increase of around 11 per cent from the current population, most of which is forecast to occur between now and 2021.

Figure 2-14 Forecast Population in Meadowbank Travel Zones

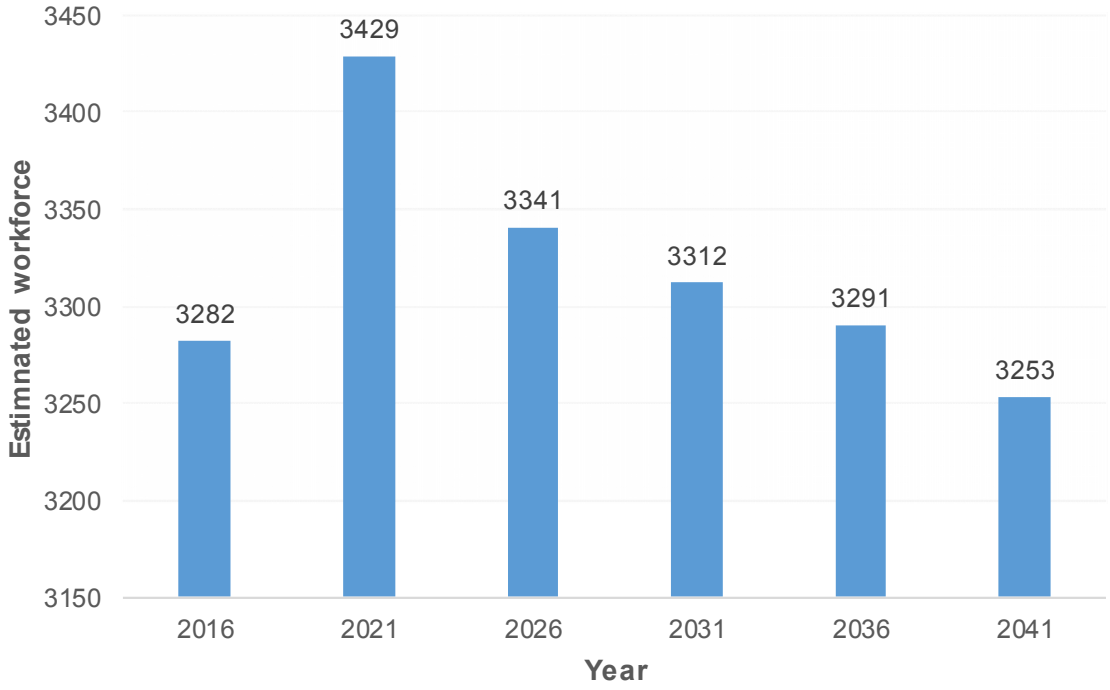


Source: NSW Transport Performance and Analytics employment forecasts

Forecast Workforce

Approximately 3,282 people currently are employed and reside within the Meadowbank travel zones. This is forecast to grow to around 3,429 people by 2021, as shown in Figure 2-15 but decrease thereafter. By 2041 it is expected that 3,523 people will be in the workforce. This is a decrease of around one per cent from the current workforce number.

Figure 2-15 Workforce forecast in Meadowbank Travel Zones

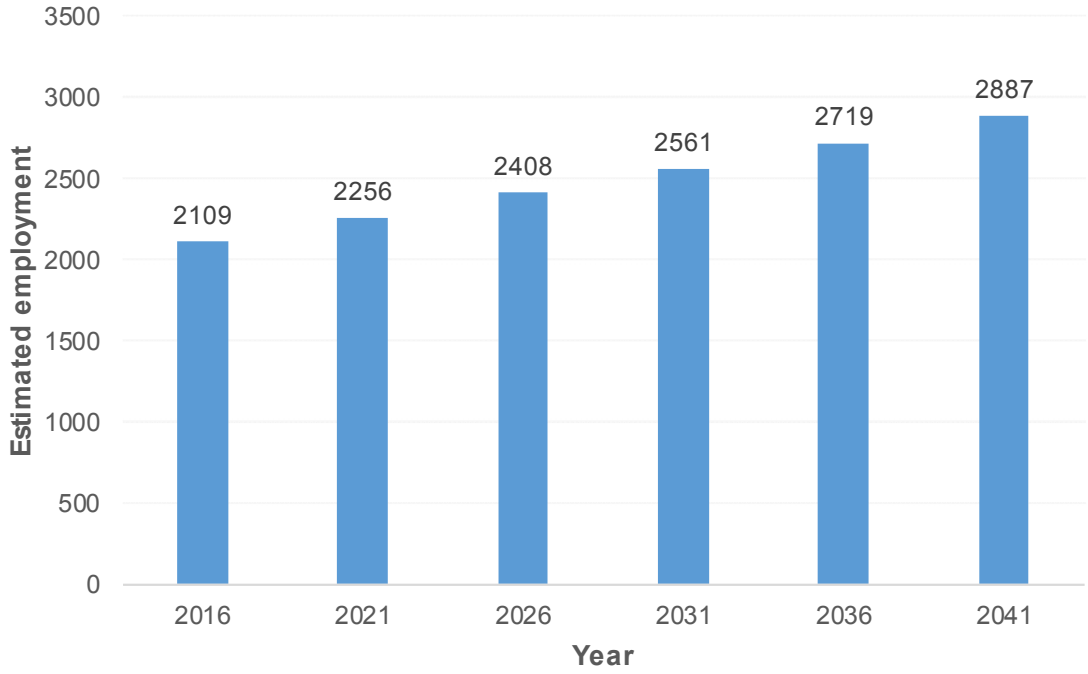


Source: NSW Transport Performance and Analytics employment forecasts

Forecast Employment

Approximately 2,109 people are currently employed within the Meadowbank travel zones. This is forecast to grow to 2,887 by 2041, as shown in Figure 2-16. This indicates that there is likely to be an increased demand for walking in the vicinity of key employment land uses in the study area, such as the TAFE.

Figure 2-16 Employment forecast in Meadowbank Travel Zone



Source: NSW Transport Performance and Analytics employment forecasts

2.6 Existing Land Use and Infrastructure

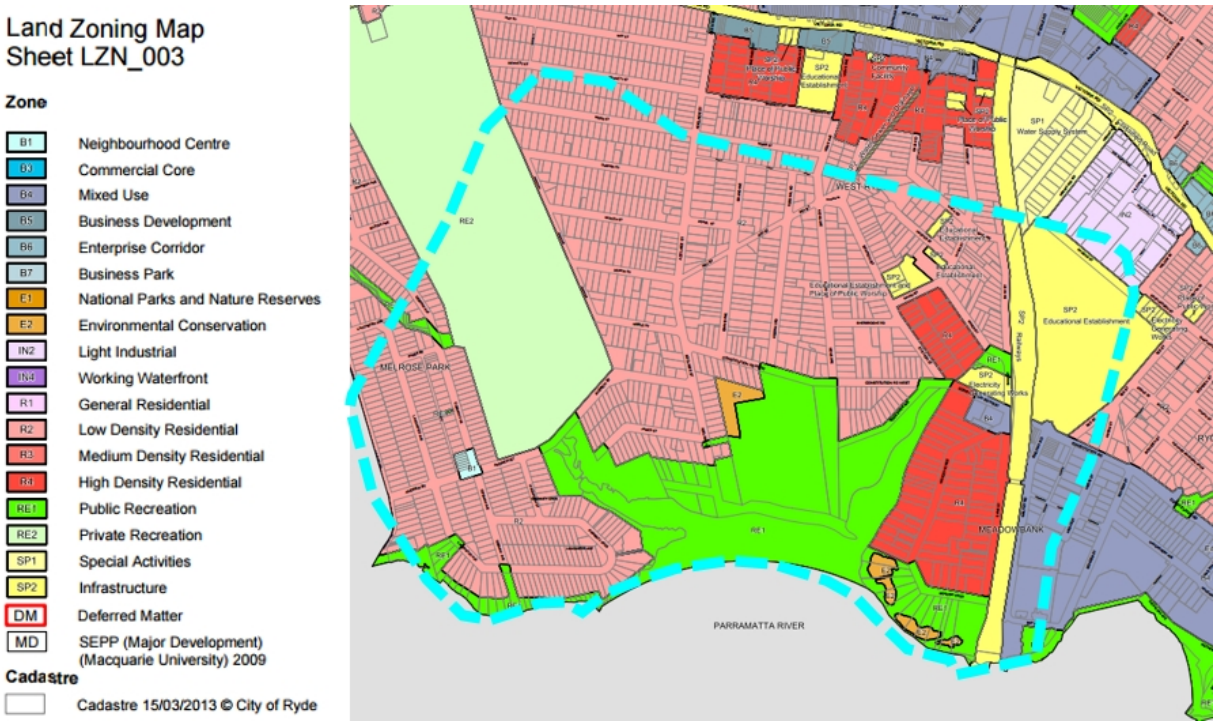
2.6.1 Land Use

An extract of the land use plan for the study area is shown at Figure 2-17. Land uses within the study area include low density residential (primarily to the west of the station) and high density residential, mixed use and educational land uses located near Meadowbank Station. There is a large amount of open space recreation (passive and active) along and close to the Parramatta River shoreline. The western parts of the study area are separated from the eastern parts, by the Parramatta Golf Course and open space at Meadowbank Park.

The land use plan can be used to identify areas of expected higher pedestrian demand, such as:

- Educational facilities, including the TAFE
- High density residential land uses to the west of the rail line
- Mixed use land uses to the east of the rail line
- Public recreation land uses, with pedestrian demand highest on weeknights and weekends.

Figure 2-17 Land Use of Study Area



Source: City of Ryde Local Environmental Plan 2014, (modified by GHD)

2.6.2 Road Network

Road Hierarchy

State Roads perform a state function and are fully funded and managed by RMS. Council maintains local and regional streets or roads.

The classification of roads within the existing road network is as an indication of the functional role each road plays and the volume of traffic they should appropriately carry. Roads and Maritime have developed a set of road hierarchy classifications detailed in Table 2-2, which indicate typical nominal average annual daily traffic (AADT) volumes for various classes of roads.

Table 2-2 Functional Classification of Roads

Type of Road	Traffic Volume (vpd*)	Peak Hour Volume (vph*)
Motorways/Freeways	>15,000	>5,600
Arterial Road	>15,000	1,500 – 5,600
Sub-Arterial Road	5,000 – 20,000	500 – 2,000
Collector Road	2,000 – 10,000	200 – 1,000
Local Road	<2,000	0 – 200

Source: NSW Roads and Maritime Service (formerly NSW RTA), Road Design Guide and AMCORD
**Note vpd = vehicles per day, vph = vehicles per hour*

Roads in the study area have been appraised based on the classification provided in Table 2-2. The outcomes of the AADT data assessment was limited to the availability of daily traffic volume datasets, which were previously collected in 2009.

Bank Street

Bank Street provides direct access to Meadowbank Station for pedestrians and motorists. It functions as a regional road to the north of the rail overbridge (and a local road to the south of the bridge) with a two-way traffic flow of approximately 13,000 vehicles per day.

Although its orientation is in a north-south direction and runs parallel to the railway line it provides an overpass link to the other side of the railway. This link is located south of Meadowbank Station.

On-street parking is available on both sides of the street. No time restrictions apply.

Figure 2-18 Bank Street, viewed northwards towards Meadowbank Station

Constitution Road and Constitution Road West

Constitution Road is a regional road and functions as a collector road. It provides access to Meadowbank Station for pedestrians and motorists. It is made up of two sections and is separated by Meadowbank Station. The section west of the station is named Constitution Road West.

It is a two-way road with one traffic lane in each direction. Constitution Road West has provision for on-street parking on both sides of the road with a 30 minute parking restriction in effect between Station Street and Bank Street.

On the eastern side of the station there is a bus stop on Constitution Road servicing routes 81T1, 507 and N80. The bus stop is located south of TAFE NSW Meadowbank Campus.

Constitution Road West provides a links to educational, retail and residential land uses.

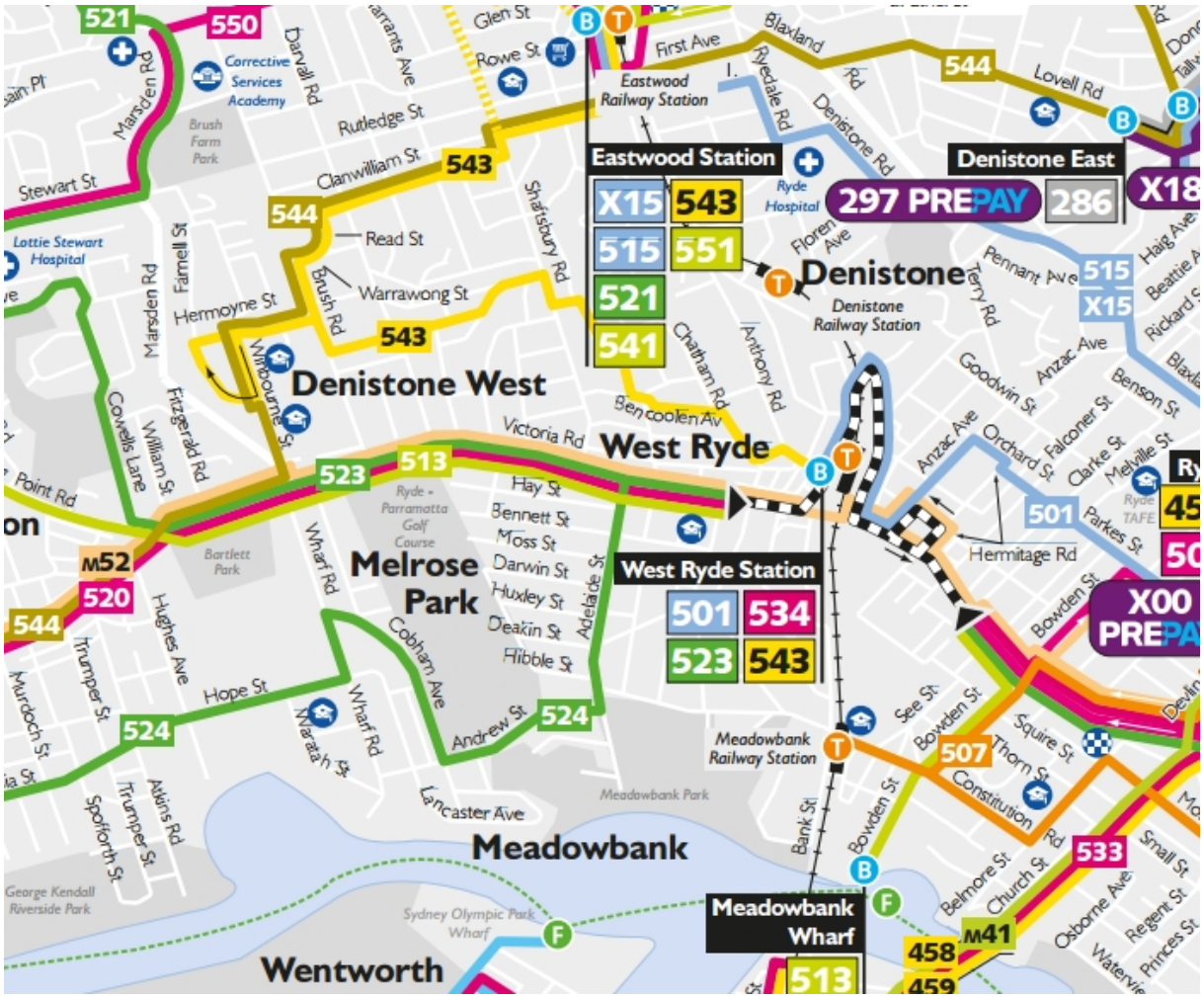
Figure 2-19 Constitution Road West, viewed westwards

2.6.3 Public Transport Network

The public transport network within the study area consist of the following:

- T1 North Shore, Northern and Western train services, operating from Meadowbank Station accessed from Bank Street and Railway Road
- F3 Parramatta River ferry services operating from Meadowbank Ferry Wharf, at Bowden Street
- Buses operate along the following roads within the study area, as shown at Figure 2-20:
  - Adelaide Street
  - Andrew Street
  - Cobham Avenue
  - Constitution Road West
  - Bowden Street

Figure 2-20 Bus Network



Source: http://www.sydneybuses.info/routes/15326_STA_region_web_map_west_20160905.pdf

2.7 Crash Statistics

2.7.1 Pedestrian crashes

Crash statistics for incidents involving pedestrians at roads within the study area over a five-year period between 2011 and 2015 were obtained from TfNSW. This crash data was used to determine the main factors contributing to crashes within the study area.

A summary of the recorded crashes along each street in the study area during this five-year period is shown at Figure 2-21.

Table 2-3 Recorded Crashes with Pedestrians in West Ryde (2011 – 2015)

Street	Location	Location / Nearest Intersecting Street	Time of day	Crash Type	Injuries	Severity
Maxim Street	Mid block	Union Street	Night	Pedestrian far side	1	Moderate
Bank Street	T-junction	Constitution Road	Day	Pedestrian near side	1	Minor
Bank Street	T-junction	Constitution Road	Day	Pedestrian far side	1	Moderate
Railway Road	T-junction	Constitution Road	Day	Pedestrian far side	2	Moderate

Figure 2-21 Crashes Involving Pedestrians Between 2011 - 2015

Source: TfNSW Centre for Road Safety
**note that two separate incidents occurred at one location as shown on the above plan.*

The crash data indicates that there were four crashes involving pedestrians over the five-year period between 2011 to 2015 (it should be noted that two crashes occurred at the same location).

Figure 2-21 shows that the majority of crashes occurred around Meadowbank Station where pedestrian activity would be higher when compared to other parts of the study area:

- Three out of the four crashes involving pedestrians occurred during daytime, with one crash (at Maxim Street) occurring at night
- Three of the incidents resulted in injury to one person (each), with the other incident resulting in two person injuries
- All of the crashes involved a pedestrian emerging from the footpath on the far side of the road to the vehicle involved in the crash

It should be noted that the crash data presented is based on NSW Police reports, which generally under represent the incidence of pedestrian and cyclist related crashes due to some of these incidents not being reported. This is due to the fact that many minor pedestrian incidents do not result in tow-away crashes where police are called and the incident therefore goes unrecorded.

Bank Street

Two crashes were recorded at the Bank Street and Constitution Road West T-junction. These incidents resulted in one minor and one moderate injury. The pair of crashes at this location within the study area indicates that this is a higher risk zone for pedestrians.

During the site audit, it was noted that there is pedestrian and vehicle conflict at the existing pedestrian crossing, as there were a large number of pedestrians crossing Bank Street when egressing trains at Meadowbank Station during the PM peak. This can cause long delays to traffic and result in inpatient driver behaviour, which can be a risk to pedestrians.

Figure 2-22 shows a photograph of the intersection and zebra crossing. There is heavy congestion at all legs of the intersection including on Constitution Road West, Bank Street and Meadow Crescent in peak hours. There is also an influx of pedestrians using the crossing in these periods presenting a safety issue and contributing to the congestion.

Figure 2-22 Bank Street and Constitution Road West, Viewed Northwards from West Ryde Parade

Railway Road

One crash occurred during the day on the east side of Meadowbank Station. This crash resulted in two injuries, one minor and one major.

Maxim Road

One incident involving a pedestrian occurred on Maxim Road. This incident occurred at a mid-block location between Station Street and Union Street and resulted in a minor injury.

2.7.2 Vehicle Crash Data Review

Crash statistics for roads within the study area over a five-year period between 2011 and 2015 were obtained from TfNSW. This crash data was used to determine the main factors contributing to crashes within the study area.

A summary of the notable recorded crash clusters in the study area during this five year period is presented at Table 2-4, which summarises crashes by crash types and the location of the incident. The notable crash clusters are in areas which have experienced relatively more crashes over the same time period when compared to other locations within the study area. The majority of crashes resulted in non-casualties. There were two crashes that resulted in minor injuries and two that resulted in moderate injuries. No fatalities were recorded in the cluster zones.

Two incidents were recorded at the T-junction of Adelaide Street and Annie Lane including:

- One crash which was a left near crash
- One crash which was a rear end crash

Two incidents were recorded at the T-junction of Station Street and Maxim Street including:

- Both incidents involved vehicles turning right and colliding with other vehicles on the near side.

Two incidents were recorded on Station Street near Constitution Road including:

- One crash which involved a vehicle emerging from driveway resulting in two moderate injuries
- One crash which involved a vehicle turning left off the carriageway into an object or parked vehicle

Three incidents were recorded on Constitution Road near Station Street including:

- Two crashes involved a vehicle turning left off the carriageway into an object or parked vehicle
- One crash involved a vehicle emerging from a driveway resulting in a minor injury

Two incidents were recorded at the T-junction of Railway Road and Constitution Road including:

- One crash involved a vehicle turning right off the carriageway and into a parked vehicle or object
- One crash involved a vehicle striking another vehicle's open door

Two incidents were recorded on Railway Road near Constitution Road including:

- Both incidents involved a vehicle turning left off carriageway into parked vehicle or object

Table 2-4 Recorded Crashes Involving Vehicles in Meadowbank (2011 – 2015)

Street	Location	Location . Nearest Intersecting Street	Time of day	Type	Injuries	Severity
Adelaide Street	T-junction	Annie Lane	Day	Left near	-	Non-casualty
Adelaide Street	T-junction	Annie Lane	Day	Rear end	-	Non-casualty
Station Street	T-junction	Maxim Street	Day	Right near	-	Non-casualty
Station Street	T-junction	Maxim Street	Day	Right near	-	Non-casualty
Station Street	2-way undivided	Constitution Road	Day	Emerging from driveway	2	Moderate
Station Street	2-way undivided	Constitution Road	Night	Left off carriageway into object/parked vehicle	-	Non-casualty
Constitution Road	2-way undivided	Station Street	Night	Left off carriageway into object/parked vehicle	-	Non-casualty
Constitution Road	2-way undivided	Station Street	Day	Left off carriageway into object/parked vehicle	-	Non-casualty
Constitution Road	2-way undivided	Station Street	Night	Emerging from drive	1	Minor
Railway Road	T-junction	Constitution Road	Day	Right off carriageway into object parked vehicle	1	Moderate
Railway Road	T-junction	Constitution Road	Day	Struck open vehicle door	1	Moderate
Railway Road	2-way undivided	Constitution Road	Day	Left off carriageway into object/parked vehicle	-	Non-casualty
Railway Road	2-way undivided	Constitution Road	Day	Left off carriageway into object/parked vehicle	-	Non-casualty

Locations of crashes involving pedestrians is shown at Figure 2-23.

Figure 2-23 Crashes Involving Vehicles Between 2011 - 2015

Source: TfNSW Centre for Road Safety

3. Existing Pedestrian and Mobility Audit

This section builds on the investigations undertaken in previous sections in order to define a set of user and functional requirements to be developed for the PAMP. The outputs of this section constitute the brief for the development of pedestrian infrastructure improvement options.

Existing traffic calming and pedestrian facilities in the study area are shown in Figure 3-1.

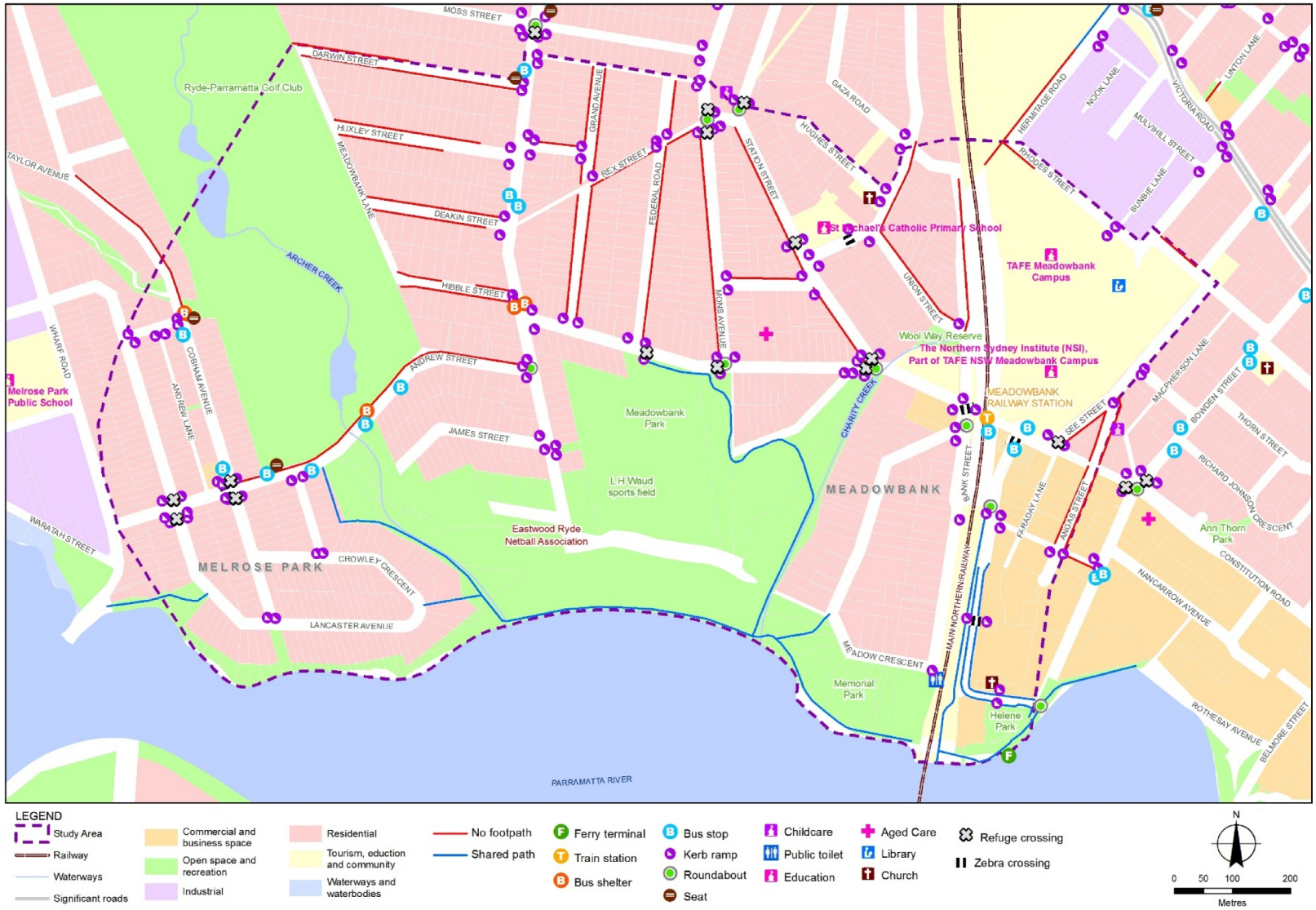
An audit of existing conditions was undertaken in the study area. The audit focused on identifying existing facilities, land uses, any shortcomings in the pedestrian environment and potential safety issues.

The audit has been developed through:

- Site inspections, which were conducted on 4 November and 21 December 2016
- Community consultation as summarised in Section 3.1

A significant amount of anecdotal or qualitative feedback was received via the Social Pinpoint site, open questions on the community surveys and discussions with stakeholders and members of the community.

Figure 3-1 Existing Pedestrian Infrastructure



3.1 Key Results from Community Survey

To identify current pedestrian accessibility and mobility needs, community engagement was undertaken from November 2016 until March 2017 to determine the community's views, concerns, and ideas, relating to pedestrian facilities, including a survey to allow the community to provide information about existing transport and walking behaviours and issues. The draft PAMP report was on public exhibition during October and November 2017.

A summary of each consultation activity and the number of people who were engaged for each activity is provided in Table 3-1.

Table 3-1 Overview of Community Engagement

Activity	Date	Number of People Engaged
Online community survey - questionnaire	30 November to 7 March 2017	136
Social Pinpoint - online map based community survey	30 November to 7 March 2017	80
Social media - comments provided to Council on the CoR Facebook site	2 February to 28 February 2017	75
Individual discussions with key Stakeholders. A letter was also sent to stakeholders to provide information of the project and consultation, which was prepared by GHD.	March to April 2017	10
Written responses from the community provided to CoR	January to March 2017	9
'PopUp' community consultation session near Meadowbank Station	12 December 2016	15
Community workshop	21 March 2017	5
Exhibition of the draft PAMP report - written responses from the community provided to CoR	October/November 2017	5

The PAMP and consultation activities were promoted through:

- Newspaper advertisements in the Northern District Times on 30 November 2016 and 8 March 2017
- CoR Have Your Say website
- CoR Facebook site
- A flyer letter drop, which was delivered to all households within the study area to promote the online surveys/Social Pinpoint mapping tool and to invite residents to the community workshop

Further details of the consultation and findings undertaken for this PAMP are provided within the consultation report, provided at Appendix A.

3.1.1 Stakeholder Consultation

Key stakeholders were contacted via email and phone calls to gain insight and potential concerns regarding the pedestrian network in the Meadowbank study area. The following stakeholders were contacted:

- Roads and Maritime
- Sydney Buses
- TAFE NSW
- West Ryde Public School
- Meadowbank Public School
- St Michaels Catholic Primary School
- Ryde Police
- BikeNorth
- Guide Dogs Australia
- West Ryde Progress Association

The majority of issues identified through consultations with key stakeholders relate to the need for pedestrian crossings. These include:

- Limited crossing facilities at Belmore Street
- Limited crossing facilities at Bowden Street
- There are no safe crossings near the roundabout on Constitution Road

3.1.2 Community Consultation - Online Survey

The key results of the online survey include:

- The majority of survey respondents (91 per cent) have access to a motor vehicle. Driving was generally the most popular mode of transport when travelling to participate in most activities.
- Walking has a high mode share for accessing local shops and recreational areas. Other modes of transport (cycle, train, but and ferry) had lower mode share for access to local shops and recreational areas although higher rates for commuting to/from work or school.
- The reason most survey respondents do not walk more often was that there is too much traffic along roads within the study area. The weather also rated highly as a reason for not walking more often.
- When asked what sort of changes would encourage more walking on a regular basis, the top response was additional road crossings for pedestrians (70 per cent).

3.1.3 Community Consultation - Social Pinpoint/Community Workshop

In the Social Pinpoint online mapping tool and during the community workshop, the most commonly identified issues/gaps in the PAMP study area walking network were:

- There is a need for improved visibility and reduced foliage near Constitution Road
- There is a need for a pedestrian bridge/underpass or traffic lights to replace the existing pedestrian crossings at Meadowbank Station
- The footpath from the train station to Meadowbank Park along the eastern side of Bank Street needs to be improved

3.1.4 Community Consultation - Written Responses

The key issues/ideas provided via email submissions to CoR and provided on the COR Facebook social media site include:

- A traffic light controlled pedestrian crossing or overbridge for pedestrians at Meadowbank Station (western side)
- Potentially improving train frequency and scheduling of trains to arrive at different times, which could improve traffic flow and pedestrian safety in the area around Meadowbank Station.

3.1.5 Community Consultation - Written Responses during Public Exhibition

The key issues and ideas provided by community members to CoR during the exhibition of the draft PAMP report are listed below.

- Pedestrian crossing adjacent to Meadowbank Station at Bank Street:
  - Pedestrian and vehicle conflicts, results in traffic impacts and safety issues for pedestrians. This issue has been addressed as part of this PAMP, with an intersection re-design recommended (refer to item 34 in Table 5-3)
- Pedestrian crossing adjacent to Meadowbank Station at Railway Road:
  - Pedestrian and vehicle conflicts, results in traffic impacts and safety issues for pedestrians. This issue has been addressed as part of this PAMP, with an intersection re-design recommended (refer to item 106 in Table 5-3)
- Constitution Road/See Street intersection:
  - Pedestrian and vehicle conflicts at this intersection. This is expected to be addressed as part of a future road upgrade (refer to item two in Table 5-3)
- Station Street, along the western side of the road:
  - There is no footpath currently provided along the western side of the road. This issue has been addressed as part of this PAMP, with a new footpath proposed along the western side of Station Street (refer to item 52 in Table 5-3)
- Station Street:
  - A new pedestrian crossing could be provided south of Sherbrook Street. The proposed footpath along the western side of Station Street (refer to item 52 in Table 5-3) would allow pedestrians to cross Station Street using the existing pedestrian refuge at the intersection with Constitution Road
- General - improvements to footpath quality is required
- General - traffic impacts resulting from new development in the area.

3.2 Existing Issues and Constraints Audit

The issues and constraints for pedestrian access and mobility were determined through field survey conducted in November and December 2016. During this survey, GHD staff were accompanied by a Council staff member and a member of Council's Access Committee. A summary of the constraint locations are shown in Figure 3-2 and a description of the corresponding issues can be found in Table 3-2.

A detailed list of these issues, together with photos of existing mobility issues is provided at Appendix B.

Figure 3-2 Locations of Existing Issues and Constraints for Pedestrians

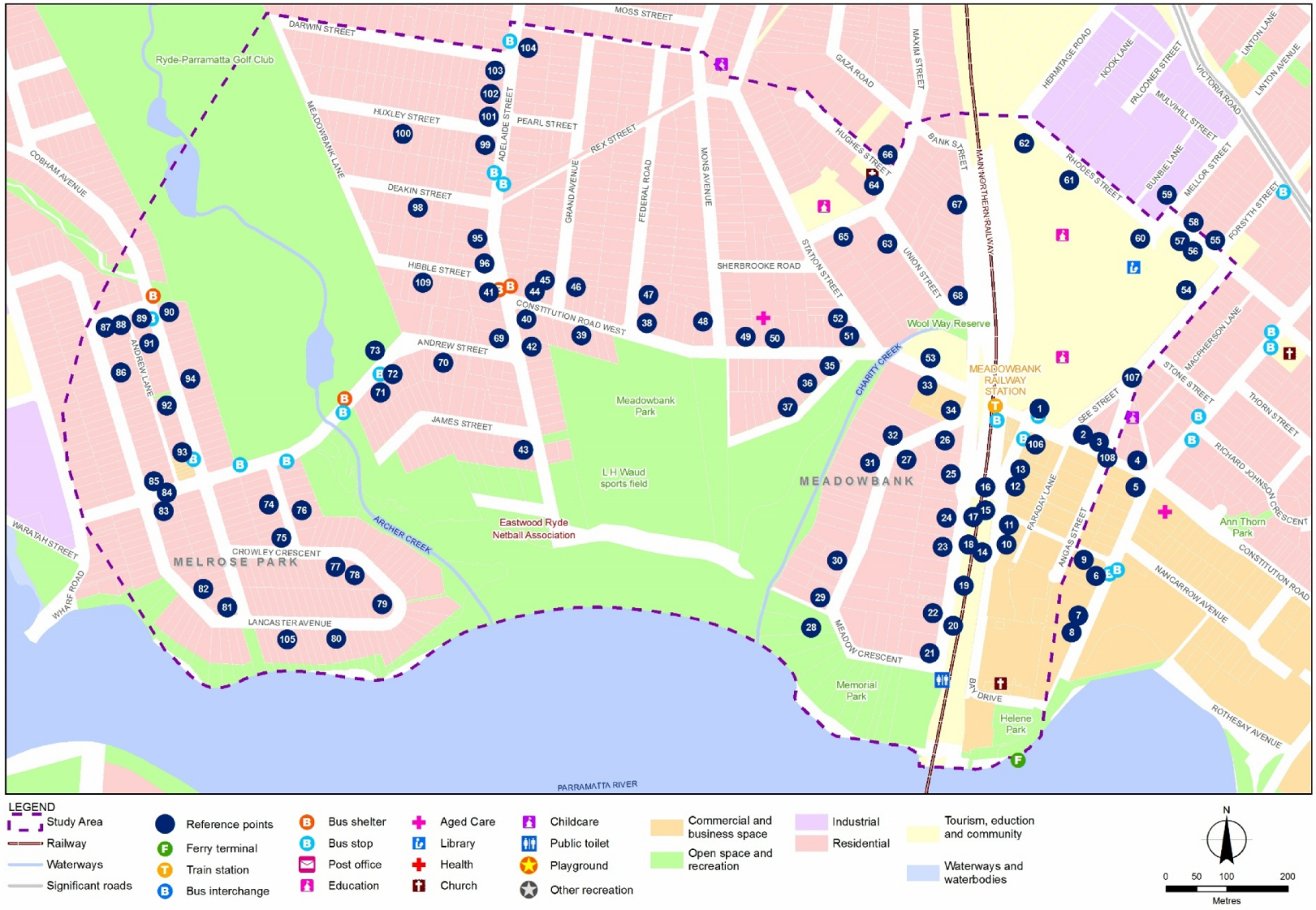


Table 3-2 Summary of Issues Corresponding to IDs

Issue Type	PAMP ID Reference	Total Issue Locations
Bus stop	41, 71	2
Intersection design	68, 59, 60, 106	4
Kerb ramps	5, 17, 18, 21, 35, 43, 55, 59, 64, 75, 81, 88, 89, 95, 97, 99, 101, 104	18
Missing link	9, 28, 45, 46, 47, 48, 52, 58, 62, 65, 69, 90, 98, 100, 103, 107, 108	17
Narrow footpath	3, 24, 32	3
Non standard pedestrian refuge	42, 83, 85	3
Obstruction in footpath	15	1
Overgrown vegetation	19, 37, 49	3
Poor quality footpath	1, 2, 4, 11, 16, 20, 27, 29, 30, 33, 50, 162, 56, 57, 61, 67, 72, 74, 80, 86, 87, 91, 93, 94, 96, 102	26
Signage	14, 19	2
Steps		1
Trip hazard	6, 7, 8, 10, 12, 22, 23, 25, 26, 27, 31, 36, 39, 44, 51, 53, 63, 66, 70, 76, 77, 78, 79, 184, 105	25
Wide crossing point	38, 40, 68, 73, 82, 84, 99	7

4. Planning for Pedestrians

Walking is the simplest form of transportation. It is available to most people, including those who use mobility aids; is free and has significant environmental and health benefits. Furthermore, all trips involve some walking component, even if they are only from the car park to the shop. Therefore, planning for safe and convenient pedestrian access is very important in transportation planning.

This section provides some introductory guidance on planning for walking.

4.1 Creating a Safe and Attractive Environment for Walking

Pedestrians use every part of the public domain, including roads, footpaths, nature strips, shopping centres and other public spaces. Some planners and engineers incorrectly assume that planning for pedestrians will follow the same logic as traffic planning:

- Car → 'trips' → 'routes' → 'traffic network'

The planning scale for pedestrians is detailed to accommodate the local nature of the trips. Pedestrian movement can be better conceptualised in terms of:

- Pedestrian → 'activity' → 'areas of activity' → 'pedestrian environment'

Rather than conforming to traditional traffic engineering concepts like turning radii and design speeds, pedestrians are far more attuned to the environment in which they are moving. Therefore, planners need to consider the needs of pedestrians in regards to design, amenity, and personal security. Pedestrians are particularly vulnerable to cars and other motorised traffic.

Pedestrian Needs

The provision of pedestrian infrastructure should not only aim to fulfil the requirements of existing users or to comply with relevant standards, but should also promote walking for transport, recreation and health, and increase the number of trips taken by foot. Such an outcome would result in fewer car trips, healthier residents and a more active (and safe) public domain. A number of elements are required in order to provide a high quality pedestrian environment.

Safety

Perceived and actual safety is very important to pedestrians. Road crossings present the greatest danger to pedestrians. Therefore, safe crossing locations should be provided at regular intervals along major streets, or at the location where key desire lines cross major streets. Pedestrians will rarely walk along an indirect route to access safe crossing points, so frequent, direct crossing points should be provided.

Lighting in open space is important for security. Pedestrians of all ages and genders need to feel that it is safe to walk whenever they choose to do so.

Directness

Pedestrians do not like to walk out of their way to reach a destination. This is a natural response to avoid the extra effort involved in walking extra distance. Pedestrian facilities serving desire lines between major centres of activity need to be direct and legible in order to provide for and encourage walking trips.

Wherever possible, barriers should be overcome, with additional crossing points such as grade separated or signalised crossings. However, grade separation does not always provide the most direct access.

Engineering solutions to direct pedestrians for safety reasons (such as fencing) should only be used when no other solution is possible.

Amenity

Pedestrians are particularly sensitive to the quality of the urban environment. Areas with high volumes of traffic, excessive noise, and poor pavements will discourage walking. Additionally, urban areas should be maintained at a human scale that provides an attractive walking environment.

While it would be extremely costly to improve the amenity of all pedestrian areas, targeted works can achieve a great improvement in areas of high pedestrian activity (such as shopping streets, areas around commercial, employment and public buildings, and recreation areas). Spot improvement programs can also target localised areas of high need.

Suitable for all users

Quality pedestrian environments must be available to all who choose to use them. This requires compliance with Austroads Guide to Traffic Management and Guide to Road Design and AS1428.1-2001 - Design for Access and Mobility. Paths must be of a suitable width to accommodate the number of pedestrians (and other users, such as mobility scooters) expected and be of an appropriate gradient, including ramps. The path should be continuous and free of obstructions such as signage and street furniture. The needs of hearing and vision impaired users must be considered and provided for; especially where user safety is an issue.

Pedestrian Strategies

Council should support and encourage walking in the study area through the following actions:

- Provide an environment where the personal, social and environmental benefits of walking are recognised as paramount and that the needs of pedestrians are considered as a primary element in any projects affecting the urban landscape
- Ensure that all planning and redevelopment includes walking as a safe, healthy and accessible form of transport
- Incorporate the needs of people with a disability into all levels of planning and implementation of the transportation network and public domain improvements

4.2 Best Practice Standards

This sub-section provides a brief overview of best practice standards that apply to the treatment of pedestrian facilities.

Minimum Footpath Widths

The *Austroads Guide to Road Design Part 6A 2009 – Pedestrians and Cyclist Paths* states that:

'As a guide, the desirable minimum width of a footpath that has a very low demand is 1.2m with an absolute minimum of 1.0m. These widths should be increased at locations where:

- *high pedestrian volumes are anticipated*
- *a footpath is adjacent to a traffic or parking lane*
- *a footpath is combined with bicycle facilities*
- *the footpath is to cater for people with disabilities*.'

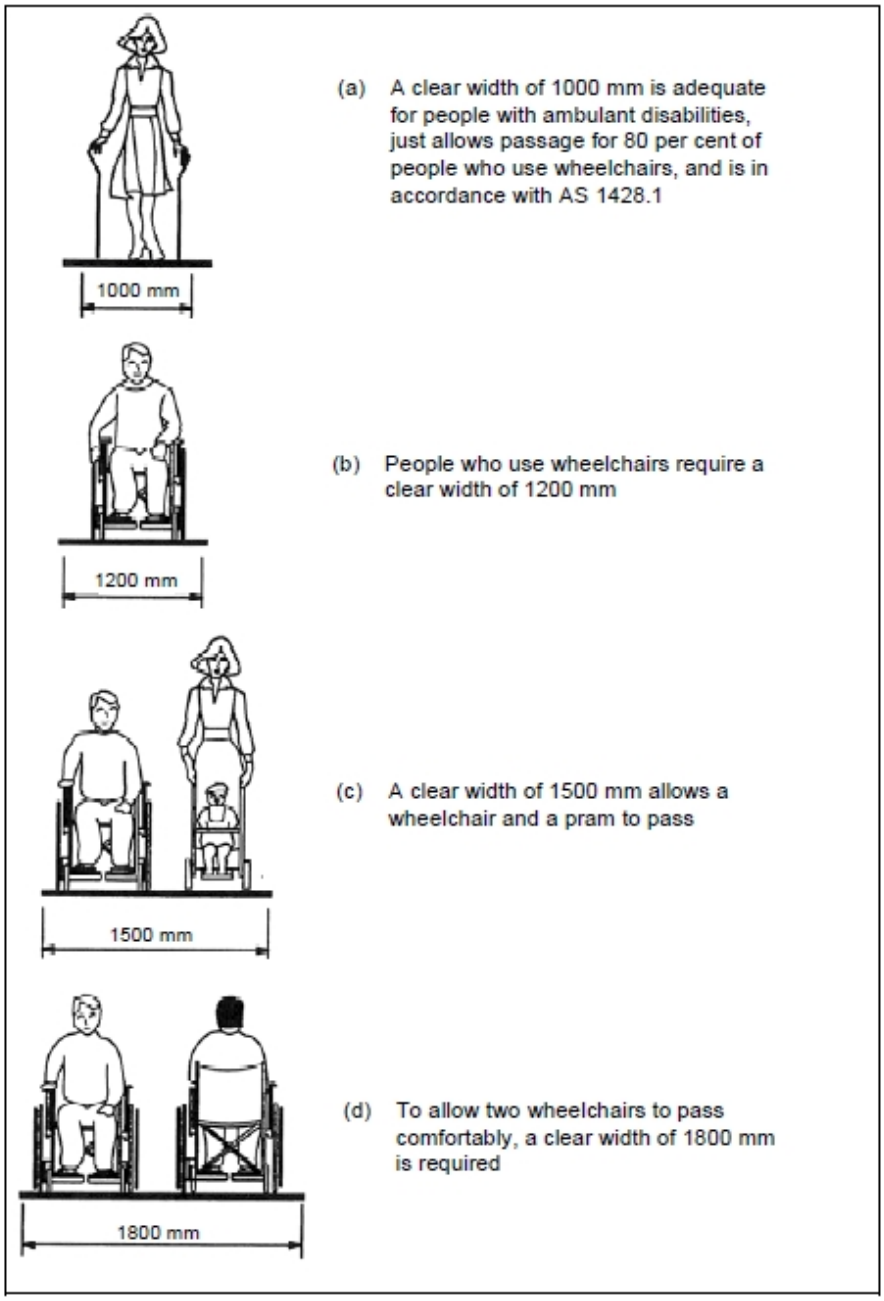
Figure 4-1 and Table 4-1 show the minimum widths for various types of footpath users.

Table 4-1 Minimum Footpath Widths

Situation	Desired width (m)	Comments
General low demand	1.2 to 1.0 (absolute minimum)	General minimum is 1.2 m for most roads and streets. Clear width required for one wheelchair. Not adequate for commercial or shopping environments.
High pedestrian volumes	2.4 m (or higher based on demand)	Generally commercial and shopping areas.
For wheelchairs to pass	1.8 to 1.5 (desired minimum)	Allow for two wheelchairs to pass (1.8 m comfortable, 1.5 m minimum) Narrower width (1.2 m) can be tolerated for short distances.
For people with other disabilities	1.8 to 1.0	

Source: *Austroads Guide to Road Design Part 6A 2009 – Pedestrians*

Figure 4-1 Path Width Requirements for Various Users



Source: *Austroads Guide to Road Design Part 6A 2009 – Pedestrians*

Maximum Grades

Grades of footpaths and drop kerbs are important as they affect the usability and safety of pedestrian facilities. Long sections of high grade footpath can be extremely difficult for mobility impaired users to negotiate.

High grade kerb ramps can also cause safety issues for mobility impaired users. Users can become vulnerable to general traffic as they attempt leave the carriageway and proceed up steep ramps.

It is noted that AS 1428.1 – 1993, specifies that any footpath should not exceed a gradient of 1:8 as wheelchairs may tip backwards. This is considered as an absolute maximum ramp gradient and should only be used in extenuating circumstances.

Table 4-2 shows the maximum desirable grades for footpaths and kerb ramp treatments.

Table 4-2 Maximum Grades

Footpaths	Grade
Recommended maximum grade (footpaths) Absolute maximum grade (kerb ramps)	1:10 (2.5% cross fall) 1:8

Source: *Austroads Guide to Road Design Part 6A 2009 – Pedestrians.*

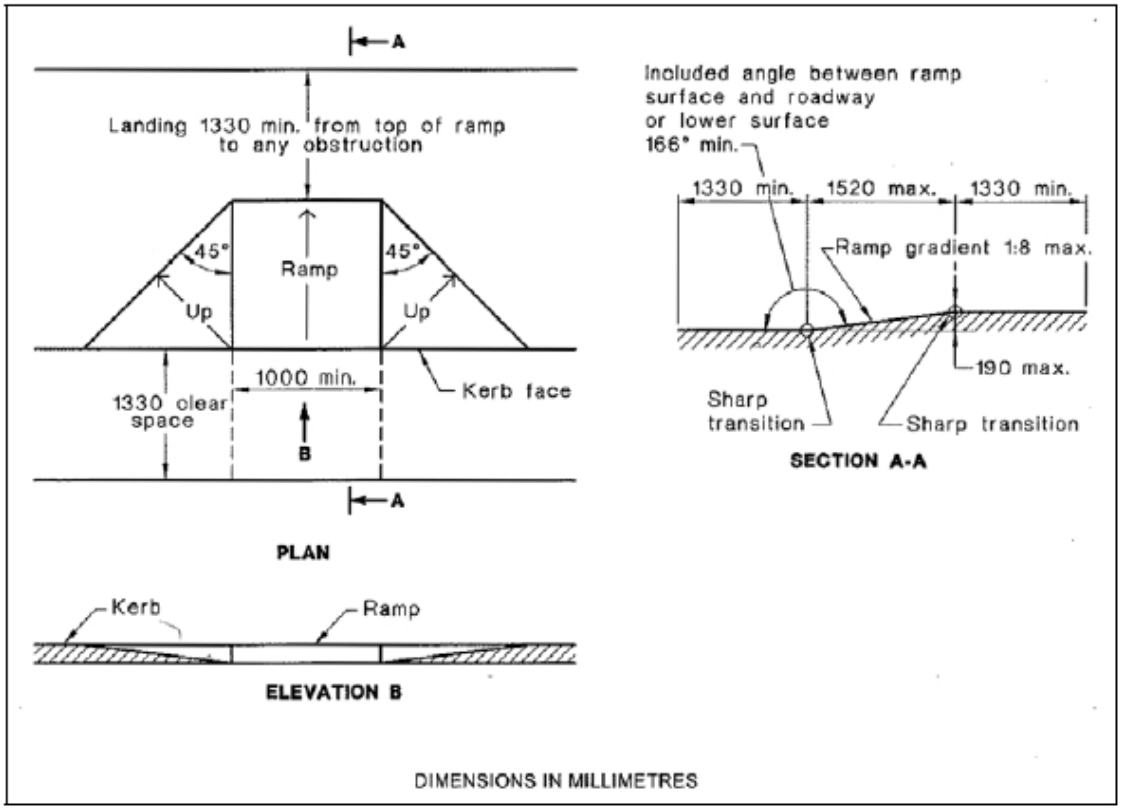
In hilly areas, these gradients are not always achievable and where possible consideration to alternative routes should be made.

Kerb Ramps

The difference in the level between the footpath and the roadway is a common situation that poses difficulties for pedestrians, particularly with mobility and vision impairments. A drop kerb or kerb ramp provides a smooth change in the level between the footpath and the roadway (maximum grade of 1:8).

The general dimensions of a drop kerb are illustrated in Figure 4-2. The *Austroads Guide to Road Design Part 4 – Intersections and Crossings* states that: '*A minimum footway width of 1330 mm should be provided beyond the top of the ramp, to ensure that users of the footway along the street are not inconvenienced by the ramp.*

Figure 4-2 Kerb Ramp Design



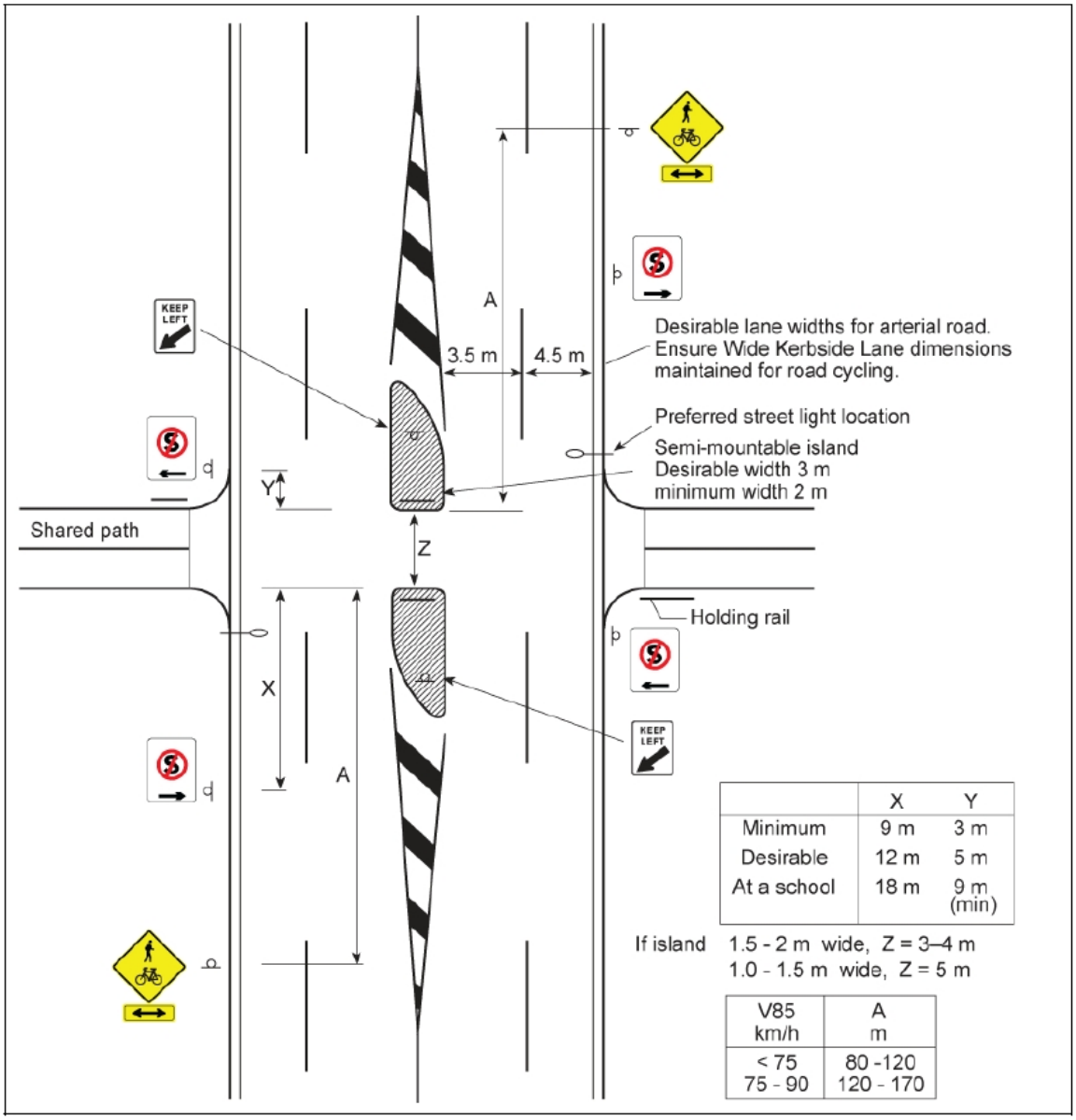
Source: *Austroads Guide to Road Design Part 4 – Intersections and Crossings.*

Pedestrian Refuges

Pedestrian refuges allow a safe point for pedestrians to wait at when crossing wide or busy roads. It is noted that many people do not feel safe when using refuges and should the funds be available kerb extensions should be considered to reduce the width of the road at the crossing points rather than using refuges.

The general dimensions of a pedestrian refuge are illustrated in Figure 4-3. Pedestrian refuges should in all cases be adequately illuminated in accordance with AS/NZS 1158 – 2007 and careful positioning of street lights should be considered in accordance with AS 1158.4: 2007. *Austroads Guide to Road Design Part 4 – Intersections and Crossings* also recommends a refuge width of at least 2 metres to allow storage for a person with a pram or bicycle needs.

Figure 4-3 Pedestrian Refuge Design



	X	Y
Minimum	9 m	3 m
Desirable	12 m	5 m
At a school	18 m	9 m (min)

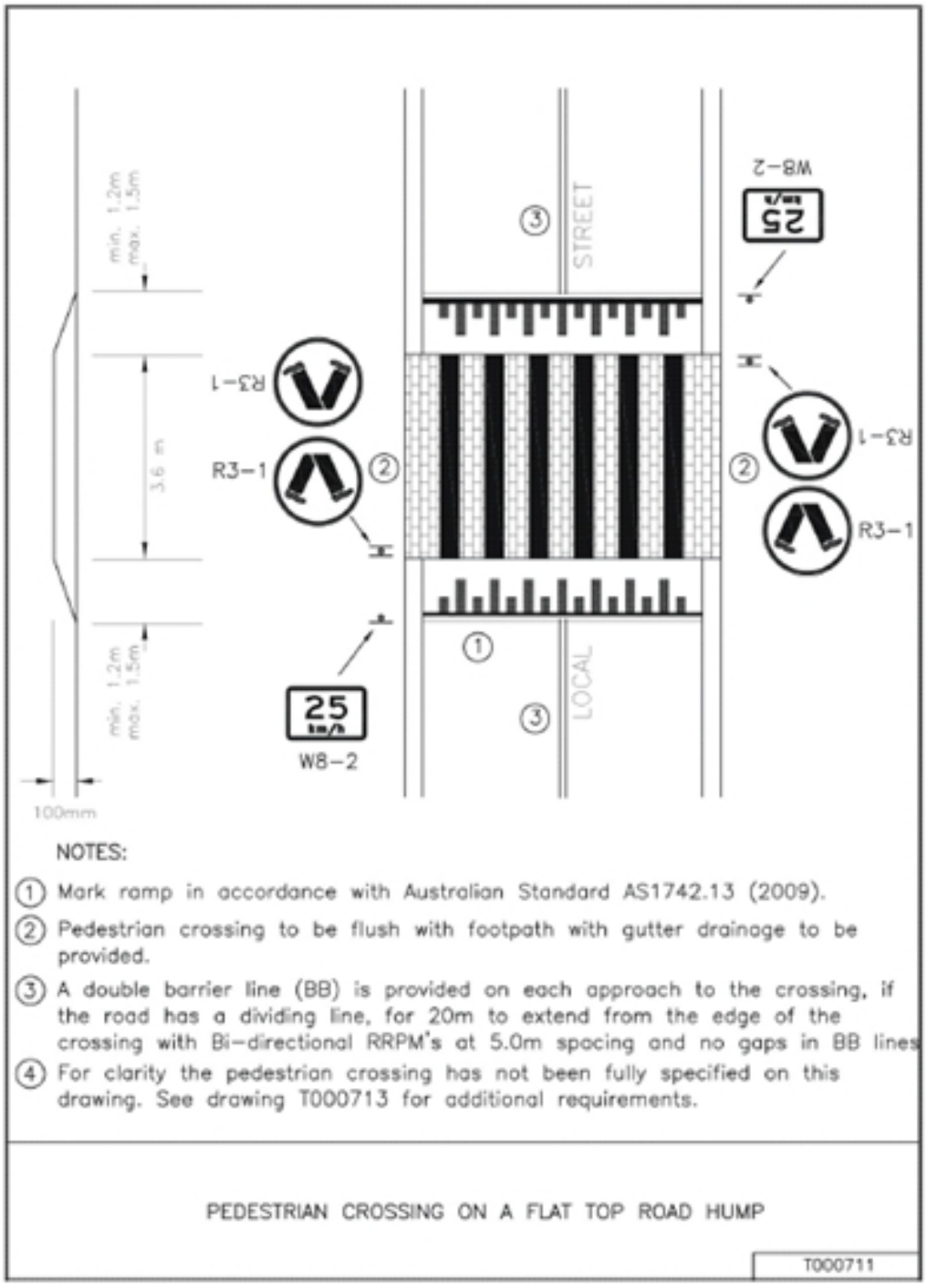
V85 km/h	A m
< 75	80 -120
75 - 90	120 - 170

Source: *Austroads Guide to Road Design Part 4 – Intersections and Crossings.*

Wombat Crossings

Wombat crossings are generally the same dimensions as flat top road humps (with pedestrian priority provided with the use of 'zebra' style line markings) as shown in Figure 4-4. It provides priority to pedestrians as well as acting as a traffic calming measure. The minimum length of the device including ramps is 6 metres and the desirable minimum height of the platform is 100 millimetres. Wombat crossings generally have ramp gradients of 1:15 to 1:20 to be bicycle and/or bus friendly. Wombat crossings can be used when the warrant for such a traffic control is met as required in AS 1742.10

Figure 4-4 Typical Details of a Wombat Crossing



Source: RMS Australian Standards Supplement AS1742 Manual of Uniform Traffic Control Devices Parts 1-16 (RMS, July, 2013)

Tactile Ground Surface Indicators (TGSI's)

TGSI's should also be provided to indicate the edge of the roadway to sight impaired pedestrians.

Roads and Maritime Requirements for Pedestrian (Zebra) Crossings

The Roads and Maritime *Australian Standard Supplements 2013, section 6.3*, provides practice for numerical warrants for a pedestrian (zebra) crossing. It is warranted where in each of three separate one hour periods in a typical day where:

- The pedestrian flow per hour (P) crossing the road is greater than or equal to 30 and;
- The vehicular flow per hour (V) through the site is greater than or equal to 500 and;
- The product PV is greater than or equal to 60,000.

Special Warrants may also be considered where consideration can be given to a potential pedestrian crossing site. In such circumstances, council should justify why this location is in need of special consideration. The special warrant conditions state that:

- PV ≥ 45,000 and;
- P ≥ 30 and;
- V ≥ 500.

4.3 Methodology for Identifying Pedestrian Needs

4.3.1 Identification of Activity Generators and Primary Routes

The following approach was used to develop a hierarchy of pedestrian needs:

Primary Pedestrian Activity Zone

This is typically the main commercial street, i.e. Railway Road in this case. Throughout the day, pedestrians are attracted to this zone from surrounding residential areas: therefore, it is an important trip attractor. Also, there are high levels of pedestrian activity occurring within this zone, making it an important area for internal pedestrian movements (between shops and to car parking).

Secondary Pedestrian Activity Generators

This includes shops, schools, TAFEs, sporting facilities, clubs, hospitals and community facilities such as churches that are not located within the Primary Pedestrian Activity Zone. These land uses will attract people, but possibly only at certain times of the day or week.

Tertiary Pedestrian Activity Generators

These include the above land uses from the Secondary Activity Generators, but differentiate them based on a lower level of activity. Again, these are not located within the Primary Pedestrian Activity Zone.

Primary Pedestrian Routes

These are routes from residential areas to the Primary, Secondary and Tertiary Activity Zones and Generators. They are trunk or collector level routes, which do not reach every property but instead form a network of routes that are accessible to a significant catchment of population. These routes take account of the existing street network and topographical constraints, aiming to provide a direct and convenient route to the major trip generators. The demographic use of connecting generators is considered when defining the routes (i.e. schools and playing fields, aged care facilities and return service league clubs).

4.3.2 Identification of Infrastructure Provision Goals

The hierarchy above provides a basis for applying standard treatments, ensuring the development of a comprehensive and structured pedestrian network. Specific treatments may be required in some of these areas to accommodate the user needs or where other community suggestions are made.

These treatments form the basis of the proposed improvements. While this standard may not be achievable in the short-term due to the capital investment required, it is nevertheless a useful guide to work towards.

Desirable scenarios for potential infrastructure responses are outlined in Table 4-3.

Table 4-3 Infrastructure Provision Goals for Urban Areas

Hierarchy Feature	Desirable Route Infrastructure	Minimum Route Infrastructure
Primary Pedestrian Activity Zone	Footpaths on both sides of the road adjacent to the generators within the Primary Pedestrian Activity Zone of full width between the property line and kerb line (typically 3-4m).	Footpaths on both sides of the road adjacent to the Primary Pedestrian Activity Zone of 2m widths.
	Multiple assisted road crossings (pedestrian crossings or refuges).	Assisted road crossings where required by high traffic volumes.
Secondary Pedestrian Activity Generators	Footpath on the side of the road adjacent to the Activity Generator of 2m widths.	Footpath on the side of the road adjacent to the Activity Generator of 1.2m widths.
	Assisted road crossings at all Activity Generators.	Assisted road crossings where required by high traffic volumes and/or pedestrian types.
Tertiary Pedestrian Activity Generators	Footpath on the side of the road adjacent to the Activity Generator of 1.2m widths.	Footpath on the side of the road adjacent to the Activity Generator of 1.0m widths.
	Assisted road crossings where required by high traffic volumes and/or pedestrian types.	Assisted road crossings where required by high traffic volumes and/or pedestrian types.
Primary Pedestrian Routes	Footpath on one side of the road of 2m widths, footpath on other side of the road of 1.2m widths.	Footpath on one side of the road of 1.2 m widths.
	Assisted road crossings at most cross streets.	Assisted road crossings at major cross streets with high traffic volumes.
	Directional signage to Primary Pedestrian Activity Zones, Secondary and Tertiary Activity Generators for pedestrians.	Directional signage to Primary Pedestrian Activity Zones for pedestrians.

4.3.3 Aims in the Development of Infrastructure Recommendations

Major aims of the proposed improvement works, in decreasing order of priority, are:

- Fill any shortcomings in the Primary Pedestrian Activity Zone area through new footpaths and crossing points, particularly if safety issues have been raised
- Establish a network of key pedestrian routes in the town centre and between major trip generators including schools. Prioritised routes are those that serve a wide range of community users and can remove pedestrians from unsafe environments
- Broaden the extent of the network to areas outside of the Primary Pedestrian Activity Zones
- Provide additional pedestrian routes for primarily recreational or tourism purposes

Additionally, crossing points are generally catered for via pedestrian refuges, rather than a zebra crossing or signalised crossing. This is because there are onerous requirements to install marked pedestrian crossings in terms of pedestrian and vehicle warrants, as described by the Australian Standards requirements of AS 1742 Part 10. Refuges are of benefit to pedestrians as they allow for a staged crossing of a road and provide a visual cue for motorists that pedestrians can be expected in the vicinity of a refuge.

5. Proposed Pedestrian Improvements

This section identifies the pedestrian improvements proposed as part of this PAMP.

5.1 Types of Pedestrian Improvements

Pedestrian infrastructure initiatives are classified under the following categories:

- **Amenity** which is the attractiveness of an area for pedestrians. Improvements could involve upgrading an existing footpath surface or introducing landscaping or art feature along walkways
- **Safety** along the route to address safety issues for pedestrians from traffic or other physical hazards including trip hazards. This also includes perceived safety issues for pedestrians such as walking along or crossing busy roads
- **Information** that includes wayfinding signage, maps, brochures and pamphlets.
- **Disabled/pram access** along the routes that do not comply with Disabled Discrimination Act (DDA) standards and other issues including steep gradients and access via steps
- **Connectivity** with new links between streets and land uses
- **Severance** for pedestrians to cross busy roads, railway lines or waterways
- **Access to adjacent land uses** with new pedestrian access to land uses being blocked by fences or walls

These pedestrian improvements can include the types of projects shown in Table 5-1, which also indicates the benefits of each pedestrian improvement.

Table 5-1 Potential Pedestrian Infrastructure Initiatives

Initiative	Amenity	Safety along the Route	Information	Security	Disabled/ Pram Access	Connectivity	Severance	Access to Adjacent Land Use
Footpath Resurfacing	✓	✓			✓			
Footpath Replacement	✓	✓			✓			
New Footpath	✓	✓			✓		✓	✓
Bridge Crossing		✓			✓	✓	✓	✓
Underpass Crossing		✓			✓	✓	✓	✓
Lighting	✓	✓		✓				
Ramps					✓	✓		
Lifts					✓	✓		
Stairs						✓		
Pedestrian Actuated Signal Crossing		✓			✓	✓	✓	
Zebra Crossing		✓			✓	✓	✓	
Wombat Crossing		✓			✓	✓	✓	
Shared Zone	✓	✓			✓			

Initiative	Amenity	Safety along the Route	Information	Security	Disabled/ Pram Access	Connectivity	Severance	Access to Adjacent Land Use
Reduced Traffic Speed Limit		✓						
Traffic Calming	✓	✓						
Wayfinding/ Signage			✓	✓				
Information			✓	✓				

5.1.1 Cost Estimate Assumptions

The indicative unit costs shown in Table 5-3 for the purposes of costing the prioritised pedestrian improvement works.

Table 5-2 Indicative Cost Estimate Assumptions

PAMP / Footpath Treatment	Unit cost
New footpaths – 1.5m wide, no reinforcement (per sqm)	$130
Footpath upgrade/resurfacing (per sqm)	$150
Shared path – 2.5m wide, reinforced (per sqm)	$160
Line marked footpath (per 100m)	$500
Footpath grinding (each for a minimum of 20)	$50
Kerb ramp – to suit a standard 1.5m wide path	$1,800
Kerb blister/extension	$13,500
Pedestrian refuge	$15,000
Pedestrian Refuge + 2 blisters (kerb extensions)	$43,500
Service lid repair	$500
Zebra crossing	$15,000
Wombat crossing	$40,000
Traffic signal controlled crossing	$500,000
Traffic signal controlled crossing (existing signal intersection)	$100,000
Tactile Ground Surface Indicators (per sqm)	$500
Road signage	$300
Bus stop seats	$1,500
Bus stop pad	$8,400
Public seating	$3,000
Pedestrian fence (handrail) per m	$150
Pedestrian fence (guard rail) per m	$300
Removal of pedestrian infrastructure and upgrade	$13,500
Replace stair (per step)	$400
Vegetation trimming (per site + one hour site establishment)	$200

Where possible, unit rates provided by CoR have been used directly. For items where costs were not available previous studies, estimation and professional judgement have been used. These costs are indicative and are subject to change and make no allowances for contingencies or actual site design and installation.

5.2 Proposed Pedestrian Improvements

A full list of the proposed improvements is provided in Table 5-3. The issues and constraints identification (ID) references relate to those provided in Figure 3-2.

Table 5-3 Identified Issues and Proposed Upgrades

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
1	Constitution Road, west of See Street	Area around service lids are infilled with asphalt causing the surface to be indent and act as a trip hazard Described as 'appalling' by member of public	Resurface footpath	0	20	9,000
2	Constitution Road, east of See Street	High drop-off along footpath edge	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include new asphalt and painted edge	0	20	NA
3	Constitution Road, east of See Street	Narrow walkway due to barrier may inhibit access to pedestrians with prams and/or wheelchairs	The road is to be reconstructed in the future. This issue will be addressed in the new design	0	50	NA
4	Constitution Road, west of Bowden Street	High drop-off along footpath edge creates inconsistent surface level and trip hazard	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include soil topping	0	10	10,000
5	Constitution Road/Bowden St intersection	Non-standard pedestrian refuge is (missing safety bollards) and unaligned kerb ramps	The road is to be reconstructed in the future. This issue will be addressed in the new design	1	0	N/A
6	Bowden Street, south of Constitution Road	Raised footpath tile at the joint presents a trip hazard to pedestrians	Grind the footpath or asphalt banding to remove trip hazard	3	0	150
7	Bowden Street, south of Underdale Lane	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2	0	100
8	Bowden Street, south of Underdale Lane	Lid of service access protruding from footpath / driveway, creating a trip hazard for pedestrians	Upgrade the service access lid to remove trip hazard	1	N/A	500
9	Underdale Lane, west of Bowden Street	No footpath on western side of the street. Footpath provided on eastern side only	Provide a new footpath	65	65	12,675
10	Bay Drive, south of Underdale Lane	Service lid is lopsided and creates an inconsistent surface level is trip hazard	Upgrade the service access lid to remove trip hazard	1	N/A	500

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
11	Railway Road, south of Underdale Lane	Footpath outside of development area is narrow and poor quality	Resurface and widen footpath. This will be addressed as part of the public domain upgrade for this development	0	60	13500
12	Railway Road, north of Underdale Lane	Raised section of footpath resulting in a trip hazard	Fill in the verge	0	10	10,000
14	Bay Drive	Shared path ends at footpath. No signage to indicate where the shared path starts/ends	Install shared path start/ends signage	1	0	600
16	Bank Street	Bridge has been identified by public as an issue, with the decking not being sturdy	TfNSW to consider upgrading the footpath on the bridge. To be considered for future renewal in S94 plan	1	30	TBC
17	Bank Street, south of Meadowbank Station	No kerb ramp provided on either side of the road, with footpath on eastern side facing a driveway. This is one of only three east-west connection across the rail line at Meadowbank (alternative via Meadowbank Station or shared path along Parramatta River).	Provide a new kerb blister and kerb ramp on the western side, which requires the removal of one parking space. Realign footpath and provision of a kerb ramp on the eastern side	1	N/A	18,900
18	Bank Street	Kerb ramp has a high lip	Provide a new kerb ramp	1	N/A	1,800
19	Bank Street	Footpath is unsightly as it is covered in dirt and fallen leaves	Vegetation trimming / clearing	0	0	200
19	Bank Street	Pedestrian route is through the car park	Create a shared zone through the provision of signage	1	0	600
20	Bank Street	Service lid is sunken in creating a trip hazard to pedestrians	Resurface the footpath	0	2	450
21	Bank Street	No kerb ramp on the opposite side of the street to provide link	Provide a new kerb ramps	2	N/A	3,600
22	Bank Street	Raised section of footpath resulting in a trip hazard	Resurface the footpath	0	10	2,250
23	Bank Street	Service lid is not secure and moves when walked on - may act as a trip hazard	Upgrade the service access lid to remove trip hazard	1	N/A	500
24	Bank Street	Footpath is narrow with a width of approximately 0.7metres	Widen/upgrade footpath	0	30	6,750

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
25	Bank Street	Service lid is not secure and moves when walked on - may act as a trip hazard	Upgrade the service access lid to remove trip hazard	3	N/A	1,500
26	Meadow Crescent	Raised section of footpath resulting in a trip hazard	Resurface the footpath	0	10	2,250
27	Meadow Crescent	Footpath narrows from 1.2metres to approximately 0.7metres	Widen/upgrade footpath	0	80	18,000
28	Meadow Crescent	Missing link - Goat track indicates pedestrians desire line to footpath within Memorial Park from Meadow Crescent	Provide a new footpath	0	10	1,950
29	Meadow Crescent	Service lid is sunken in creating a trip hazard	Resurface the footpath	0	5	1,125
30	Meadow Crescent	The asphalt infill around the service lid is at a lower level than the surface	Resurface the footpath	0	5	1,125
31	Meadow Crescent	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5	0	250
32	Meadow Crescent	Section of narrow footpath (approximately 1 m)	Widen/upgrade footpath	0	20	4,500
33	Meadow Crescent	Footpath is uneven in sections and asphalt infill results in changes in the surface level - trip hazard	Resurface the footpath	0	80	18,000
34	Meadow Crescent, west of Bank Street	Poor visibility at crossing location behind a tree. Poor quality kerb ramps provided and the brick footpath paving is uneven and patched with asphalt infill in sections. This results in changes in the surface level and is a trip hazard	Re-design the intersection and resurface footpaths.	0	0	TBC
35	Constitution Rd West / Ross Smith Avenue intersection	Kerb ramp is not aligned with the one opposite	Provide kerb blister / extension and kerb ramps	1	0	17,100
36	Ross Smith Avenue	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2	0	100

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
37	Ross Smith Avenue	Overgrown foliage reduces the effective width of footpath	Trim the vegetation	0	0	200
38	Constitution Road/Federal Road intersection	Wide crossing point at intersection. High radius kerb return. Allows higher vehicle turning speeds	Reduce radius - kerb extension using raised pavement markers and line marking	1	0	17,100
39	Constitution Road/Federal Road	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5	0	250
40	Constitution Road/Adelaide Street intersection	No pedestrian refuge island provided across a wide crossing point (side street) at the intersection	Provide a new pedestrian refuge island and kerb extensions on both Adelaide Street and Constitution Road, and upgrade kerb ramps	2	0	43,500
41	Adelaide Street, south of Hibble Street	Bus shelter not located at the bus stop landing.	Consider moving the bus shelter to the bus landing	1	0	10,400
42	Adelaide Street/Andrew Street intersection	No provision of physical pedestrian island - only a gap in the raised pavement markers are provided.	Provide a new pedestrian refuge island and upgrade the kerb ramps	1	0	43,500
43	James Street/Adelaide Street	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	1	N/A	1,800
44	Constitution Road West, east of Adelaide Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4	0	200
45	Grand Avenue	No footpath on either side of the street	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.	0	440	85,800
46	Grand Avenue	No footpath on either side of the street	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.	0	440	85,800
47	Federal Road	No footpath provided along the eastern side of the street (existing footpath provided on the western side of the street). 'Goat track' observed on the eastern side of the street, indicate pedestrian desire line	Provide new footpath and kerb ramps	0	450	87,750

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
48	Mons Avenue	No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). 'Goat track'observed on the western side of the street, indicate pedestrian desire line.	Provide new footpath and kerb ramps	0	400	78,000
49	Constitution Road West	Overgrown foliage reduces the effective width of footpath	Trim the vegetation	0	0	200
50	Constitution Road West, east of Mons Ave	Footpath is steep and grading downwards towards the street in sections. May be difficult for some pedestrians to walk along this footpath.	Resurface the footpath	0	20	4,500
51	Constitution Road West, west of Station Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2	0	100
52	Station Street	No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). 'Goat track' observed on the western side of the street, indicate pedestrian desire line.	Provide new footpath and kerb ramps	0	460	89,700
53	Constitution Road West, east of Station Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2	0	100
54	See Street, south of Macpherson Street	Poor quality footpath	Resurface the footpath	0	150	33,750
55	Macpherson Street/Forsyth Street intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
56	Macpherson Street	Broken footpath due to tree root	Resurface the footpath	0	30	6,750
57	Macpherson Street	Poor quality footpath	Resurface the footpath	0	5	1125
58	Macpherson Street, between Mellor Street and Forsyth Street	No footpath on northern side. 'Goat track' observed indicating desire line for pedestrians.	Provide a new footpath	0	80	15,600
59	Macpherson Street/Mellor Street intersection	No stop line or give way lines at intersection. Unclear as to which intersection approach has the priority, which could be confusing to	Provide stop line or give way line at Macpherson St approach	1	N/A	TBC

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
		motorists and pedestrians crossing at this location				
59	Macpherson Street/Mellor Street intersection	Kerb ramps are unaligned	Replace and realign the kerb ramp(s)	1	N/A	1,800
60	Rhodes Street, south of Mellor Street	Pedestrians have the priority across the driveway. However, the provision of the yellow refuge island makes it unclear as to whether drivers or pedestrians have priority at this location	Remove the pedestrian refuge and consider replacing with zebra crossing	1	0	TBC
61	Rhodes Street, east of Hermitage Road	Poor quality footpath	Provide a shared path as per Bicycle Strategy	0	100	N/A funding as part of Bike Plan
62	Rhodes Street, east of Hermitage Road	Footpath ends at substation	Provide a shared path as per Bicycle Strategy	0	0	N/A funding as part of Bike Plan
63	Union Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	8	0	400
64	Union Street/Maxim Street intersection	Kerb ramp is facing into drain on the opposite side of the street	Provide a new kerb ramp and ramp to connect with footpath on northern side of Maxim Street	1	N/A	3,360
65	Maxim Street, west of Union Street	Pedestrians are required to access the pedestrian crossing from Union Street via a driveway and steps. Access to the northern side of the crossing via steps (no kerb ramp provided)	Pedestrian crossing is to be replaced with a new crossing in 2017/18 (Roads and Maritime grant). Introduce AS.1428 compliant ramp on the northern side of the crossing	0	30	N/A - Funding already provided
66	Maxim Street, east of Union Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4	0	200
67	Bank Street	Poor quality footpath	Resurface the footpath	0	25	5,625

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
68	Bank Street/Union Street	Kerb ramps not aligned with crossing point. No kerb ramp provided on the Bank Street approach	Provide new kerb ramps and kerb blister (extension). Potential issue with storm water drains in this area. Kerb extension design to consider impacts to storm water drainage	1	N/A	17,100
69	Andrew Street, west of Adelaide Street	No footpath along the southern side of the street	Consider providing a new footpath along southern side of the road	0	160	31,200
70	Andrew Street, west of Adelaide Street	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4	0	200
71	Andrew Street, west of Adelaide Street	No pad area or tactile ground surface indicators at bus stop	Provide bus stop pad area and tactile ground surface indicators at bus stop	1	0	8,900
72	Andrew Street, west of Adelaide Street	Poor quality footpath	Resurface the footpath	0	40	9,000
73	Andrew Street, west of Adelaide Street	No pedestrian crossing facility to bus stop on western side of the street (adjacent to Meadowbank Park)	Provide kerb blister/extension and kerb ramps	1	0	17,100
74	Macintosh Street	Raised footpath tile at the joint presents a trip hazard to pedestrians	Resurface the footpath	0	20	4,500
75	Macintosh Street/Crowley Crescent intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
76	Macintosh Street	Raised sections of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	11	0	550
77	Crowley Crescent	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5	0	250
78	Crowley Crescent	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5	0	250
79	Crowley Crescent	Overgrown foliage reduces the effective width of footpath	Trim the vegetation	0	0	200
80	Lancaster Avenue	Poor quality footpath with cracked paving.	Resurface the footpath	0	150	33,750

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
81	Lancaster Ave/Cobham Avenue intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
82	Lancaster Avenue	No pedestrian crossing facility to shared path. Crossing location is at a bend in the road, which could be unsafe for pedestrians.	Provide kerb blister/extension and kerb ramps to reduce the crossing distance and improve pedestrian safety	1	0	17,100
83	Lancaster Avenue/Andrew Street intersection	Non standard pedestrian refuge island	Upgrade pedestrian refuge island	1	0	43,500
84	Lancaster Avenue/ Andrew Street intersection	Long crossing across Andrew Street	Provide a kerb blister/extension and kerb ramps on each side of Andrew Street to reduce road crossing distance	2	0	17,100
85	Lancaster Avenue/ Andrew Street intersection	Non standard pedestrian refuge island	Upgrade pedestrian refuge island	1	0	43,500
86	Lancaster Avenue, north of Andrew Street	Poor quality footpath with cracked paving.	Resurface the footpath	0	100	22,500
87	Parer Street, east of Lancaster Avenue	Poor quality footpath	Resurface the footpath	0	20	4,500
88	Parer Street/ Andrew Lane intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
89	Cobham Avenue/Parer Street intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
90	Cobham Avenue/ Parer Street intersection	No footpath connection to the bus stop	Provide a new footpath, with landing and tactile ground surface indicators at bus stop	0	30	14,250
91	Cobham Avenue, south of Parer Street intersection	Sunken section of footpath forming a trip hazard	Resurface the footpath	0	4	900
92	Cobham Avenue, south of Parer Street intersection	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4	0	200
93	Cobham Avenue, north of Andrew Street	Poor quality footpath, with cracked and uneven sections which could be a trip hazard.	Resurface the footpath	0	45	10,125

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
94	Cobham Avenue, north of Andrew Street	Poor quality footpath, with cracked and uneven sections which could be a trip hazard	Resurface the footpath	0	50	11,250
95	Adelaide Street/Hibble Street intersection	Kerb ramps not aligned	Replace and realign the kerb ramp(s)	2	N/A	3,600
96	Adelaide Street	Footpath terrain is uneven especially at the interface with the newer concrete surface	Resurface the footpath	0	15	3,375
97	Adelaide Street/Deakin Street intersection	Kerb ramp is not aligned with the one opposite	Replace and realign the kerb ramp(s)	1	0	1,800
98	Deakin Street	Footpath does not continue to the end of the street	Provide a new footpath on one side of the road	0	180	35,100
99	Adelaide Street near Huxley Street	No pedestrian refuge crossing point along Adelaide Street for around 600 metres. Adelaide Street is a wide street, with bus stops along both sides of the street	Improve pedestrian connectivity across Adelaide Street by providing a new pedestrian refuge and kerb ramps	1	0	43,500
99	Adelaide Street/Huxley Street intersection	Kerb ramp is not aligned with the one opposite	Replace and realign the kerb ramp(s)	1	0	1,800
100	Huxley Street	Footpath does not continue to the end of the street	Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program	0	270	52,650
101	Adelaide Street/Huxley Street intersection	Kerb ramps are unaligned	Replace and realign the kerb ramp(s)	2	0	3,600
102	Adelaide Street between Darwin Street and Huxley Street	Footpath is deteriorating due to its age	Resurface the footpath	0	100	22,500
103	Darwin Street	No footpath along the southern side of the street. However, there is a footpath along the northern side of the street.	None	0	0	0
104	Adelaide Street/Darwin Street	Kerb ramp is not aligned with the one opposite	Replace and realign the kerb ramp(s)	1	0	1,800

PAMP ID	Street / Intersection	Description of Issue	Description of Proposed Treatment	Number of units	Distance (m)	Estimated Cost ($)
105	Lancaster Avenue	Raised section of footpath resulting in a trip hazard	Grind the footpath or asphalt banding to remove trip hazard	15	0	750
106	Constitution Road/Railway Parade	Meadowbank Station Precinct - traffic and pedestrian conflicts, with long queues observed due to pedestrian crossing. Driver impatience also observed at the crossing, which can be a safety issue for pedestrians	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location	1	0	TBC
107	Angus Street	No footpath on either side of street	Provide a new footpath on one side of the road, two kerb extensions and a pedestrian refuge island	2	120	23,400
108	Angus Street	No footpath on bridge	Provide a new shared zone	1	0	600
109	Hibble Street	Footpath does not continue to the end of the street	Provide a new footpath on one side of the road (northern side) to complete the footpath along this street	0	130	25,350

6. Priorities for Pedestrian Improvements

6.1 Methodology to Prioritise Pedestrian Requirements

The *How to Prepare a Pedestrian Access and Mobility Plan* (Roads and Maritime, 2002) provides guidance on what is important in providing footpaths. This method was used to determine the prioritisation of the proposed improvements.

Scores were derived for each of the recommended pedestrian improvements for the purpose of prioritising projects. The Weighted Criteria Scoring System from the Roads and Maritime publication *How to Prepare a Pedestrian Access and Mobility Plan* (2002) was used to prioritise each proposed improvement as shown in Table 6-1.

Table 6-1 RMS Weighted Criteria Scoring System

Category	Criteria
Land Use	Number of Attractors/Generators
	Land Use Type
	Proximity to Attractors/Generators
	Future Development with Attractors/Generators
Traffic Impact	Road Hierarchy
Safety	Identified as Hazardous Area (from consultation)
	Identified Pedestrian Crashes
Facility Benefits	Demonstrated Path
Continuity of Routes	Addition to Existing Facility
Priority	Pedestrian Route Hierarchy

The RMS defines the overall work prioritisation as:

- High (100 – 70)
- Medium (<70 – 40)
- Low (<40)

In order to determine the priorities of the pedestrian access improvement items in a PAMP, the infrastructure initiatives or studies are given a priority rating to be accommodated in the Council budget cycle. A possible weighted scoring system is provided in Table 6-2. However, a system could be customised to suit specific council areas according to local needs.

Table 6-2 Weighted Scoring Criteria to Prioritise the PAMP Initiatives

Category	Criteria	Performance Conditions 1	Score 2, 3
Land Use	Number of attractors/generators (locations)	more than 5 locations 3-5 locations 1-2 locations 0 locations	10 8 5 0
	Land use type	schools commercial/retail residential other	10 8 5 0
	Proximity to generators/attractors	less than 250 metres >250-500 metres >500-1000 metres >1000 metres	10 8 5 0
	Future development with attractors/generators	High medium low	5 3 1
Traffic Impact	Road hierarchy	State Road Regional Road Local Road Special use Other	15 10 8 5 0
Safety	Identified as hazardous area (from audit or consultation)	High Medium Low None	10 8 5 0
	Identified pedestrian crashes	>3 reported crashes per year 3 reported crashes per year 2 reported crashes per year 1 reported crash per year 0 reported crashes per year	15 10 8 5 0
Facility Benefits	Demonstrated path	High usage Medium usage Low usage No demonstrated use	10 8 5 0
Continuity of routes	Addition to existing facility	Link existing facilities Extension of facilities Addition to facilities Other	10 8 5 0
Priority	Pedestrian route hierarchy	High use Medium use Low use	5 3 1

Notes:

[1] Only one performance condition is to be selected for each criteria e.g. Land use type residential = 5.

[2 3] The maximum score achievable overall is 100.

The overall work prioritisation is then determined by adding up each criteria scores to reflect the environment of the specific area. e.g. High (100-60), Medium (<60-40), Low (<40) or Considering (not scored).

Source: *How to Prepare a Pedestrian Access and Mobility Plan,* Roads and Traffic Authority of NSW (RTA), 2002

Limitations of Roads and Maritime Services Methodology

Please note that there are limitations to the Roads and Maritime based methodology for prioritising each proposed improvement. For example, the Weighted Criteria Scoring System does not include the presence of existing footpaths on the opposite side of the street. This results in the proposed improvement having a higher priority using the RMS method (as it is assumed there is no footpath on the route).

In addition, at some key generators, pedestrian facilities may be urgently required (outside an aged care facility for example). However, the weighting system may not provide a score that is significantly higher for the same type of facility at a less critical location. Therefore, consideration needs to be taken when assessing priorities in conjunction with the Roads and Maritime methodology.

6.1.1 Walking Route Hierarchy

A hierarchy of pedestrian routes has been established, based on observed pedestrian demand and proximity to pedestrian attractors, such as town centre land uses and schools, and key walking routes. This walking route hierarchy was used as part of the scoring method to determine the priority for proposed pedestrian infrastructure upgrades.

Figure 6-1 shows the walking route hierarchy used for the PAMP scoring assessment. The figure shows high and medium use walking routes, with all other routes being low use.

Figure 6-1 Walking Route Hierarchy

6.2 Ranking of the Pedestrian Improvements

Results from the Roads and Maritime weighted prioritisation are provided in Table 6-3. The issues and constraints identification (ID) references relate to those provided in Figure 3-2. Recommendations are based on GHD site based prioritisation. Roads and Maritime weighted prioritisations are provided in full in 0.

The overall work prioritisation has been determined for high, medium and low priority projects, by using the following prioritisation scoring ranges:

- High priority: 100-60
- Medium priority: <60-40
- Low priority: <40

Table 6-3 Infrastructure Provision Goals for Meadowbank

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
106	Constitution Road/Railway Parade	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location	76	1	High
34	Meadow Crescent, west of Bank Street	Re-design the intersection and resurface footpaths	74	2	High
33	Meadow Crescent	Resurface the footpath	62	3	High
65	Maxim Street, west of Union Street	Pedestrian crossing is to be replaced with a new crossing in 2017/18 (Roads and Maritime grant). Introduce AS.1428 compliant ramp on the northern side of the crossing	60	4	High
17	Bank Street, south of Meadowbank Station	Provide a new kerb blister (extension) and kerb ramp on the western side, which requires the removal of one parking space. Realign footpath and provision of a kerb ramp on the eastern side	58	5	Medium
62	Rhodes Street, east of Hermitage Road	Provide a shared path as per Bicycle Strategy	58	5	Medium
64	Union Street/Maxim Street intersection	Provide a new kerb ramp and ramp to connect with footpath on northern side of Maxim Street	58	5	Medium
1	Constitution Road, west of See Street	Resurface footpath	55	8	Medium
2	Constitution Road, east of See Street	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary	55	8	Medium

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
		upgrade to include new asphalt and painted edge			
59	Macpherson Street/Mellor Street intersection	Provide stop line or give way line at Macpherson Street approach	55	8	Medium
60	Rhodes Street, south of Mellor Street	Remove the pedestrian refuge and consider replacing with zebra crossing	55	8	Medium
61	Rhodes Street, east of Hermitage Road	Provide a shared path as per Bicycle Strategy	55	8	Medium
107	Angus Street	Provide a new footpath on one side of the road, 2 kerb extensions and a pedestrian refuge island	55	8	Medium
108	Angus Street	Provide a new shared zone	55	8	Medium
28	Meadow Crescent	Provide a new footpath	53	15	Medium
3	Constitution Road, east of See Street	The road is to be reconstructed in the future. This issue will be addressed in the new design	52	16	Medium
59	Macpherson Street/Mellor Street intersection	Replace and realign the kerb ramp(s)	52	16	Medium
14	Bay Drive	Install shared path start/ends signage	51	18	Medium
16	Bank Street	TfNSW to consider upgrading the footpath on the bridge. To be considered for future renewal in S94 plan	51	18	Medium
55	Macpherson Street/Forsyth Street intersection	Replace and realign the kerb ramp(s)	50	20	Medium
66	Maxim Street, east of Union Street	Grind the footpath or asphalt banding to remove trip hazard	50	20	Medium
32	Meadow Crescent	Widen/upgrade footpath	48	23	Medium
4	Constitution Road, west of Bowden Street	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include soil topping	47	24	Medium
58	Macpherson Street, between Mellor Street and Forsyth Street	Provide a new footpath	47	24	Medium
10	Bay Drive, south of Underdale Lane	Upgrade the service access lid to remove trip hazard	46	26	Medium
11	Railway Road, south of Underdale Lane	Resurface and widen footpath. This will be	46	26	Medium

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
		addressed as part of the public domain upgrade for this development			
12	Railway Road, north of Underdale Lane	Fill in the verge	46	26	Medium
21	Bank Street	Provide a new kerb ramps	45	29	Medium
40	Constitution Road/Adelaide Street intersection	Provide a new pedestrian refuge island and kerb extensions on both Adelaide Street and Constitution Road, and upgrade kerb ramps	45	29	Medium
41	Adelaide Street, south of Hibble Street	Consider moving the bus shelter to the bus landing	45	29	Medium
42	Adelaide Street/Andrew Street intersection	Provide a new pedestrian refuge island and upgrade the kerb ramps	45	29	Medium
54	See Street, south of Macpherson Street	Resurface the footpath	45	29	Medium
56	Macpherson Street	Resurface the footpath	45	29	Medium
57	Macpherson Street	Resurface the footpath	45	29	Medium
73	Andrew Street, west of Adelaide Street	Provide kerb blister/extension and kerb ramps	45	29	Medium
9	Underdale Lane, west of Bowden Street	Provide a new footpath	44	37	Medium
99	Adelaide Street near Huxley Street	Improve pedestrian connectivity across Adelaide Street by providing a new pedestrian refuge and kerb ramps	44	37	Medium
19	Bank Street	Create a shared zone through the provision of signage	43	39	Medium
24	Bank Street	Widen/upgrade footpath	43	39	Medium
27	Meadow Crescent	Widen/upgrade footpath	43	39	Medium
29	Meadow Crescent	Resurface the footpath	43	39	Medium
30	Meadow Crescent	Resurface the footpath	43	39	Medium
31	Meadow Crescent	Grind the footpath or asphalt banding to remove trip hazard	43	39	Medium
5	Constitution Road/Bowden Street intersection	The road is to be reconstructed in the future. This issue will be addressed in the new design	42	46	Medium
6	Bowden Street, south of Constitution Road	Grind the footpath or asphalt banding to remove trip hazard	42	46	Medium

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
8	Bowden Street, south of Underdale Lane	Upgrade the service access lid to remove trip hazard	42	46	Medium
35	Constitution Road West/Ross Smith Avenue intersection	Provide kerb blister / extension and kerb ramps	42	46	Medium
38	Constitution Road/Federal Road intersection	Reduce radius - Kerb extension using raised pavement markers and line marking	42	46	Medium
90	Cobham Avenue/Parer Street intersection	Provide a new footpath, with landing and tactile ground surface indicators at bus stop	42	46	Medium
43	James Street/Adelaide Street	Replace and realign the kerb ramp(s)	40	52	Medium
68	Bank Street/Union Street	Provide new kerb ramps and kerb blister. Potential issue with storm water drains in this area. Kerb extension design to consider impacts to storm water drainage.	40	52	Medium
84	Lancaster Avenue/Andrew Street intersection	Provide a kerb blister / extension and kerb ramps on each side of Andrew Street to reduce road crossing distance	39	54	Low
85	Lancaster Avenue/Andrew Street intersection	Upgrade pedestrian refuge island	39	54	Low
7	Bowden Street, south of Underdale Lane	Grind the footpath or asphalt banding to remove trip hazard	37	56	Low
39	Constitution Road/Federal Road	Grind the footpath or asphalt banding to remove trip hazard	37	56	Low
52	Station Street	Provide new footpath and kerb ramps	37	56	Low
71	Andrew Street, west of Adelaide Street	Provide bus stop pad area and tactile ground surface indicators at bus stop	37	56	Low
83	Lancaster Avenue/Andrew Street intersection	Upgrade pedestrian refuge island	37	56	Low
88	Parer Street/Andrew Lane intersection	Replace and realign the kerb ramp(s)	37	56	Low
89	Cobham Avenue/Parer Street intersection	Replace and realign the kerb ramp(s)	37	56	Low
102	Adelaide Stret between Darwin Street and Huxley Street	Resurface the footpath	37	56	Low
95	Adelaide Street/Hibble Street intersection	Replace and realign the kerb ramp(s)	36	64	Low
96	Adelaide Street	Resurface the footpath	36	64	Low

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
97	Adelaide Street/Deakin Street intersection	Replace and realign the kerb ramp(s)	36	64	Low
18	Bank St reet	Provide a new kerb ramp	35	67	Low
19	Bank Street	Vegetation trimming/clearing	35	67	Low
20	Bank Street	Resurface the footpath	35	67	Low
22	Bank Street	Resurface the footpath	35	67	Low
23	Bank Street	Upgrade the service access lid to remove trip hazard	35	67	Low
25	Bank Street	Upgrade the service access lid to remove trip hazard	35	67	Low
26	Meadow Crescent	Resurface the footpath	35	67	Low
44	Constitution Road West, east of Adelaide Street	Grind the footpath or asphalt banding to remove trip hazard	35	67	Low
53	Constitution Road West, east of Station Street	Grind the footpath or asphalt banding to remove trip hazard	35	67	Low
69	Andrew Street, west of Adelaide Street	Consider providing a new footpath along southern side of the road	35	67	Low
98	Deakin Street	Provide a new footpath on one side of the road	35	67	Low
100	Huxley Street	Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program.	35	67	Low
103	Darwin Street	None	35	67	Low
109	Hibble Street	Provide a new footpath on one side of the road (northern side) to complete the footpath along this street.	35	67	Low
93	Cobham Ave, north of Andrew Street	Resurface the footpath	34	80	Low
94	Cobham Ave, north of Andrew Street	Resurface the footpath	34	80	Low
99	Adelaide Street / Huxley Street intersection	Replace and realign the kerb ramp(s)	34	80	Low
101	Adelaide Street/Huxley Street intersection	Replace and realign the kerb ramp(s)	34	80	Low
104	Adelaide Street / Darwin Street	Replace and realign the kerb ramp(s)	34	80	Low
45	Grand Avenue	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18	33	85	Low

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
		footpath expansion program.			
72	Andrew Street, west of Adelaide Street	Resurface the footpath	32	86	Low
82	Lancaster Avenue	Provide kerb blister / extension and kerb ramps to reduce the crossing distance and improve pedestrian safety	32	86	Low
91	Cobham Avenue, south of Parer Street intersection	Resurface the footpath	32	86	Low
92	Cobham Avenue, south of Parer Street intersection	Grind the footpath or asphalt banding to remove trip hazard	32	86	Low
46	Grand Avenue	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.	30	90	Low
47	Federal Road	Provide new footpath and kerb ramps	30	90	Low
48	Mons Avenue	Provide new footpath and kerb ramps	30	90	Low
63	Union Street	Grind the footpath or asphalt banding to remove trip hazard	30	90	Low
67	Bank Street	Resurface the footpath	30	90	Low
36	Ross Smith Avenue	Grind the footpath or asphalt banding to remove trip hazard	29	95	Low
37	Ross Smith Avenue	Trim the vegetation	29	95	Low
70	Andrew Street, west of Adelaide Street	Grind the footpath or asphalt banding to remove trip hazard	27	97	Low
75	Macintosh Street / Crowley Crescent intersection	Replace and realign the kerb ramp(s)	27	97	Low
81	Lancaster Avenue / Cobham Avenue intersection	Replace and realign the kerb ramp(s)	27	97	Low
86	Lancaster Avenue, north of Andrew Street	Resurface the footpath	27	97	Low
87	Parer Street, east of Lancaster Avenue	Resurface the footpath	27	97	Low
74	Macintosh Street	Resurface the footpath	22	102	Low
76	Macintosh Street	Grind the footpath or asphalt banding to remove trip hazard	22	102	Low

PAMP ID	Street / Intersection	Description of Proposed Treatment	Roads & Maritime Priority	Roads & Maritime Rank	Priority
77	Crowley Crescent	Grind the footpath or asphalt banding to remove trip hazard	22	102	Low
78	Crowley Crescent	Grind the footpath or asphalt banding to remove trip hazard	22	102	Low
79	Crowley Crescent	Trim the vegetation	22	102	Low
80	Lancaster Avenue	Resurface the footpath	22	102	Low
105	Lancaster Avenue	Grind the footpath or asphalt banding to remove trip hazard	22	102	Low
49	Constitution Road West	Trim the vegetation	20	109	Low
50	Constitution Rd West, east of Mons Avenue	Resurface the footpath	20	109	Low
51	Constitution Road West, west of Station Street	Grind the footpath or asphalt banding to remove trip hazard	20	109	Low

7. Conclusions and Recommendations

7.1 Conclusions

GHD was engaged by CoR to prepare a Pedestrian Access and Mobility Plan (PAMP) for the Meadowbank Station West area, to improve the walking environment for all pedestrians. The development of this study included the following:

- Review relevant background report, policies and plans
- Undertake community and stakeholder consultation
- Undertake site audits of current pedestrian infrastructure
- Identify, cost and priorities improvements for walking infrastructure.

Background review

The background review concluded that:

- The majority of State and Local Government planning policy documents reviewed as part of this study aim to encourage sustainable travel modes, including walking. The strategies identified in this PAMP will help to support this objective by providing improved walking connections.
- The proportion of age groups between 20 to 39 years old in Meadowbank is significantly greater than compared to the Greater Sydney average, with this age group consisting of 59 per cent of the population and 30 per cent of the population in Greater Sydney
- The proportion of people in Meadowbank aged between five and 19 is significantly lower than that of Greater Sydney. This indicates that there is a lower proportion of primary and secondary school students.
- A review of crash data for the study area indicates that there were four crashes involving pedestrians over the five-year period between 2011 to 2015 (inclusive).

Community consultation

Community consultation was completed across a range of media platforms as discussed in Section 3. From this, GHD concluded that:

- The majority of respondents to the online community survey undertaken for this PAMP (91 per cent) have access to a motor vehicle. Driving was generally the most popular mode of transport when travelling to participate in most activities. Walking has a high mode share for accessing local shops and recreational areas.
- The reason most survey respondents do not walk more often was that there is too much traffic along roads within the study area. Additional road crossings for pedestrians were identified as the most important change for encouraging more walking on a regular basis.

The most commonly identified issues/gaps in the PAMP study area walking network were:

- There is a need for a pedestrian bridge/underpass or traffic lights to replace the existing pedestrian crossings at Meadowbank Station
- There is a need for improved visibility and reduced foliage near Constitution Road
- The footpath from the train station to Meadowbank Park along the eastern side of Bank Street needs to be improved

Stakeholder Consultation

Key stakeholders were contacted via email and phone calls to gain insight and into concerns about the pedestrian network in the Meadowbank study area. The majority of issues identified through consultation with key stakeholders relate to the need for pedestrian crossings. These include:

- Limited crossing facilities at Belmore Street
- Limited crossing facilities at Bowden Street
- No safe crossings near the roundabout on Constitution Road

Site Audit

An audit of existing issues and constraints for pedestrians was undertaken in the study area. The audit focused on identifying existing facilities, land uses, any shortcomings in the pedestrian environment and potential safety issues. The key issues and constraints included:

- Poor quality footpath surfaces
- Pedestrians crossing busy roads at non-permitted crossing locations
- Missing pedestrian links
- Lack of pedestrian crossings
- Poor quality pedestrian crossings
- Street furniture or overgrown vegetation in footpaths, blocking the path of pedestrians
- Lack of disabled or pram access

A key issue for pedestrians within the study area is conflicts with vehicles at the existing pedestrian crossings on both sides of Meadowbank Station (at Bank Street on the western side and Railway Road on the eastern side). The current arrangement can cause long delays to traffic, particularly during the weekday PM peak when large numbers of people are alighting from trains and walking across the crossing in large groups. Drivers were observed to be impatient at both crossings, resulting in an increased safety risk for pedestrians.

7.2 Recommendations

Pedestrian access and mobility improvement works were identified and prioritised for the study area. The highest ranking projects that are considered worthwhile for progression into the detailed concept planning, design and implementation stage are listed under the categories of:

- Further investigations and concept planning
- Footpath works to improve the safety for pedestrians along the streets
- Upgrades to allow for safer pedestrian movements to cross busy streets

Investigations and Concept Planning

- Bank Street/Constitution Road West intersection:
  - Non-standard pedestrian crossing (zebra crossing) is provided, which crosses two approach lanes in a northbound direction
  - Pedestrian crossing impacts traffic operations, resulting in long queues along Bank Street (northbound) and Railway Road
  - Poor quality footpath surfaces and kerb ramps exist at this location
  - The intersection was identified as an issue for both pedestrians and drivers as part of the community consultation process and through the site audits
- Railway Street/Constitution Road intersection:
  - Located at Meadowbank Station precinct
  - Traffic and pedestrian conflicts, with long queues observed due to pedestrian crossing. Driver impatience also observed at the crossing, which can be a safety issue for pedestrians
  - The intersection was identified as an issue for both pedestrians and drivers as part of the community consultation process and through the site audits

Footpath Works

Identified locations for new footpath connections include:

- Grand Avenue
- Federal Road
- Mons Avenue
- Station Street
- Macpherson Street, between Mellor Street and Forsyth Street
- Maxim Street, west of Union Street
- Deakin Street
- Huxley Street
- Darwin Street
- Hibble Street
- Angus Street

Pedestrian Crossings

Upgrade or provide new pedestrian refuges/kerb blisters (extensions) at the following locations:

- Bank Street, south of Meadowbank Station
- Constitution Road West/Ross Smith Avenue intersection
- Constitution Road/Federal Road intersection
- Constitution Road/Adelaide Street intersection
- Adelaide Street/Andrew Street intersection
- Adelaide Street/Andrew Street intersection
- Bank Street/Union Street intersection
- Andrew Street, west of Adelaide Street
- Lancaster Avenue, at access to shared path
- Lancaster Avenue/Andrew Street intersection
- Adelaide Street near Huxley Street

Priorities

Table 7-1 provides a summary of the highest priority proposed upgrades that were identified (with scores of 60 or higher using the Roads and Maritime scoring system).

Table 7-1 PAMP Priorities – Proposed Upgrades

PAMP ID	Street / Intersection	Description of Proposed Treatment	RMS Priority	RMS Rank
106	Constitution Road/Railway Parade	Intersection re-design	76	1
34	Meadow Crescent, west of Bank Street	Intersection re-design and resurface footpaths.	74	2
33	Meadow Crescent	Resurface footpath	62	3
65	Maxim Street, west of Union Street	Provide footpath behind a kerb barrier along the southern side of the road, from Union Street to the pedestrian crossing. Introduce AS.1428 compliant ramp on the northern side of the crossing.	60	4

Appendices

Appendix A – Consultation Summary Report

City of Ryde

Meadowbank Station West Pedestrian Access and Mobility Plan (PAMP)

Consultation Outcomes Report

29 December 2017

This report: has been prepared by GHD for City of Ryde Council and *may only be used and relied on by City of Ryde Council for the purpose agreed between GHD and the City of Ryde Council as set out in section 1.2 of this report.*

GHD otherwise disclaims responsibility to any person other than City of Ryde Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 1.2 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

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1. Introduction

1.1 Background

GHD is working with the City of Ryde Council (CoR) to develop a Pedestrian Access and Mobility Plan (PAMP) for Meadowbank Station West. A PAMP is a comprehensive strategic and action plan to develop pedestrian policies and facilities.

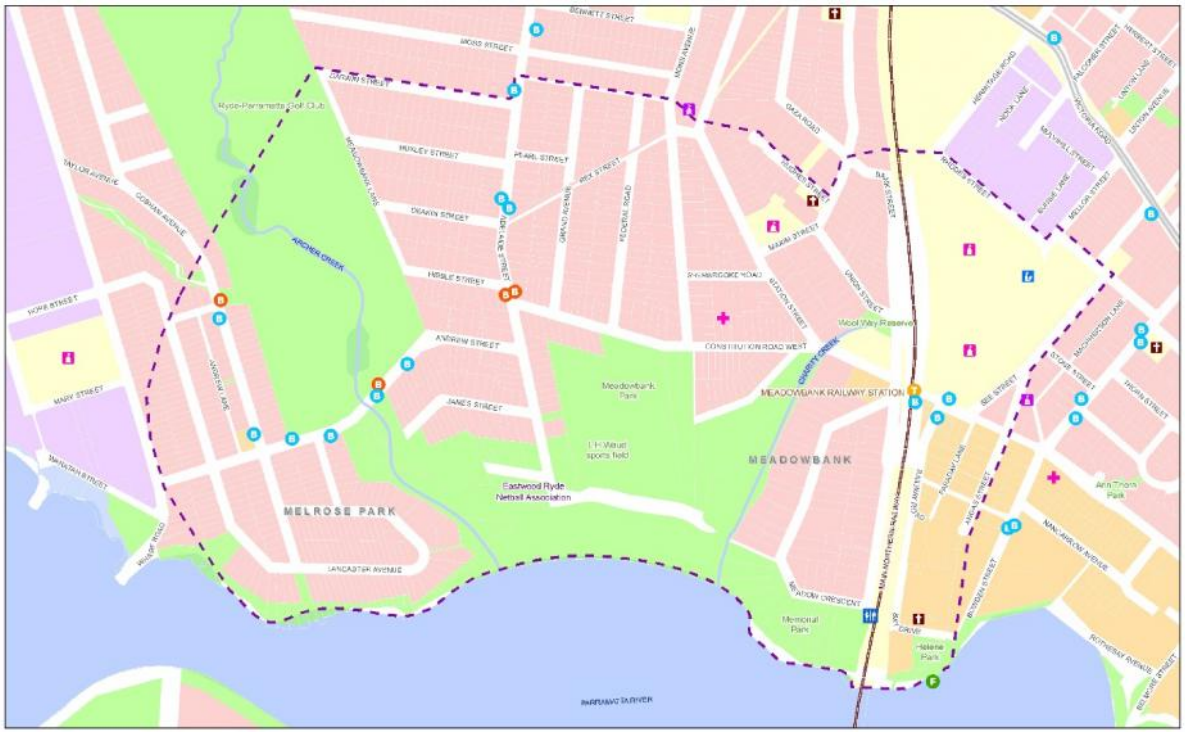
The PAMP provides an important framework for pedestrian of all ages and mobility. It assess existing pedestrian needs, facilities management and enhancement.

The PAMP is a strategic document that identifies the pedestrian network hierarchy and associated action plan for management. The strategic, high-level, objectives of this PAMP are to:

- Integrate walking into the transport system as a legitimate form of transport to encourage it more
- Provide appropriate pedestrian facilities where required to improve accessibility and mobility
- Identify clusters and patterns of pedestrian crashes, to address safety issues
- Development and integration of pedestrian routes that complement 'Safer Routes to School' projects and Local Area Traffic Management schemes

The study area for the PAMP is shown in Figure 1-1.

Figure 1-1 Study Area



The PAMP has been prepared according to the following stages:

- Stage one - GHD carried out a comprehensive site audit of the existing path network and pedestrian facilities within the area
- Stage two - Collection and development of spatial data
- Stage three – Stakeholder and community consultation
- Stage four – Public exhibition and finalisation of the PAMP

GHD are also preparing a PAMP for West Ryde Centre on behalf of CoR. The consultation activities for both PAMPs have been undertaken concurrently.

1.2 Purpose of this Report

This report provides a summary of the outcomes of the stakeholder and community consultation activities undertaken to inform preparation of the Meadowbank Station West PAMP.

A number of consultation activities were undertaken for this PAMP, including discussions with stakeholders and the community, and an online survey. The purpose of the consultation process was to allow the community and stakeholders to provide input into the PAMP by identifying their views, concerns, and ideas, relating to pedestrian facilities and the walking network in Meadowbank.

A summary of each consultation activity and the number of people who were engaged for each activity is provided in Table 1-1.

Table 1-1 Overview of Community Engagement

Activity	Date	Number of People Engaged
Online community survey - questionnaire	30 November to 7 March 2017	136
Social Pinpoint - online map based community survey	30 November to 7 March 2017	80
Social media - comments provided to Council on the CoR Facebook site	2 February to 28 February 2017	75
Individual discussions with key Stakeholders. A letter was also sent to stakeholders to provide information of the project and consultation, which was prepared by GHD.	March to April 2017	10
Written responses from the community provided to CoR	January to March 2017	9
‘Pop-up’ community consultation session near Meadowbank Station	12 December 2016	15
Community workshop	21 March 2017	5
Exhibition of the draft PAMP report - - Written responses from the community provided to CoR	October to November 2017	5

The PAMP and consultation activities were promoted through:

- Newspaper advertisements in the Northern District Times on 30 November 2016 and 8 March 2017
- CoR Have Your Say website

- CoR Facebook site
- A flyer letter drop, which was delivered to all households within the study area (refer to Appendix A) to promote the online surveys/Social Pinpoint mapping tool and to invite residents to the community workshop

2. Key Results

This section of the report provides a summary of the key findings from the consultation activities. Detailed results from the consultation activities are provided in Sections 4, 5, 6 and 7.

2.1 Stakeholder Consultation

Key stakeholders were contacted via email and phone calls, to gain insight and an understanding of potential concerns regarding the pedestrian network in the Meadowbank study area. The following stakeholders were contacted:

- Roads and Maritime
- Sydney Buses
- TAFE NSW
- West Ryde Public School
- Meadowbank Public School
- St Michaels Catholic Primary School
- Ryde Police
- BikeNorth
- Guide Dogs Australia
- West Ryde Progress Association

The majority of issues identified through consultations with key stakeholders relate to the need for pedestrian crossings. These include:

- Limited crossing facilities at Belmore Street
- Limited crossing facilities at Bowden Street
- There are no safe crossings near the roundabout on Constitution Road

2.2 Community Consultation - Online Survey

The key results of the online survey include:

- The majority of survey respondents (91 per cent) have access to a motor vehicle. Driving was generally the most popular mode of transport when travelling to participate in most activities
- Walking has a high mode share for accessing local shops and recreational areas. Other modes of transport (cycle, train, but and ferry) had lower mode share for access to local shops and recreational areas although higher rates for commuting to/from work or school
- The reason most survey respondents do not walk more often was that there is too much traffic along roads within the study area. The weather also rated highly as a reason for not walking more often.
- When asked what sort of changes would encourage more walking on a regular basis, the top response was additional road crossings for pedestrians (70 per cent).

2.3 Community Consultation - Social Pinpoint / Community Workshop

In the Social Pinpoint online mapping tool and during the community workshop, the most commonly identified issues/gaps in the PAMP study area walking network were:

- There is a need for improved visibility and reduced foliage near Constitution Road
- There is a need for a pedestrian bridge/underpass or traffic lights to replace the existing pedestrian crossings at Meadowbank Station
- The footpath from the train station to Meadowbank Park along the eastern side of Bank Street needs to be improved

2.4 Community Consultation - Written Responses

The key issues/ideas provided via email submissions to CoR and provided on the COR Facebook social media site include:

- A traffic light controlled pedestrian crossing or overbridge for pedestrians at Meadowbank Station (western side)
- Potentially improving train frequency and scheduling of trains to arrive at different times, which could improve traffic flow and pedestrian safety in the area around Meadowbank Station

2.5 Community Consultation - Written Responses during Public Exhibition

The key issues/ideas provided by community members to CoR during the exhibition of the draft PAMP report are listed below.

- Pedestrian crossing adjacent to Meadowbank Station at Bank Street:
  - Pedestrian and vehicle conflicts, results in traffic impacts and safety issues for pedestrians. This issue has been addressed as part of this PAMP, with an intersection re-design recommended.
- Pedestrian crossing adjacent to Meadowbank Station at Railway Road:
  - Pedestrian and vehicle conflicts, results in traffic impacts and safety issues for pedestrians. This issue has been addressed as part of this PAMP, with an intersection re-design recommended.
- Constitution Road/See Street intersection:
  - Pedestrian and vehicle conflicts at this intersection. This is expected to be addressed as part of a future road upgrade.
- Station Street, along the western side of the road:
  - There is no footpath currently provided along the western side of the road. This issue has been addressed as part of this PAMP, with a new footpath proposed along the western side of Station Street.
- Station Street: A new pedestrian crossing could be provided south of Sherbrook Street. The proposed footpath along the western side of Station Street would allow pedestrians to cross Station Street using the existing pedestrian refuge at the intersection with Constitution Road
- General - improvements to footpath quality is required
- General - Traffic impacts resulting from new development in the area

3. Online Survey

A survey questionnaire was available online between 30 November and 7 March 2017, which allowed the community to identify existing gaps and issues in the walking network in the Meadowbank Station West PAMP study area. The survey consisted of nine multiple-choice and open-ended short answer questions. Feedback from the survey will help the CoR to understand walking behaviours and will provide the CoR with information to identify opportunities for improving the walking route network in Meadowbank.

The survey was advertised on Council's website through the 'Have Your Say' link, It was also promoted on Council's Facebook page and through a flyer which was delivered to residents within the study area.

As an incentive for community members to participate in the survey, CoR offered six pairs of movie tickets to members of the community who participated in the survey. A total of 136 responses were received to the online survey.

This section provides an analysis of the general survey results. A full summary of survey results is provided at Appendix B.

3.1 Profile of Respondents

3.1.1 Age Profile

Respondents were asked to identify their age group. Sixty seven per cent of respondents were 35 years and older. The highest number of respondents was aged between 35 and 49 years old (41 per cent).

It was noted from the age profile of the surveys resonant, that the proportion of respondents in the 35 to 49 age range is much higher than proportion of Meadowbank residents within this age range. While the sample is not representative, it does give an indication of the attitudes of community members within certain age groups who are engaged with Council's Facebook page and website.

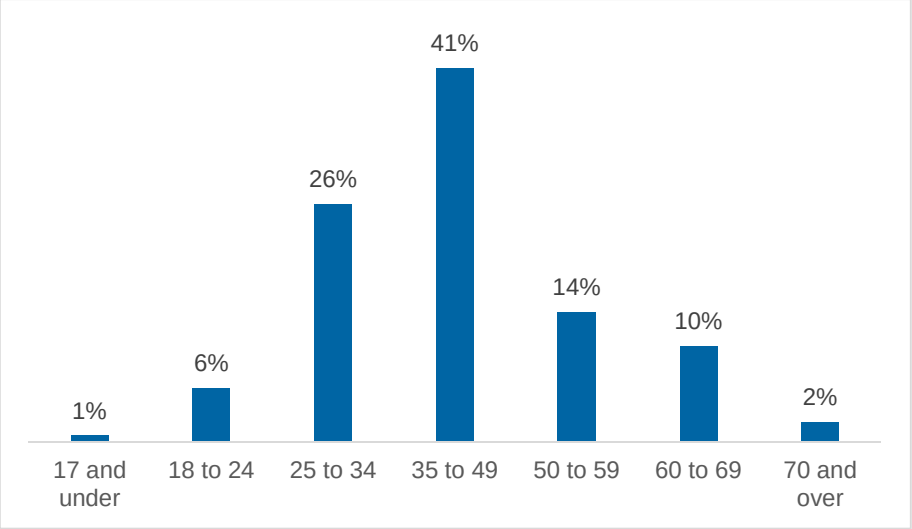


Figure 3-1 - Age Groups of Respondents

3.1.2 Gender

Around two-thirds of respondents were female (63 per cent) and around a third were male (37 per cent). Two respondents did not answer this question.

The proportion of women who responded to the survey was much higher than the proportion of women in the general population. While the sample is not representative of the area, it does give an indication of the attitudes amongst men and women who are engaged with Council via Council's Facebook page and website.

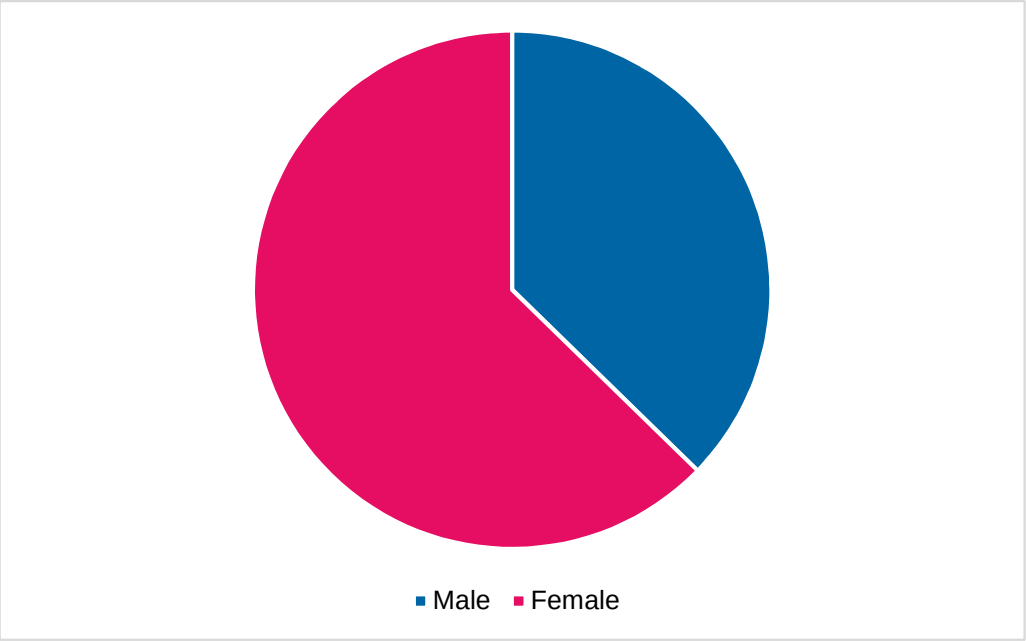


Figure 3-2 - Gender of Respondents

3.1.3 Access to a Motor Vehicle

Respondents were asked if they have access to a motor vehicle. The survey found that the majority of respondents (91 per cent) have access to a motor vehicle.

3.1.4 Transport usage

Respondents were asked what type of transport they typically use for a variety of travel activities. Respondents were able to choose more than one mode of transport for each activity type:

- Commuting to/from home to work, school or other - majority of respondents drive (66 per cent)
- Commuting to/from the bus stop - majority of respondents walk (85 per cent)
- Accompanying a child/children to school - majority of respondents drive (67 per cent) or and 51 per cent walk
- For recreational activities - majority of respondents drive (73 per cent) and 71 per cent walk
- Travelling to/from local shops - majority of respondents drive (75 per cent)

Cycling, the ferry and the bus were the least popular modes of transport across all activities.

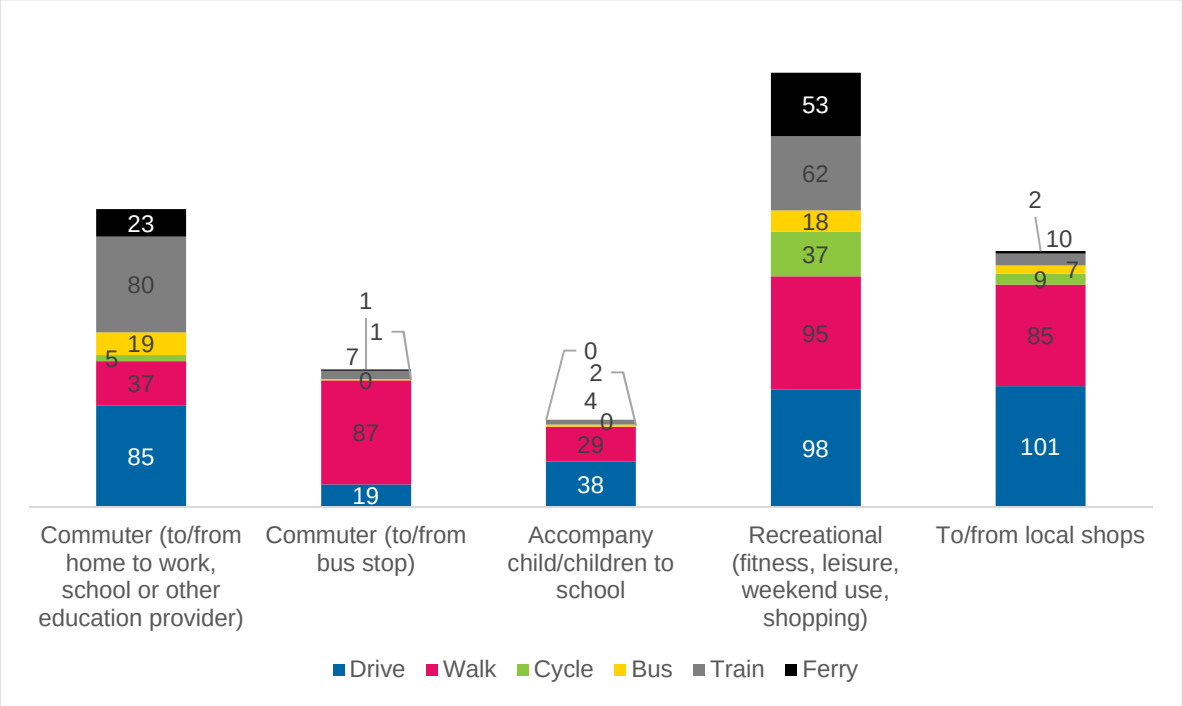


Figure 3-3 - Transport Usage by Activity Type

3.2 Reasons for Not Walking

Respondents were asked to provide the reasons why they do not walk more often for four different journey types (to shops, school, work and recreation). Four respondents did not answer this question.

The top reasons why respondents do not walk more often for all four journey types, were:

- For walking to the shops, the weather (e.g. too hot, too cold) was rated the highest reason for not walking more often (by 39 respondents)
- For walking to school, too much traffic along the roads was rated the highest reason for not walking more often (by 24 respondents)
- For walking to work, distance is too long to walk as rated the highest reason for not walking more often (by 61 respondents)

For walking for recreational activities, 56 respondents indicated that they already walk to recreational activities

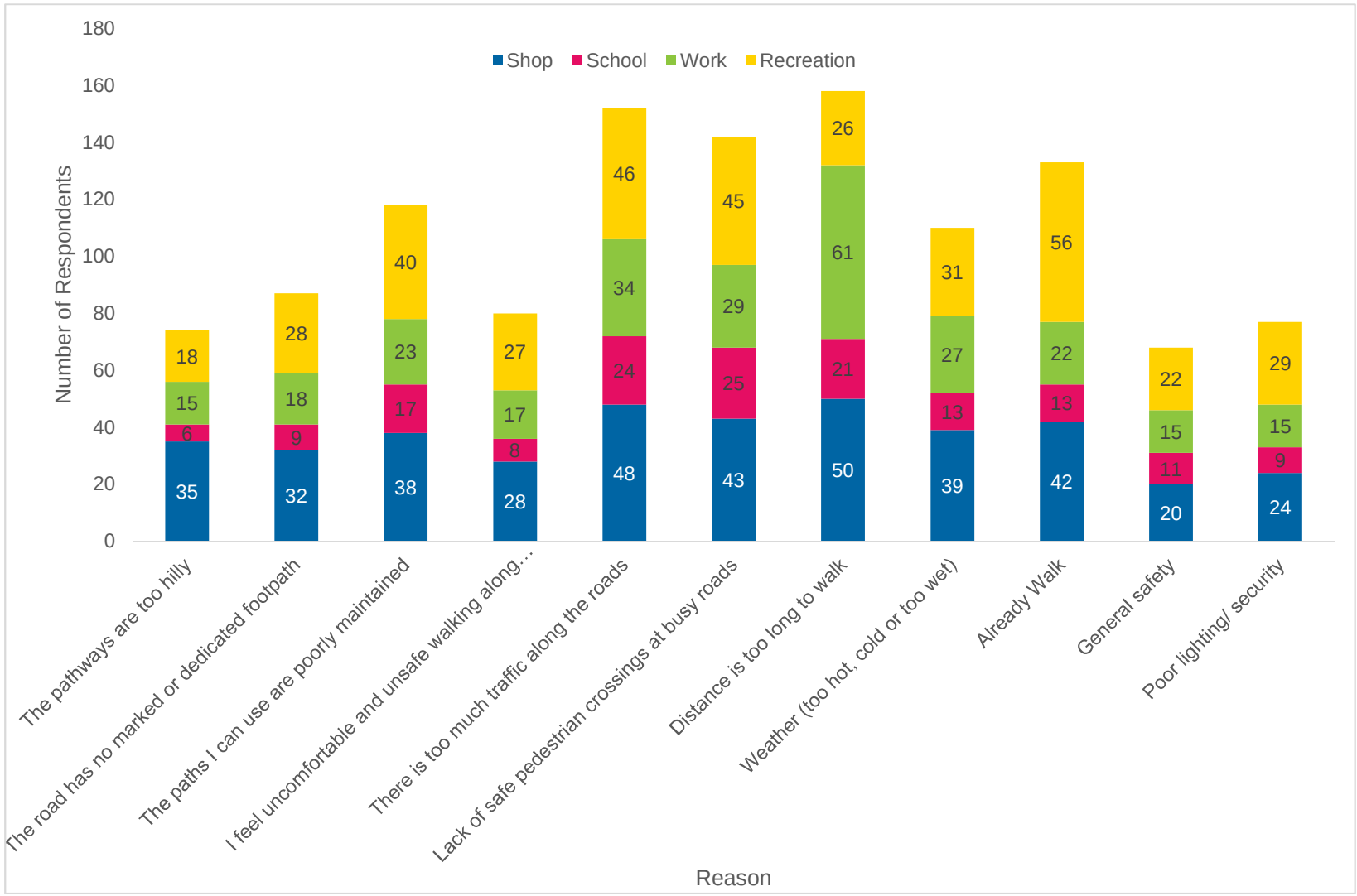


Figure 3-4 - Reasons Why Respondents do not Walk More Often, by Journey Type

3.3 Gaps in the Walking Network

Respondents were asked to identify the top three gaps in the Meadowbank walking network that they would like to see improved in the future. Fifty two respondents (38 per cent) did not answer this question.

Some of the most commonly identified gaps in the Meadowbank walking network were:

- A shared cycle and pedestrian path on the south side of Constitution Road
- A footbridge over, or set of traffic lights either side of the station
- Upgrade pedestrian crossing at See Street
- Need footpaths along Mons Avenue and Federal Street to link up with footpaths
- Connecting footpaths between Meadowbank Park and the playground on Constitution Road/Ross Smith Avenue
- A safety island along Adelaide Street
- Upgrade footpaths near TAFE and Forsyth Street
- Speed humps on Andrew Street approaching the pedestrian crossing would improve safety of pedestrians

3.4 Pedestrian Improvements

Respondents were asked what changes to pedestrian infrastructure would make them more likely to walk on a more regular basis for everyday local trips, or to commute to work/study.

The proposed changes that was most likely to make respondents walk more was additional road crossings for pedestrians (70 per cent). The survey found that audible/tactile crossing facilities at traffic signals would make no difference as to whether respondents were more likely to walk (68 per cent). Responses for the ‘I might walk more’ category were varied.

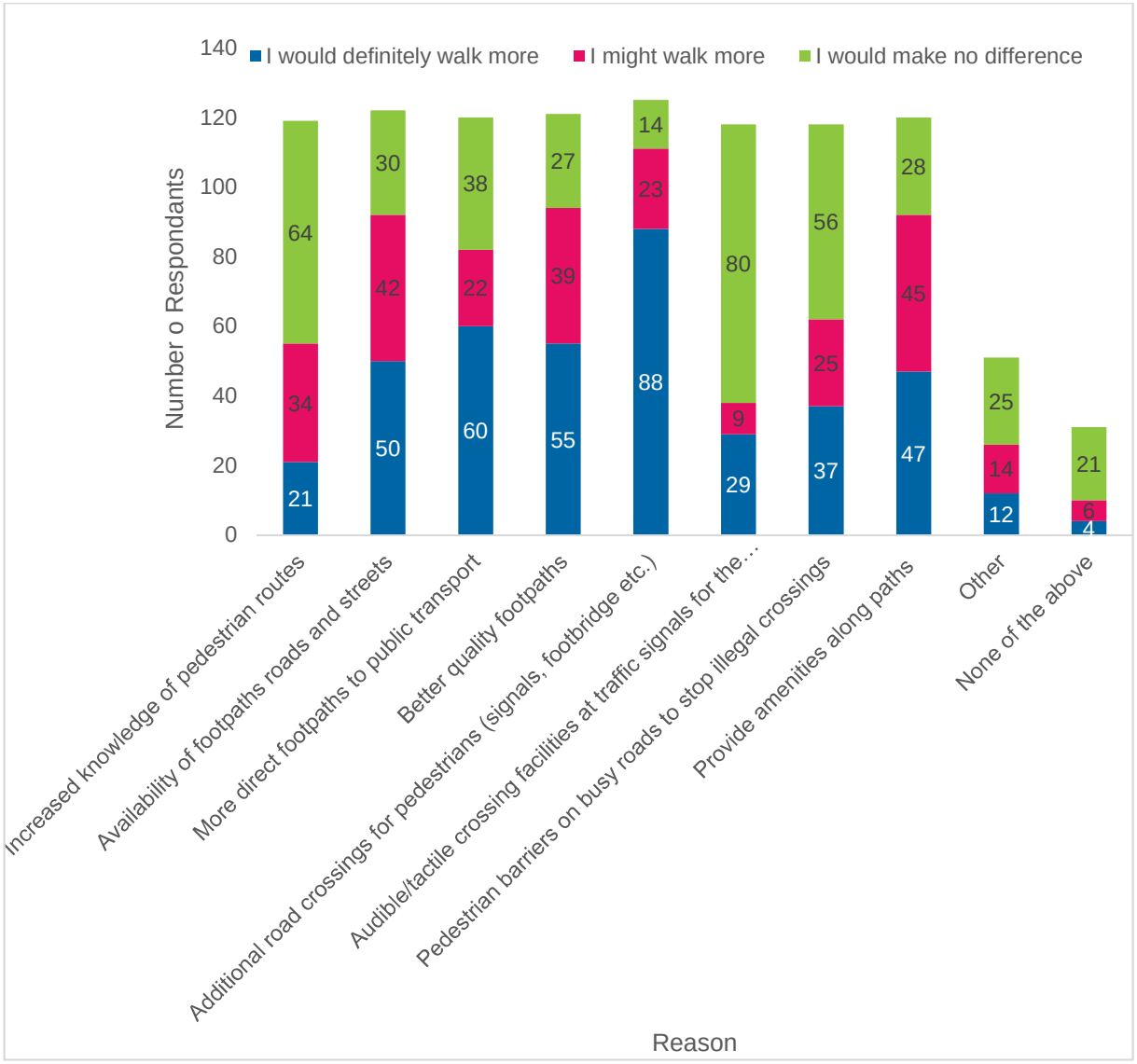


Figure 3-5 – Which Changes Would Make Respondents More Likely to Walk on a Regular Basis?

3.5 Other Feedback

Respondents were asked if there is anything else that they would like to say about pedestrian access around Meadowbank.

A full list of responses from the survey is in Appendix A.

4. Social Pinpoint

The Social Pinpoint online mapping tool was used for both the Meadowbank Station West and West Ryde Centre PAMP projects. Figure 4-1 shows the location of the study areas, which overlap.

Figure 4-1 Social Pinpoint comment map

(Source: Social Pinpoint 2017)

Over 150 people provided comments on Social Pinpoint across the two PAMP projects between 30 November 2016 and 7 March 2017. Of these, 80 submissions related to the Meadowbank Station West pedestrian network. Some comments overlap with the West Ryde Centre PAMP.

Figure 4-1, shows how respondents provide their comments according to categories and positioned at the location of where the issue occurs. Table 4-1 provides a summary of the key comments for each theme.

The theme with the most comments was ‘Other Issues and Ideas’ with 26 comments. The majority of these related to the need for an overpass or footbridge at Meadowbank Station for pedestrian use. This was followed by ‘Pedestrian Access and Safety’ with 22 responses. These were primarily related to poor visibility of pedestrians by oncoming vehicles at Constitution Road and Banks Street. The third highest category was ‘Footpaths and Routes’ with 21 responses that related to the need for a pedestrian bridge or underpass at the station.

Table 4-1 Social Pinpoint Commentary

Issue	Number of comments	Overview of comments
Other Issues and Ideas	26	• Overpass at the station is needed to ease traffic congestion • Cars should not be able to turn right onto Constitution Road due to safety concerns
Pedestrian Access and Safety	22	• Visibility of pedestrians to oncoming vehicles at Constitution Road and Banks Street is poor • Footpaths along Constitution Road are poor or non-existent and this road carries a large amount of through-traffic • Median traffic island on Constitution Road needs to be upgraded or removed • Poor signage and lighting along Bank Street to indicate station access
Foot paths and Routes	21	• Hughes Street/Station Street could be acquired for a park/bicycle path • Pedestrian bridge or underpass is required at the station • Need for improved footpath from the station to Meadowbank Park
Ramps and Surfaces	5	• The right turning bay at Bank Street and Constitution Road is poorly located and results in poor lane adherence for cars; suggested to remove and block the right turn to Bank Street from Constitution Road • Upgrade the kerb along Bank Street that limits the traffic to local traffic only; numerous motorists parked on Bank Street
Amenity, Lighting and Cleanliness	3	• Need for improved visibility and reduced foliage near Constitution Road • Need for improved playground facilities
Signage and Signals	3	• Traffic signals or an overpass near Meadowbank Station are required to deal with the gridlock traffic when northbound and southbound trains stop at the same time

5. Community Workshop and Pop-Up Session

5.1 Community Workshop

A community workshop was held on 21 March 2017 at the West Ryde Hall for both the Meadowbank Station West and West Ryde Centre PAMPs. GHD facilitated discussions with members of the public to identify existing issues and identify improvements in the pedestrian network for Meadowbank Station West and West Ryde Centre study areas. Members of the community were able to drop by and discuss their issues, and identify problematic locations within the pedestrian network.

Community members and stakeholders were invited to the workshop, which was advertised online (CoR website and Facebook page) and through a flyer letter drop, which was delivered to all properties within the PAMP study area. (Appendix A).

A letter was also sent to key stakeholders to invite them to a stakeholder workshop. (Appendix C). In addition to this workshop, individual phone calls were made to ten key stakeholders to discuss any further concerns or input they had (Section 6).

A total of five community members attended the community workshop, with two GHD team members and a CoR representative also attending.

Key issues and comments were recorded at the workshop relating to both PAMPs. The comments relating to Meadowbank Station West PAMP are summarised in Table 5-1.

Table 5-1-1 - Workshop Feedback

Issue	Comments
Introduction of a shared path for pedestrian and bicycle access near Meadowbank Station and TAFE	• The existing footpath stops at the parking area of the TAFE campus • Request to link path to existing path on Hermitage Road as it provides a direct link to Hermitage Road without having to go through the TAFE • Potential to become high volume shared path if missing link is connected • Main concern being the feasibility of a three metre wide shared path in the area (within TAFE land)
Safety on shared paths at Meadowbank Park	• Currently no speed limit for bicycle riders along shared path – safety issue for pedestrians • All age groups of pedestrians use the shared paths • Bicycle riders tend to use the path more frequently and are more dominant within the area • Speed humps are present in certain areas but are not proving to be effective • Request for more signage in the area (so that it is clear that it is a shared path and not just for bicycle riders) • Council recently upgraded the quality of the shared paths • Volume of people have risen since the upgrades which create a higher risk of an incident/accident to occur • Uneven ground of the path prior to the upgrade used to act as traffic calming but since the upgraded, the quality of the path allows cyclists to speed through it • General consensus is that more appropriate signage is required so that people can be informed better of the shared paths and any speed limits

Issue	Comments
Safety of pedestrians at the Pedestrian Crossing near Meadowbank Railway Station	• It was highlighted that the pedestrian crossing is a top priority within the PAMP • Possibility of having traffic signal controlled pedestrian crossing as it will force gaps in traffic and pedestrian can cross safely • Existing pedestrian crossing was deemed not to comply with Australian Standards as it crosses two lanes on one side, and one lane on the other side (Australian Standard require that it should only cross one lane in an each direction) • Lack of visibility from pedestrians and motorists due to the tight angle of the road
The location of a shared path along Rhodes Street	• A two metre wide concrete path was recently constructed by Meadowbank TAFE (within the TAFE campus), which opened in December 2016 • This footpath is located within the TAFE campus only, providing access between the TAFE buildings and the car park
General Comments	• The idea of having trees along local streets in the area is supported, however they pose complications with tree branches falling on the paths and tree roots damaging the footpaths and creating trip hazards • The presence of medium to large tree roots has hindered the upgrading/construction of concrete paths • Bitumen paths are currently more prevalent rather than concrete paths - these paths are black in colour, they are not visible during the night • Paths have become a trip hazard in recent times

5.2 'Pop-up' Community Consultation Session

GHD and CoR held a 'pop-up' community consultation session on both sides of Meadowbank Station on 12 December 2016. Four people provided comment on pedestrian issues within the study area. All of these comments related to the existing pedestrian crossing provided at Bank Street.

6. Stakeholder Consultation

Key stakeholders were contacted via email and phone calls to gain insight and potential concerns regarding the pedestrian network in the Meadowbank study area. The following stakeholders were contacted:

- Roads and Maritime
- Sydney Buses
- TAFE NSW
- West Ryde Public School
- Meadowbank Public School
- St Michaels Catholic Primary School
- Ryde Police
- BikeNorth
- Guide Dogs Australia
- West Ryde Progress Association

Of the contacted organisations, Meadowbank Public School and the West Ryde Progress Association, provided issues and suggestions for this PAMP. The key issues from these stakeholders are summarised in Table 6-1.

Table 6-1 Stakeholder Telephone Consultations

Organisation	Issues to be addressed	Suggestions for Walking Infrastructure
Meadowbank Public School	• Students travelling from Sheperd's Bay area via Constitution Road and Bowden Street are not safe as there are no crossings • A lot of students reside along Railway Road and there are no safe crossings • Gale Street (back of the school) has a crossing on the corner, which is unsafe and only uses flags • Many cars tend to ignore the school zone and crossings and speeds through – the 'lollipop man' and Principal herself have to constantly be at crossings to make sure students are safe • Belmore Street has no crossing • At the very top of Bowden Street, there is no way to cross • Near the roundabout on Constitution Road, there are no safe crossings • As commuters come out of the train station, they could cross for 10-15 minutes as there is only a crossing there. The traffic jam flows all the way back to our	• More parking spaces for buses • Traffic lights outside the station would be great to balance pedestrian traffic and car traffic • As the school is growing in student population we are in need of more 'kiss and ride' areas around the school

Organisation	Issues to be addressed	Suggestions for Walking Infrastructure
	school which causes issues for safety - There are no areas for parking buses - it is difficult to safely escort the students to the buses during excursions - There are two car spots in front of the school and two car sports behind designated 'kiss and ride' - there's not enough space for cars to be pulling in and picking up children safely	
West Ryde Progress Association	- Getting to Meadowbank Station from Constitution Road is difficult as there is no footpath - Rhodes Street to Victoria Road - no footpath on the western side - There is a bridge over a river in Meadowbank on top of a hill on Bay Drive - it's difficult to get to the footpath - Inadequate cycling facilities	- Make walkways from railway bridge overpass accessible to prams and wheelchairs - Hermitage Road link to Victoria Road to the underpass - More cycling parking spots at Meadowbank Station - Hermitage Road link to Meadowbank Station along railway

7. Other Feedback

7.1 Written Submissions

CoR received nine emails about the Meadowbank and West Ryde PAMPs. The main issues identified in the emails are summarised below.

- More signage is needed for pedestrians on Constitution Road. There also needs to be better visibility of pedestrians crossing on the other side of the station
- There is not enough car parking spaces along Sherbrooke Road and the footpaths along this road also need to be re-surfaced
- Construct a pedestrian crossing on Constitution Road West, on the eastern side of Charity Creek
- Construct concrete footpaths in the following streets:
  - Northern side of Sherbrooke Road
  - Western side of Station Street between Dunmore Road and Sherbrooke RoadWestern side of Station Street between Sherbrooke Road and Constitution Road

7.2 Comments on Social Media

The CoR Facebook account received 75 comments and 28 shares on a post promoting the two PAMPs. The post included a link to the online survey. The majority of comments submitted on the Facebook page related to the following:

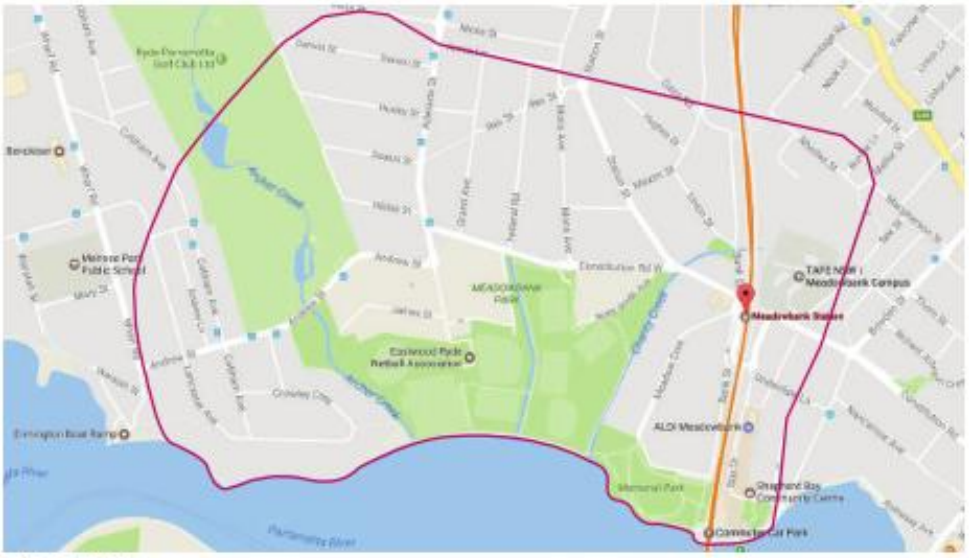
- A traffic light controlled pedestrian crossing or overpass for pedestrians at Meadowbank Station is required
- The extension and widening of footpaths near Meadowbank Station and along Constitution Road
- A pedestrian crossing on Bank Street and on Belmore and Bouden Street
- Improved train frequency and scheduling of trains to arrive at different times

Appendices

Appendix A - Community Flyer

Meadowbank Station West Pedestrian Access and Mobility Plan

City of Ryde
Lifestyle and opportunity
@ your doorstep



© Google Maps

The City of Ryde would like your feedback to improve pedestrian facilities around Meadowbank Station and towards the west. The input you provide will go towards the development of a draft Pedestrian Access and Mobility Plan (PAMP) for the area.

The purpose of a PAMP is to provide a framework for developing a safe and accessible pedestrian network. The PAMP will contain an overview of pedestrian issues as well as a recommended program for future capital works.

Have YOUR SAY

To Have Your Say, please complete the online survey at **www.ryde.nsw.gov.au/haveyoursay** and show us on the online map exactly where there are issues with walking in your area. The survey will be open until 7 March 2017.

Let's TALK

MAR
Tuesday
21

Community Workshop

When: Tuesday 21 March 2017
Time: 6.00 - 7.30pm
Where: West Ryde Hall,
1A Station Street, West Ryde
RSVP: **www.pamp.eventbrite.com.au**

Further Information:
If you have any queries please contact us at rydePAMP@ryde.nsw.gov.au or call 9952 8206.

Appendix B - Survey Questions and Results

Question 1

Age		
Answer Options	Response Per cent	Response Count
17 and under	0.7%	1
18 to 24	5.9%	8
25 to 34	25.9%	35
35 to 49	40.7%	55
50 to 59	14.1%	19
60 to 69	10.4%	14
70 and over	2.2%	3
Answered question		135
Skipped question		1

Question 2

Gender			
Answer Options		Response Per cent	Response Count
Male	Male	37.3%	50
Female	Female	62.7%	84
Answered question			134
Skipped question			2

Question 3

Do you have access to a motor vehicle?		
Answer Options	Response Per cent	Response Count
Yes	91.1%	123
No	8.9%	12
Answered question		135
Skipped question		1

Question 4

What type of transport do you typically use for the following activities? (Please select all that apply)							
Answer Options	Drive	Walk	Cycle	Bus	Train	Ferry	Response Count
Commuter (to/from home to work, school or other education provider)	85	37	5	19	80	23	129
Commuter (to/from bus stop)	19	87	0	1	7	1	102
Accompany child/children to school	38	29	0	2	4	0	57
Recreational (fitness, leisure, weekend use, shopping)	98	95	37	18	62	53	134
To/from local shops	101	85	9	7	10	2	134
Answered question							135
Skipped question							1

Question 5

Please select the reasons why you do not walk more often from the list below for each journey type (Please select all that apply)					
Answer Options	Shop	School	Work	Recreation	Response Count
The pathways are too hilly	35	6	15	18	52
The road has no marked or dedicated footpath	32	9	18	28	49
The paths I can use are poorly maintained	38	17	23	40	58
I feel uncomfortable and unsafe walking along the route	28	8	17	27	48
There is too much traffic along the roads	48	24	34	46	70
Lack of safe pedestrian crossings at busy roads	43	25	29	45	73
Distance is too long to walk	50	21	61	26	88
Weather (too hot, cold or too wet)	39	13	27	31	56
Already walk	42	13	22	56	77
General safety	20	11	15	22	39
Poor lighting/ security	24	9	15	29	41
Answered question					132
Skipped question					4

Question 6

In your opinion please state the top three most hazardous and unsafe locations for pedestrians within the study area. Please state the street name, nearest cross street and reason for concern		
Answer Options	Response Percent	Response Count
1	100.0%	115
2.	77.4%	89
3.	55.7%	64
Answered question		115
Skipped question		21

Question 7

Please indicate whether the following changes would make you more likely to walk on a more regular basis for everyday local trips or to commute to work/study (Please provide an answer for each option)				
Answer Options	I would definitely walk more	I might walk more	I would make no difference	Response Count
Increased knowledge of pedestrian routes	21	34	64	119
Availability of footpaths roads and streets	50	42	30	122
More direct footpaths to public transport	60	22	38	120
Better quality footpaths	55	39	27	121
Additional road crossings for pedestrians (signals, footbridge etc.)	88	23	14	125
Audible/tactile crossing facilities at traffic signals for the hearing and visually impaired	29	9	80	118
Pedestrian barriers on busy roads to stop illegal crossings	37	25	56	118
Provide amenities along paths (benches, drinking fountains, shade area etc.)	47	45	28	120
Other	12	14	25	51
None of the above	4	6	21	31
Answered question				131
Skipped question				5

Question 8

Do you have any other comments you would like to make in relation to pedestrian facilities with the study area and ways of improving them? Please specify the location wherever possible	
Answer Options	Response Count
	84
Answered question	84
Skipped question	52

Question 9

If would like to go into the running to win a pair of movie tickets or to be kept informed about the progress of the Meadowbank Station West PAMP, please provide your contact details below		
Answer Options	Response Percent	Response Count
Name	98.3%	59
Organisation	10.0%	6
Address	90.0%	54
Address 2	11.7%	7
City/Town	88.3%	53
ZIP/Postal Code	95.0%	57
Email Address	95.0%	57
Phone Number	78.3%	47
Answered question		60
Skipped question		76

Appendix C – Letter to Stakeholders

XX February 2017

Name
Company

Dear **Name**,

Pedestrian Access Mobility Plans - Meadowbank Station West and West Ryde Centre

The City of Ryde is seeking your feedback to improve pedestrian facilities at Meadowbank Station West and West Ryde Centre. The input you provide will go toward development of draft Pedestrian Access and Mobility Plans (PAMP) for these areas.

The purpose of the PAMP is to provide a strategic framework for developing safe and accessible pedestrian routes and fostering improvements in pedestrian mobility. The PAMP will contain a comprehensive overview of pedestrian issues in the study area as well as a recommended program of works that will guide future prioritisation of capital works.

The objectives of a PAMP are to:

- Encourage pedestrian activity for short trips (1.5 - 2 km)
- Reduce the number of missing connections within the pedestrian network
- Improve pedestrian safety
- Improve pedestrian connectivity with other transport modes, including train, bus, bicycle and car
- Provide facilities which cater for the needs of all pedestrians, including people with disabilities, commuters, children, seniors and recreational walkers
- Complement existing and future planned walking and cycling facilities in the area

Stakeholder Workshop

You are invited to attend a workshop to discuss existing issues and brainstorm ideas for proposed improvements.

Details for the workshop are:

- **Date:** **Tuesday, 21 March 2017**
- **Time:** **3pm to 4.30pm**
- **Location:** **West Ryde Hall, 1A Station Street, West Ryde**
- **RSVP:** **by 7 March 2017 at https://pampworkshop.eventbrite.com.au**

You can also submit your feedback by going online to **http://www.ryde.nsw.gov.au/haveyoursay** and completing the online survey and showing us on the online map exactly where there are issues within the study area that you know of. The online survey will be available until 7 March 2017.

For more information on the Meadowbank Station West PAMP and West Ryde Centre PAMP, please visit **http://www.ryde.nsw.gov.au/haveyoursay** or call us on **1800 810 680**

Sincerely
Name

GHD

Level 15

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Rev 1		Lauren Harding	On File	G McCabe	On File	30/05/2017
Rev 2		Lauren Harding	On File	G McCabe	On File	07/06/2017
Rev 3	OP	S Rosewell	On File	G McCabe	On File	29/11/2017

www.ghd.com

Appendix B – Weighted PAMP Scoring

PAMP ID	Street / Intersection	Description of Issue	Issue Type	Description of Proposed Treatment	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	RMS Priority	RMS Rank	Priority
106	Constitution Road / Railway Parade	Meadowbank Station Precinct - Traffic and pedestrian conflicts, with long queues observed due to pedestrian crossing. Driver impatience also observed at the crossing, which can be a safety issue for pedestrians.	Intersection design	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location.		N/A	Council / RMS	TBC	76	1	High
34	Meadow Crescent, west of Bank Street	Poor visibility at crossing location behind a tree. Poor quality kerb ramps provided and the brick footpath paving is uneven and patched with asphalt infill in sections. This results in changes in the surface level and is a trip hazard	Intersection design	Re-design the intersection and resurface footpaths.		N/A	Council / RMS	TBC	74	2	High
33	Meadow Crescent	Footpath is uneven in sections and asphalt infill results in changes in the surface level - trip hazard	Poor quality footpath	Resurface the footpath		80	Council	18,000	62	3	High
65	Maxim St, west of Union St	Pedestrians are required to access the pedestrian crossing from Union Street via a driveway and steps. Access to the northern side of the crossing via steps (no kerb ramp provided)	Missing link	Pedestrian crossing is to be replaced with a new crossing in 2017/18 (Roads and Maritime grant). Introduce AS.1428 compliant ramp on the northern side of the crossing.		30	Council	N/A - Funding already provided	60	4	High
17	Bank St, south of Meadowbank Station	No kerb ramp provided on either side of the road, with footpath on eastern side facing a driveway. This is one of only three east-west connection across the rail line at Meadowbank (alternative via Meadowbank Station or shared path along Parramatta River).	Kerb ramps	Provide a new kerb blister and kerb ramp on the western side, which requires the removal of one parking space. Realign footpath and provision of a kerb ramp on the eastern side.	1		Council	18,900	58	5	Medium
62	Rhodes St, east of Hermitage Rd	Footpath ends at substation	Missing link	Provide a shared path as per Bicycle Strategy			Council / RMS	N/A funding as part of Bike Plan	58	5	Medium
64	Union St / Maxim St intersection	Kerb ramp is facing into drain on the opposite side of the street	Kerb ramps	Provide a new kerb ramp and ramp to connect with footpath on northern side of Maxim Street.	1		Council	3,360	58	5	Medium
1	Constitution Rd, west of See St	Area around service lids are infilled with asphalt causing the surface to be indent and act as a trip hazard Described as 'appalling' by member of public	Poor quality footpath	Resurface footpath		20	Council	9,000	55	8	Medium
2	Constitution Rd, east of See St	High drop-off along footpath edge	Poor quality footpath	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include new asphalt and painted edge.		20	Council	NA	55	8	Medium
59	Macpherson St / Mellor St intersection	No stop line or give way lines at intersection. Unclear as to which intersection approach has the priority, which could be confusing to motorists and pedestrians crossing at this location.	Intersection design	Provide stop line or give way line at Macpherson St approach.	1		Council	TBC	55	8	Medium
60	Rhodes St, south of Mellor St	Pedestrians have the priority across the driveway. However, the provision of the yellow refuge island makes it unclear as to whether drivers or pedestrians have priority at this location.	Intersection design	Remove the pedestrian refuge and consider replacing with zebra crossing	1		Council	TBC	55	8	Medium
61	Rhodes St, east of Hermitage Rd	Poor quality footpath	Poor quality footpath	Provide a shared path as per Bicycle Strategy		100	Council	N/A funding as part of Bike Plan	55	8	Medium
107	Angus St	No footpath on either side of street	Missing link	Provide a new footpath on one side of the road, kerb x2 extensions and a pedestrian refuge island	2	120	Council	23,400	55	8	Medium
108	Angus St	No footpath on bridge	Missing link	Provide a new shared zone	1		Council	600	55	8	Medium
28	Meadow Crescent	Missing link - Goat track indicates pedestrians desire line to footpath within Memorial Park from Meadow Crescent	Missing link	Provide a new footpath		10	Council	1,950	53	15	Medium
3	Constitution Rd, east of See St	Narrow walkway due to barrier may inhibit access to pedestrians with prams and/or wheelchairs	Narrow footpath	The road is to be reconstructed in the future. This issue will be addressed in the new design.		50	Council	NA	52	16	Medium
59	Macpherson St / Mellor St intersection	Kerb ramps are unaligned	Kerb ramps	Replace and realign the kerb ramp(s)	1		Council	1,800	52	16	Medium
14	Bay Dr	Shared path ends at footpath. No signage to indicate where the shared path starts / ends	Signage	Install shared path start / ends signage	1		Council / RMS	600	51	18	Medium
16	Bank St	Bridge has been identified by public as an issue, with the decking not being sturdy.	Poor quality footpath	TfNSW to consider upgrading the footpath on the bridge. To be considered for future renewal in S94 plan.	1	30	TfNSW / RMS	TBC	51	18	Medium
55	Macpherson St / Forsyth St intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	50	20	Medium
66	Maxim St, east of Union St	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4		Council	200	50	20	Medium
15	Railway Rd, south of Bank St	Electrical infrastructure obstructing footpath	Obstruction in footpath	Remove redundant pole	1		Council / service provider	TBC	49	22	Medium
32	Meadow Crescent	Section of narrow footpath (approximately 1 m)	Narrow footpath	Widen / upgrade footpath		20	Council	4,500	48	23	Medium
4	Constitution Rd, west of Bowden St	High drop-off along footpath edge creates inconsistent surface level and trip hazard	Poor quality footpath	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include soil topping.		10	Council	10,000	47	24	Medium
58	Macpherson St, between Mellor St and Forsyth St	No footpath on northern side. "Goat track" observed indicating desire line for pedestrians.	Missing link	Provide a new footpath		80	Council	15,600	47	24	Medium
10	Bay Dr, south of Underdale Ln	Service lid is lopsided and creates an inconsistent surface level is trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	1		Council / service provider	500	46	26	Medium
11	Railway Rd, south of Underdale Ln	Footpath outside of development area is narrow and poor quality	Poor quality footpath	Resurface and widen footpath. This will be addressed as part of the public domain upgrade for this development.		60	Developer	13500	46	26	Medium
12	Railway Rd, north of Underdale Ln	Raised section of footpath resulting in a trip hazard	Trip hazard	Fill in the verge		10	Council	10,000	46	26	Medium
21	Bank St	No kerb ramp on the opposite side of the street to provide link	Kerb ramps	Provide a new kerb ramps	2		Council	3,600	45	29	Medium
40	Constitution Rd / Adelaide St intersection	No pedestrian refuge island provided across a wide crossing point (side street) at the intersection	Wide crossing point	Provide a new pedestrian refuge island and kerb extensions on both Adelaide Street and Constitution Road, and upgrade kerb ramps	2		Council	43,500	45	29	Medium
41	Adelaide St, south of Hibble St	Bus shelter not located at the bus stop landing.	Bus stop	Consider moving the bus shelter to the bus landing	1		TfNSW / Sydney Buses	10,400	45	29	Medium
42	Adelaide St / Andrew St intersection	No provision of physical pedestrian island - only a gap in the raised pavement markers are provided.	Non standard pedestrian refuge	Provide a new pedestrian refuge island and upgrade the kerb ramps	1		Council	43,500	45	29	Medium
54	See St, south of Macpherson St	Poor quality footpath	Poor quality footpath	Resurface the footpath		150	Council	33,750	45	29	Medium
56	Macpherson St	Broken footpath due to tree root	Poor quality footpath	Resurface the footpath		30	Council	6,750	45	29	Medium
57	Macpherson St	Poor quality footpath	Poor quality footpath	Resurface the footpath		5	Council	1125	45	29	Medium
73	Andrew St, west of Adelaide St	No pedestrian crossing facility to bus stop on western side of the street (adjacent to Meadowbank Park).	Wide crossing point	Provide kerb blister / extension and kerb ramps	1		Council	17,100	45	29	Medium
9	Underdale Ln, west of Bowden St	No footpath on western side of the street. Footpath provided on eastern side only.	Missing link	Provide a new footpath	65	65	Developer	12,675	44	37	Medium
99	Adelaide St near Huxley St	No pedestrian refuge crossing point along Adelaide Street for around 600 metres. Adelaide Street is a wide street, with bus stops along both sides of the street.	Wide crossing point	Improve pedestrian connectivity across Adelaide Street by providing a new pedestrian refuge and kerb ramps	1		Council	43,500	44	37	Medium
19	Bank St	Pedestrian route is through the car park	Signage	Create a shared zone through the provision of signage	1		Council	600	43	39	Medium
24	Bank St	Footpath is narrow with a width of approximately 0.70m	Narrow footpath	Widen / upgrade footpath		30	Council	6,750	43	39	Medium
27	Meadow Cres	Footpath narrows from 1.20m to approximately 0.7m	Poor quality footpath	Widen / upgrade footpath		80	Council	18,000	43	39	Medium
29	Meadow Crescent	Service lid is sunken in creating a trip hazard	Poor quality footpath	Resurface the footpath		5	Council	1,125	43	39	Medium
30	Meadow Crescent	The asphalt infill around the service lid is at a lower level than the surface	Poor quality footpath	Resurface the footpath		5	Council	1,125	43	39	Medium

PAMP ID	Street / Intersection	Description of Issue	Issue Type	Description of Proposed Treatment	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	RMS Priority	RMS Rank	Priority
31	Meadow Crescent	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5		Council	250	43	39	Medium
5	Constitution Rd / Bowden St intersection	Non-standard pedestrian refuge is (missing safety bollards) and unaligned kerb ramps	Kerb ramps	The road is to be reconstructed in the future. This issue will be addressed in the new design.	1		Council	N/A	42	46	Medium
6	Bowden St, south of Constitution Rd	Raised footpath tile at the joint presents a trip hazard to pedestrians	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	3		Council	150	42	46	Medium
8	Bowden St, south of Underdale Ln	Lid of service access protruding from footpath / driveway, creating a trip hazard for pedestrians.	Trip hazard	Upgrade the service access lid to remove trip hazard	1		Council / service provider	500	42	46	Medium
35	Constitution Rd West / Ross Smith Avenue intersection	Kerb ramp is not aligned with the one opposite	Kerb ramps	Provide kerb blister / extension and kerb ramps	1		Council	17,100	42	46	Medium
38	Constitution Rd / Federal Rd intersection	Wide crossing point at intersection. High radius kerb return. Allows higher vehicle turning speeds	Wide crossing point	Reduce radius - Kerb extension using raised pavement markers and line marking	1		Council	17,100	42	46	Medium
90	Cobham Ave / Parer St intersection	No footpath connection to the bus stop	Missing link	Provide a new footpath, with landing and tactile ground surface indicators at bus stop		30	Council	14,250	42	46	Medium
43	James St / Adelaide St	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	1		Council	1,800	40	52	Medium
68	Bank St / Union St	Kerb ramps not aligned with crossing point. No kerb ramp provided on the Bank Street approach.	Wide crossing point	Provide new kerb ramps and kerb blister. Potential issue with storm water drains in this area. Kerb extension design to consider impacts to storm water drainage.	1		Council	17,100	40	52	Medium
84	Lancaster Ave / Andrew St intersection	Long crossing across Andrew Street	Wide crossing point	Provide a kerb blister / extension and kerb ramps on each side of Andrew Street to reduce road crossing distance	2		Council	17,100	39	54	Low
85	Lancaster Ave / Andrew St intersection	Non standard pedestrian refuge island	Non standard pedestrian refuge	Upgrade pedestrian refuge island	1		Council	43,500	39	54	Low
7	Bowden St, south of Underdale Ln	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2		Council	100	37	56	Low
39	Constitution Rd / Federal Rd	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5		Council	250	37	56	Low
52	Station St	No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). "Goat track" observed on the western side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps		460	Council	89,700	37	56	Low
71	Andrew St, west of Adelaide St	No pad area or tactile ground surface indicators at bus stop	Bus stop	Provide bus stop pad area and tactile ground surface indicators at bus stop	1		Council	8,900	37	56	Low
83	Lancaster Ave / Andrew St intersection	Non standard pedestrian refuge island	Non standard pedestrian refuge	Upgrade pedestrian refuge island	1		Council	43,500	37	56	Low
88	Parer St / Andrew Ln intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	37	56	Low
89	Cobham Ave / Parer St intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	37	56	Low
102	Adelaide St between Darwin Street and Huxley Street	Footpath is deteriorating due to its age	Poor quality footpath	Resurface the footpath		100	Council	22,500	37	56	Low
95	Adelaide St / Hibble St intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	36	64	Low
96	Adelaide St	Footpath terrain is uneven especially at the interface with the newer concrete surface	Poor quality footpath	Resurface the footpath		15	Council	3,375	36	64	Low
97	Adelaide St / Deakin St intersection	Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	1		Council	1,800	36	64	Low
18	Bank St	Kerb ramp has a high lip	Kerb ramps	Provide a new kerb ramp	1		Council	1,800	35	67	Low
19	Bank St	Footpath is unsightly as it is covered in dirt and fallen leaves	Overgrown vegetation	Vegetation trimming / clearing			Council	200	35	67	Low
20	Bank St	Service lid is sunken in creating a trip hazard to pedestrians	Poor quality footpath	Resurface the footpath		2	Council	450	35	67	Low
22	Bank St	Raised section of footpath resulting in a trip hazard	Trip hazard	Resurface the footpath		10	Council	2,250	35	67	Low
23	Bank St	Service lid is not secure and moves when walked on - may act as a trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	1		Council / service provider	500	35	67	Low
25	Bank St	Service lid is not secure and moves when walked on - may act as a trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	3		Council / service provider	1,500	35	67	Low
26	Meadow Cres	Raised section of footpath resulting in a trip hazard	Trip hazard	Resurface the footpath		10	Council	2,250	35	67	Low
44	Constitution Rd West, east of Adelaide St	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4		Council	200	35	67	Low
53	Constitution Rd West, east of Station Street	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2		Council	100	35	67	Low
69	Andrew St, west of Adelaide St	No footpath along the southern side of the street	Missing link	Consider providing a new footpath along southern side of the road		160	Council	31,200	35	67	Low
98	Deakin St	Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road		180	Council	35,100	35	67	Low
100	Huxley St	Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program.		270	Council	52,650	35	67	Low
103	Darwin St	No footpath along the southern side of the street. However, there is a footpath along the northern side of the street.	Missing link	None			Council	0	35	67	Low
109	Hibble St	Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road (northern side) to complete the footpath along this street.		130	Council	25,350	35	67	Low
109	Hibble St	Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road (northern side) to complete the footpath along this street.		130	Council	25350	35	67	Low
93	Cobham Ave, north of Andrew St	Poor quality footpath, with cracked and uneven sections which could be a trip hazard.	Poor quality footpath	Resurface the footpath		45	Council	10,125	34	80	Low
94	Cobham Ave, north of Andrew St	Poor quality footpath, with cracked and uneven sections which could be a trip hazard.	Poor quality footpath	Resurface the footpath		50	Council	11,250	34	80	Low
99	Adelaide St / Huxley St intersection	Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	1		Council	1,800	34	80	Low
101	Adelaide St / Huxley St intersection	Kerb ramps are unaligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	34	80	Low
104	Adelaide St / Darwin St	Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	1		Council	1,800	34	80	Low
45	Grand Ave	No footpath on either side of the street	Missing link	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.		440	Council	85,800	33	85	Low
72	Andrew St, west of Adelaide St	Poor quality footpath	Poor quality footpath	Resurface the footpath		40	Council	9,000	32	86	Low
82	Lancaster Ave	No pedestrian crossing facility to shared path. Crossing location is at a bend in the road, which could be unsafe for pedestrians.	Wide crossing point	Provide kerb blister / extension and kerb ramps to reduce the crossing distance and improve pedestrian safety	1		Council	17,100	32	86	Low
91	Cobham Ave, south of Parer St intersection	Sunken section of footpath forming a trip hazard	Poor quality footpath	Resurface the footpath		4	Council	900	32	86	Low
92	Cobham Ave, south of Parer St intersection	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4		Council	200	32	86	Low
46	Grand Ave	No footpath on either side of the street	Missing link	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.		440	Council	85,800	30	90	Low

PAMP ID	Street / Intersection	Description of Issue	Issue Type	Description of Proposed Treatment	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	RMS Priority	RMS Rank	Priority
47	Federal Rd	No footpath provided along the eastern side of the street (existing footpath provided on the western side of the street). "Goat track" observed on the eastern side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps		450	Council	87,750	30	90	Low
48	Mons Ave	No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). "Goat track" observed on the western side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps		400	Council	78,000	30	90	Low
63	Union St	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	8		Council	400	30	90	Low
67	Bank St	Poor quality footpath	Poor quality footpath	Resurface the footpath		25	Council	5,625	30	90	Low
36	Ross Smith Ave	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2		Council	100	29	95	Low
37	Ross Smith Ave	Overgrown foliage reduces the effective width of footpath	Overgrown vegetation	Trim the vegetation	1		Council	200	29	95	Low
70	Andrew St, west of Adelaide St	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	4		Council	200	27	97	Low
75	Macintosh St / Crowley Cres intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	27	97	Low
81	Lancaster Ave / Cobham Ave intersection	Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	2		Council	3,600	27	97	Low
86	Lancaster Ave, north of Andrew St	Poor quality footpath with cracked paving.	Poor quality footpath	Resurface the footpath		100	Council	22,500	27	97	Low
87	Parer St, east of Lancaster Ave	Poor quality footpath	Poor quality footpath	Resurface the footpath		20	Council	4,500	27	97	Low
74	Macintosh St	Raised footpath tile at the joint presents a trip hazard to pedestrians	Poor quality footpath	Resurface the footpath		20	Council	4,500	22	102	Low
76	Macintosh St	Raised sections of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	11		Council	550	22	102	Low
77	Crowley Cres	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5		Council	250	22	102	Low
78	Crowley Cres	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	5		Council	250	22	102	Low
79	Crowley Cres	Overgrown foliage reduces the effective width of footpath	Trip hazard	Trim the vegetation	1		Council	200	22	102	Low
80	Lancaster Ave	Poor quality footpath with cracked paving.	Poor quality footpath	Resurface the footpath		150	Council	33,750	22	102	Low
105	Lancaster Ave	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	15		Council	750	22	102	Low
49	Constitution Rd West	Overgrown foliage reduces the effective width of footpath	Overgrown vegetation	Trim the vegetation	1		Council	200	20	109	Low
50	Constitution Rd West, east of Mons Ave	Footpath is steep and grading downwards towards the street in sections. May be difficult for some pedestrians to walk along this footpath.	Poor quality footpath	Resurface the footpath		20	Council	4,500	20	109	Low
51	Constitution Rd West, west of Station St	Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	2		Council	100	20	109	Low
13	Railway Rd	Access to pedestrian refuge via steps from eastern side, with no kerb ramp on the western side	Steps	No upgrade - alternative crossing location provided to the north			Council	0	0	112	Low

													Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
1	Constitution Rd, west of See St	Northern side		Area around service lids are infilled with asphalt causing the surface to be indent and act as a trip hazard Described as 'appalling' by member of public	Poor quality footpath	Resurface footpath	Footpath upgrade	Footpath		20	Council	9000	8	10	10	3	8	5	0	8	0	3	55	8
2	Constitution Rd, east of See St	Northern side		High drop-off along footpath edge	Poor quality footpath	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include new asphalt and painted edge.	Footpath upgrade	Footpath		20	Council	NA	5	10	10	3	8	8	0	8	0	3	55	8
3	Constitution Rd, east of See St	Northern side		Narrow walkway due to barrier may inhibit access to pedestrians with prams and/or wheelchairs	Narrow footpath	The road is to be reconstructed in the future. This issue will be addressed in the new design.	none	Footpath		50	Council	NA	5	10	10	3	8	5	0	8	0	3	52	16
4	Constitution Rd, west of Bowden St	Northern side		High drop-off along footpath edge creates inconsistent surface level and trip hazard	Poor quality footpath	The road is to be reconstructed in the future. Cross falls will be addressed in the new design. Temporary upgrade to include soil topping.	Verge upgrade	Footpath		10	Council	10000	5	5	10	3	8	5	0	8	0	3	47	24
5	Constitution Rd / Bowden St intersection			Non-standard pedestrian refuge is (missing safety bollards) and unaligned kerb ramps	Kerb ramps	The road is to be reconstructed in the future. This issue will be addressed in the new design.	none	PAMP	1		Council	N/A	0	5	8	3	8	5	0	5	5	3	42	46
6	Bowden St, south of Constitution Rd	Western side		Raised footpath tile at the joint presents a trip hazard to pedestrians	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	3		Council	150	0	5	8	3	8	5	0	5	5	3	42	46
7	Bowden St, south of Underdale Ln	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100	0	5	8	3	8	5	0	5	0	3	37	56
8	Bowden St, south of Underdale Ln	Western side		Lid of service access protruding from footpath / driveway, creating a trip hazard for pedestrians.	Trip hazard	Upgrade the service access lid to remove trip hazard	Service access	Footpath	1	N/A	Council / service provider	500	0	5	8	3	8	5	0	5	5	3	42	46
9	Underdale Ln, west of Bowden St	S		No footpath on western side of the street. Footpath provided on eastern side only.	Missing link	Provide a new footpath	New footpath	Footpath	65	65	Developer	12675	5	5	8	5	8	0	0	5	5	3	44	37

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PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
10	Bay Dr, south of Underdale Ln	Eastern side		Service lid is lopsided and creates an inconsistent surface level is trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	Service access	Footpath	1	N/A	Council / service provider	500	5	5	8	5	8	0	0	5	5	5	46	26
11	Railway Rd, south of Underdale Ln	Eastern side		Footpath outside of development area is narrow and poor quality	Poor quality footpath	Resurface and widen footpath. This will be addressed as part of the public domain upgrade for this development.	Footpath upgrade	Footpath		60	Developer	13500	5	5	8	5	8	0	0	5	5	5	46	26
12	Railway Rd, north of Underdale Ln	Eastern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Fill in the verge	Verge upgrade	Footpath		10	Council	10000	5	5	10	5	8	0	0	8	0	5	46	26
13	Railway Rd	Eastern side		Access to pedestrian refuge via steps from eastern side, with no kerb ramp on the western side	Steps	No upgrade - alternative crossing location provided to the north	none																0	112
14	Bay Dr	W		Shared path ends at footpath. No signage to indicate where the shared path starts / ends	Signage	Install shared path start / ends signage	Signage	PAMP	1		Council / RMS	600	5	5	10	5	8	0	0	8	5	5	51	18
15	Railway Rd, south of Bank St	Western side		Electrical infrastructure obstructing footpath	Obstruction in footpath	Remove redundant pole	Footpath upgrade	Footpath	1		Council / service provider	TBC	5	5	10	5	8	0	0	8	5	3	49	22
16	Bank St	Western side		Bridge has been identified by public as an issue, with the decking not being sturdy.	Poor quality footpath	TfNSW to consider upgrading the footpath on the bridge. To be considered for future renewal in S94 plan.	Footpath upgrade	Footpath	1	30	TfNSW / RMS	TBC	5	5	10	5	10	0	0	8	5	3	51	18
17	Bank St, south of Meadowbank Station	Eastern side		No kerb ramp provided on either side of the road, with footpath on eastern side facing a driveway. This is one of only three east-west connection across the rail line at Meadowbank (alternative via Meadowbank Station or shared path along Parramatta River).	Kerb ramps	Provide a new kerb blister and kerb ramp on the western side, which requires the removal of one parking space. Realign footpath and provision of a kerb ramp on the eastern side.	Kerb ramps and kerb extension / blister	PAMP	1	N/A	Council	18900	5	5	8	1	10	8	0	8	10	3	58	5
18	Bank St	Eastern side		Kerb ramp has a high lip	Kerb ramps	Provide a new kerb ramp	Kerb ramps	PAMP	1	N/A	Council	1800	5	5	5	1	8	0	0	8	0	3	35	67

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19	Bank St	Eastern side		Footpath is unsightly as it is covered in dirt and fallen leaves	Overgrown vegetation	Vegetation trimming / clearing	Vegetation trimming	Footpath			Council	200	5	5	5	1	8	0	0	8	0	3	35	67
19	Bank St	Eastern side		Pedestrian route is through the car park	Signage	Create a shared zone through the provision of signage	Shared zone	PAMP	1		Council	600	5	5	5	1	8	8	0	8	0	3	43	39
20	Bank St	Eastern side		Service lid is sunken in creating a trip hazard to pedestrians	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		2	Council	450	5	5	5	1	8	0	0	8	0	3	35	67
21	Bank St	Northern side		No kerb ramp on the opposite side of the street to provide link	Kerb ramps	Provide a new kerb ramps	Kerb ramps	PAMP	2	N/A	Council	3600	5	5	5	1	8	0	0	8	10	3	45	29
22	Bank St	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Resurface the footpath	Footpath upgrade	Footpath		10	Council	2250	5	5	5	1	8	0	0	8	0	3	35	67
22	Bank St	Western side		Raised section of footpath resulting in a trip hazard		Resurface the footpath	Footpath upgrade	Footpath		10	Council												0	112
23	Bank St	Western side		Service lid is not secure and moves when walked on - may act as a trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	Service access	Footpath	1	N/A	Council / service provider	500	5	5	5	1	8	0	0	8	0	3	35	67
24	Bank St	Western side		Footpath is narrow with a width of approximately 0.70m	Narrow footpath	Widen / upgrade footpath	Footpath upgrade	Footpath		30	Council	6750	5	5	5	1	8	0	0	8	8	3	43	39
25	Bank St	Western side		Service lid is not secure and moves when walked on - may act as a trip hazard	Trip hazard	Upgrade the service access lid to remove trip hazard	Service access	Footpath	3	N/A	Council / service provider	1500	5	5	5	1	8	0	0	8	0	3	35	67

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25	Bank St	Western side		Service lid is not secure and moves when walked on - may act as a trip hazard		Upgrade the service access lid to remove trip hazard	Service access	Footpath		N/A	Council / service provider												0	112
25	Bank St	Western side		Service lid is not secure and moves when walked on - may act as a trip hazard		Upgrade the service access lid to remove trip hazard	Service access	Footpath		N/A	Council / service provider												0	112
26	Meadow Cres	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Resurface the footpath	Footpath upgrade	Footpath		10	Council	2250	5	5	5	1	8	0	0	8	0	3	35	67
27	Meadow Cres	Southern side		Footpath narrows from 1.20m to approximately 0.7m	Poor quality footpath	Widen / upgrade footpath	Footpath upgrade	Footpath		80	Council	18000	5	5	8	1	8	5	0	8	0	3	43	39
27	Meadow Cres	Southern side		Large crack in footpath surface with one side elevated which acts as a trip hazard		Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
27	Meadow Cres	Southern side		Asphalt infill along footpath deteriorated and is a trip hazard		Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
27	Meadow Cres	Southern side		Raised footpath tile at the joint presents a trip hazard to pedestrians	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100	5	5	8	1	8	5	0	8	0	3	43	39
27	Meadow Cres	Southern side		Broken section of footpath		Resurface the footpath	Footpath upgrade	Footpath		10	Council												0	112
28	Meadow Crescent	Western side		Missing link - Goat track indicates pedestrians desire line to footpath within Memorial Park from Meadow Crescent	Missing link	Provide a new footpath	New footpath	Footpath		10	Council	1950	5	5	8	1	8	5	0	8	10	3	53	15

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PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
29	Meadow Crescent	Western side		Service lid is sunken in creating a trip hazard	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		5	Council	1125	5	5	8	1	8	5	0	8	0	3	43	39
30	Meadow Crescent	Western side		The asphalt infill around the service lid is at a lower level than the surface	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		5	Council	1125	5	5	8	1	8	5	0	8	0	3	43	39
31	Meadow Crescent	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	5		Council	250	5	5	8	1	8	5	0	8	0	3	43	39
32	Meadow Crescent	Western side		Section of narrow footpath (approximately 1 m)	Narrow footpath	Widen / upgrade footpath	Footpath upgrade	Footpath		20	Council	4500	5	5	8	1	8	5	0	8	5	3	48	23
33	Meadow Crescent	Western side		Footpath is uneven in sections and asphalt infill results in changes in the surface level - trip hazard	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		80	Council	18000	5	8	10	1	10	8	5	10	0	5	62	3
34	Meadow Crescent, west of Bank Street	Western side		Poor visibility at crossing location behind a tree. Poor quality kerb ramps provided and the brick footpath paving is uneven and patched with asphalt infill in sections. This results in changes in the surface level and is a trip hazard	Intersection design	Re-design the intersection and resurface footpaths.	Intersection re-design	PAMP / Footpath			Council / RMS	TBC	5	8	10	1	10	10	5	10	10	5	74	2
34	Constitution Rd West, west of Bank Street	Southern side		Kerb ramps with no gap for pedestrians in median.		Re-design the intersection and resurface footpaths.	Intersection re-design	PAMP / Footpath			Council / RMS												0	112
33	Constitution Rd West, west of bank Street	Southern side		Brick footpath paving is uneven and patched with asphalt infill in sections. This results in changes in the surface level and is a trip hazard		Re-design the intersection and resurface footpaths.	Intersection re-design	PAMP / Footpath			Council / RMS												0	112
33	Constitution Rd West, west of bank Street	Southern side		Service lid is not secure and moves when walked on - may act as a trip hazard		Upgrade the service access lid to remove trip hazard	Service access	Footpath	2	N/A	Council / service provider	1000											0	112

													Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
33	Constitution Rd West, west of bank Street	Southern side		Lid of service access protruding from footpath / driveway, creating a trip hazard for pedestrians.		Upgrade the service access lid to remove trip hazard	Service access	Footpath		N/A	Council / service provider													
35	Constitution Rd West / Ross Smith Avenue intersection	Southern side		Kerb ramp is not aligned with the one opposite	Kerb ramps	Provide kerb blister / extension and kerb ramps	Kerb ramps and kerb extension / blister	PAMP	1		Council	17100	5	5	5	1	8	5	0	5	5	3	42	46
36	Ross Smith Ave	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100	5	5	5	1	5	0	0	5	0	3	29	95
37	Ross Smith Ave	Western side		Overgrown foliage reduces the effective width of footpath	Overgrown vegetation	Trim the vegetation	Vegetation trimming	Footpath	1		Council	200	5	5	5	1	5	0	0	5	0	3	29	95
38	Constitution Rd / Federal Rd intersection	Eastern side		Wide crossing point at intersection. High radius kerb return. Allows higher vehicle turning speeds	Wide crossing point	Reduce radius - Kerb extension using raised pavement markers and line marking	Kerb ramps and kerb extension / blister	PAMP	1		Council	17100	5	5	5	1	8	5	0	5	5	3	42	46
39	Constitution Rd / Federal Rd	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	5		Council	250	5	5	5	1	8	5	0	5	0	3	37	56
40	Constitution Rd / Adelaide St intersection			No pedestrian refuge island provided across a wide crossing point (side street) at the intersection	Wide crossing point	Provide a new pedestrian refuge island and kerb extensions on both Adelaide Street and Constitution Road, and upgrade kerb ramps	Kerb ramps and pedestrian refuge and kerb extension	PAMP	2		Council	43500	5	5	5	1	8	8	0	5	5	3	45	29
41	Adelaide St, south of Hibble St	Western side		Bus shelter not located at the bus stop landing.	Bus stop	Consider moving the bus shelter to the bus landing	Bus stop upgrade	PAMP	1		TfNSW / Sydney Buses	10400	5	5	5	1	8	8	0	5	5	3	45	29
42	Adelaide St / Andrew St intersection	Northern side		No provision of physical pedestrian island - only a gap in the raised pavement markers are provided.	Non standard pedestrian refuge	Provide a new pedestrian refuge island and upgrade the kerb ramps	Kerb ramps and pedestrian refuge	PAMP	1		Council	43500	5	5	5	1	8	8	0	5	5	3	45	29

												Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
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42	Adelaide St / Andrew St intersection	Western side		No provision of physical pedestrian island.		Provide a new pedestrian refuge island and upgrade the kerb ramps	Kerb ramps and pedestrian refuge	PAMP	1		Council	43500											0	112
43	James St / Adelaide St	SW		Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	1	N/A	Council	1800	5	5	5	1	8	5	0	5	5	1	40	52
44	Constitution Rd West, east of Adelaide St	Northern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	4		Council	200	5	5	5	1	8	5	0	5	0	1	35	67
45	Grand Ave	Western side		No footpath on either side of the street	Missing link	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.	New footpath	Footpath		440	Council	85800	0	5	0	1	8	5	0	5	8	1	33	85
46	Grand Ave	Eastern side		No footpath on either side of the street	Missing link	Provide new footpath and kerb ramps. Council have identified this is a proposal in the 2017/18 footpath expansion program.	New footpath	Footpath		440	Council	85800	0	5	0	1	8	5	0	5	5	1	30	90
47	Federal Rd	Eastern side		No footpath provided along the eastern side of the street (existing footpath provided on the western side of the street). "Goat track" observed on the eastern side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps	New footpath	Footpath		450	Council	87750	0	5	0	1	8	5	0	5	5	1	30	90
48	Mons Ave	Western side		No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). "Goat track" observed on the western side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps	New footpath	Footpath		400	Council	78000	0	5	0	1	8	5	0	5	5	1	30	90
49	Constitution Rd West	Northern side		Overgrown foliage reduces the effective width of footpath	Overgrown vegetation	Trim the vegetation	Vegetation trimming	Footpath	1		Council	200	0	5	0	1	8	0	0	5	0	1	20	109
50	Constitution Rd West, east of Mons Ave	Northern side		Footpath is steep and grading downwards towards the street in sections. May be difficult for some pedestrians to walk along this footpath.	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		20	Council	4500	0	5	0	1	8	0	0	5	0	1	20	109

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PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
51	Constitution Rd West, west of Station St	Northern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100	0	5	0	1	8	0	0	5	0	1	20	109
52	Station St	Western side		No footpath provided along the western side of the street (existing footpath provided on the eastern side of the street). "Goat track" observed on the western side of the street, indicate pedestrian desire line.	Missing link	Provide new footpath and kerb ramps	New footpath	Footpath		460	Council	89700	5	5	5	1	8	0	0	5	5	3	37	56
53	Constitution Rd West, east of Station Street	Northern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100	5	5	8	1	8	0	0	5	0	3	35	67
54	See St, south of Macpherson St	Western side		Poor quality footpath	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		150	Council	33750	5	10	10	1	8	0	0	8	0	3	45	29
54	See St	Western side		Asphalt infill adjacent to concrete footpath pavement is at a lower level and presents a trip hazard	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
54	See St	Western side		Broken footpath creates an uneven terrain for pedestrians and can be awkward to traverse	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
55	Macpherson St / Forsyth St intersection	NW		Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	5	10	10	1	8	0	0	8	5	3	50	20
56	Macpherson St	Southern side		Broken footpath due to tree root	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		30	Council	6750	5	10	10	1	8	0	0	8	0	3	45	29
57	Macpherson St	Southern side		Poor quality footpath	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		5	Council	1125	5	10	10	1	8	0	0	8	0	3	45	29

													Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
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58	Macpherson St, between Mellor St and Forsyth St	Northern side		No footpath on northern side. "Goat track" observed indicating desire line for pedestrians.	Missing link	Provide a new footpath	New footpath	Footpath		80	Council	15600	5	10	10	1	8	0	0	5	5	3	47	24
59	Macpherson St / Mellor St intersection	Eastern side		Kerb ramps are unaligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	1	N/A	Council	1800	5	10	10	1	8	5	0	5	5	3	52	16
59	Macpherson St / Mellor St intersection			No stop line or give way lines at intersection. Unclear as to which intersection approach has the priority, which could be confusing to motorists and pedestrians crossing at this location.	Intersection design	Provide stop line or give way line at Macpherson St approach.	Intersection re-design	PAMP	1	N/A	Council	TBC	5	10	10	1	8	8	0	5	5	3	55	8
60	Rhodes St, south of Mellor St	Southern side		Pedestrians have the priority across the driveway. However, the provision of the yellow refuge island makes it unclear as to whether drivers or pedestrians have priority at this location.	Intersection design	Remove the pedestrian refuge and consider replacing with zebra crossing	Intersection re-design	PAMP	1		Council	TBC	5	10	10	1	8	8	0	5	5	3	55	8
61	Rhodes St, east of Hermitage Rd	Southern side		Poor quality footpath	Poor quality footpath	Provide a shared path as per Bicycle Strategy	Shared path	Bicycle Strategy		100	Council	N/A funding as part of Bike Plan	5	10	10	1	8	5	0	8	5	3	55	8
61	Rhodes St	Southern side		Poor quality footpath		Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
61	Rhodes St, east of Hermitage Rd	Southern side		Poor quality footpath		Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
61	Rhodes St, east of Hermitage Rd	Southern side		Yellow line marking potentially at driveway is confusing for pedestrians and motorists		Remove yellow line across pedestrian path at driveway	Footpath upgrade	Footpath			Council												0	112
62	Rhodes St, east of Hermitage Rd	Southern side		Footpath ends at substation	Missing link	Provide a shared path as per Bicycle Strategy	Shared path	Bicycle Strategy			Council / RMS	N/A funding as part of Bike Plan	5	10	10	1	8	5	0	8	8	3	58	5

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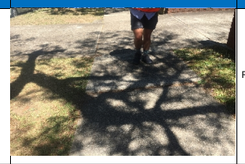
63	Union St	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	8		Council	400	5	5	5	1	8	0	0	5	0	1	30	90
63	Union St	Southern side		Section of the footpath is quite steep		None					Council												0	112
63	Union St	Southern side		Raised section of footpath resulting in a trip hazard		Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	5		Council	250											0	112
64	Union St / Maxim St intersection	Southern side		Kerb ramp is facing into drain on the opposite side of the street	Kerb ramps	Provide a new kerb ramp and ramp to connect with footpath on northern side of Maxim Street.	Kerb ramps	PAMP	1	N/A	Council	3360	5	10	10	1	8	5	0	8	8	3	58	5
64	Maxim St, west of Union St	Western side		Steps leading from footpath to street		None																	0	112
65	Maxim St, west of Union St	SE		Pedestrians are required to access the pedestrian crossing from Union Street via a driveway and steps. Access to the northern side of the crossing via steps (no kerb ramp provided)	Missing link	Pedestrian crossing is to be replaced with a new crossing in 2017/18 (Roads and Maritime grant). Introduce AS:1428 compliant ramp on the northern side of the crossing.	New crossing, footpath and AS:1428 compliant ramp	Footpath		30	Council	N/A - Funding already provided	5	10	10	1	8	5	0	8	10	3	60	4
66	Maxim St, east of Union St	NW		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	4		Council	200	5	10	10	1	8	5	0	8	0	3	50	20
67	Bank St	Western side		Poor quality footpath	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		25	Council	5625	5	5	5	1	8	0	0	5	0	1	30	90
68	Bank St / Union St			Kerb ramps not aligned with crossing point. No kerb ramp provided on the Bank Street approach.	Wide crossing point	Provide new kerb ramps and kerb blister. Potential issue with storm water drains in this area. Kerb extension design to consider impacts to storm water drainage.	Kerb ramps and kerb extension / blister	PAMP	1	N/A	Council	17100	5	5	5	1	8	5	0	5	5	1	40	52

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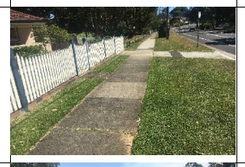
34	Bank St / Constitution Rd West			Non-standard pedestrian crossing, which crosses two approach lanes in a northbound direction. Crossing impacts traffic operations, resulting in long queues along Bank Street (northbound) and Railway Road.	Intersection design	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location.	Intersection re-design	PAMP	1	N/A	Council												0	112
69	Andrew St, west of Adelaide St	Northern side		No footpath along the southern side of the street	Missing link	Consider providing a new footpath along southern side of the road	New footpath	Footpath		160	Council	31200	0	5	0	1	10	5	0	5	8	1	35	67
70	Andrew St, west of Adelaide St	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	4		Council	200	0	5	0	1	10	5	0	5	0	1	27	97
70	Andrew St, west of Adelaide St	Southern side		Raised section of footpath resulting in a trip hazard		Resurface the footpath	Footpath upgrade	Footpath	15		Council												0	112
70	Andrew St, west of Adelaide St	Southern side		Raised section of footpath resulting in a trip hazard		Resurface the footpath	Footpath upgrade	Footpath			Council												0	112
71	Andrew St, west of Adelaide St	Southern side		No pad area or tactile ground surface indicators at bus stop	Bus stop	Provide bus stop pad area and tactile ground surface indicators at bus stop	Bus stop upgrade	PAMP	1		Council	8900	5	5	0	1	10	5	0	5	5	1	37	56
72	Andrew St, west of Adelaide St	Southern side		Poor quality footpath	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		40	Council	9000	5	5	0	1	10	5	0	5	0	1	32	86
73	Andrew St, west of Adelaide St			No pedestrian crossing facility to bus stop on western side of the street (adjacent to Meadowbank Park).	Wide crossing point	Provide kerb blister / extension and kerb ramps	Kerb ramps and kerb extension / blister	PAMP	1		Council	17100	5	5	0	1	10	8	0	5	10	1	45	29
74	Macintosh St	Western side		Raised footpath tile at the joint presents a trip hazard to pedestrians	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		20	Council	4500	5	5	0	1	5	0	0	5	0	1	22	102

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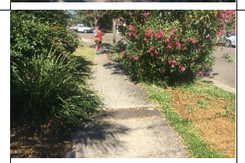
74	Macintosh St	Western side		Raised section of footpath resulting in a trip hazard		Resurface the footpath	Footpath upgrade	Footpath															0	112
74	Macintosh St	Western side		Poor quality footpath quality		Resurface the footpath	Footpath upgrade	Footpath															0	112
75	Macintosh St / Crowley Cres intersection	NW		Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	5	5	0	1	5	0	0	5	5	1	27	97
76	Macintosh St	Eastern side	NA	Raised sections of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	11		Council	550	5	5	0	1	5	0	0	5	0	1	22	102
77	Crowley Cres	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	5		Council	250	5	5	0	1	5	0	0	5	0	1	22	102
78	Crowley Cres	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	5		Council	250	5	5	0	1	5	0	0	5	0	1	22	102
79	Crowley Cres	Western side		Overgrown foliage reduces the effective width of footpath	Trip hazard	Trim the vegetation	Vegetation trimming	Footpath	1		Council	200	5	5	0	1	5	0	0	5	0	1	22	102
80	Lancaster Ave	Northern side		Poor quality footpath with cracked paving.	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		150	Council	33750	5	5	0	1	5	0	0	5	0	1	22	102
80	Lancaster Ave	Northern side		Poor quality footpath		Resurface the footpath	Footpath upgrade	Footpath															0	112

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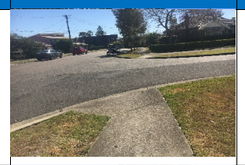
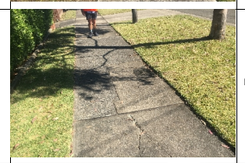
81	Lancaster Ave / Cobham Ave intersection			Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	5	5	0	1	5	0	0	5	5	1	27	97
82	Lancaster Ave			No pedestrian crossing facility to shared path. Crossing location is at a bend in the road, which could be unsafe for pedestrians.	Wide crossing point	Provide kerb blister / extension and kerb ramps to reduce the crossing distance and improve pedestrian safety	Kerb ramps and kerb extension / blister	PAMP	1		Council	17100	5	5	5	1	5	0	0	5	5	1	32	86
83	Lancaster Ave / Andrew St intersection	Southern side		Non standard pedestrian refuge island	Non standard pedestrian refuge	Upgrade pedestrian refuge island	Kerb ramps and pedestrian refuge	PAMP	1		Council	43500	5	5	5	1	5	5	0	5	5	1	37	56
84	Lancaster Ave / Andrew St intersection	Eastern side		Long crossing across Andrew Street	Wide crossing point	Provide a kerb blister / extension and kerb ramps on each side of Andrew Street to reduce road crossing distance	Kerb ramps and kerb extension / blister	PAMP	2		Council	17100	5	5	5	1	5	5	0	5	5	3	39	54
85	Lancaster Ave / Andrew St intersection	Northern side		Non standard pedestrian refuge island	Non standard pedestrian refuge	Upgrade pedestrian refuge island	Kerb ramps and pedestrian refuge	PAMP	1		Council	43500	5	5	5	1	5	5	0	5	5	3	39	54
86	Lancaster Ave, north of Andrew St	Eastern side		Poor quality footpath with cracked paving.	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		100	Council	22500	5	5	5	1	5	0	0	5	0	1	27	97
87	Parer St, east of Lancaster Ave	Southern side		Poor quality footpath	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		20	Council	4500	5	5	5	1	5	0	0	5	0	1	27	97
88	Parer St / Andrew Ln intersection			Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	5	5	5	1	5	5	0	5	5	1	37	56
89	Cobham Ave / Parer St intersection	Western side		Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	5	5	5	1	5	5	0	5	5	1	37	56

													Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
90	Cobham Ave / Parer St intersection	Eastern side		No footpath connection to the bus stop	Missing link	Provide a new footpath, with landing and tactile ground surface indicators at bus stop	New footpath	Footpath		30	Council	14250	5	5	5	1	5	5	0	5	10	1	42	46
91	Cobham Ave, south of Parer St intersection	Western side		Sunken section of footpath forming a trip hazard	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		4	Council	900	5	5	5	1	5	5	0	5	0	1	32	86
92	Cobham Ave, south of Parer St intersection	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	4		Council	200	5	5	5	1	5	5	0	5	0	1	32	86
92	Cobham Ave, south of Parer St intersection	Western side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	Footpath	2		Council	100											0	112
93	Cobham Ave, north of Andrew St	Western side		Poor quality footpath, with cracked and uneven sections which could be a trip hazard.	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		45	Council	10125	5	5	5	1	5	5	0	5	0	3	34	80
94	Cobham Ave, north of Andrew St	Eastern side		Poor quality footpath, with cracked and uneven sections which could be a trip hazard.	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		50	Council	11250	5	5	5	1	5	5	0	5	0	3	34	80
94	Cobham Ave, north of Andrew St	Eastern side		Poor quality footpath, with cracked and uneven sections which could be a trip hazard.		Resurface the footpath	Footpath upgrade																0	112
95	Adelaide St / Hibble St intersection			Kerb ramps not aligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2	N/A	Council	3600	2	5	0	1	10	5	0	5	5	3	36	64
96	Adelaide St	Western side north of Hibble St		Footpath terrain is uneven especially at the interface with the newer concrete surface	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		15	Council	3375	2	5	0	1	10	5	0	5	5	3	36	64

													Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
97	Adelaide St / Deakin St intersection			Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	1		Council	1800	2	5	0	1	10	5	0	5	5	3	36	64
98	Deakin St	Southern side		Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road	New footpath	Footpath		180	Council	35100	2	5	0	1	8	5	0	5	8	1	35	67
98	Deakin St	Northern side		Footpath does not continue to the end of the street		Provide a new footpath	New footpath	Footpath			Council												0	112
99	Adelaide St / Huxley St intersection			Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	1		Council	1800	2	5	0	1	10	5	0	5	5	1	34	80
99	Adelaide St near Huxley St			No pedestrian refuge crossing point along Adelaide Street for around 600 metres. Adelaide Street is a wide street, with bus stops along both sides of the street.	Wide crossing point	Improve pedestrian connectivity across Adelaide Street by providing a new pedestrian refuge and kerb ramps	Kerb ramps and pedestrian refuge	PAMP	1		Council	43500	2	5	0	1	10	8	0	5	10	3	44	37
100	Huxley St	Southern side		Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program.	New footpath	Footpath		270	Council	52650	2	5	0	1	8	5	0	5	8	1	35	67
100	Huxley St	Northern side		Footpath ends		Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program.	New footpath	Footpath			Council												0	112
100	Huxley St	Southern side		Footpath does not continue to the end of the street		Provide a new footpath on one side of the road. Council have advised that this footpath on northern side of street is listed in the 2020/21 footpath expansion program.	New footpath	Footpath			Council												0	112
101	Adelaide St / Huxley St intersection			Kerb ramps are unaligned	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	2		Council	3600	2	5	0	1	10	5	0	5	5	1	34	80

												Land Use				Traffic Impact	Safety		Facility Benefits	Continuity of Routes	Priority		
PAMP ID	Street / Intersection	Location	Photograph	Description of Issue	Issue Type	Description of Proposed Treatment	Treatment Type	Footpath / PAMP	Number of units	Distance (m)	Agency Responsible	Estimated Cost Range	No. of Attractors/ Generators	Land Use Type	Proximity to Generators/ Attractors	Future Development	Road Hierarchy	Hazardous Area	Pedestrian Crashes	Demonstrated Path	Addition to existing facility	Ped Route Hierarchy	RMS Priority	RMS Rank
102	Adelaide St between Darwin Street and Huxley Street	Western side		Footpath is deteriorating due to its age	Poor quality footpath	Resurface the footpath	Footpath upgrade	Footpath		100	Council	22500	2	5	0	1	10	5	0	5	8	1	37	56
103	Darwin St	Southern side		No footpath along the southern side of the street. However, there is a footpath along the northern side of the street.	Missing link	None	none	Footpath			Council	0	2	5	0	1	8	5	0	5	8	1	35	67
104	Adelaide St / Darwin St			Kerb ramp is not aligned with the one opposite	Kerb ramps	Replace and realign the kerb ramp(s)	Kerb ramps	PAMP	1		Council	1800	2	5	0	1	10	5	0	5	5	1	34	80
105	Lancaster Ave	Southern side		Raised section of footpath resulting in a trip hazard	Trip hazard	Grind the footpath or asphalt banding to remove trip hazard	Footpath grinding	PAMP	15		Council	750	5	5	0	1	5	0	0	5	0	1	22	102
106	Constitution Road / Railway Parade			Meadowbank Station Precinct - Traffic and pedestrian conflicts, with long queues observed due to pedestrian crossing. Driver impatience also observed at the crossing, which can be a safety issue for pedestrians.	Intersection design	Intersection re-design. Council is currently working with Roads and Maritime to deliver a signal controlled pedestrian crossing at this location.	Intersection re-design	PAMP	1		Council / RMS	TBC	8	10	10	5	8	10	5	10	5	5	76	1
107	Angus St			No footpath on either side of street	Missing link	Provide a new footpath on one side of the road, kerb x2 extensions and a pedestrian refuge island	New footpath	PAMP / Footpath	2	120	Council	23400	5	10	10	3	8	5	0	5	8	1	55	8
108	Angus St	Angus St		No footpath on bridge	Missing link	Provide a new shared zone	Shared zone	PAMP	1		Council	600	5	10	10	3	8	5	0	5	8	1	55	8
109	Hibble St	Northern side		Footpath does not continue to the end of the street	Missing link	Provide a new footpath on one side of the road (northern side) to complete the footpath along this street.	New footpath	Footpath		130	Council	25350	2	5	0	1	8	5	0	5	8	1	35	67

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https://projects.ghd.com/oc/Sydney/westrydeandmeadowban/Delivery/Documents/2125871_REP-REV2_Meadowbank PAMP_FINAL REPORT.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
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