STREETS for PEOPLE



NORTHERN RESERVOIR CORRIDOR

June 2018

Prepared by **Hansen Partnership, Trafficworks & Martyn Group**
for **City of Darebin**

HOW TO USE THIS DOCUMENT

Part A: Introduction & Process

This section describes the Project's intent and the 2 Study Corridors. It describes the project's process and explains key drivers for Streets for People.

Part B: Corridor Concept

This section describes the vision, principles and ideas to achieve Streets for People, informed by the Reservoir North community.

Concept designs for the Study Corridor demonstrates how the vision can potentially be achieved.

Part B also includes concept designs for 4 key priority locations to improve pedestrian and cyclist safety, as well as to contribute to the overall amenity of the public realm.

Appendices

This section comprises additional information that support the Streets for People Project Development for Corridors 4 and 5.

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PROJECT TEAM & COLLABORATORS

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ABOUT THE PROJECT

The Streets for People project builds on Council's adopted **Streets for People Feasibility Study** (Hansen Partnership, September 2018). It seeks to restore a balance in the role of streets between their functional modal requirements and their role in defining places and spaces for people.

In 2019, two corridors in Reservoir and Preston (Referred to in the Feasibility Report as Corridor 4- Northern Reservoir and Corridor 5- Preston Activity Link) have been identified for further work comprising the development of Concept Designs, to realise innovative, yet cost – effective Streets for People outcomes that are informed by the Community and Stakeholders. This report addresses the Northern Reservoir corridor and a separate report is also being prepared for the Preston Activity Link corridor.

The 2018 Streets for People Feasibility Study project provides the foundation for future corridor concept designs based on the following key principles:

Streets for People should:



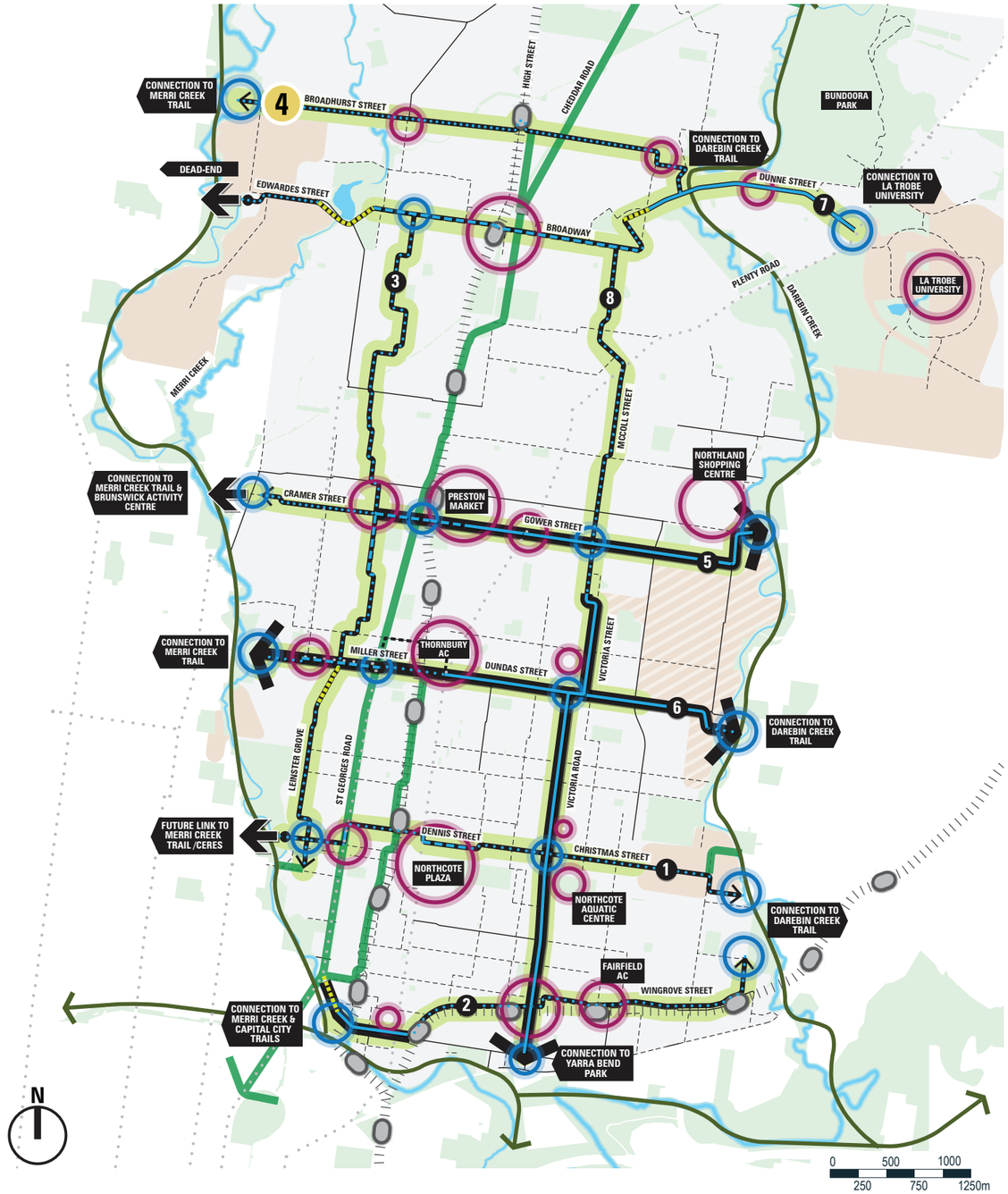
- **Prioritise People** as the main users of streets and that future street design should maximise opportunities to improve pedestrian safety and amenity.



- **Minimise conflict** between the varying modes of transport, with higher priority given to pedestrian and cyclists without compromising the functional role of streets and requirements to support adjacent existing and future uses.



- **Increase cycling confidence** along the corridors by providing high-quality cycling infrastructure that is well connected, easily navigated with varying degrees of separation and safety from moving traffic.



Overall Framework Concept Plan (City of Darebin Streets for People Feasibility Study, 2018)

PRINCIPLE 01: PRIORITISE PEOPLE

Corridor Legibility
To improve the connectivity and sense of place along each corridor

Activity Node
To create distinctive places with high quality pedestrian and cycle infrastructure

Green Network
To reinforce network of open spaces and environmental corridors as a distinctive characteristic of Darebin

PRINCIPLE 02: DESIGN TO MINIMISE CONFLICT

Public Transport
To support efficient public transport operations while improving pedestrian amenity around public transport nodes.

Role of Streets
To ensure street design is consistent with the designated role or function.

Employment Nodes
To acknowledge existing industry and employment nodes while managing improved pedestrian and cycle connections

Future Mixed Use Precinct

PRINCIPLE 03: INCREASE CYCLING CONFIDENCE

Protected Cycle Facility
To provide a physically marked and seperated bike lane with a vertical barrier.

Dedicated Cycle Facility
To provide on-road lanes dedicated to cycling and excluding all motorised traffic with an appropriate painted buffer.

Shared Facility
To provide for continuous cycling facility along lower order local streets.

Off-Road Bike Path
To provide safe and convenient access between off-road bike paths and on-road facilities.

Environmental Links (Trails)
To provide safe and convenient connections to surrounding north-south trails

Designated shimmy route & bike corridors
To ensure new infrastructure connects with and complements Council's designated Shimmy Routes.

THE CORRIDOR

Corridor 4: Northern Reservoir Corridor

The Northern Reservoir Corridor is an east-west aligned corridor at the northern reaches of the municipality, extending from Merri Creek to Darebin Creek Reserves. The corridor traverses through predominately low density residential streets and crosses major roads including High Street and Cheddar Road. Sections of this route are being considered for designation as a primary or secondary transport cycling route as part of the State Government's Strategic Cycling Network. This corridor is divided into two precincts, defined as:

- **Reservoir West:** along Broadhurst Avenue, between Merri Creek & High Street.
- **Reservoir East:** along Crookston Road, Boldrewood Parade and McMahon Road, between Cheddar Road & Darebin Creek.

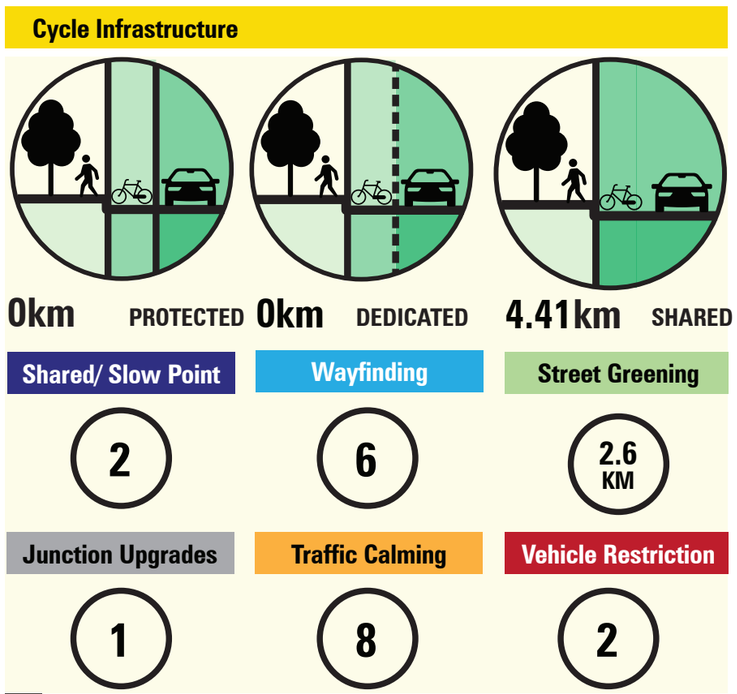
Specific portions of the Study Corridor have been excluded from this project, in response to other on-going projects undertaken by Level Crossing Removal Project (LXRP) and Darebin Council. The exclusion area has effectively set the Study Corridors into 2 sections: east and west.

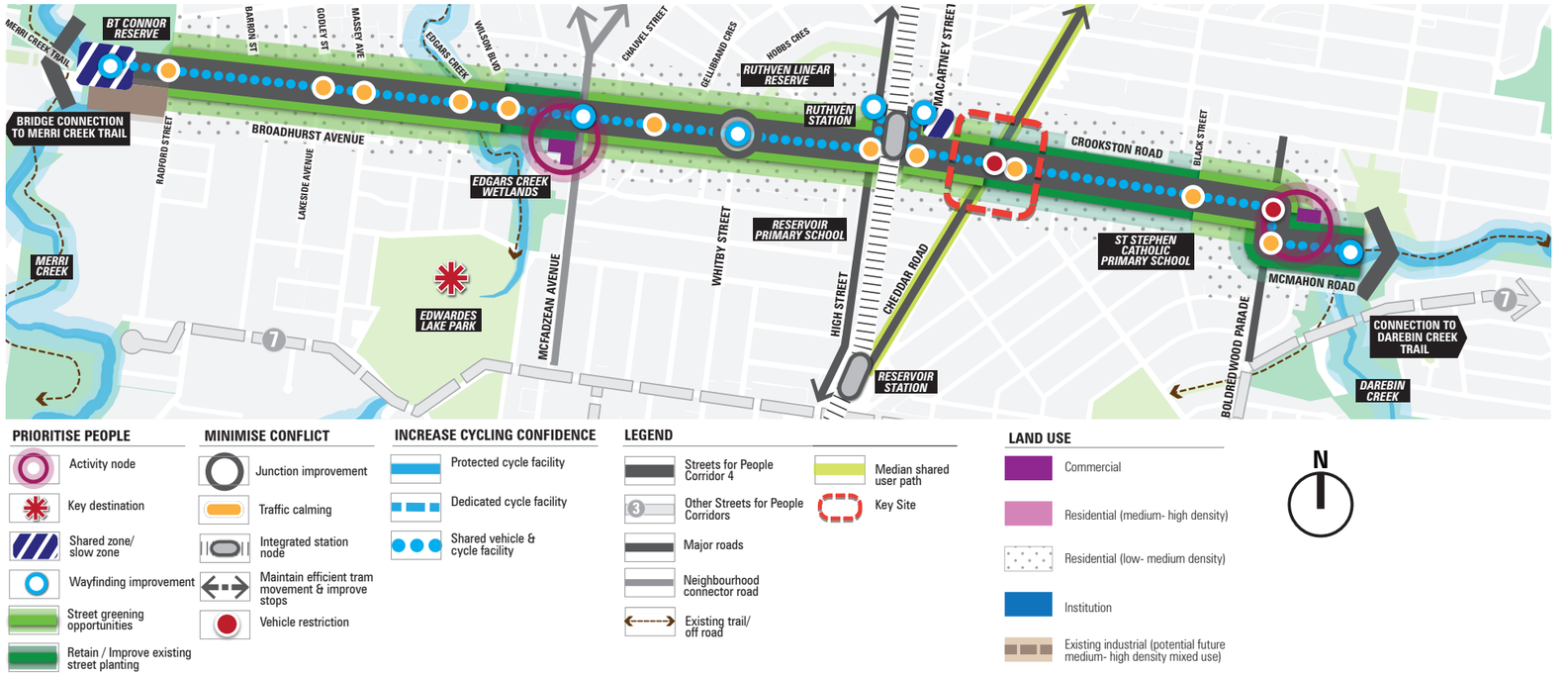
The City of Darebin 'Streets for People' Feasibility Report (adopted, 2018) provides the starting point for the preparation of Concept Plans for the corridor (Part B of this report). It has identified the following opportunities for the Northern Reservoir Corridor:



Corridor 4: Northern Reservoir Corridor

Reservoir Corridor Framework Concept (Extract from City of Darebin 'Streets for People' Feasibility Study, 2018)





Hansen Partnership Pty Ltd

FOR PEOPLE PROJECT OBJECTIVES

1 To Deliver Council's Plan 2017-2020: "A Greener, Bolder, More Connected City"

- *Goal 1.2 states that Council will "increase sustainable transport through safer streets for walking and cycling, and advocacy for public transport"*
- *Goal 1.3 states that Council will "expand and improve our network of open and green spaces, parks and natural environments to provide the lungs for our city and reduce the impacts of climate change"*
- *Goal 3.3 states that Council will "manage local roads, buildings and public spaces to make our city safer, cleaner and more attractive."*

2 To Increase Road Safety for All Users

The Facts:

- 14% of Darebin's household do not have a vehicle, (compared to 9.4 – Melbourne)
- More than 30% of urban spaces are taken up by streets
- 57% of all car trips in Darebin are made by people living outside of Darebin
- 44% of short trips to work in Darebin (<2km) are completed by car
- 2.8km Average car trip distance for Darebin residents

The Ambitions:

- As more people walk and ride bikes there is a corresponding increase in the awareness of how to drive safely around people who are walking and cycling.
- For Darebin residents in particular, improving non-car forms of transport will be beneficial for a larger proportion of our population and increase accessibility to daily needs.

Reference: ABS 2016 census

3 To Reduce Carbon Emissions

The Facts: 18% of Darebin's carbon emissions derive from transport.

The Ambitions:

- Reduce the number of private vehicle kilometres travelled in Darebin by increasing the share of public transport use, walking and cycling.
- Improve the walkability of our city, public transport nodes, interchanges and access to public transport services.
- Create a cohesive and safe high-quality network of bicycle routes to key destinations including workplaces, schools, shops and services.

Reference: https://www.climatecouncil.org.au/transport-emissions-and-climate-solutions

4 To Define the Character of a Place

The Ambitions:

- The "Streets for People"program will facilitate a re-imagining of what a local street in metropolitan Melbourne can be for the community and its users.

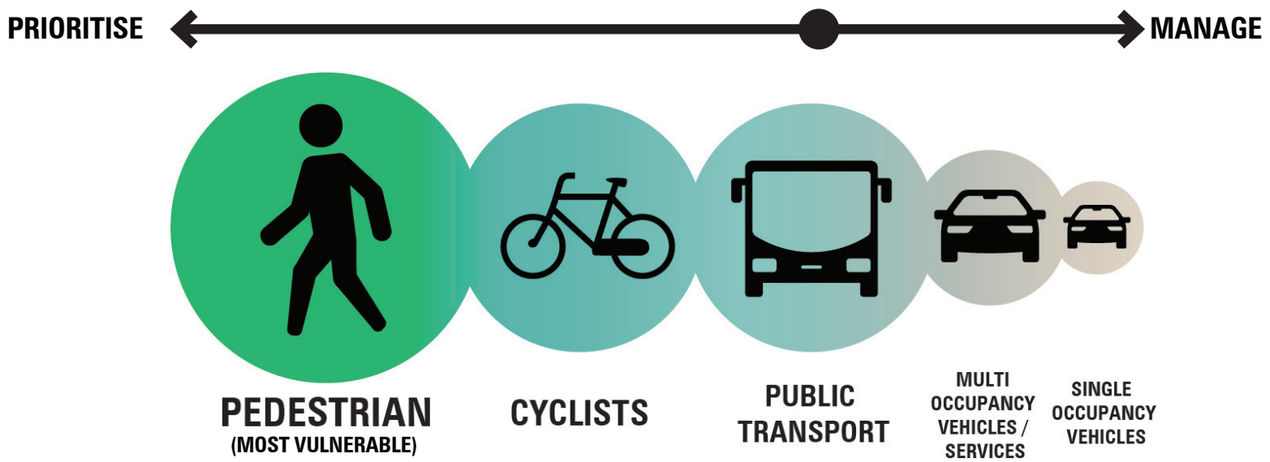


Diagram demonstrating 'Streets for People' modal hierarchy

5 For Health Benefits

The Facts: $13.8 billion of total economic cost of physical inactivity is an addition to Australian Economy

The Ambitions:

- Encourage children to feel safer in the streets and to increase walking for complementary physical activity.
- For adults, 30-minute walking a day can prolong life expectancy by up to 3 years.
- By making our streets friendlier for pedestrians, more people can engage in safe walking activities.

Reference: Medibank Private (October 2008): The cost of physical inactivity

IMPLEMENTING STREETS FOR PEOPLE (KIT OF PARTS)

The following section provides a summary for each potential treatment to deliver Streets for People, including its application, benefits, considerations and an approximate cost range.

Potential treatments that could be adopted include:

Cost Range

$ - <$50,000

$$ - $51,000 - $100,000

$$$ - >$100,000

TRAFFIC CALMING TREATMENTS

Raised side street treatment (with/without kerb extensions)



A raised side street treatment (with optional kerb outstands) is intended to reduce vehicle speeds on approach to intersections with collector roads. The treatment comprises a flat top road hump on the discontinuing leg of a T-intersection to slow vehicular traffic, as well as optional kerb outstands on the main road to separate on-street car parking. This treatment can be used with or without on-street bicycle lanes.

$$

Raised shared path crossing (priority / non-priority)



A raised shared path crossing is intended to reduce vehicle speeds to the pedestrian / cyclist crossing point and raise the awareness of the potential conflict point. The raised profile will require motorists to reduce speeds through the crossing. It is desirable to provide kerb extensions to create a pinch point to further slow vehicle speeds and to reduce the crossing point.

$$

T-intersection with Kerb Outstands



A T-intersection with kerb outstands is intended to reduce speeds of through-traffic. The treatment comprises kerb outstands on the through-road.

$$

Pinch point with raised cushion



A pinch point is intended to reduce vehicle speeds. The treatment comprises kerb extensions to narrow the trafficable width to 3.5 m (one lane) and may also include a centrally located road cushion to slow vehicular traffic.

$

Raised wombat crossing



A raised wombat crossing is intended to allocate priority to crossing pedestrians and reduce vehicle speeds. The treatment comprises kerb extensions to narrow the trafficable width to 5.5 m and a zebra crossing to allocate pedestrian priority on top of a flat top road hump to slow vehicular traffic.

$$

Raised T-intersection



A raised T-intersection is intended to reduce vehicle speeds on all legs at local roads intersections. The treatment comprises a flat top road hump through the intersection to slow vehicular traffic on all approaches. This treatment can include kerb extensions where road width permits.

$$$

Chicane



A chicane is intended to reduce vehicle speeds. The treatment comprises kerb extensions to narrow the trafficable width to 3.5 m (one lane) and provides an angled traffic lane to slow vehicular traffic. This treatment also includes bicycle sharrows to warn motorists of cyclists and to encourage cyclists to take the lane.

$$

Kerb outstand zebra crossing



A kerb outstand zebra crossing is intended to allocate priority to crossing pedestrians and reduce vehicle speeds. The treatment comprises of the same components as the wombat crossing, except the crossing is not raised.

$

Tighter radius intersection



A semi-mountable area with contrasting material is intended to provide a visual effect to reduce speeds of vehicles approaching an intersection.

$

Cost Range
$ - <$50,000
$$ - $51,000 - $100,000
$$$ - >$100,000

TRAFFIC CALMING TREATMENTS

Shared zone



A shared zone is intended to reduce vehicle speeds and provide equal priority to pedestrians, cyclists and vehicles. The treatment generally comprises a contrasting road pavement and a 10 km/h speed limit.

$+

Contraflow bike lane for intersections with one-way exits



Contra-flow bicycle lanes are exclusive bicycle lanes deployed on one side (to the left of the opposing traffic flow) of a one-way road serving cyclists travelling against what is otherwise the legal direction of travel. Physical separation between the contra-flow bicycle lane and the traffic lane should be considered where vehicle speeds are 60 km/h or greater.

$+

JUNCTION TREATMENTS

Roundabout with raised platforms on each approach



A roundabout with raised platforms on each approach is intended to reduce vehicle speeds and improve pedestrian connectivity at roundabouts.

$$$

Roundabouts with sharrow linemarking



A roundabout with sharrow linemarking is intended to increase vehicle awareness of cyclists at the intersection and encourage cyclists to take the lane through the roundabout.

$

Roundabouts with protected bicycle lanes



A roundabout with protected bicycle lanes is intended to separate cyclists from vehicular traffic and allocated priority to pedestrians and cyclists at the intersection. This treatment includes raised pedestrian and cyclist crossings on each leg and separated off-road bicycle lanes surrounding the intersection.

$$$

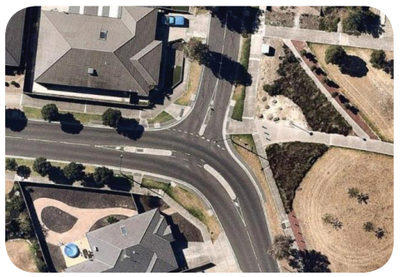
Diamond-shaped roundabout



A C-roundabout is a modified roundabout where the central island is of an irregular shape to increase deflection through the roundabout, slow vehicle speeds and increase cyclist safety. This treatment may also include narrow traffic lanes, bicycle sharrows, raised platforms and bicycle signage on the approaches.

$$$

Reverse priority treatments



A reverse priority treatment is intended to allocate priority at a T-intersection (or cross intersection) to turning traffic rather than traffic travelling straight along the roadway. This is usually in response to high volumes performing the turning movement. This treatment comprises linemarking and may include kerb outstands and/or traffic islands to reinforce the priority.

$$+

PROJECT METHODOLOGY

The following section describes the process to deliver the Streets for People project.

1 STEP 1: PLACE AUDIT (ISSUES + OPPORTUNITIES)

The first step of the project process is to ground proof recommendations found in the 2018 Streets for People Feasibility Report to respond to Northern Reservoir context.

2 STEP 2: VISION + IDEAS (ENGAGING WITH STREET USERS + STAKEHOLDERS)

This process involves engaging with street users and Stakeholders who live, work and visit the Study Corridor. Street users are key contributors in informing the Visions for Streets for People and how future interventions can improve their experience in the streets.

Engagement with street users and Stakeholders was conducted via online surveys, public drop-in sessions, street champion workshops and stakeholder workshops.

A detailed summary of the Engagement Process is provided in Appendix B.

3 STEP 3: DRAFT CONCEPTS FOR CORRIDOR & PRIORITY AREAS

Draft Concept Plan were prepared based on feedback received from street users and Stakeholders regarding the vision for their streets and insights into how these streets are used and perceived. Street Champion group has also identified priority areas to improve cycling/ walking safety and amenity within the public realm.

Technical testing of emerging concept designs for these priority areas was undertaken to ensure they could be achieved, whilst delivering street users' aspiration for their streets.

4 STEP 4: CONFIRMATION OF DRAFT CONCEPT (ENGAGING WITH STREET USERS + STAKEHOLDERS)

This process involves going back to street users and Stakeholders to inform them of the emerging concept designs for the Study Corridor. This gave an opportunity to discuss the designs in more depth and provide a better understanding of the Streets for People approach.

Engagement with street users and Stakeholders was conducted via online surveys, public drop-in sessions, street champion workshop and stakeholder workshop.

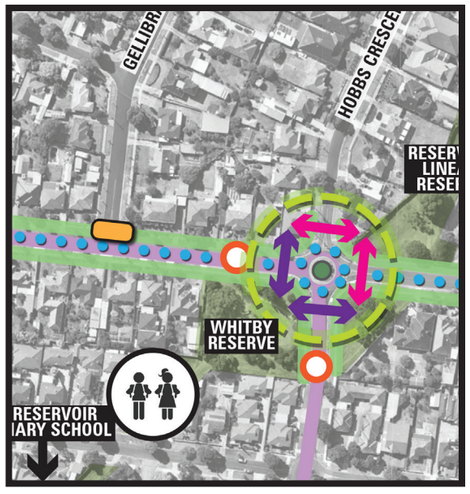
A detailed summary of the Engagement Process is provided in Appendix B.

5 STEP 5: FINALISE CONCEPTS

Feedback received from street user and Stakeholder groups are integrated into the final concept designs and recommendations. The concept design for Northern Reservoir is found in Part B of this report.











DRAFT

PART B

STREETS for PEOPLE

NORTHERN RESERVOIR CORRIDOR





UNDERSTANDING THE CORRIDOR AND ITS USERS

A bit about the Corridor

The Northern Reservoir Corridor is an east-west aligned street network, extending between Merri Creek and Darebin Creek defined by Broadway Avenue, Crookston Road and part of Boldrewood Parade and McMahon Road. The corridor is divided into 2 precincts (east and west) separated by the exclusion area between High Street and Cheddar Road including Ruthven Station. Important in defining the study area as a 'Streets for People' Corridor is acknowledging its important role as a conduit between neighbourhood and municipal destinations, such as primary schools, local activity centres, public transport and multiple public open spaces.

The corridor traverses through a highly intact and celebrated suburban residential setting, comprising predominately traditional single storey post-war brick dwellings and low brick front fences, framing established front gardens of open lawn and perimeter plantings. The streetscape profile is reflective of a typical residential setting found in Reservoir, comprising an unmarked carriageway accommodating vehicle movement and informal parallel parking with grassed nature strips and standard concrete footpaths on both sides of the road.

The key distinction between the 2 precincts is the narrower road profile of the east, including larger canopy street trees enclosing the streetscape, contrasting from the more open, broad profile of Broadhurst Avenue to the west. While both precincts are flanked by a significant creek corridor, the western precinct also benefits from Edgars Creek, intersecting the middle of Broadhurst Avenue. These important environmental assets offer substantial opportunities for the guidance of new landscape interventions, effectively 'spilling out' along the Streets for People corridor.

WHO CONTRIBUTED TO SETTING THE VISION

82 82 People responded to the online survey in March 2019

30 30 People participated at the Community Drop In Session in March 2019

15 15 Street champions participated at the 'Ideas Workshop' in April 2019.

WHO USED THE CORRIDOR

88% 88% of respondents live along the corridor, or in the area

14% 14% Respondents use the corridor to access public transport

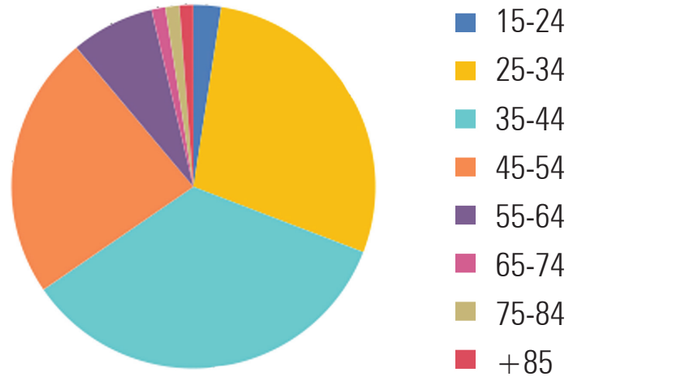
7% 7% Respondents are frequent visitors to the corridor

6% 6% Respondents are not frequent visitors but are interested in the project



Map showing study corridor extent

AGE GROUPS OF ONLINE SURVEY PARTICIPANTS



Key issues

- Lack of accessibility and convenience to existing public transport, particularly to Ruthven Station.
- High volume of trade vehicles, semi-trucks and buses at the western end of Broadhurst Avenue.
- Concerns about 'rat- running' and vehicles traveling at high speed along the study corridors which poses safety issues for pedestrian, including children walking to schools.
- Lack of legibility, or wayfinding to guide pedestrian and cyclists to key destinations.
- Limited awareness that the Study Corridor is intersected by three creeks/ green corridors.
- No infrastructure to support safe cycling.
- Concerns about footpath widths and conditions.
- Underutilised shop fronts and underutilised commercial area.

Valued attributes for Reservoir corridor

Reservoir East

- Sense of openness
- Quiet street
- Street trees and greenery
- Destinations along the corridor
- Community oriented

Reservoir West

- Community oriented
- Public transport convenience
- Street trees and greenery
- Quiet Street
- Sense of openness

"Streets for people should allow all road users to use the street equally"







"Streets for People should recognise the unique character of Reservoir"





"Streets for People should assist families to ride safely together"

"Streets for People should provide more trees and greenery"

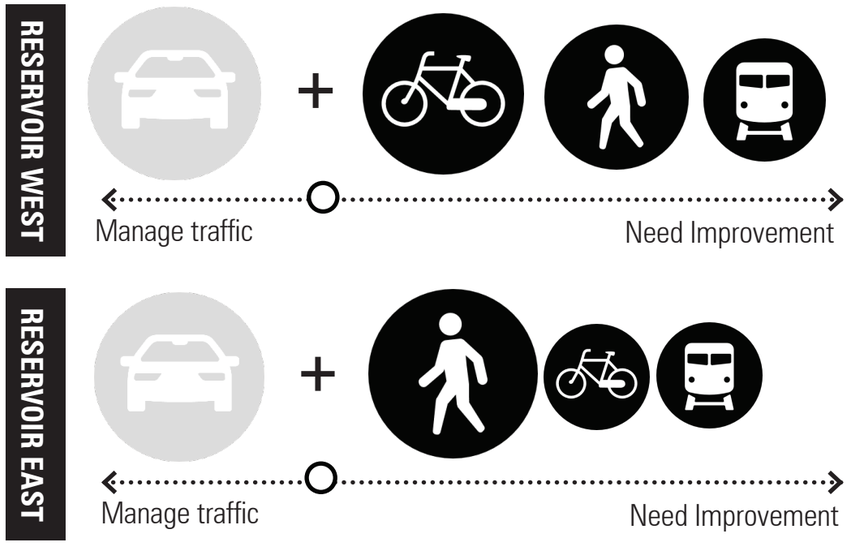
WHAT WE HEARD FROM THE COMMUNITY

The following infographics provides a high level summary of the feedback received during the community engagement process. This information was used to guide the concept designs and recommendations for future streetscape improvements along the Northern Reservoir Corridor.

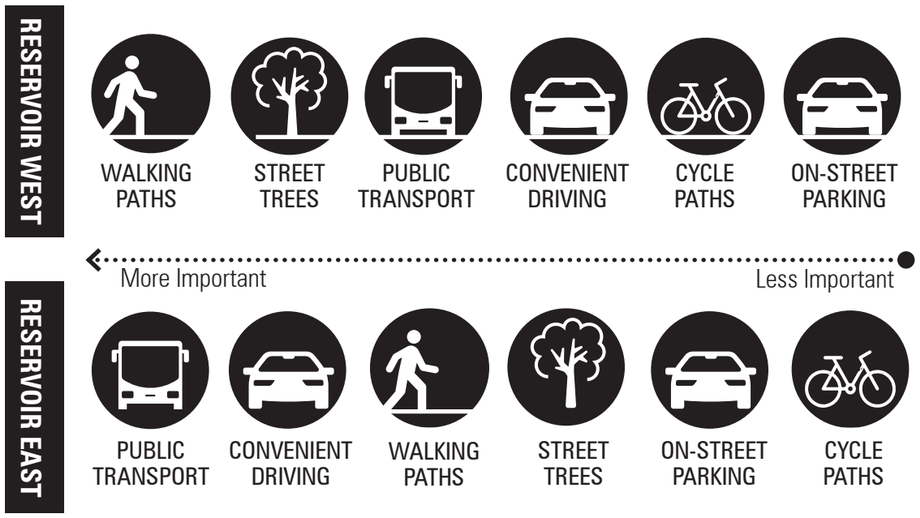
MODE USE
EXISTING MODE OF TRAVEL



PREFERRED MODE USE
AS AN ALTERNATIVE MODE OF TRASNPORT TO CARS



STREET PRIORITIES
THE IMPORTANCE OF DIFFERENT STREET ATTRIBUTES



STREETS FOR PEOPLE
IDEAS & WISH LIST*



*Note * In no particular order of priority*

VISION FOR THE CORRIDOR

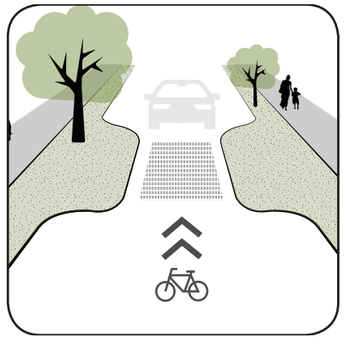
In understanding community and stakeholder aspirations for the future of their streets, the following Vision has been tailored for the Northern Reservoir corridor:

"The Northern Reservoir Streets for People Corridor will provide a safe, inviting walking and cycling environment for residents to access their local parks, schools and shops."

CORRIDOR AMBITIONS

The following corridor ambitions have been tailored for the Northern Reservoir Streets for People corridor. These corridor ambitions have been informed by feedbacks received during community and stakeholder engagement processes to inform the concept designs. Importantly, they do not seek to contradict, or duplicate recommendations and key principles found in the 2018 Feasibility Study but builds upon a 'place and community-specific' response that distinguishes Northern Reservoir corridor. The Northern Reservoir Streets for People Concept Designs have been underpinned by the following ambitions:

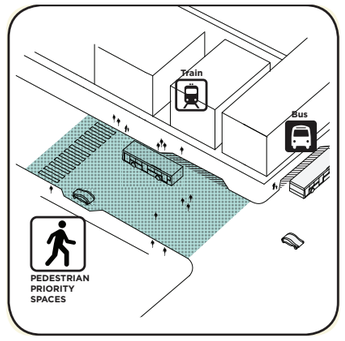
To modify the street by allocating more space for walking and vegetation, reduce vehicle speeds and rat-running to support safer cycling and retain the valued quiet nature of the street.



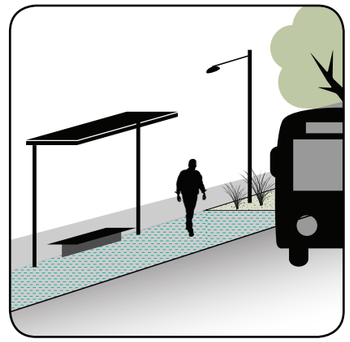
To improve wayfinding along the corridor by installing signage and public art, guiding pedestrians and cyclists to local destinations.



To make it safer for pedestrian to cross the streets to access local destinations such as parks, schools, public transport and shops.



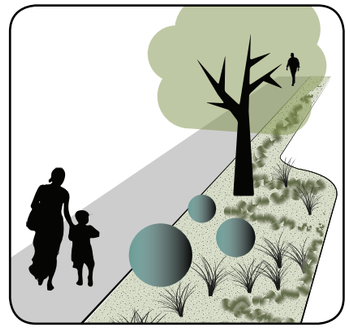
To make public transport more attractive by providing new pedestrian crossings and seating at bus stops and creating a more pleasant walking environment to the station.



To connect creeks and open space by creating welcoming and green streets with shade and lighting, as well as on going support for native landscaping within the streets.



To embrace Reservoir North local identity by promoting community-led street landscaping and public art projects to support ongoing improvement to pedestrian safety and amenity.



CORRIDOR CONCEPTS

The conditions along the extent of the Study Corridor is somewhat varied. This is influenced by existing land use (industrial, residential, or commercial), road width and street trees. For the purpose of this project, the Corridor has been broken into **5 Areas** including an overarching concept plan for each. These are defined as:

Area 1: Broadhurst Avenue - Merri Creek to Godley Street

Area 2: Broadhurst Avenue - Banbury Road to McFadzean Avenue

Area 3: Broadhurst Avenue - Chauvel Street to Plenty Road

Area 4: Crookston Road - Cheddar Road to Black Street

Area 5: Crookston Road - Black Street to Darebin Creek

Demonstration Project of Priority Area

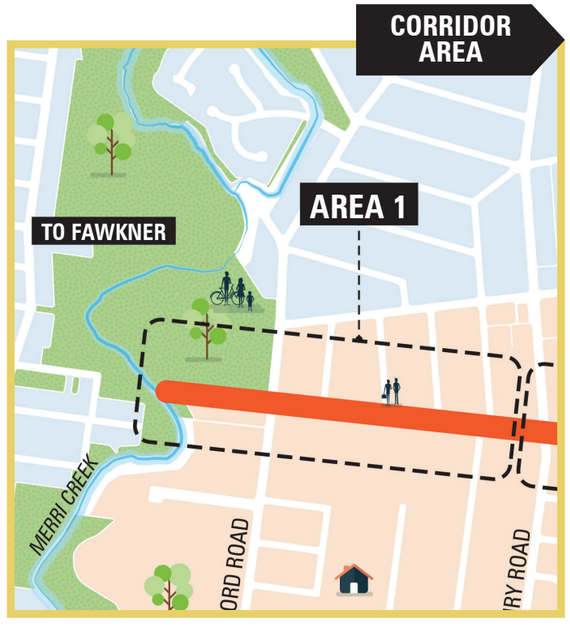
In addition to the Corridor Concepts, four key areas have been selected with the Street Champion group as priority areas, where implementation for Streets for People is encouraged. The sites were studied in detail to identify opportunities for streetscape management befitting the Streets for People ideology. An indicative sketch concept is prepared for each priority area, demonstrating how design recommendations and suggestions can potentially be achieved.

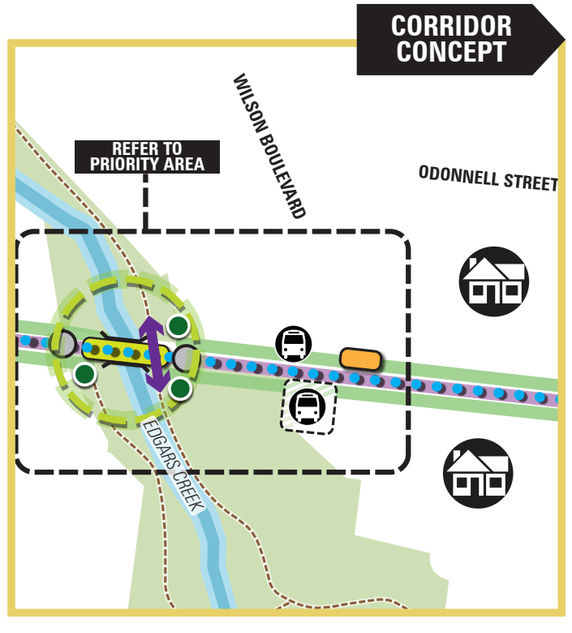
The 4 Priority Areas identified:

- Area 1: BT Connor Reserve and Radford Road junction
- Area 2: Edgars Creek bridge
- Area 3: Black Street junction
- Area 4: Boldrewood Parade shops

Reservoir Corridor Study Corridor & Areas





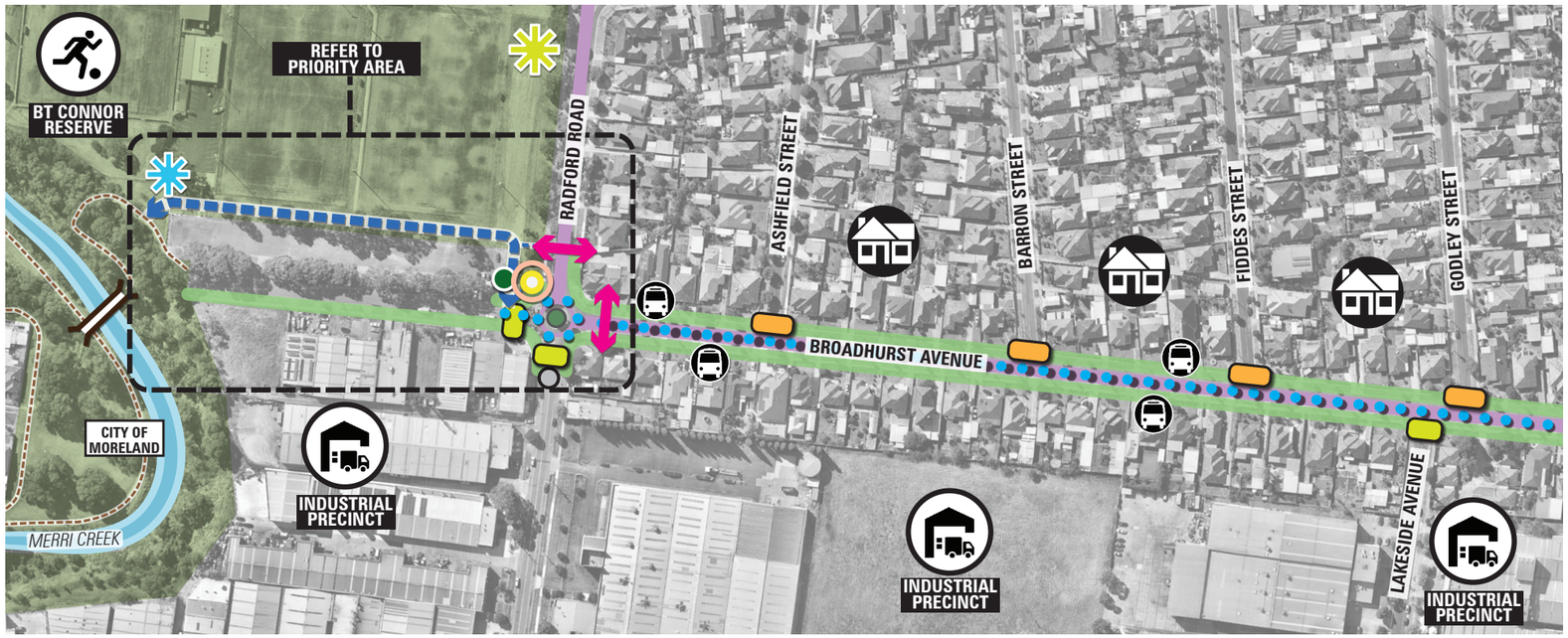




1 Area 1: Broadhurst Avenue - Merri Creek to Godley Street

Streets/ Locations	Recommended Treatment	Objective
Along Broadhurst Avenue	Shared vehicle and cycling, or 'sharrow'.	To encourage cyclists to use Broadhurst Avenue as a cycling route by formalising it as a shared road with 'sharrow' symbols to assist with wayfinding.
	Bus stop improvement	Improve pedestrian amenity and encourage greater public transport use by integrating seating, lighting, bike racks and/or wayfinding signs with bus stop.
	Infill street tree planting	Nature strip to increase shade and street beautification
	Community-driven nature strip planting	Council to further encourage community-driven nature strip planting, supporting native and drought tolerant species.
Merri Creek Trail entry	A new off-road shared user path. A new bike station (bike racks, bike pump, water fountain, seating, lighting and wayfinding)	To provide a safe pedestrian and cycle connection along the southern, vacant portion, of BT Connor Reserve connecting Merri Creek to Broadhurst Avenue. For cyclists and pedestrians to rest, surrounded by native landscape of the creek environment as a gateway treatment into the City of Darebin.
Broadhurst Avenue & Radford Road	Raised pedestrian crossing at the northern & eastern legs.	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety when crossing the roundabout.
	Threshold treatment at the southern (with speed cushion) and western legs.	To raise driver's awareness and slow down traffic entering/ exiting the intersection through line markings/ contrasting material, acknowledging the frequency of large/commercial vehicles along this street.
	Public art installation	Opportunity for public art installation which references the unique characteristics of Reservoir residential areas and/or surrounding creek corridors.
Broadhurst Avenue & Ashfield Street	Raised side street treatment	To discourage traffic rat-running into Broadhurst Avenue by slowing down vehicles and improving pedestrian safety/access across Ashfield Street.
Broadhurst Avenue & Barron Street	Raised side street treatment	To discourage traffic rat-running into Broadhurst Avenue by slowing down vehicles and improving pedestrian safety/access across Barron Street.
Broadhurst Avenue & Fiddes Street	Raised side street treatment	To discourage traffic rat-running into Broadhurst Avenue by slowing down vehicles and improving pedestrian safety/access across Fiddes Street.
Broadhurst Avenue & Lakeside Avenue	Tighter radius intersection	To visually narrow turning circles, through line markings, at the intersection to slow traffic entering and exiting along Broadhurst Avenue, acknowledging the frequency of large/commercial vehicles.
Broadhurst Avenue & Godley Street	Raised side street treatment	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety/access across Godley Street.

Concept Plan





Maximise safe pedestrian and cyclists access to Merri Creek



Support safe pedestrian crossing at intersections



Provide for cycling amenity and servicing at key node along the corridor

1 Area 1: Broadhurst Avenue - Merri Creek to Godley Street

Priority Area: BT Connor Reserve

The Broadhurst Avenue and Radford Road intersection has been identified as a priority area to improve pedestrian and cycle safety and amenity to BT Connor Reserve and Merri Creek Trail (refer to concept sketch below).

Strategies

1. Merri Creek Trail: Create a safer cycling and walking route to Merri Creek trail by introducing a new, 2 -way off-road shared user path along the north side of the car park (within the BT Connor Reserve) and the west side of Radford Road within the nature strip.
2. Add a new bike station and rest area (including bike rack, bike pump, water fountain, seating, lighting and wayfinding) surrounded by native landscape of the creek environment as a gateway treatment into the City of Darebin.
3. Across Radford Road (north): Improve pedestrian safety and give priority to pedestrians across Radford Road by implementing a new raised pedestrian crossing, connecting to new off-road shared user path, where large vehicles (including buses) are common.
4. Across Radford Road (south): Improve driver's awareness on approach and slow traffic on approach to the roundabout through contrasting material treatment (on road) and speed cushion.
5. Across Broadhurst Avenue (east): Improve pedestrian safety and give priority to pedestrian across Broadhurst Avenue (by implementing a new raised pedestrian crossing where large vehicles (including buses) are common.
6. Across Broadhurst Avenue (west): Improve driver's awareness on approach and slow traffic on approach to the roundabout through contrasting material treatment (on road) around existing crossing.
7. At the roundabout: Install warning signs and sharrow (bike symbol) line marking to assist in raising the awareness of cyclists through the roundabout.
8. Encourage infill street tree planting within the nature strip.
9. At the roundabout: Install new wayfinding, or signage near the roundabout to provide directions to Merri Creek and BT Connor Reserve.
10. Council to investigate opportunity for a new neighbourhood level playspace at BT Connor Reserve, in accordance with the Darebin Playspace Strategy (2010-2020).



Artist's impression of Radford Avenue looking north



Existing conditions

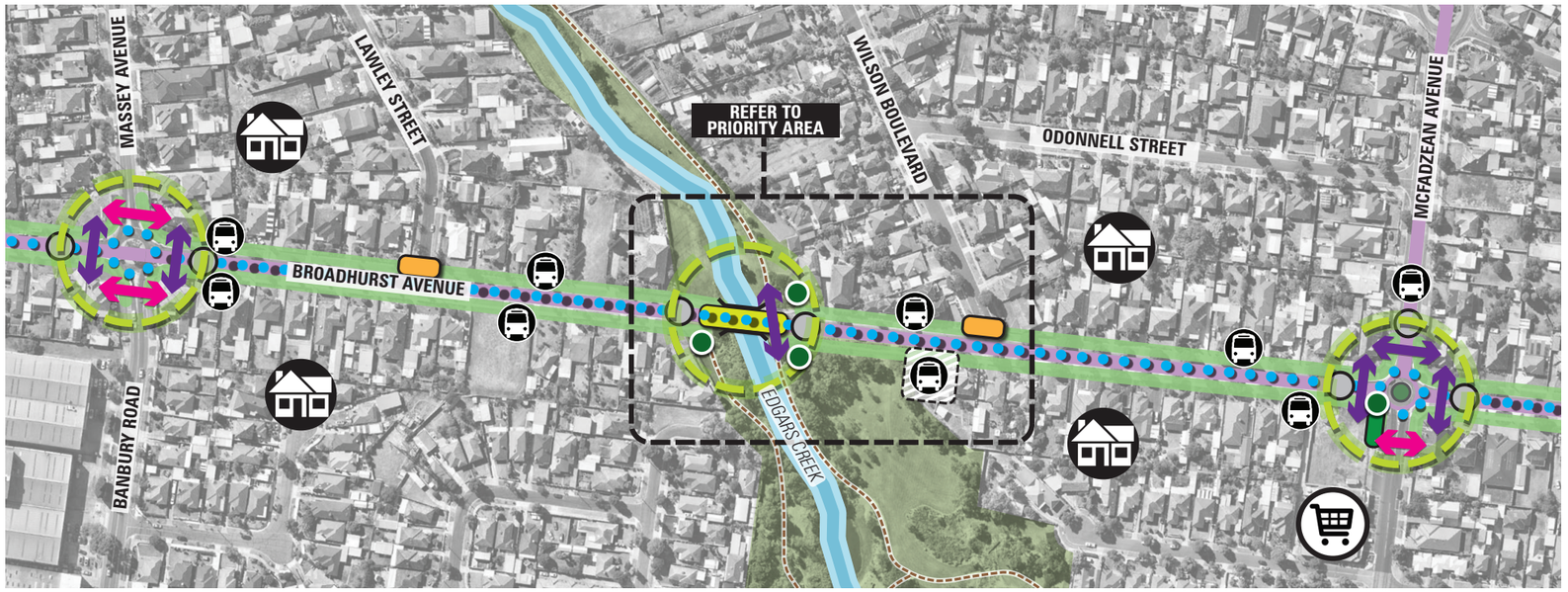
Indicative Sketch Ideas



2 Area 2: Broadhurst Avenue - Banbury Road to McFadzean Avenue

Streets/ Locations	Recommended Treatment	Objective
Along Broadhurst Avenue	Shared vehicle and cycling, or 'sharrow'	To encourage cyclists to use Broadhurst Avenue as a cycling route by formalising it as a shared road with 'sharrow' symbols to assist with wayfinding.
	Bus stop improvement	Improve pedestrian amenity and encourage greater public transport use by integrating seating, lighting, bike racks and/ or wayfinding signs with bus stop.
	Infill street tree planting	Nature strip to increase shade and street beautification
	Community-driven nature strip planting	Council to further encourage community-driven nature strip planting, supporting native and drought tolerant species.
Broadhurst Avenue & Banbury Road/ Massey Avenue roundabout	Raised pedestrian crossing on northern and southern legs	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety when crossing the roundabout.
	Zebra crossing with speed cushion on eastern and western legs	To improve pedestrian safety across Broadhurst Avenue (east-west) giving priority to pedestrian, when large vehicles (including buses) are common.
Broadhurst Avenue & Lawley Street	Raised side street treatment	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety/access across Lawley Street.
Broadhurst Avenue & Edgars Creek Bridge	Kerb extension (south side) and contrasting material treatment	To raise driver's awareness and slow down traffic on approach to the narrow bridge through line markings/ contrasting material, acknowledging the frequency of bus movement along this street.
	Zebra crossing with speed cushions on approach	To provide for safe pedestrian and cyclist connections to existing trails along Edgars Creek, including across Broadhurst Avenue.
Broadhurst Avenue & Wilson boulevard	Raised side street treatment	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety/access across Wilson Boulevard.
Broadhurst Avenue & McFadzean Avenue roundabout	Zebra crossing on northern, eastern and western legs with speed cushion. Raised pedestrian crossing on the southern leg	To improve pedestrian safety on all approaches at roundabout and improve wayfinding to local shops along McFadzean Avenue, acknowledging the frequency of bus movement at this intersection along Broadhurst Avenue and Botha Avenue.
	Kerb extension adjacent to raised crossing	To provide for improved pedestrian amenity (through footpath widening and landscaping opportunity. To ensure sufficient distance between vehicle crossover/ on street car parking from the roundabout.

Concept Plan





Support resting point with good pedestrian amenity along the corridor



Promote a unique street feature and identity



Improving pedestrian safety when crossing at a roundabout

2 Area 2: Broadhurst Avenue - Banbury Road to McFadzean Avenue

Priority Area: Edgars Creek

The Edgars Creek bridge has been selected as a priority area to improve safe pedestrian and cyclist access to Edgars Creek shared trail and reduce vehicle speeds along the narrow bridge (refer to concept sketch).

Strategies

1. Kerb extension on the south side for a new 2-way, off- road shared user path connecting existing trails.
2. Provide zebra crossing at the eastern end of the bridge to connect the Edgars Creek trail across Broadhurst Avenue.
3. Improve driver's awareness on approach to the bridge and slow traffic entering and exiting the bridge by applying contrasting surface treatment with additional speed cushions on approach.
4. Footpath upgrade on both sides of the bridge to minimise tripping hazard and create a consistent 'look and feel' along the bridge.
5. Council to investigate opportunity with Public Transport Victoria for the relocation of existing bus stop to be closer to No. 111 Broadhurst Avenue for improved passive surveillance. Future bus stop at this location will be provided with additional lighting, seating and bike racks.
6. Implement wayfinding signage at the raised pedestrian crossing (including opportunity for public art, or interpretive signage) that provide direction to Edgars Creek, Merri Creek and Darebin Creek. Its design should reference the creek character and native wildlife.
7. Additional native landscaping at the entrance to Edgar Creek trail to beautify the streetscape.
8. Implement raised side street treatment at Wilson Boulevard to discourage traffic rat-running into Broadhurst Avenue by slowing down vehicles and improving pedestrian safety/access across Ashfield Street.

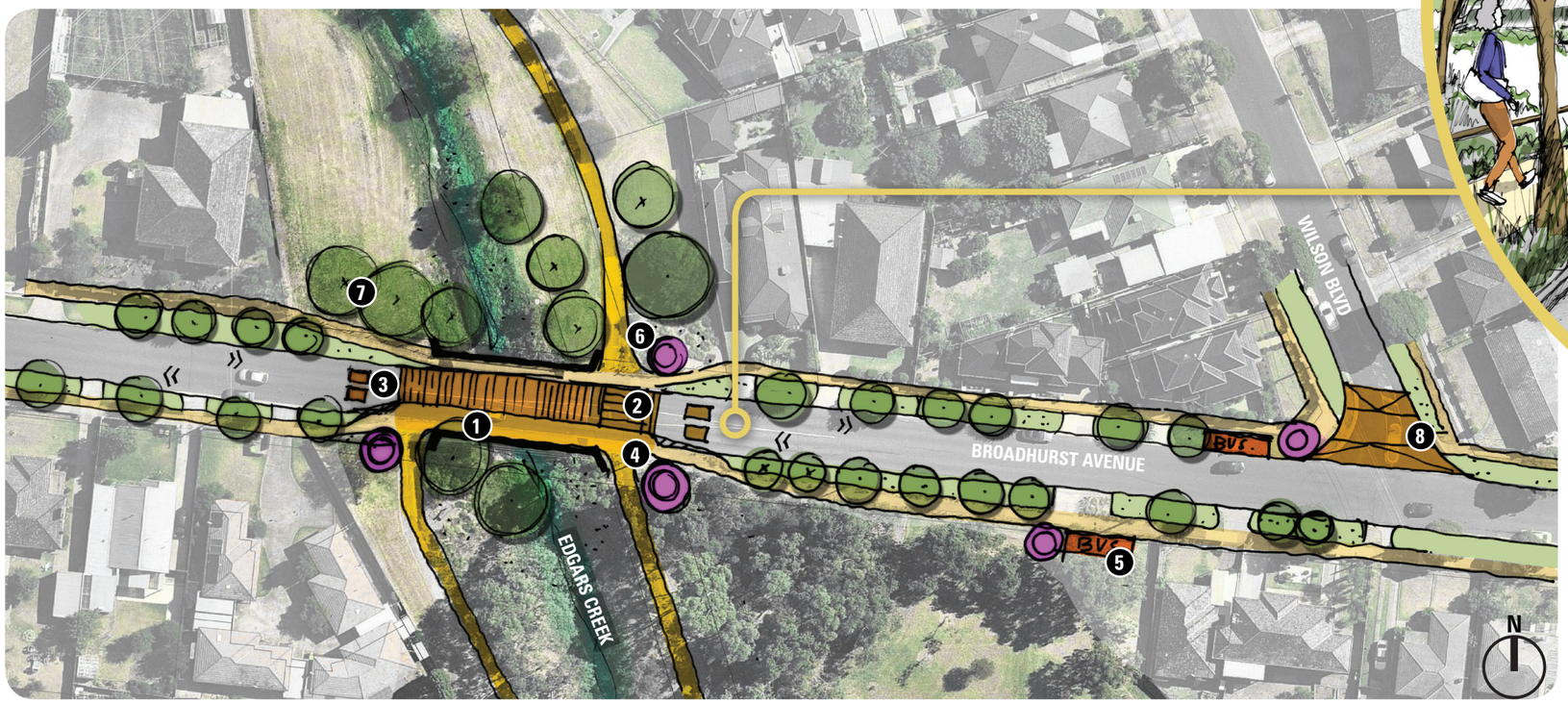


Artist's impression of Broadhurst Avenue looking west



Existing Conditions

Indicative Sketch Ideas



3 Area 3: Broadhurst Avenue - Chauvel Street to High Street

Streets/ Locations	Recommended Treatment	Objective
Along Broadhurst Avenue	Shared vehicle and cycling, or 'sharrow'	To encourage cyclists to use Broadhurst Avenue as a cycling route by formalising it as a shared road with 'sharrow' symbols to assist with wayfinding.
	Bus stop improvement	Improve pedestrian amenity and encourage greater public transport use by integrating seating, lighting, bike racks and/ or wayfinding signs with bus stop.
	Infill street tree planting	Nature strip to increase shade and street beautification
	Community-driven nature strip planting	Council to further encourage community-driven nature strip planting, supporting native and drought tolerant species.
Broadhurst Avenue & Chauvel Street	Raised side street treatment	To discourage traffic rat- running along Broadhurst Avenue by slowing down traffic and improving pedestrian safety/ access across Chauvel Street.
Broadhurst Avenue between Chauvel Street and Gellibrand Crescent	Landscaped pinch point with raised table	To discourage traffic rat- running along Broadhurst Avenue by slowing down traffic and reduce the perception of a wide road, acknowledging the frequency of bus movement.
Broadhurst Avenue & Gellibrand Crescent	Raised side street treatment	To discourage traffic rat- running along Broadhurst Avenue by slowing down traffic and improving pedestrian safety/ access across Gellibrand Street.
Broadhurst Avenue & Hobbs Crescent roundabout	Zebra crossing with raised table on approach (western and southern legs)	To improve pedestrian safety on all approaches at roundabout ensuring vehicles give way to pedestrians. To discourage traffic rat- running along Broadhurst Avenue by slowing down traffic on approach to the roundabout, acknowledging the frequency of bus movement.
	Raised pedestrian crossing (northern and eastern legs)	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety when crossing the roundabout.
Broadhurst Avenue & Maclagan Crescent	Raised side street treatment	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic and improving pedestrian safety/ access across Maclagan Street.
Broadhurst Avenue between Maclagan Crescent & High Street	Landscaped pinch point with raised table	To discourage traffic rat- running along Broadhurst Avenue by slowing down traffic and reduce the perception of a wide road.

Concept Plan





Improving pedestrian safety when crossing at a roundabout



Encourage Water Sensitive Urban Design solution to street design



Foster community's involvement in beautifying the nature strip

4 Area 4: Crookston Road- Cheddar Road to Black Street

Streets/ Locations	Recommended Treatment	Objective
Along Crookston Road	Shared vehicle and cycling, or 'sharrow'	To encourage cyclists to use Crookston Road as a cycling route by formalising it as a shared road with 'sharrow' symbols to assist with wayfinding.
	Bus stop improvement	Improve pedestrian amenity and encourage greater public transport use by integrating seating, lighting, bike racks and/ or wayfinding signs with bus stop.
	Infill street tree planting	Nature strip to increase shade and street beautification
	Community-driven nature strip planting	Council to further encourage community-driven nature strip planting, supporting native and drought tolerant species.
	Implement wayfinding and signage	To provide directions to Ruthven Railway Station, bus route along Broadhurst Avenue, Edgars Creek and Merri Creek at Crookston Road and Cheddar Road intersection.
Crookston Road (mid-block)	Landscaped pinch point with raised cushion	To discourage traffic rat- running along Crookston Road by slowing down traffic. Safe cycle movement is achieved by providing bike lanes (on either side of raised cushion) to avoid some of the stress of negotiation space with oncoming cars.
Crookston Road & Black Street Roundabout	Raised pedestrian crossing (all legs) Kerb extension	To discourage traffic rat- running along Crookston Road by slowing down traffic and improving pedestrian safety when crossing the roundabout. To reduce the perception of a wide road and create opportunities for additional landscaping at the corners of the roundabout.
	Public art installation	Opportunity for public art installation which references the unique characteristics of Reservoir residential areas and/or surrounding creek corridors.

Concept Plan





Support safe pedestrian crossing and slowing down traffic



Wayfinding and signage to key destinations along the corridor



Public arts that tell the story of Reservoir and its community

4 Area 4: Crookston Road- Cheddar Road to Black Street

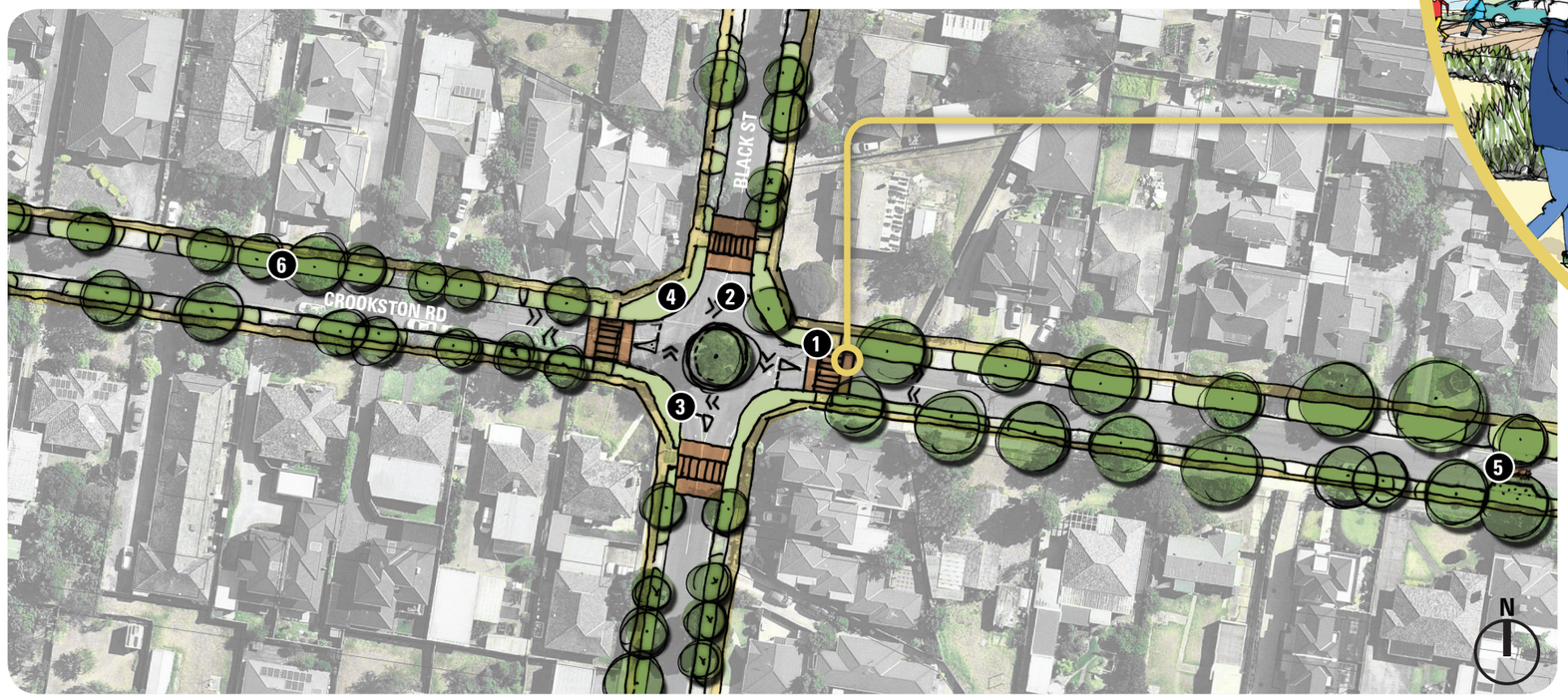
Priority Area: Black Street

Crookston Road and Black Street roundabout has been selected as a priority area to facilitate improved pedestrian and cyclist safety. This location is identified to cater for higher pedestrian volume, including children traveling to schools (Reservoir Views Primary School and St Stephen's Catholic Primary School) along Black Street (refer to concept sketch).

Strategies

1. Discourage traffic rat-running and improve pedestrian safety by implementing raised pedestrian crossings on all sides across Black Street and Crookston Road roundabout.
2. Install warning signs and sharrow (bike symbol) line marking to assist in raising the awareness of cyclists through the roundabout.
3. Slow the speed of vehicles traversing through roundabout by installing kerb extensions at each street corner with opportunity for additional landscaping.
4. Implement wayfinding signage for cyclist/ pedestrians to schools, bus stop (along Black Street) and Darebin Creek.
5. To discourage traffic rat- running along Crookston Road by slowing down traffic. Safe cycle movement is achieved by providing bike lanes (on either side of raised cushion) to avoid some of the stress of negotiating space with oncoming cars.
6. Infill tree planting within nature strip for additional shading and street beautification.

Indicative Sketch Ideas





Artist's impression of Crookston Road looking west.

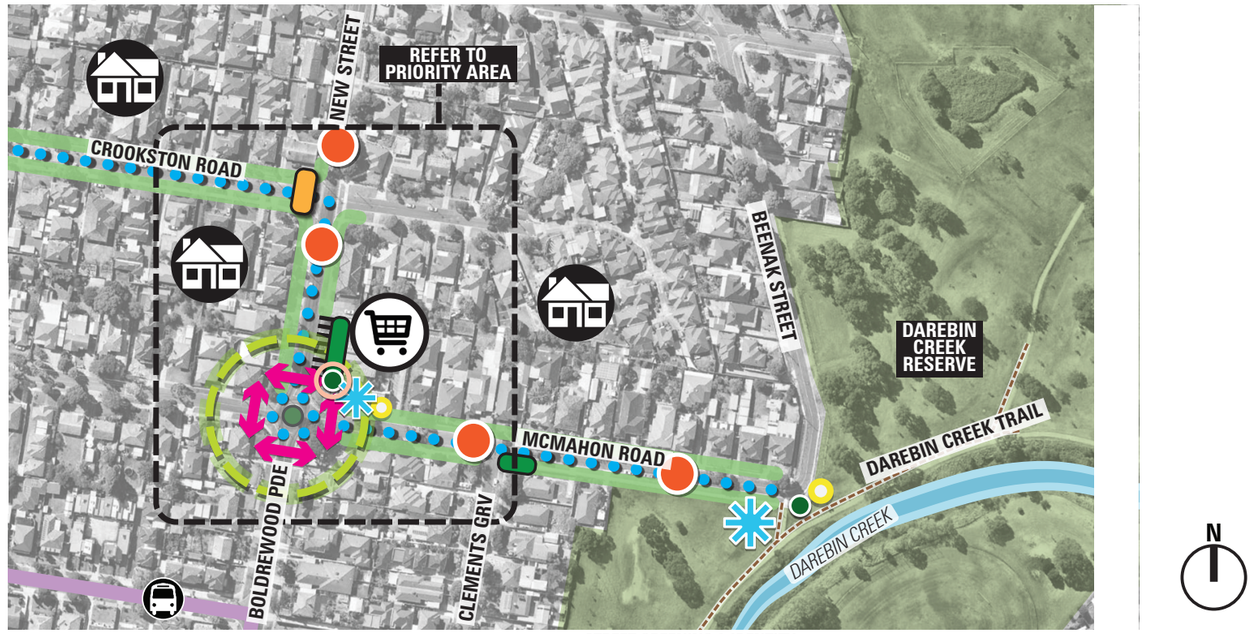


Existing Conditions

5 Area 5: Crookston Road- New Street to Darebin Creek

Streets/ Locations	Recommended Treatment	Objective
Along Crookston Road, Boldrewood Parade and McMahon Road	Shared vehicle and cycling, or 'sharrow'.	To encourage cyclists to use Crookston Road, Boldrewood Parade and McMahon Road as a cycling route by formalising it as a shared road with 'sharrow' symbols to assist with wayfinding.
	Implement wayfinding and signage	To provide directions to Ruthven Railway Station, bus route along Broadhurst Avenue, Edgars Creek and Merri Creek at Crookston Road and Cheddar Road intersection.
	Infill street tree planting	Nature strip to increase shade and street beautification
	Community-driven nature strip planting	Council to further encourage community-driven nature strip planting, supporting native and drought tolerant species.
Crookston Road & New Street intersection	Raised side street treatment	To discourage traffic rat- running into Boldrewood Parade by slowing down traffic and improving pedestrian safety/ access across Crookston Road.
New Street & Boldrewood Parade	Landscaped pinch point with raised table	To discourage traffic rat- running into Broadhurst Avenue by slowing down traffic when entering and exiting Boldrewood Parade and Crookston Road.
Boldrewood Parade & McMahon Road roundabout	Raised pedestrian crossing (all legs)	To discourage traffic rat- running into Boldrewood Parade and McMahon Road by slowing down traffic and improving pedestrian safety when crossing the roundabout.
	Public art installation	Opportunity for public art installation which references the unique characteristics of Reservoir residential areas and/or surrounding creek corridors.
Clements Grove & McMahon Road	Landscaped pinch point with raised cushion	To discourage traffic rat- running along McMahon Road by slowing down traffic. Safe cycle movement is achieved by providing bike lanes (on either side of raised cushion) to avoid some of the stress of negotiation space with oncoming cars.
	Tighter radius intersection	To visually narrow turning circles, through kerb extension, at the T- junction to slow traffic entering and exiting McMahon Road.

Concept Plan





Support safe pedestrian crossing and slowing down traffic at the roundabout



Footpath widening and additional lansdcaping to create an inviting community meeting place



Wayfinding and signage to key destinations along the corridor

5 Crookston Road- New Street to Darebin Creek

Priority Area: Boldrewood Parade

Boldrewood Parade (between Crookston Road and McMahon Road) is an important local walking route to Darebin Creek. It has been selected as a priority area for improved pedestrian and cycle safety and amenity as well as mitigating rat-running through local streets (refer to concept sketch).

Strategies

1. Implement raised side street treatment at Crookston Road to slow down traffic entering and exiting Boldrewood Parade.
2. Implement landscaped pinch point with raised table along New Street and Boldrewood Parade to slow down through traffic and discourage rat- running along Boldrewood Parade. Additional landscaping will also contribute in reducing the perception of a wide road.
3. Infill tree planting within nature strip for additional shading and street beautification.
4. Re-organise on street car park (parallel parking) for kerb extension to widen existing footpath. Improvement of footpath paving and new landscaping along the Boldrewood Parade shops frontage to create a welcoming space for community gathering and encourage activation of shops. Parallel parking is also a safer option for cyclists traveling along Boldrewood Parade.
5. Boldrewood Parade and McMahon Road roundabout: Implement raised pedestrian crossings at all approaches to improve pedestrian safety, increase driver awareness and reduce vehicle speeds.
6. Landscape upgrade with the potential for new seating at the nature strip on McMahon Road, or on the south side of 26b McMahon Road.
7. Wayfinding: Implement wayfinding and signage, providing directions to Darebin Creek, Ruthven Station and local schools at McMahon Road and Boldrewood Parade intersection.



Existing Conditions



Artist's impression of Radford Avenue

Indicative Sketch Ideas



DESIGN THEMES FOR NORTHERN RESERVOIR CORRIDOR

The experience of travelling along the Reservoir corridor is predominantly influenced by its quiet, residential character. Notably, this corridor is unique being intersected by three creek corridors, influencing the sense of arrival and wayfinding along its length. These environmental corridors and distinctive residential character are key consideration for materiality and design detailing in future stages. The aim is to enhance valued attributes identified by the Community in order to distinguish the corridor's unique characteristic.

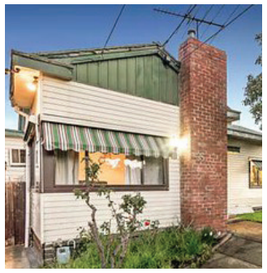
Wayfinding is an important aspect of traveling along the corridor, noting that wayfinding is defined by ways in which people (residents/ visitors) orient themselves in physical space and navigate from place to place. Wayfinding can be facilitated through items such as material and landscape palette, signage, directional markings and public arts. The Design Themes matrix below highlights how the varied characters of west and east parts of the Reservoir Corridor can be designed to achieve a cohesive experience as one travel along its entire length.

RESERVOIR WEST (BROADHURST AVENUE) → ← **RESERVOIR EAST (CROOKSTON ROAD)**

CHARACTER





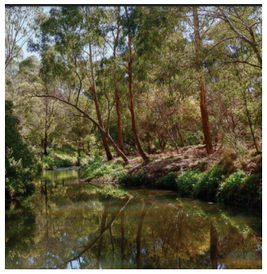
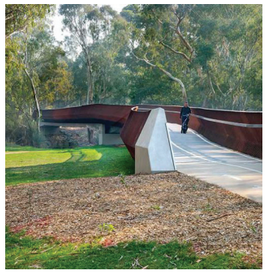





ENVIRONMENT



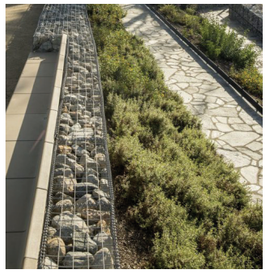




GROUND PLANE










FEATURES



