



**ACT**  
Government

Transport Canberra and  
City Services

## FREEDOM OF INFORMATION COVERSHEET

The following information is provided pursuant to section 28 of the *Freedom of Information Act 2016*.

FOI reference: TCCSFOI 20-013

Information to be published	Status
1. Access application	Published
2. Decision notice and schedule	Published
3. Documents	Published
4. Additional information identified	n/a
5. Fees	waived
6. Processing time (in working days)	29 days
7. Decision made by Ombudsman	n/a
8. Additional information identified by Ombudsman	n/a
9. Decision made by ACAT	n/a
10. Additional information identified by ACAT	n/a



## Freedom of Information – Access Application Form

### PRIVACY NOTICE

The personal information you supply on this form will only be used for the purpose of processing your request. Your application must include an email or postal address to which the respondent can send notices under the Act. If all or some of this information is not collected, Transport Canberra and City Services may not be able to communicate with you, inhibiting their obligations under the Act. This could mean the request cannot be dealt with. Your personal information will not be disclosed to a third party without your consent unless statutory obligations require otherwise.

The Transport Canberra and City Services Privacy Policy contains information on how you can access or seek to correct any of your personal information that is held by the Transport Canberra and City Services, as well as the process for lodging a complaint about an alleged breach of the *Information Privacy Act 2014*. The Privacy Policy can be found on the Transport Canberra and City Services website at [www.tccs.act.gov.au](http://www.tccs.act.gov.au).

### Applicant details

I wish to make an access application to Transport Canberra and City Services under the *Freedom of Information Act 2016*.

<b>Name</b>	[REDACTED]
<b>Address</b> (where notices relating to this request can be sent – either postal or electronic)	[REDACTED]
<b>Telephone Contact (Business Hours)</b>	[REDACTED]
<b>Telephone Contact (Mobile)</b>	[REDACTED]
<b>Email Contact</b>	[REDACTED]

### What documents are you requesting under the Act?

- To help Transport Canberra and City Services process your request, please include enough detail in your application so that we can fully understand what government information you want.
- You may wish to include a statement about how the release of information is in the public interest.
- If your application is for access to your own personal information you must include evidence of your identity. If you are an agent acting for an applicant, please supply evidence of your authorisation and evidence of the identity of the agent.
- If for reasons in section 30 of the Act is not compliant and your application cannot be processed, Transport Canberra and City Services will take reasonable steps to assist you and give you reasonable time to amend your application if you wish.

## Walking and Cycling – Feasibility and Options Report, June 2014 – AECOM

This report should be publicly released given the age of the document. So as to provide free and open information to community organisations and community advocates.

### Fee Waiver

If you wish to apply for a fee waiver, the Act sets out a number of provisions to do so:

- The information being requested was previously publicly available but no longer is.
- The information being requested is of special benefit to the public (Ombudsman guidelines see Section 66).
- The applicant is a concession card holder and demonstrates a material connection with the information requested (concession cards include a current health care or pensioner card issued under the [Social Security Act 1991](#); a current pensioner concession card issued in relation to a pension under the [Veterans' Entitlements Act 1986](#) or the [Military Rehabilitation and Compensation Act 2004](#); a current gold card; or a card prescribed by regulation).
- The applicant is a not-for-profit organisation and the application relates to the activities or purposes of the organisation.
- The applicant is a member of the Legislative Assembly.

Transport Canberra and City Services must waive any fees for providing information if the information was not publicly available and the agency makes the information publicly available before or within 3 working days after giving it to the applicant.

### Fee waiver application (fill in if applicable. Otherwise leave blank)

I would like to apply for a fee waiver because (state reason/s from the list above).

[provide details and evidence of how this reason applies]

I would like

a copy of these documents sent to the above  
email address and published at  
<https://www.cityservices.act.gov.au/roads-and-paths/policies-reports/documents>

OR

~~to inspect these document~~

APPLICANTS SIGNATURE

DATE OF REQUEST

18 th of February 2020



**ACT**  
Government

Transport Canberra and  
City Services



Dear 

**Freedom of information request:** Reference – 20-013

I refer to your application made under the *Freedom of Information Act 2016* (the Act), to Transport Canberra and City Services Directorate (TCCS) in which you sought access to the Walking and Cycling Feasibility and Options Report, June 2014 – AECOM. Thank you for agreeing to an extension until 1 April 2020.

I am an Information Officer appointed by the Director-General under section 18 of the Act to deal with access applications made under Part 5 of the Act.

#### **Decision on access**

A search of documents held by TCCS was completed and one document has been identified as in scope of your request. I have provided partial access to this document with deletions applied to information on page two, which was found to not be in the public interest to disclose.

The document is at Attachment A.

You may note that the document is marked as a draft version. I have been advised that TCCS does not hold a final version of this document. As the document is in draft, it is not appropriate that it is published on the TCCS website. However, it will be published on the TCCS disclosure log in accordance with the Act.

#### **Reasons for decision**

##### Factors considered in favour of disclosure (Schedule 2.1):

- 2.1 (a)(i) - promote open discussion of public affairs and enhance the government's accountability;
- 2.1 (a)(ii) - contribute to positive and informed debate on important issues or matters of public interest;
- 2.1 (a)(iii) - inform the community of the government's operations, including the policies, guidelines and codes of conduct followed by the government in its dealings with members of the community;
- 2.1 (a)(iv) - ensure effective oversight of expenditure of public funds; and
- 2.1 (a)(viii) reveal the reason for a government decision and any background or contextual information that informed the decision.

Factors considered in favour of non-disclosure (Schedule 1.6 and 2.2):

2.1 (a)(ii) - prejudice the protection of an individual's right to privacy or any other right under the Human Rights Act 2004.

Public Interest

I have considered the public interest in relation to the Walking and Cycling Feasibility and Options Report. The information within the documents provide transparency of government considerations, which extends to ensuring effective oversight of expenditure of public funds. I have also placed weight on the FOI Act, which favours disclosure of information unless it is contrary to the public interest.

However, some information within page two at Attachment A has been identified, on balance, to not be in the public interest to disclose. Where this has occurred, deletions have been made.

I am satisfied that the factors in favour of release can still be met despite deletions have been applied to information not in the public interest to disclose. Therefore, I have released the documents with deletions applied.

Personal and private information

Personal information means information or an opinion whether true or not about an individual whose identity is apparent or can reasonably be ascertained from the information or opinion. The *Information Privacy Act 2014* prescribes how government collects, uses, shares and stores this information.

Using personal information is limited to the purpose for which it was collected. It is not in the public interest to release personal information about this case.

I have redacted information where it would prejudice the protection of an individual's right to privacy or any other right under the *Human Rights Act 2004* and the *Information Privacy Act 2014*.

Protecting this information outweighs factors favouring its disclosure.

**Charges**

I have waived the fee of \$0.70 as the number of pages in this document marginally exceed the fee free threshold.

**Disclosure log**

Under section 28 of the Act, TCCS maintains an online record of access applications called a disclosure log. You may view the TCCS' disclosure log at [http://www.tccs.act.gov.au/about-us/freedom\\_of\\_information](http://www.tccs.act.gov.au/about-us/freedom_of_information)

I have decided that your application, documents to be released to you and this notice of my decision is in the public interest to publish. All personal information will be removed before publication. Publication will occur within 3-10 business days from the date of this letter.

## Review rights

You may apply to the ACT Ombudsman to review my decision under section 73 of the Act. An application for review must be made in writing within **20 days** of my decision being published in the disclosure log.

You may submit a request for review of my decision to the ACT Ombudsman by writing in one of the following ways:

Email (preferred): [actfoi@ombudsman.gov.au](mailto:actfoi@ombudsman.gov.au)

Post: The ACT Ombudsman  
GPO Box 442  
CANBERRA ACT 2601

More information about ACT Ombudsman review is available on the ACT Ombudsman website at: <http://www.ombudsman.act.gov.au/Freedom-of-Information>.

### *ACT Civil and Administrative Tribunal (ACAT) review*

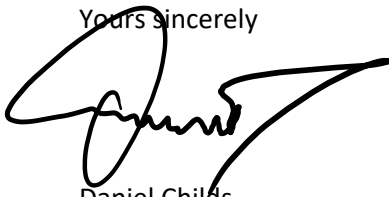
Under section 84 of the Act, if a decision is made under section 82(1) on an Ombudsman review, you may apply to the ACAT for review of the Ombudsman decision.

Further information may be obtained from the ACAT at:

ACT Civil and Administrative Tribunal  
Level 4, 1 Moore Street  
GPO Box 370  
Canberra City ACT 2601  
Telephone: (02) 6207 1740  
[www.acat.act.gov.au](http://www.acat.act.gov.au)

If you have any queries about the directorate's processing of your request, or would like further information, please contact TCCS FOI team on 620 72987 or email [tccs.foi@act.gov.au](mailto:tccs.foi@act.gov.au).

Yours sincerely

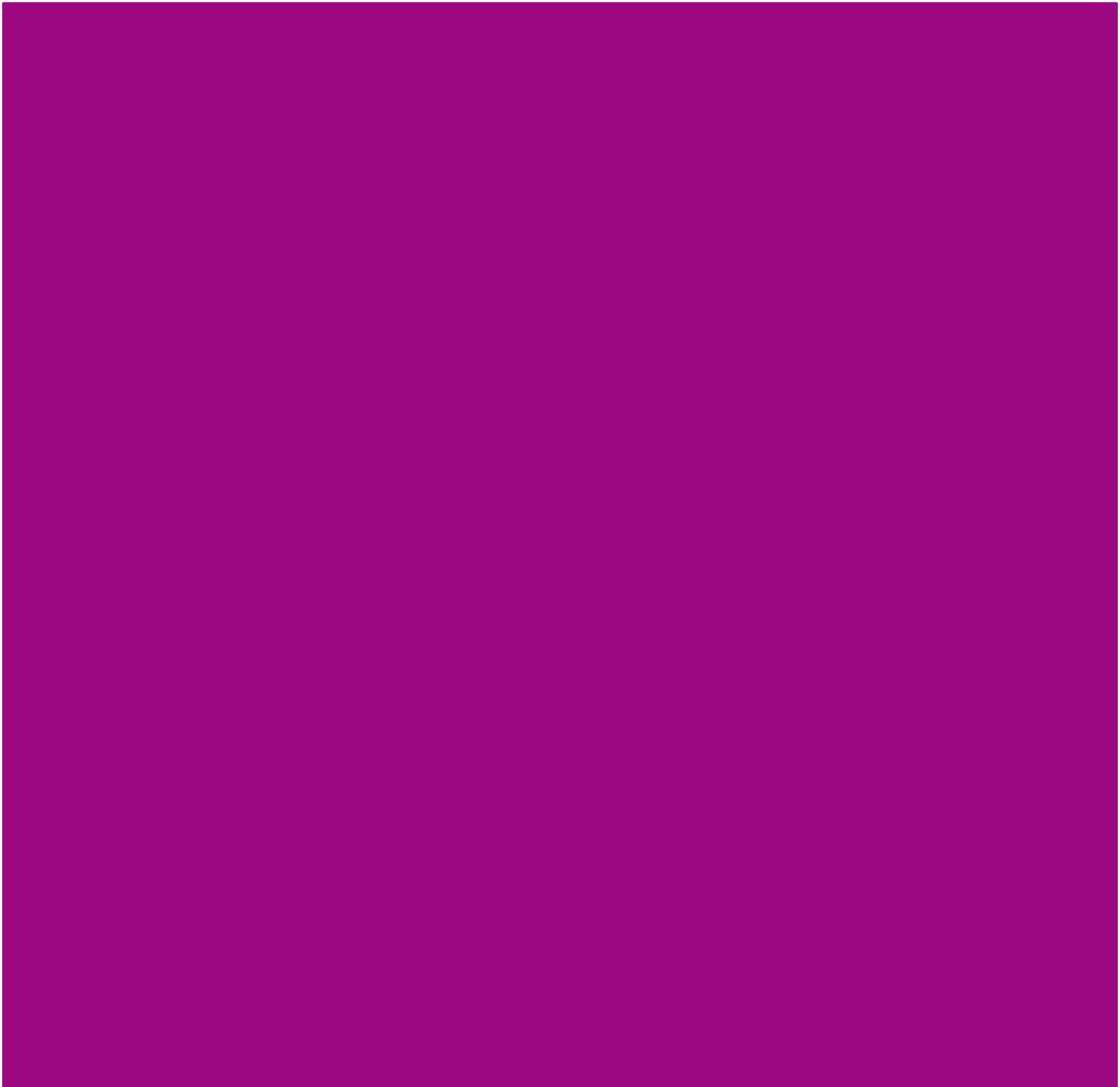


Daniel Childs  
Information Officer

31 March 2020

# Walking and Cycling

## Feasibility and Options Report



# DRAFT

## Walking and Cycling

### Feasibility and Options Report

Client: Roads ACT Strategic Planning and Development

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**DRAFT****Quality Information**

Document Walking and Cycling  
60318983


Ref p:\cbr\60318983\_walk\_cycle\8. issued docs\8.1 reports\2014-06-18-draft\60318983-wac-0001-feasibility options report.docx

Date 18-Jun-2014

Prepared by Alek Aster-Stater

Reviewed by Tim Rampton

## Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	18-June-2014	For Client Review	Ama King Project Manager	

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## 1.0 Introduction

### 1.1 About the Study

The Strategic Cycle Network Plan (SCNP)<sup>1</sup> identified a number of priority sites to improve the Walking and Cycling Network (WCN) throughout the ACT. These priority sites were selected based on the principle that fast and direct links will increase the number of people cycling. This principle did not consider the different user types and their travel needs.

A current review of DS13<sup>2</sup> aims to incorporate a higher degree of user choice in the WCN by adopting a revised hierarchy for the Community Routes Network. This hierarchy includes Main Community Routes (MCRs) at a primary level, Local Community Routes (LCRs) at a secondary level, and Access Community Routes at a tertiary level. The Main Community Route (MCR) network is for all walkers and cyclists and its infrastructure is sometimes located adjacent to on-road routes (ORRs). This may be considered duplication of the WCN however the two routes are mutually exclusive networks. They serve different purposes and represent an important choice for cyclists to meet the different values and needs associated with different riders and trip purposes. The aim of this study is to assess existing travel corridors in their ability to achieve a coherent MCR.

Roads ACT engaged AECOM to consider seven of these priority corridors for future growth, improved safety and amenity of existing facilities and increasing the appeal and choice in using the WCN.

### 1.2 Objectives

The objective of this study is to provide an assessment of the corridors' existing condition and provide options for upgrading the network where the primary purpose of the MCR is not achieved. A MCR is to be:

- Safe
- Accessible
- Connected

This can be achieved by:

- Providing a safe environment for all user groups
- Provide a smooth ride which eliminates as many stops as possible
- Minimising conflicts with traffic

### 1.3 Corridors

The corridors assessed as part of this study are listed in Table 1-1.

Table 1-1 WCN study areas

Site No.	Corridor Description	WCN Consideration
1.	Sullivans Creek	Main Community Route
2.	Dickson to Canberra City	Main Community Route/Cycling on street
3.	Canberra Avenue	Main Community Route
4.	Phillip to Manuka	Main Community Route/Cycling on street
5.	Lake Burley Griffin Circuit	Recreational Route
6.	Mirinjani Village, Namatjira Drive, Weston Creek	Age friendly facilities
7.	Haig Park	Main Community Route

<sup>1</sup> SMEC, November 2012, ACT Strategic Cycle Network Plan Preliminary Options Report, Revision 5, Environment and Sustainable Development Directorate

<sup>2</sup> Territory and Municipal Services (TAMS), *Design Standards for Urban Infrastructure (DS) Part 13: Pedestrian and Cycle Facilities* Edition 1 Revision 1

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## 1.4 Acronyms

The following acronyms are used throughout this report:

ATC	Active Transport Corridor
CAAG	Cycling Aspects of Austroads Guidelines
LCR	Local Community Route
LORR	Local On-Road Route
MCR	Main Community Route
MORR	Main On-Road Route
ORR	On-Road Route
RR	Recreational Route
SCNP	Strategic Cycle Network Plan
WCN	Walking and Cycling Networks

## 1.5 References, Standards and Codes

### 1.5.1 Studies and Reports

Marcus Clarke Street Segregated Cycleway – Concept Design Report (March 2012)

Braddon Mixed Use Area Public Domain Guidelines – January 2013 (Rev 2)

Grevillea Park, Barton Traffic Count Report (Rev A, Draft)

SMEC, November 2012, *ACT Strategic Cycle Network Plan Preliminary Options Report*, Revision 5, Environment and Sustainable Development Directorate

Effectiveness of On-Road Bicycle Lanes at Roundabouts in Australia and New Zealand – Austroads Research Paper AP-R461-14

Environmetrics (2006), *Sydney cycling research: internet survey*, prepared by Environmetrics for the City of Sydney

Environment and Sustainable Development Directorate, 2012, *Transport for Canberra, Transport for a Sustainable City, 2012-2031*

### 1.5.2 Standards and Codes

MIS 05 Pedestrian and Cyclist Facilities Planning and Design (Draft Rev 1)

AS 1428 Design for access and mobility

AS 1742 Manual of uniform traffic control devices

AS 1742.9 Bicycle facilities

AS 1158.3.1 Lighting for roads and public spaces

AGRD04 Guide to Road Design: Part 4 Intersections and Crossings General

AGRD04B Guide to Road Design: Part 4B Roundabouts

AGRD06A Guide to Road Design: Part 6A Pedestrian and Cyclepaths

AGTM06 Guide to Traffic Management – Part 6 Intersections, Interchanges and Crossings

AGTM08 Guide to Traffic Management – Part 8: Local Area Traffic Management

Territory and Municipal Services (TAMS), *Design Standards for Urban Infrastructure (DS) Part 13: Pedestrian and Cycle Facilities* Edition 1 Revision 1

Roads and Traffic Authority (RTA), July 2005, NSW Bicycle Guidelines

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VicRoads Cycle Notes 21 – Widths of Off-Road Shared Use Paths (August 2013)

## 1.5.3 Other

Strava, Inc 2014, <[www.strava.com](http://www.strava.com)>, last viewed 12 June 2014

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## 2.0 User Groups

The Transport for Canberra (TfC) policy<sup>3</sup> details a number of specific objectives relating to active travel which includes creating an environment where *'more people of all ages are cycling and walking for work and other trips'*. When assessing existing infrastructure it is critical that consideration is given to the different user groups. User groups include all age and abilities – they are anyone who wants to cycle.

This section of the report will explore the different user groups that could be considered as the primary and vulnerable users in assessing each corridor.

### 2.1 Different Bicycle Rider Types

Bicycle infrastructure attracts a variety of different users ranging from experienced commuter and sports training cyclists to young children riding bikes to school through to families riding to/around the lakes/parks at the weekends for fun. For this reason, it is critical to understand the differing requirements for each type of bicycle rider.

The Austroads Guide to Traffic Engineering Practice identifies seven typical groups of cyclists:

- 1) Commuters
- 2) Primary school children
- 3) High school children
- 4) Utility
- 5) Recreational
- 6) Sports cyclists in training
- 7) Long distance touring cyclists

The ACT Strategic Cycle Network Plan Preliminary Options Report<sup>4</sup> also identifies the following cyclist types and associated need:

- 1) Commuters (experienced) - These cyclists are often undertaking longer trips, will choose the quickest route even if there are safety risks.
- 2) Commuters (inexperienced) - Novice riders attempting a cycle commute may not be very confident and may prefer to stick to off-road paths or on-road paths with a high degree of separation from general traffic.
- 3) Recreational cyclists - These cyclists may like to take scenic trips at a leisurely pace, most likely to use the shared path network.
- 4) Sporting cyclists - Are most interested in speed and distance, should be discouraged from using shared paths.

The final user hierarchy is that of the Queensland Government 'Designing for Pedestrian and Cyclists Course' handbook. This states that international best practice in walking and cycling network and facility provision focuses primarily on providing quality facilities that offer a high level of service to suit the community.

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<sup>3</sup> Environment and Sustainable Development Directorate, 2012, Transport for Canberra, Transport for a Sustainable City, 2012-2031

<sup>4</sup> SMEC, November 2012, ACT Strategic Cycle Network Plan Preliminary Options Report, Revision 5, Environment and Sustainable Development Directorate

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As the various needs of the different user groups can vary greatly it is often necessary to provide facilities which will cater for the main groups present rather than serving the exclusive needs of a single numerically dominant group. Table 2-1 outlines the user types.

**Table 2-1 Different Bicycle Rider Types**

User Type	Purposes	Operating Characteristics
Vulnerable to traffic	Children to 15 years of age Senior and elderly riders Traffic shy riders	Speeds slower than 15km/h Vulnerable Lower reaction times Lower skill levels Shorter trip distances
Mobile adults	Utility riders Commuters Bicycle tourists Recreational and social riders Tertiary students	Speeds 15 to 30km/h Purposeful riding Higher skill levels Medium to quick reaction times Medium to long trip distances
Sports and fitness	Racing and training riders Triathletes Fitness riders Recreational and social riders	Speeds higher than 8km/h Quick reaction times High skill levels Often ride in bunches Medium to long trip distances Need smooth high quality road surface

## 2.2 Different Pedestrian Types

When planning for pedestrian facilities ideally the placement of facilities should match the usage patterns. There are a number of pedestrian user groups that have to be focused on, with the aim to encapsulate all pedestrian users' mobility and access needs.

The Austroads Guide to Traffic Engineering Practice, states that pedestrian facilities are often designed to cater for the 'average' pedestrian. In order to meet the needs of different users the Austroads identifies ten broad groups of pedestrians:

- 1) Commuters
- 2) Children walking to school
- 3) Utility activities
- 4) Parents/carers with prams
- 5) Wheelchair users
- 6) People with disabilities
- 7) Seniors and people with mobility aids
- 8) Recreational pedestrians
- 9) Runners/joggers
- 10) Dog walkers

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The Queensland Government 'Designing for Pedestrian and Cyclists Course' handbook identifies three groups as shown in Table 2-2.

**Table 2-2 Different Pedestrian Types**

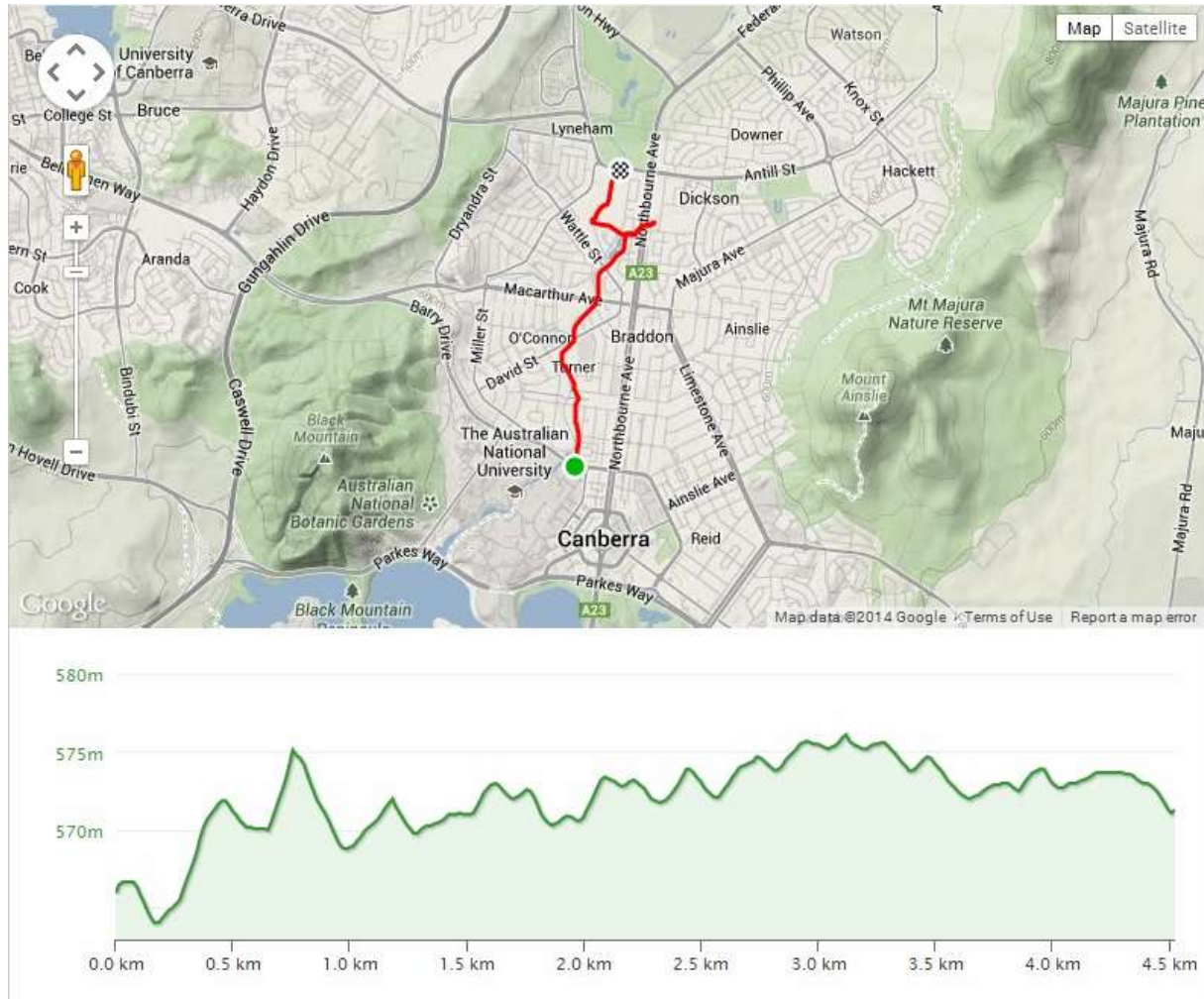
User Type	Purposes	Operating Characteristics
Vulnerable to traffic	Elderly walkers Disabled walkers Parents with prams Children to 15 years of age Traffic shy adults	Speeds slower than 4 km/h Vulnerable Lower reaction times Lower skill levels Shorter trip distances
Mobile adults	Purposeful adult walkers Commuters Recreational/social walkers Tertiary students	Speeds 2 – 8 km/h Purposeful walking Higher skill levels Medium to quick reaction times Medium to long trip distances
Sports and fitness	Runners Triathletes Fitness walkers Recreational and social walkers	Speeds higher than 8 km/h Quick reaction times High skill levels Often walk in groups Medium to long trip distances Need high-quality walking surface

## 2.3 Walking and Cycling User Groups

For the purpose of providing usable and practical facilities for both cyclists and pedestrians these user types can be narrowed down to three key user groups of:

- 1) Vulnerable walkers and cyclists – school children, the elderly, disabled walkers, adults with strollers
- 2) Mobile adults – people who walk or use their bicycle for transport to travel for a purpose around their communities
- 3) Sport and fitness riders and walkers – power walkers, joggers, fitness riders

These user types have been applied in the assessment of the priority WCN corridors.

**DRAFT****3.0 Corridor Assessment****3.1 Sullivans Creek Corridor**

**Figure 3-1 Sullivans Creek corridor<sup>5</sup>**

The Sullivans Creek corridor is a MCR that connects North Canberra to the City and runs parallel to Sullivans Creek. The study area extends from Mouat Street to the north to Barry Drive to the south and includes the following road crossings:

- Goodwin Street – uncontrolled crossing
- De Burgh Street – priority crossing
- Wattle Street – signalised priority crossing
- Macarthur Avenue – signalised priority crossing
- David Street – pedestrian crossing
- Condamine Street – uncontrolled crossing
- Masson Street – uncontrolled crossing (refuge crossing)

These intersections generate longer wait times for all users. Reversing priority from the road vehicle to the WCN user group at these intersections is an important consideration for this corridor.

<sup>5</sup> Strava, Inc 2014, <www.strava.com>, last viewed 12 June 2014

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Connectivity between the Sullivans Creek and Dickson to City MCR is also an important aspect of this corridor, namely from Challis Street to the north and via the east-west green corridor of Haig Park.

### Character

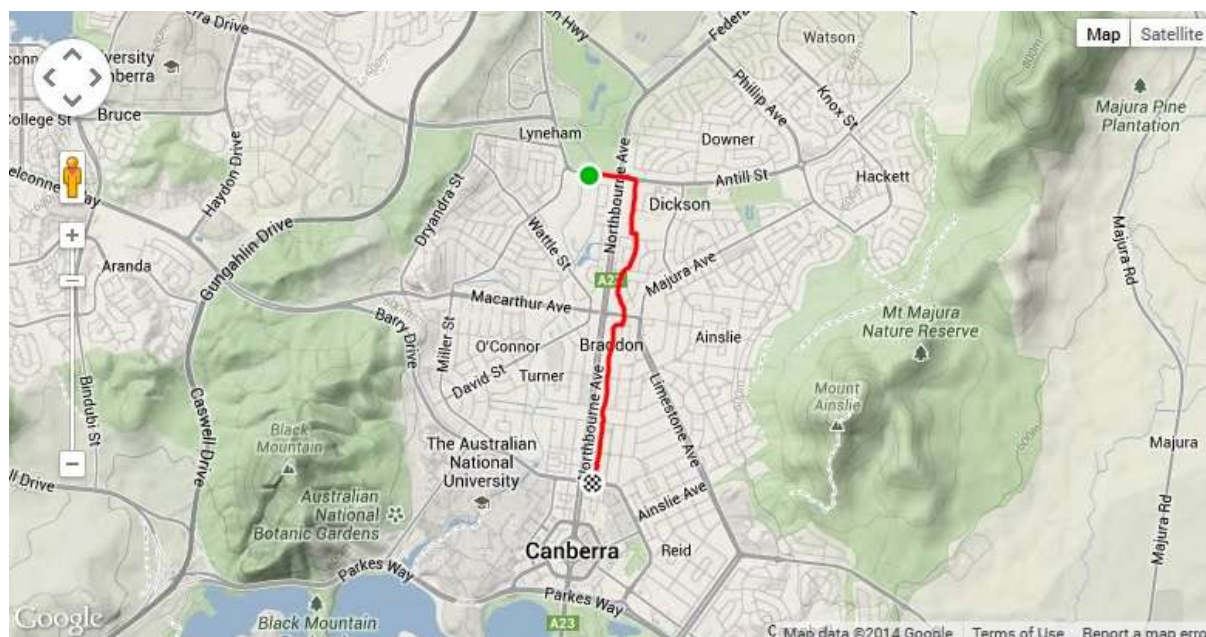
Length	Average Grade	Elevation Difference	Primary Users	Existing Infrastructure
4.5 km	0.1%	12 m	Vulnerable pedestrians/cyclists Mobile pedestrians/cyclists Sporting pedestrians/cyclists	Bi-directional Path 2.5 m – 3.0 m wide

### Constraints and Opportunities

Constraints	Opportunities
<b>General Notes</b>	
- Vehicles given priority at Condamine Street, Goodwin Street and Masson Street crossings	- Reverse priority to walking/cycling – retrofit crossings using De Burgh Street example
- High peak traffic volumes of cyclists and vehicles within corridor - Cyclists often bypassing pedestrians	- Provision of separation or wider path - Reversing priority from vehicles to WCN will help to reduce and slow vehicular traffic on collector streets
- Signalised crossings at Macarthur Avenue, Wattle Street and Mouat Street	- Signalised intersections give priority to the WCN, however, may still warrant user separation
- Poor lighting along full corridor and thus lack of compliance with CPTED guidelines	- Improve lighting throughout or at high conflict areas such as road crossings
<b>Barry Drive to Masson Street</b>	
- Short section of concrete footpath between Barry Drive and McKay Lane inconsistent with bi-directional along corridor - At grade crossing to car park access from McKay Lane	- Upgrade to bi-directional path consistent with the rest of the path - Reverse priority to WCN
- Strong desire line from Sullivans Creek corridor to Masson Street overpass via Masson Street Oval	- Formalise desire line to improve corridor connectivity
- Path width constrained through Masson Street Oval, Sullivans Creek bridge crossing, and Jandura Park	- Path realigned around trees and bridge widened if path width considered inadequate
<b>Masson Street to Condamine Street via Haig Park (West)</b>	
- Sullivans Creek bridge crossing constrains path width	- Provide separate pedestrian overpass if user separation warranted
- Strong desire line identified at Condamine Street	- Formalise desire line
<b>Condamine Street to David Street</b>	
- Turner Primary School generates high volumes of vehicular and WCN traffic along David Street	- Provide user separation between cyclists and pedestrians
<b>David Street to Macarthur Avenue</b>	
- Pedestrian crossing at David Street	- Priority given to pedestrians - Cyclists legally required to dismount across pedestrian crossing impacting on trip amenity
<b>Macarthur Avenue to Wattle Street</b>	
- Poor path condition with rutting noticed throughout impacting on user comfort gradient	- Improve path

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Constraints	Opportunities
<b>Wattle Street to Mouat Street (including Goodwin Street)</b>	
<ul style="list-style-type: none"> <li>- Poor to the north of Wattle Street where path forks to; (1) Mouat Street, and (2) Northbourne Avenue</li> </ul>	<ul style="list-style-type: none"> <li>- Improve signage</li> </ul>
<ul style="list-style-type: none"> <li>- Narrow refuge crossing at Goodwin Street cannot accommodate more than two cyclists</li> <li>- Crossing is close to intersection so reversing priority to WCN at this location may create an unsafe road environment</li> </ul>	<ul style="list-style-type: none"> <li>- Reversing priority is warranted based on cyclist numbers (approximately 100 per hour in morning peak)</li> </ul>
<b>Wattle Street to Northbourne Avenue (including De Burgh Street)</b>	
<ul style="list-style-type: none"> <li>- Poor visibility to WCN users at De Burgh Street priority crossing</li> <li>- Signage impaired by existing trees</li> </ul>	<ul style="list-style-type: none"> <li>- Install adequate lighting to AS 1158.3.1 and adjust existing signage to improve visibility</li> <li>- Use precedence set by this crossing as a template to reverse priority along full corridor</li> </ul>

**DRAFT****3.2 Dickson to City**

**Figure 3-2 Dickson to City corridor<sup>6</sup>**

The Dickson to City corridor was investigated as a precursor to the future light rail network along Northbourne Avenue and as a MCR mirroring the Sullivans Creek corridor.

The corridor aims to facilitate an ATC philosophy by promoting an environment of safe shared use and lower travel speeds for all users, predominantly car user. This corridor seeks to raise priority of walkers and cyclists above vehicle and improves the attractiveness and viability of walking and cycling as modes of transport, both at the commuter, recreational and general user levels.

The corridor is located between Antill Street to the north and Cooyong Street to the south and is situated along the following streets:

- Challis Street (and/or Cowper Street)
- Moncrieff Street
- Dooring Street
- Lowanna Street
- Henty Street
- Mort Street (and/or Torrens Street)

<sup>6</sup> Strava, Inc 2014, <[www.strava.com](http://www.strava.com)>, last viewed 12 June 2014

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This study area requires consideration of:

- The existing signalised intersection at Mouat Street/Antill Street and Northbourne Avenue for providing improved connectivity between Sullivans Creek and the upper Challis Street ATC.
- Cowper Street and Torrens Street as potential routes either part of or linking into the Dickson to City MCR. Both routes are located to the east of the Dickson to City MCR but may be viable as feeder routes from the suburbs of Watson, Downer, and Hackett into the Dickson to City MCR.
- The Braddon Mixed Use Area Public Domain Guidelines (Jan 2013) which recognises the Braddon precinct, between Mort Street and Torrens Street, as an urban village with Lonsdale Street at its heart.

### Character

Length	Average Grade	Elevation Difference	Primary Users	Existing Infrastructure
3.8 km	0.3%	11 m	Vulnerable pedestrians/cyclists Mobile pedestrians/cyclists Sporting pedestrians/cyclists	1.2 m to 1.5 m wide verge footpath

### Constraints and Opportunities

#### Dickson to City (Primary Corridor)

Constraints	Opportunities
<b>Antill Street</b>	
- Signalised crossing at Northbourne Avenue has not wait times impacting on overall travel time	- Priority given to cyclist and pedestrians - Improve path safety along Antill Street and crossing onto Challis Street through signalised intersection or priority controlled
- Uncontrolled/unsafe crossing at Antill St/Challis Street intersection	- Signalised crossing or other priority measures at Antill Street to link to Dickson to City corridor
<b>Challis Street</b>	
- High potential for cyclist/vehicle conflicts along Challis Street (90 degree parking) and Mort Street (parallel parking)	- Provision of Copenhagen lanes to provide visual and physical separation
- High user volume at Challis Street pedestrian crossing travelling to/from Daramalan College - Cyclists legally required to dismount at zebra crossing	- Upgrade crossing to improve path continuity for cyclists whilst maintaining pedestrian safety (apply De Burgh Street example)
<b>Moncrieff Street</b>	
- Offset to the east of Challis Street and Dooring Street	- Provide a safe and continues route such as separated one-way pair to attract cyclist
- Non-linear route requiring short and sharp transitions at Morphett Street Dooring Street intersections	- Provide appropriate treatment measures at intersections
<b>Dooring Street</b>	
- Signalised intersection at Wakefield Avenue	- Priority given to MCN users
- Steep road south of Wakefield Avenue (longitudinal grade approximately 5%)	- Consider speed limiting devices to control the approach speed of cyclists such as rumble strips or textured paving
- Non-linear route with numerous corners to navigate	- Provide Copenhagen lanes to improve path safety, particularly around tight corners
<b>Lowanna Street</b>	

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Constraints	Opportunities
- On-street parking both sides	- Provide physical separation to MCR using Copenhagen style paths
<b>Henty Street</b>	
- Constrained path from Henty Street to Haig Park	- Improve continuity by removing tight path radii
<b>Haig Park</b>	
- 1.2 m to 1.5 m wide footpath with numerous worn desire lines branching off	- Formalise desire lines at the Girraheen Street/Mort Street intersection
- Unsafe pram crossing from Haig Park onto Girraheen Street	- Formalise existing desire line connecting to the refuge crossing on Girraheen Street (this aligns with the western verge of Mort Street)
<b>Mort Street</b>	
- Roundabout at Elouera Street/Mort Street intersection	- Roundabout treatment methods to be investigated
- On-street parking both sides	- Provide physical separation to MCR using Copenhagen style paths
- Braddon Mixed Use Study identifies Mort Street as a mixed use (Active Travel Street) arrangement which may impact on overall coherence of the Dickson to City MCR	- Shift MCR corridor to Torrens Street via Haig Park - Slowly all traffic to 40 km/h or less may improve the attractiveness of this route
- Major bus route exists along Mort Street may prevent safe, low speed environment from being achieved	- Shift MCR to Torrens Street

**Dickson to City (Alternate route via Cowper Street and Torrens St)**

Constraints	Opportunities
<b>Cowper Street</b>	
- On-road cycle lane begins and ends abruptly between Doorling Street and Morphett Street	- Improving connection between existing on-road path and Antill Street/Doorling Street
- Located east of the preferred route	- Acts as a feeder route to service the northern suburbs of Downer, Hackett and Watson
- Signalised crossing at Dickson Place increases delay time for WCN users	- Priority given to WCN
- Existing shared path along floodway merges with Dickson Place	- Provide shared path link between Antill Street and Dickson Place (western verge of Cowper Street)
<b>Torrens Street</b>	
- Roundabout at Elouera Street/Torrens Street intersection	- Treatment methods to be investigated
- Torrens Street corridor is located east of the preferred route	- Identified in Braddon Mixed Use Study as an active travel route into the city centre - Provision of multiple routes through Braddon may be possible to improve user choice, i.e. along Mort Street, Lonsdale Street or Torrens Street
- Uncontrolled crossing at Cooyong Street	- Intersection is planned for signalisation as part of the Mort Street and Lonsdale Street urban renewal project

# DRAFT

## 3.3 Canberra Avenue

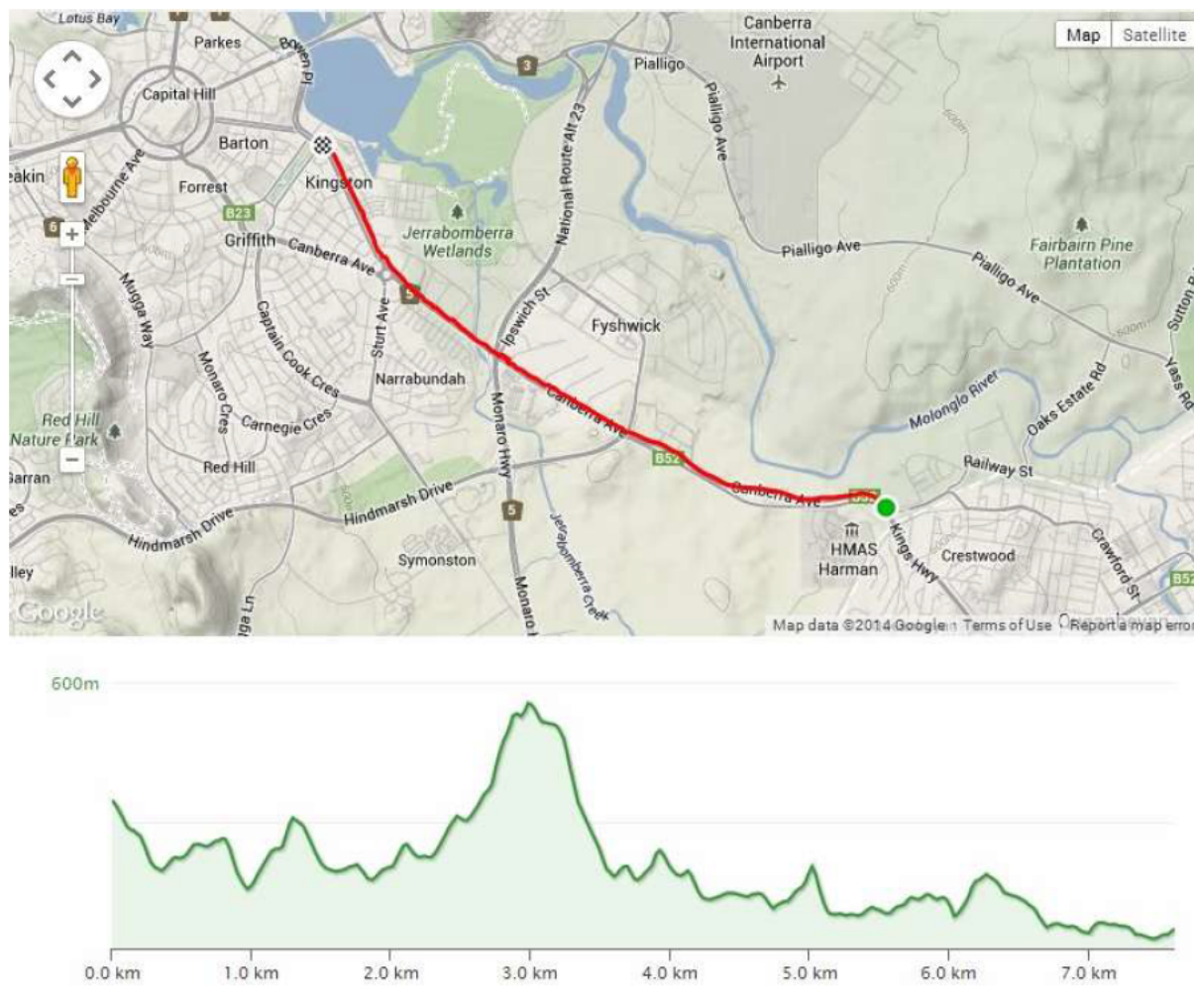


Figure 3-3 Canberra Avenue corridor<sup>7</sup>

Canberra Avenue was assessed for providing a MCR connecting Queanbeyan to the ACT, and improving connectivity from Kingston to Manuka via Eyre Street.

A MCR along Eyre Street was considered an important connector route to support the large pedestrian and cycle movements accessing Manuka.

The eastern portion of the corridor is activated by a bi-directional shared path which extends to Queanbeyan however the western portion is lacking in MCR facilities in providing an attractive, user friendly, and coherent route. Thus the priority of this corridor assessment focusses on completing this connection.

### Character

Length	Average Grade	Elevation Difference	Primary Users	Existing Infrastructure
7.6 km	0.2%	34 m	Mobile pedestrians/cyclists Sporting pedestrians/cyclists	1.2 m to 1.5 m wide concrete footpath Bi-directional path (incomplete) On-road cycle lanes (incomplete)

<sup>7</sup> Strava, Inc 2014, <www.strava.com>, last viewed 12 June 2014

**DRAFT****Constraints and Opportunities**

Constraints	Opportunities
- Narrow concrete path (1.2 m to 1.5 m wide) exists along the northern verge of Wentworth Avenue between Eastlake Parade and Ipswich Street	- Widening path to 2.5 m wide bi-directional
- Concrete path is bent in around car park accesses between Giles Street and Eyre Street, Eyre Street and Dawes Street, Dawes Street and Cunningham Street	- Provide separated on-street bi-directional path adjacent to access way to ensure path continuity
- Incomplete on-road cycle lanes	- Retrofit corridor with missing segments
- Path continues onto Canberra Avenue service road	- Provide separated on-street bi-directional path adjacent to access way to ensure path continuity
- Numerous uncontrolled crossings	- Change to priority crossing for WCN network through application of green paint
- Numerous signalised crossings (some with slip lanes)	- Provide user separation similar to the Civic Cycle Loop Marcus Clarke Street/Alinga Street intersection
- Path continues on-road for short segment between Ipswich Street and Lithgow Street (alternative concrete path exists down to Ipswich Street intersection)	- Formalise off-road concrete path by widening
- Bi-directional path (approximately 2.5 m wide) within Canberra Avenue northern verge between Ipswich Street and Queanbeyan	- Adopt similar profile for upgraded path sections
<b>Eyre Street</b>	
- Existing concrete footpaths located on constrained verges	- Utilise carriageway for retrofitting separated on-street cycling infrastructure - Install dedicated cycle lane within verge where possible
- Bi-directional separated path exists through Kingston between Eastlake Parade and The Causeway	- Provide connectivity to this path via separated bi-directional path along Eyre Street
- Existing bus route - On-street parking	- Squeeze carriageway width to allow separated one-way pair cycle lanes - Widen western footpath to 2.5 m wide bi-directional shared path

# DRAFT

## 3.4 Phillip to Manuka

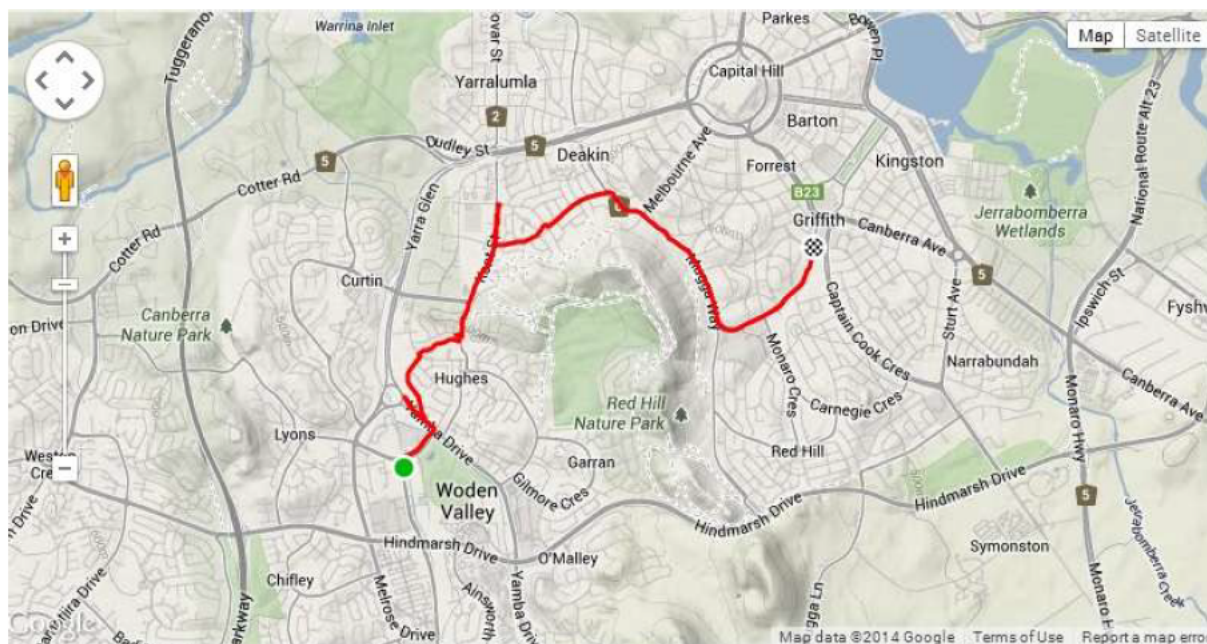


Figure 3-4 Phillip to Manuka corridor

The Phillip to Manuka corridor was assessed for a MCR between these two hubs. The preferred corridor is not the most direct link between Phillip and Manuka and, being constrained by Red Hill and its centre, may contribute to a larger than desirable detour factor along the MCR. Despite these identified constraints this corridor will provide a highly sought-after route to the east of Yamba Drive, which currently cannot be navigated without onerous detours.

The assessment of the MCR included options for cycling on local streets to provide connectivity through this dense and high value corridor.

### Character

Length	Average Grade	Elevation Difference	Primary Users	Existing Infrastructure
9.4 km	0.1%	49 m	Vulnerable pedestrians/cyclists Mobile pedestrians/cyclists Sporting pedestrians/cyclists	1.2 m to 1.5 m wide concrete footpath Bi-directional path along Flinders Way

**DRAFT****Constraints and Opportunities**

Constraints	Opportunities
<b>Launceston Street (Callum Street to Yamba Drive)</b>	
- Signalised crossings at Launceston Street/Callum Street and Launceston Street/Yamba Drive intersections	- Gives priority to WCN - Opportunity for user separation through slip lane and road crossing
- Narrow bridge crossing at Launceston Street/Yamba Drive intersection - Accentuated by on-road cycle lane merging with off-road path prior to bridge crossing	- Widen bridge path to accommodate all WCN users
- Inexperienced commuters not accommodated on existing route	- Improve off-road network by widening footpath to cater for these users
- Constrained verges with trees in close proximity to concrete path, particularly on southern verge	- Upgrade northern path to 3.0 m shared path (minimum 2.5 m)
<b>Yamba Drive (Launceston Street to Yarra Glen roundabout)</b>	
- Difficult to provide safe east-west crossing of Yamba Drive for continuity of MCR	- Utilise existing signalised intersection at Yamba Drive/Launceston Street and continuing MCR to the east of Yarra Glen/Yamba Drive
- Existing shared path on the eastern side of Yarra Glen ends at Carruthers Street intersection - On-road cyclists forced onto off-road footpath at Yarra Glen roundabout	- Continue off-road path to the east of Yarra Glen through to the Yamba Drive/Launceston Street intersection - Ensure separation to existing footpath which services on-road cyclists
<b>East-west connection (Yarra Glen to Kent Street)</b>	
- No MCR connection from Yarra Glen to Groom Street underpass	- Provide MCR along floodway (between North Woden Tennis Club and Clarrie Hermes Park)
- Dark spaces at underpasses contributing to poor user amenity	- Upgrade lighting through CPTED Guidelines
- Existing concrete footpath (approximately 1.2 m wide) in poor condition	- Upgrade to 3.0 m wide MCR
<b>Kent Street</b>	
- Unsafe crossing at Jensen Street (west of Kent Street)	- Utilise underpass to avoid crossing Kent Street - Upgrading footpath to the east of Kent Street to a 3.0 m wide shared path will improve directness of MCR along this corridor
<b>Norman Place to Hopetoun Circuit</b>	
- Access path through alley (between Kent Street and Norman Place) may contribute to low perception of social safety	- Improve lighting - Widen path to 3.0 m MCR
- Cycling on footpaths not an attractive option for cyclists due to poor comfort gradient from numerous access streets	- Marked cycle lanes on-road
- Roundabouts at Buxton Street and Hopetoun Circuit	- Buxton Street – continue path on-road - Hopetoun Circuit – utilise existing off-road path
<b>Stonehaven Crescent/ Mugga Way</b>	
- Numerous residents have tall hedges up to block boundary resulting in poor sightlines along footpath	- Provide buffer by offsetting cycleway from footpath - Provide separated one-way pair cycle lanes

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<b>Constraints</b>	<b>Opportunities</b>
- Poor coherence to bi-directional shared path along Flinders Way	- Improve coherence by retrofitting corridor with path of similar dimensions
- Constrained and grade separated road reservation	- Improve WCN within existing carriageway width
<b>Flinders Way</b>	
- Narrow refuge crossing at Mugga Way intersection	- Widen crossing
- Bi-directional path within eastern verge may limit options for the overall corridor	- Provide bi-directional path along corridor to tie into this path to improve coherence and attractiveness of route

# DRAFT

## 3.5 Lake Burley Griffin

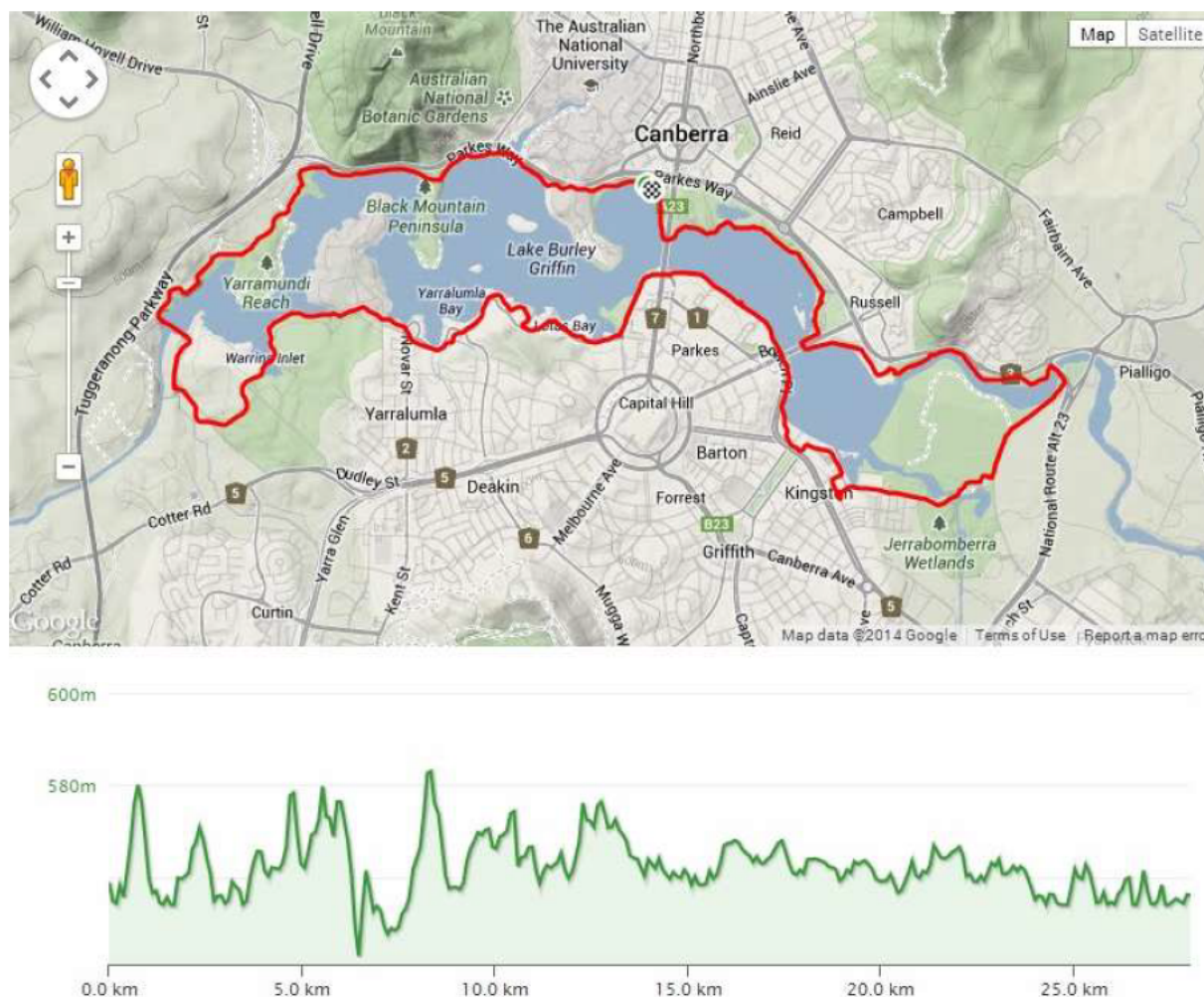


Figure 3-5 Lake Burley Griffin recreational route<sup>8</sup>

The Lake Burley Griffin loop is a popular and nationally recognised recreational route fringing one of Canberra’s prominent landmarks. The full circuit is 28 km in length and considered a ‘must do’ activity in the capital.

The majority of the loop is negotiable via a bi-direction shared path which is offset from the lake edge to ensure a high level of user amenity.

This circuit is a highly valued asset by all WCN users and its popularity is supported by its varying uses from high-speed morning rides to piscatorial activities. For this reason it is important to recognise that providing what may be considered safety improvements may in fact decrease amenity for certain user groups.

### Character

Length	Average Grade	Elevation Difference	Primary Users	Existing Infrastructure
28.0 km	0%	43 m	Vulnerable pedestrians/cyclists Mobile pedestrians/cyclists Sporting pedestrians/cyclists	Bi-Directional Path 2.5 m – 3.0 m wide

<sup>8</sup> Strava, Inc 2014, <www.strava.com>, last viewed 12 June 2014

**DRAFT****Constraints and Opportunities**

The constraints listed below are generally listed in an anti-clockwise manner.

Constraints	Opportunities
<b>Western Basin</b>	
<ul style="list-style-type: none"> <li>- Existing uncontrolled crossings at :               <ul style="list-style-type: none"> <li>• Liversidge Street</li> <li>• Garryowen Drive</li> <li>• Driveway crossing (south of Scrivener Dam bridge crossing)</li> <li>• Dunrossil Drive</li> <li>• Weston Park Road</li> <li>• Alexandrina Drive (2 x crossings)</li> <li>• Brown Street</li> <li>• Driveway crossing to gravel car park between Yarralumla Bay and Lotus Bay</li> <li>• Mariner Place (2 x crossing) access to Canberra Yacht Club carpark</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Reverse priority from vehicles to RR</li> </ul>
<ul style="list-style-type: none"> <li>- Smooth riding surface compromised at Warrina Inlet wooden plank bridge</li> </ul>	<ul style="list-style-type: none"> <li>- Retain bridge as it adds a level of user amenity along the RR</li> </ul>
<b>Eastern Basin</b>	
<ul style="list-style-type: none"> <li>- Gravel path edging lake through Bowen Park</li> </ul>	<ul style="list-style-type: none"> <li>- Formalise to shared path</li> </ul>
<ul style="list-style-type: none"> <li>- Existing RR from Bowen Park forces users onto Eastlake Parade</li> </ul>	<ul style="list-style-type: none"> <li>- Retrofit Eastlake Parade with 3.0 m wide bi-directional separated path to link with existing path along Eyre Street</li> </ul>
<ul style="list-style-type: none"> <li>- Poor connection along Eyre Street between The Causeway and Jerrabomberra Wetlands</li> </ul>	<ul style="list-style-type: none"> <li>- Improve path coherence by retrofitting Eyre Street with bi-directional path</li> </ul>
<ul style="list-style-type: none"> <li>- Path ends abruptly at Menindee Drive and forces users on-road</li> </ul>	<ul style="list-style-type: none"> <li>- Bypass Menindee Drive with new off-road connection which would also formalise gravel path edging the lake through Grevillea Park</li> </ul>
<ul style="list-style-type: none"> <li>- Poor RR signage through Kings Park</li> </ul>	<ul style="list-style-type: none"> <li>- Improve signage</li> </ul>
<ul style="list-style-type: none"> <li>- Path ends abruptly at Wendouree Drive forcing cyclists on-road</li> </ul>	<ul style="list-style-type: none"> <li>- Provide cycling (on-road or protected) along Wendouree Drive</li> </ul>

# DRAFT

## 3.6 Mirinjani Village, Namatjira Drive, Weston

This study area focusses on identifying age-friendly upgrades at two specific locations to improve the broader accessible pedestrian network. These locations are at the intersections of Namatjira Drive with Dillon Close and Parkinson Street.

The key consideration in providing age-friendly facilities is to provide a continuous, accessible path of travel along streets. This path must be of an appropriate width for wheelchairs and other mobility aids to pass through, free from obstruction, and of an acceptable grade.

Appropriate provision of these elements was assessed in accordance with AS 1428.1 which may include minimised crossing lengths and reorienting existing paths to achieve acceptable grades.

### Constraints and Opportunities

Constraints	Opportunities
<b>Dillon Close</b>	
- Steep footpaths from Namatjira Drive to underpass (14.5% grade along northern footpath and 13% grade along southern)	- Realign paths to achieve acceptable grades
- Narrow paths within vicinity of the site (approximately 1.2 m – 1.5 m wide)	- Widen paths to minimum 1.8 m (compliant with standards for allowing two wheelchairs to pass)
- Refuge crossing in close proximity to existing pedestrian (zebra) crossing. Appears to be a remnant of the previous pedestrian crossing before it was relocated to outside Mirinjani Retirement Village	- Remove crossing
- Refuge crossing creates an unsafe environment for less mobile pedestrians	
<b>Parkinson Street</b>	
- Uncontrolled T-intersection at Namatjira Drive/Parkinson Street intersection	- Signalise intersection to prioritise pedestrian movements
- Narrow paths within vicinity of the site (approximately 1.2 m to 1.5 m wide)	- Widen paths to minimum 1.8 m (compliant with Austroads for allowing two wheelchairs to pass)
- No path along eastern verge of Namatjira Drive	- Install 1.8 m wide concrete path to link with the existing pedestrian routes
- Steep footpaths intersect at underpass (north of Parkinson Street) ranging in steepness from 14.1% to 16.3%	- Realign paths where possible to achieve grade compliance

# DRAFT

## 3.7 Haig Park

Haig Park is a band of green space extending from Black Mountain to the west to Mount Ainslie to the east. Currently no formal connection exists between the north-south WCN corridors of Sullivans Creek and Dickson to City. Haig Park bisects both corridors and provides an opportunity for a primary east-west connector route between the two heavily trafficked corridors.

Evidence of numerous desire lines exist through the park. Formalising some of these paths and aligning these with the intentions of the Braddon Mixed Use Development Study (see Figure 3-6) will improve user safety and amenity along the corridor and ultimately provide a vital WCN connection across Northbourne Avenue.

The existing crossings along the routes include:

- Northbourne Avenue signalised crossing
- Uncontrolled carpark accesses off Masson Street and Girrahween Street

The Braddon Mixed Use Area Braddon Mixed Use Area Guidelines identifies a 4.0 MCR to the north of Girrahween Street (see Figure 3-6) consisting of a 1.6 m wide cyclepath and 2.4 m wide pedestrian path. This ultimate arrangement is considered in identifying potential options through the park.

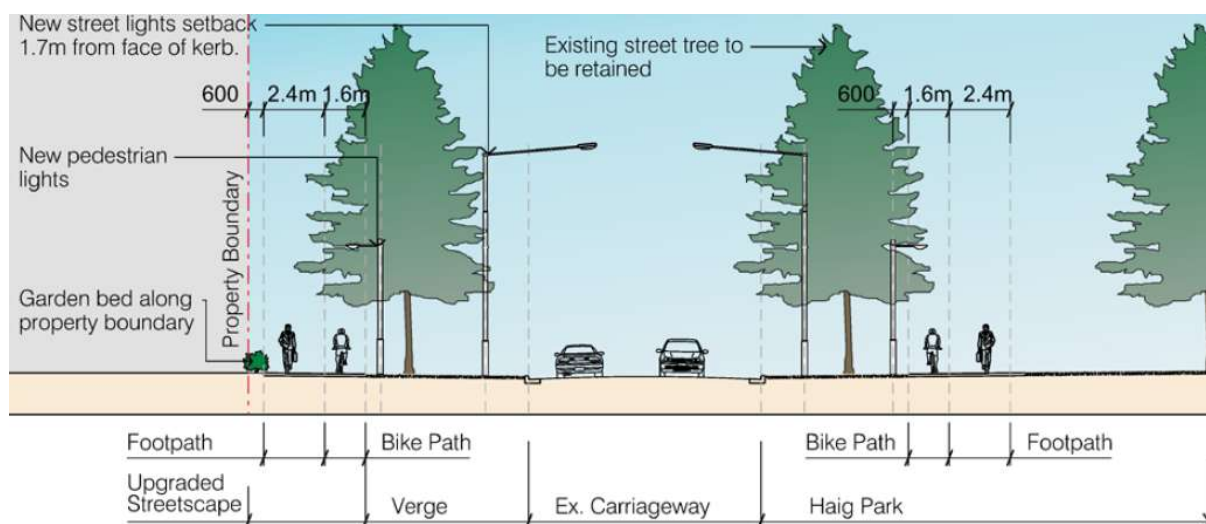


Figure 3-6 Girrahween Street Section (Braddon Mixed Use Area Guidelines)

Environment ACT indicated the presence of a critical habitat of Golden Sun Moth located to the east of the park as shown in Figure 3-7. This is a highly sensitive area and requires appropriate consideration for a proposed WCN along this corridor.

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Figure 3-7 Haig Park – Golden Sun Moth habitat locations

**Constraints and Opportunities**

Constraints	Opportunities
- Both Masson Street and Girrahween Street have signposted speeds of 60 km/h	- This speed environment suggests the need for both physical and visual separation (offset from kerb)
- Numerous street furniture/obstacles to consider including signposts, light columns and overhanging tree branches through the park and within the existing road reservation	- Offset MCR from roadway
- Park is zoned as zoned PRZ1: URBAN OPEN SPACE and may have some heritage values to be considered	- Align path within road reservation to avoid encroaching into park land
- Northbourne Avenue is a major signalised intersection that will require modification to accommodate this MCR connection	- Upgrade crossings to provide visual separation between cyclists and pedestrians
- Existing facilities within Haig Park include: <ul style="list-style-type: none"> <li>• Two carp parking facilities located to the north of Girrahween Street</li> <li>• Government Depot located to the south of Henty Street</li> <li>• Scout Hall located to the north of Masson Street</li> </ul>	- Align MCR outside facilities
- Critical Golden Sun Moth habitat recorded to the west of Torrens Street (shown in Figure 3-7)	- This constraint ties in closely with the Dickson to City MCR whereby providing this route down Mort Street/Lowanna Street avoids the path impacting on the identified habitat
- Environment ACT advised that the MCR should be located outside this area	
- Braddon Mixed Use Study identifies a 4.0 MCR to the north of Girrahween Street (see Figure 3-6) consisting of a 1.6 m wide cyclepath and 2.4 m wide pedestrian path.	- Adopt this 4.0 m wide MCR allowance through Haig Park to provide a 2.5 m wide shared path and 1.5 m wide pedestrian path.
- This cross section is based on a premise of urban renewal through the precinct.	
- Narrow concrete path (1.2 m wide) within northern verge of Girrahween Street	- Can be widened to minimum of 2.5 m which is adequate for a bi-directional shared path

# DRAFT

## 4.0 Options Assessment

### 4.1 Sullivans Creek

#### Option 1: Reversing user priority

This option involves enforcing WCN priority at the existing uncontrolled intersections of Condamine Street, Masson Street, and Goodwin Street. This provides an opportunity to improve the continuity of the WCN while simultaneously providing a measure to control traffic volume and speed in local streets.

The existing pedestrian crossing at David Street requires further consideration as it does not accommodate all users as cyclists are required by law to dismount at formal pedestrian crossings thus affecting the rider's level of service. The WCN priority crossing at De Burgh Street is an example of a workable solution where priority is given to pedestrians and cyclists whilst meeting legislative requirements. A variation of this crossing is shown in Figure 4-1 (the exceptions being that in the ACT all off-road paths are shared by both cyclists and pedestrians).

Implementing this type of arrangement at the uncontrolled crossings would improve safety and amenity along the entire corridor whilst meeting current standards and guidelines.

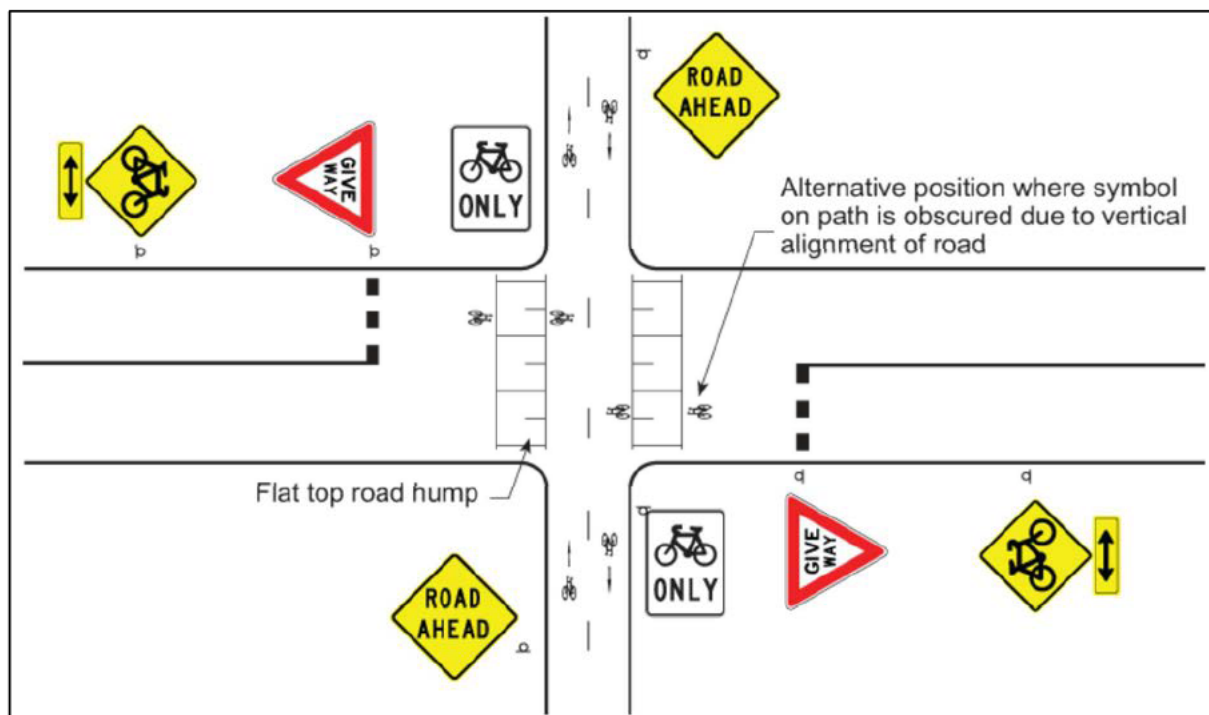


Figure 4-1 Cyclist priority treatment for use at low-volume street crossings as installed at De Burgh Street (Austroads Part 4)

Pros	Cons
<ul style="list-style-type: none"> <li>- Meets the intention of the corridor by prioritising WCN users</li> <li>- Raised crossing provide vertical separation to roads thus incorporates speed reduction measures for collector roads</li> </ul>	<ul style="list-style-type: none"> <li>- May create a negative mentality in allowing cyclists to increase speed at crossing points</li> <li>- Constrains road network by increasing vehicle delay time</li> </ul>

## DRAFT

### Option 2: Improve lighting

This option involves improving the standard of lighting along the corridor to improve safety and amenity for both vehicles and riders. Improved lighting provision at existing road crossings is particularly critical where driver vision is often hindered by darker areas.

Adequate pedestrian lighting would be installed in accordance with AS 1158.3.1.

Pros	Cons
<ul style="list-style-type: none"> <li>- Improves user safety throughout</li> </ul>	<ul style="list-style-type: none"> <li>- Costly infrastructure</li> <li>- May create undesirable light spill to adjacent properties</li> </ul>

### Option 3: Widen path from 2.5 m to 3.0 m in accordance with MCR requirements

VicRoads Cycle Notes 21 suggests a shared path width of 2.5 m is acceptable on paths that carry less than 600 cyclists per hour or less than 40 pedestrians per hour.

Although the path is likely to achieve these cyclist numbers, pedestrian numbers particularly around the school zones warrant the need for a wider path. Existing standards for MCR (including MIS05) suggest a 3.0 m wide path which allows users to pass without the need to move off the path.

Pros	Cons
<ul style="list-style-type: none"> <li>- Path upgraded to standard width</li> <li>- Increases buffer for overtaking within the same lane</li> </ul>	<ul style="list-style-type: none"> <li>- Path requires realignment in some areas to due reduced clearances to trees</li> <li>- Existing bridge crossing at Sullivans Creek and Lyneham wetlands require upgrade</li> </ul>

### Option 4: Increase hard standing area at mid-block signalised crossing to Dickson

This option involves increasing the hard standing area at the existing signalised pedestrian crossing of Northbourne Avenue. This area is adjacent to an existing bus stop and experiences a large volume of pedestrian and cyclists movements during peak periods.

Pros	Cons
<ul style="list-style-type: none"> <li>- Improves user safety by providing additional space for idled users</li> </ul>	<ul style="list-style-type: none"> <li>- Nil</li> </ul>

# DRAFT

## 4.2 Dickson to City

### Option 1: One way pair/Bi-Directional Copenhagen-Style Lane

This option involves retrofitting the existing corridor with on-road separated cycling lanes in the form of one-way pair or bi-directional paths as shown in Figure 4-2 and Figure 4-3 respectively.

The key benefit of separated cycleways is the perceived benefit they offer to cyclists from general traffic. The level of separation between cyclists and motorists is a key driver in perceived safety, which in turn is a key driver of demand for cycling. There is a strong indication that, if separated cycleways were provided, there could be significant increase in cycling. Up to 84% of non-regular cyclists would be willing to consider cycling or cycling more often if dedicated bicycle lanes and off-road routes were available (Environmetrics, 2006).



Figure 4-2 Separated bicycle lane, Swanson Street, Melbourne (Complete Streets Guidelines for Urban Street Design)



Figure 4-3 Bi-directional path in carriageway, St Kilda, Melbourne (Complete Streets Guidelines for Urban Street Design)

Pros	Cons
<ul style="list-style-type: none"> <li>- Both options provide the cyclist with visual and physical separation to road traffic</li> <li>- One-way pair 1.0 m separation median doubles as a bicycle parking facility as shown in Figure 4-2</li> <li>- Bi-directional lanes require less overall width to install compared to one-way pair option</li> </ul>	<ul style="list-style-type: none"> <li>- One-way pair requires larger overall width for installation compared to bi-directional option</li> <li>- Bi-directional lanes always have one lane in a contraflow arrangement</li> <li>- Separated bicycle lanes require more space than bicycle lanes or mixed-traffic streets</li> </ul>

# DRAFT

## Option 2: Improve east-west connectivity from Sullivans Creek through to Challis Street

This option involves two primary intersection improvements of:

- Northbourne Avenue signalised intersection - upgrading this intersection to provide user separation would greatly improve path amenity through this crossing which currently experiences long wait times between signal phases.
- Antill Street uncontrolled crossing - signalling this crossing to improve path continuity from the north of Antill Street to the Dickson to City MCR at Challis Street. An issue worth noting is that although the signalisation of the crossing gives priority to the MCR, it simultaneously creates an inferior user experience where a cyclist travelling from Sullivans Creek to Challis Street would be required to navigate three signalised crossing over a short distance. The impact these crossings create onto the WCN could be reduced by shifting the bi-directional path to the southern verge of Mouat Street and Antill Street.



Figure 4-4 Antill Street improvement options

Pros	Cons
<ul style="list-style-type: none"> <li>- Retaining northern option increases coherence of the existing shared path</li> <li>- Formalising the southern option avoids the intersection crossing of Antill Street thus reducing the delay time associated with navigating multiple intersections</li> </ul>	<ul style="list-style-type: none"> <li>- Southern options reduces user amenity that would be present along Southwell Park</li> <li>- Northern option requires crossing priority at Antill Street to link with Dickson to City MCR</li> </ul>

# DRAFT

## Option 3: Cowper Street – Completing on-road cycle lanes

This option involves improving the on-road cycling lanes along Cowper Street thus providing connectivity into the Dickson to City MCR.

Connectivity from Cowper Street into the MCR would be provided via Dooring Street.

Pros	Cons
<ul style="list-style-type: none"> <li>- Formalises this as a feeder route from the outlier suburbs of Watson, Hackett, Downer</li> <li>- Improves on-road facilities for cyclists which are currently the vulnerable user along this corridor</li> </ul>	<ul style="list-style-type: none"> <li>- Nil</li> </ul>

## Option 4: Cowper Street – Shared Path

This option involves upgrading the existing footpath within the western verge of Cowper Street, between Antill Street and Dickson Place, to a 2.5 m wide shared path (see .



Figure 4-5 Cowper Street shared path option

Pros	Cons
<ul style="list-style-type: none"> <li>- Provides off-road shared path connectivity to existing path along floodway</li> <li>- Improves user safety perception compared to on-road lanes</li> <li>- Western verge is optimal for path to activate Dickson commercial precinct</li> </ul>	<ul style="list-style-type: none"> <li>- Constrained verge, particularly around existing bus stops</li> <li>- Dickson Swimming Pool may warrant formalising footpath within eastern verge instead</li> </ul>

## Option 5: Torrens Street – Alternative (Secondary) Route to City

Torrens Street was considered as an alternative/additional corridor to Mort Street for the Dickson to City MCR.

Torrens Street is planned for urban renewal within the Braddon Mixed Use Study which identifies an ultimate arrangement of 1.6 m wide one-way pair separated cycling lanes and 2.4 m wide paved verge area for pedestrians. Such an arrangement supports the provision of one-way pair dedicated cycling lanes along the Dickson to City corridor (Option 1); however, Torrens Street does not provide the most direct route into the city when considered as an ATC in-lieu of Mort Street.

# DRAFT

Pros	Cons
<ul style="list-style-type: none"> <li>- Aligns with Braddon Mixed Use Study as part of community route into the city</li> <li>- Intersection of Cooyong Street/Torrens Street to be signalised in the future prioritises the WCN at this currently uncontrolled crossing</li> <li>- Avoids bus route along Mort Street</li> <li>- Route can utilise MCR connection through Haig Park</li> </ul>	<ul style="list-style-type: none"> <li>- Too far east of the original corridor</li> <li>- Cooyong Street/Torrens Street intersection currently uncontrolled</li> <li>- Existing trees provide a higher level of amenity to the WCN</li> </ul>

## Option 6: Mixed Use Traffic Corridor

This option involves narrowing lane widths (preferred 3.2 m) with parking on either side to create a confined and slower speed environment. NSW Bicycle Guidelines recommends this is achievable where the street is slowed to 30 km/h and carries less than 3,000 vpd.

Bicycle lanes at lower speed roundabouts should be encouraged as there are dis-benefits with providing marked cycle lanes through roundabouts, the general perception being that cyclists should be contained within the marked lane. Bicycle pavement symbols should be marked on-road as shown in Figure 4-6 or Figure 4-7.



Figure 4-6 Macrae Road and Train Street, Perth<sup>9</sup>



Figure 4-7 Pigdon Street and Garton Street, Melbourne

Pros	Cons
<ul style="list-style-type: none"> <li>- Aligns with Mort Street ultimate arrangement identified in Braddon Mixed Use Study</li> <li>- Opportunity for adopting Active Travel Street philosophy along full corridor (requires speed reduction measures to achieve 30 km/h for vehicles)</li> </ul>	<ul style="list-style-type: none"> <li>- Doesn't provide the same level of safety compared to separated cycle lanes</li> </ul>

## Option 7: Widen footpaths to minimum 1.8 m

The coherence and safety of the pedestrian network can be improved by widening existing footpaths to a minimum of 1.8 m and a desirable width of 2.0 m.

Pros	Cons
<ul style="list-style-type: none"> <li>- Complies with minimum width requirement for age-friendly facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Increased width may encourage more cyclists to use footpath in-lieu of dedicated cycle paths</li> </ul>

<sup>9</sup> Effectiveness of On-Road Bicycle Lanes at Roundabouts in Australia and New Zealand – Austroads Research Paper AP-R461-14

# DRAFT

## 4.3 Canberra Avenue

### Option 1: Upgrade concrete footpath between Ipswich Street and Eastlake Parade

This option involves upgrading the existing concrete path (varies in width from 1.2 m to 1.5 m wide) between Ipswich Street and Eastlake Parade to a bi-directional shared path (matching the existing path between Ipswich Street and Queanbeyan).

Pros	Cons
- Improves coherence of MCR	- Requires consideration of comfort gradient and directness at intersections to reduce delay time (see Option 2)

### Option 2: Upgrade signalised intersections to provide user separation

Providing user separation where pedestrian crossings exist will legally allow cyclists to cross the intersection without dismounting. This will adopt a similar arrangement at the Marcus Clarke Street/Alinga Street intersection which provides a greater level of cycling amenity (see example in Figure 4-8). The following intersections will require upgrade:

- Tom Price Street
- Newcastle Street
- Ipswich Street
- Nyrang Street
- Cunningham Street
- Eastlake Parade



Figure 4-8 User separation through signalised intersection

## DRAFT

Pros	Cons
<ul style="list-style-type: none"> <li>- Provides separation to WCN users</li> <li>- Legally permits cyclists to cycle through the intersection</li> </ul>	<ul style="list-style-type: none"> <li>- Requires upgrades to all intersections along route</li> </ul>

### Option 3: Continue path along Canberra Avenue service road

Currently the existing off-road bi-directional path forces cyclist onto the Canberra Avenue service road. This option involves improving path continuity by retrofitting the service road corridor with an off-road bi-directional path.

Pros	Cons
<ul style="list-style-type: none"> <li>- Avoids forcing the cyclist into an unsafe environment by improving path continuity</li> </ul>	<ul style="list-style-type: none"> <li>- Nil</li> </ul>

### Option 4: Improving path continuity through existing carparks

Provide off-road bi-directional path through the carpark accesses between:

- Giles Street and Eyre Street
- Eyre Street and Dawes Street
- Dawes Street and Cunningham Street

Pros	Cons
<ul style="list-style-type: none"> <li>- Avoids forcing the cyclist into an unsafe environment by improving path continuity</li> </ul>	<ul style="list-style-type: none"> <li>- Consideration of parked vehicles may warrant separated path incorporating median strip</li> </ul>

### Option 5: Eyre Street

Retrofit Eyre Street by either:

- Widening western footpath to off-road bi-directional path to link with the Wentworth Avenue shared path and provide greater amenity for users accessing the commercial facilities within Manuka
- Retrofit carriageway with on-street separated one-way pair cycle lanes
- Retrofit carriageway with on-street separated bi-directional path

Pros	Cons
<ul style="list-style-type: none"> <li>- Off-road bi-directional path provides the greater level of coherence to the WCN as there is better connectivity to the shared path at each end of this street</li> <li>- On-street options provide the greater level of comfort gradient whereby all pram crossings are avoided</li> </ul>	<ul style="list-style-type: none"> <li>- Some user groups may be dissatisfied by preferred option</li> </ul>

### Option 6: Complete on-road routes

Pedal Power raised safety concerns with heavy vehicle traffic along Wentworth Avenue. This issue directly impacts on the MORR along this corridor which is currently incomplete. This option involves filling the gaps in the MORR to improve cyclist safety.

Pros	Cons
<ul style="list-style-type: none"> <li>- Improves facilities for on-road cyclists along MCR</li> </ul>	<ul style="list-style-type: none"> <li>- Nil</li> </ul>

# DRAFT

## 4.4 Phillip to Manuka

### Option 1: Off-road path link east of Yamba Drive

This option involves completing the off-road path link (bi-directional) between Carruthers Street and Launceston Street to mirror the existing path located west of Yarra Glen.

This also includes provision of an east-west connection from this path to the existing underpass at Groom Street.

Pros	Cons
<ul style="list-style-type: none"> <li>- Links existing bi-directional path from Carruthers Street to Launceston Street</li> <li>- Crucial infrastructure to facilitate the Phillip to Manuka MCR</li> </ul>	<ul style="list-style-type: none"> <li>- East-west path from Yarra Glen to Groom Street passes through floodway. MIS05 recommends paths through floodways be located as high as possible or above the 2 year storm average recurrence interval (ARI).</li> <li>- Carruthers Street can provide suitably alternative route when path is unserviceable.</li> </ul>

### Option 2: Upgrade existing footpath between Groom Street and Kent Street

The existing concrete footpath from the Groom Street underpass to (and along) Kent Street is approximately 1.2 m to 1.5 wide. This option involves upgrading this path to a 2.5 m wide bi-directional path and extending this to the footpath connecting Kent Street to Norman Street.

Pros	Cons
<ul style="list-style-type: none"> <li>- Attractive path in terms of directness, coherence, and comfort</li> <li>- Existing path is located on the higher side of the floodway</li> </ul>	<ul style="list-style-type: none"> <li>- Lighting required along to improve passive surveillance via CPTED Guidelines, particularly at Groom Street and Kent Street underpasses</li> </ul>

### Option 3: Cycling on-street along Norman Street and Stonehaven Crescent

This option supports cycling on-street by retrofitting the highly residential Norman Street and Stonehaven Crescent with bicycle marking on road as shown in Figure 4-6.

Pros	Cons
<ul style="list-style-type: none"> <li>- The myriad of pram crossing encountered along the existing footpaths results in an inferior cycling experience (poor comfort gradient) thus supporting on-street cycling as a favourable alternative.</li> <li>- Shared use of roadway can be afforded in residential areas where speeds are 50 km/h or less</li> </ul>	<ul style="list-style-type: none"> <li>- Forms weak link along the MCR which is predominantly bi-directional shared path thus forcing user to switch between network types</li> <li>- Existing pavement condition needs to be upgraded to avoid potential hazards such as drainage grates and uneven surfaces</li> </ul>

**DRAFT****Option 4: Separated one-way pair cycling lanes along Mugga Way**

This option involves retrofitting Mugga Way with visually and physically separated bike lanes to between Stonehaven Crescent and Flinders Way. A 1.8 m (min) path width with 400 mm wide broken median separator for driveways is proposed.

Pros	Cons
<ul style="list-style-type: none"> <li>- Provide a safe and attractive option for cyclists along this major collector which has 60 km/h posted speed</li> <li>- Avoids the issue with poor sightlines along existing footpaths (acceptable for slower speeds along footpaths)</li> </ul>	<ul style="list-style-type: none"> <li>- Non-coherent facilities forcing cyclists from bi-directional path (Flinders Way) to one-way pair</li> </ul>

**Option 5: Upgrading intersections and paths along Launceston Street**

This option involves upgrading the southern verge footpath between Yamba Drive and Callum Street with a 3.0 m wide shared path (where permissible).

Pros	Cons
<ul style="list-style-type: none"> <li>- Completes the MCR link to Phillip and further to the bi-directional path to the east of Yarra Glen (via Callum Street)</li> <li>- Greater level of amenity provided along Eddison Park</li> <li>- Path avoids crossing Launceston Street and provides a more direct route into the Phillip commercial precinct</li> </ul>	<ul style="list-style-type: none"> <li>- Launceston Street floodway overpass requires widening to accommodate nominated path width</li> <li>- Canberra College (Woden Campus) may warrant upgrading the northern footpath in some capacity</li> <li>- Constrained verges may prohibit 3.0 m width path from being achieved thus making the upgrade of both paths to 2.0 m width an attractive option</li> </ul>

# DRAFT

## 4.5 Lake Loop

### Option 1: Completing the loop

This option involves upgrading segments of the eastern basin loop that experience poor user safety and amenity. These areas are:

- Formalising the gravel path edging the lake through Bowen Park including widening bridge over floodway
- Retrofitting 2.5 m wide bi-directional separated (visual and physical) path along Eastlake Parade matching the existing path along Eyre Street
- Upgrading the path between Eyre Street and Jerrabomberra wetlands (undertaken as part of separate investigation)
- Realigning path off Menindee Drive - improving path connectivity through Grevillea Park and formalising existing gravel path edging the lake to the south of Menindee Drive (priority crossing required across Menindee Drive)
- Marking on-road cycle lanes along Wendouree Drive to provide a faster cycling option parallel to RG Menzies Walk. Consideration should also be given to formalising the desire line through Kings Park to improve connectivity from shared path to RG Menzies walk – this provides inexperienced or recreational cyclists the option of bypassing the on-road lanes along Wendouree Drive

Pros	Cons
- Formally completes the loop	- Nil

### Option 2: Improve legibility along eastern basin

This involves a holistic assessment of signage along the complete lake loop and providing a consistent system and easily navigable system. Particular areas along the eastern basin require appropriate signage to avoid user confusion.

Pros	Cons
- Adopts existing signage to provide a complete RR	- Nil

### Option 3: Reverse path priority from vehicles to walkers and cyclists

This involves upgrading numerous crossings along the western basin to give priority to the lake path. These crossings are located across:

- Liversidge Street
- Garryowen Drive
- Driveway crossing (south of Scrivener Dam bridge crossing)
- Dunrossil Drive
- Weston Park Road
- Alexandrina Drive (2 x crossings)
- Brown Street
- Driveway crossing to gravel car park between Yarralumla Bay and Lotus Bay
- Mariner Place (2 x crossing) access to Canberra Yacht Club carpark

Pros	Cons
- Improves WCN safety and delay time	- May cause congestion issues to other streets where drivers attempt to avoid highly trafficked RR crossings

# DRAFT

## 4.6 Mirinjani Village, Namatjira Drive, Weston

### General

#### Option 1: Upgrading footpaths to minimum 1.8 m width

Upgrading all paths within the vicinity of the site to 1.8 m width will allow the passing of two wheelchairs along the path.

### Dillon Close

#### Option 1: Installing grade compliant footpaths to the north and south of Namatjira Drive

This involves realigning the existing 14.5% grade footpath parallel to Dillon Close and the 13% grade footpath to the south (adjacent to the McDonalds) to achieve 5% maximum gradients. This may involve raising the path in some instances, for example, along Dillon Close where the existing road grade is 6.7%.

Pros	Cons
- Achieves grade compliant paths to improve the Accessible Pedestrian Network	- Nil

#### Option 2: Upgrade/realign Dillon Close pram crossing

Upgrade both pram crossings across Dillon Close to appropriate alignment and grades.

Pros	Cons
- Improves comfort gradient and safety at existing crossing	- Nil

#### Option 3: Remove refuge crossing

Remove existing pedestrian refuge crossing along Namatjira Drive, east of retirement village.

Pros	Cons
- Removes potentially unsafe crossing located in close proximity to another zebra crossing	- Filters all pedestrian traffic to the pedestrian crossing outside Mirinjani Retirement Village - Crossing currently acts as speed reduction measure to vehicular traffic so removing may reverse this effect

### Parkinson Street

#### Option 1: Signalise Parkinson Street/Namatjira Drive intersection

This option involves signalising the Parkinson Street intersection and providing pedestrian crossings at each leg.

Pros	Cons
- Priority given to pedestrian network	- May impact on traffic volumes within adjacent road networks

#### Option 2: Install footpath within western verge of Namatjira Drive

Installing a footpath (minimum 1.8 m width) will improve network connectivity between the Namatjira Drive underpass and the Parkinson Street intersection.

Pros	Cons
- Improves connectivity of pedestrian network	- Nil

# DRAFT

## Option 3: Install grade compliant footpaths within western verge of Namatjira Drive

This option involves realigning steep the paths (14.1% to 16.3%) at the Namatjira Drive underpass to achieve compliant grades.

Pros	Cons
- Achieves grade compliant paths to improve the Accessible Pedestrian Network	- May not be achievable in some locations due to constraints with existing terrain

# DRAFT

## 4.7 Haig Park

### Option 1: Formalising the southern route

This option involves formalising the route closest within the road reservation.

Pros	Cons
<ul style="list-style-type: none"> <li>- Located in closer proximity to Masson Street and Girrahween Street providing greater exposure to street lighting and thus compliance with CPTED Guidelines</li> <li>- Existing footpath to the east of Northbourne Avenue can be widened to</li> <li>- Path is aligned with existing signalled Northbourne Avenue crossing improving user safety compared to Options 2 and 3 which would likely require a link to back into the crossing</li> <li>- Alignment is contained within existing road reservations thus avoids encroaching into Haig Park itself (currently zoned PRZ1: URBAN OPEN SPACE)</li> </ul>	<ul style="list-style-type: none"> <li>- Masson Street and Girrahween Street signposted at 60 km/h speed which suggests the need for both physical and visual separation (offset from kerb)</li> <li>- Numerous street furniture including signposts, light columns and overhanging tree branches</li> </ul>

### Option 2 and 3: Formalising the northern routes

These options involve formalising the routes through the Park itself.

Pros	Cons
<ul style="list-style-type: none"> <li>- Provides a greater level of amenity to the WCN network</li> <li>- Path continuity results in unsafe crossing at Northbourne Avenue</li> </ul>	<ul style="list-style-type: none"> <li>- Alignment is outside the existing road reservations thus encroaching into Haig Park block boundary (currently zoned PRZ1: URBAN OPEN SPACE)</li> <li>- May impact on Golden Sun Moth habitat identified to the east of the park</li> </ul>



Figure 4-9 Haig Park Options

# DRAFT

## Option 4: User separation through Northbourne Avenue

The Northbourne Avenue crossing can be widened to accommodate user separation to reflect a similar arrangement adopted by the Civic Cycle Loop crossing at the Marcus Clarke Street/Alinga Street signalised intersection. Figure 4-10 depicts a multi-lane signalised intersection with an off-road bi-directional cyclepath separated from the pedestrian path.

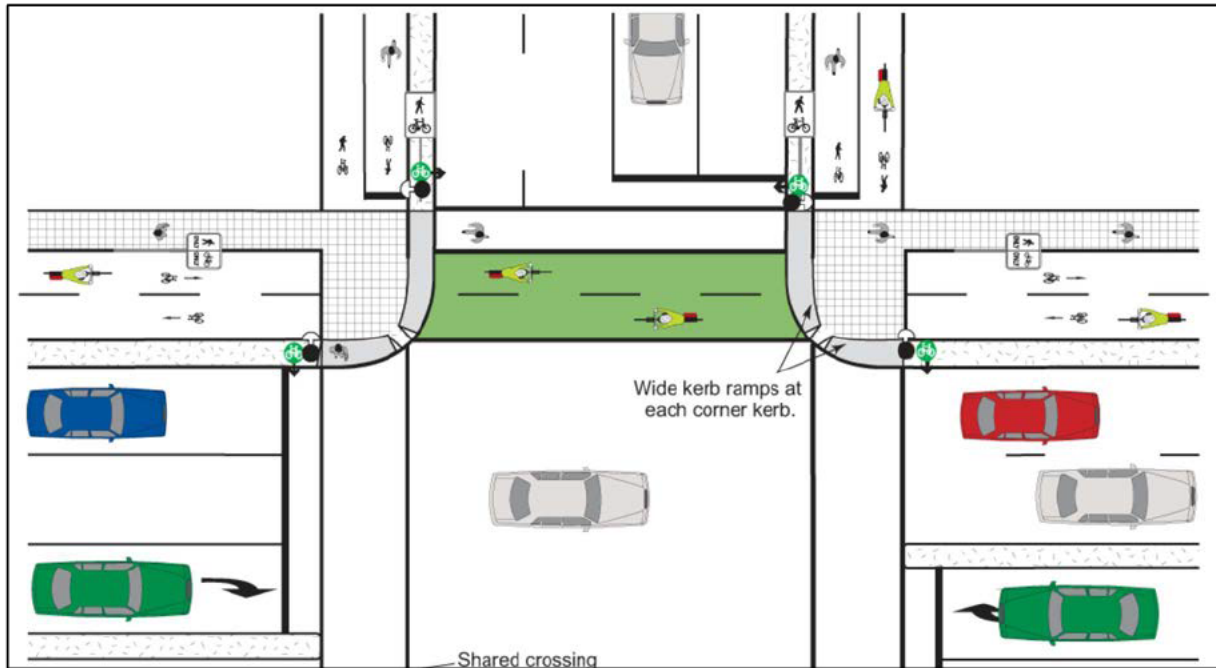


Figure 4-10 Separated path crossing

Pros	Cons
<ul style="list-style-type: none"> <li>- Favours southern alignment options closer to Masson Street/Girrahween Street</li> <li>- Aligns with ultimate arrangement through Haig Park as identified in Braddon Mixed Use Area Study</li> </ul>	<ul style="list-style-type: none"> <li>- Intersection doesn't align with northern MCR options through Haig Park</li> </ul>

**DRAFT****5.0 Stakeholder Engagement**

The following stakeholders were contacted for input into this report.

Department	Point of Contact
CSIRO	Ms Trish Bootes Manager, Conservation Planning (02) 6205 0805 Trish.Bootes@act.gov.au  Dr Michael Mulvaney Senior Environmental Planner (02) 6205 9964 Michael.Mulvaney@act.gov.au
Pedal Power	Roger Bacon  Jeff Ibbotson

# DRAFT

## 6.0 Multi Criteria Analysis

Within each section a high level assessment was undertaken of the potential treatment measures against the decision making criteria developed by Roads ACT. These criteria include:

#	Criteria	Comments
1	Safety	Includes path width, lighting, conflict points, interaction with vehicles and other path users
2	User amenity	Includes landscape and aesthetic experience
3	Distance and Time	Includes gradients
4	Indicative Cost	Cost of the scheme (CAPEX)
5	Environmental impacts	Biodiversity, heritage, contamination etc.
6	Need/Demand	Is there existing demand, what is the perceived future demand

### 6.1 Methodology

### 6.2 Assessment

### 6.3 Outcome

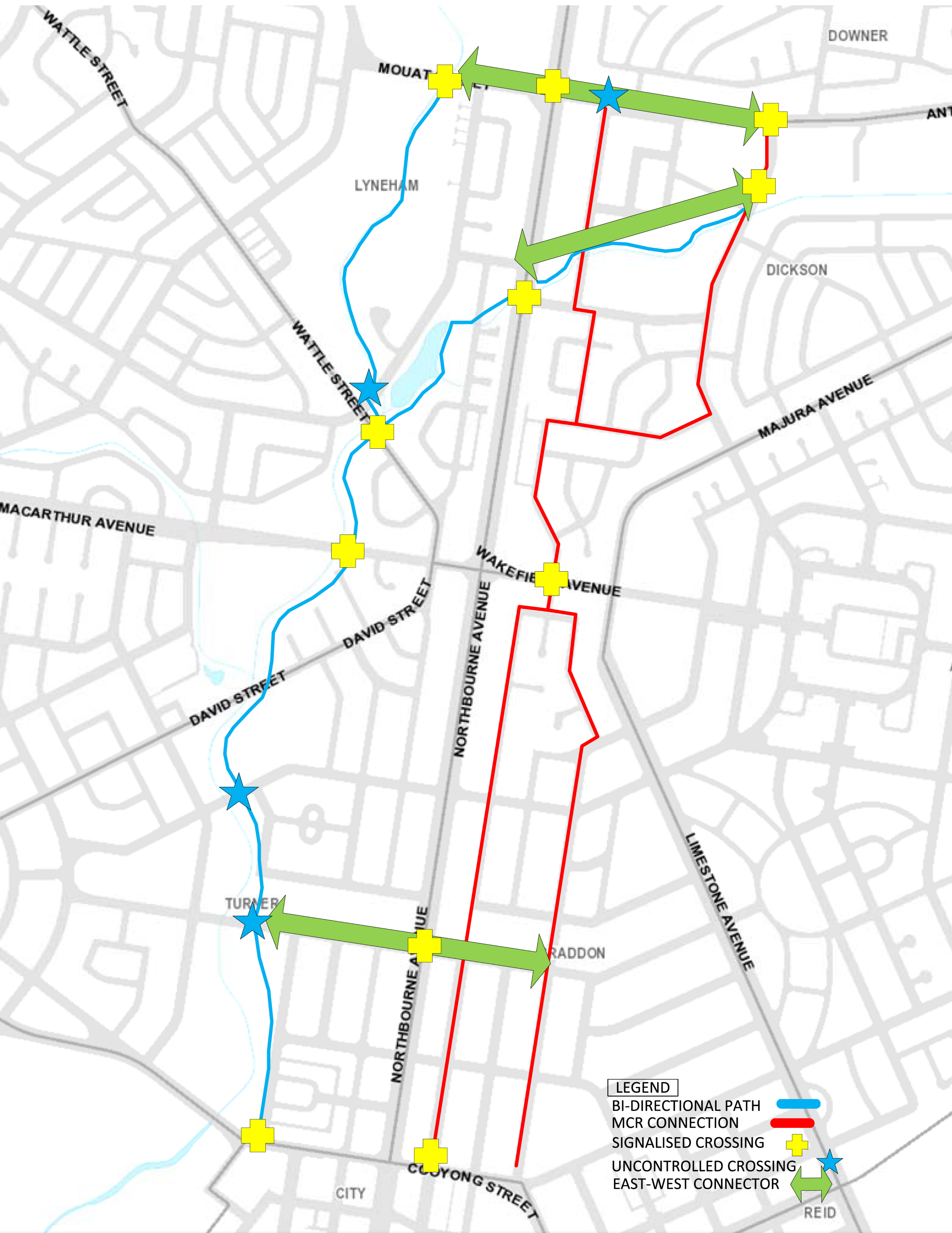
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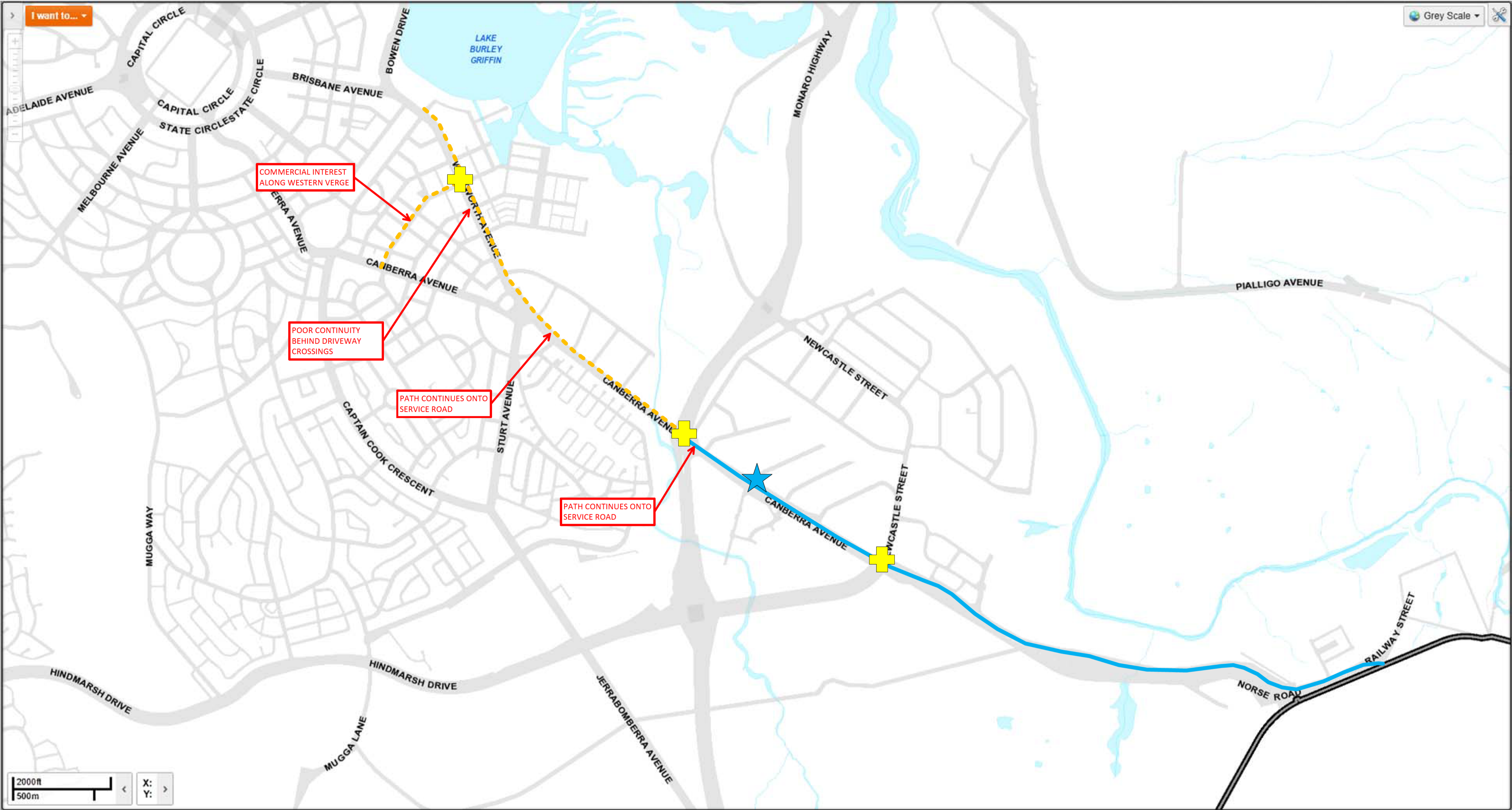
## 7.0 Conclusion

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Appendix A

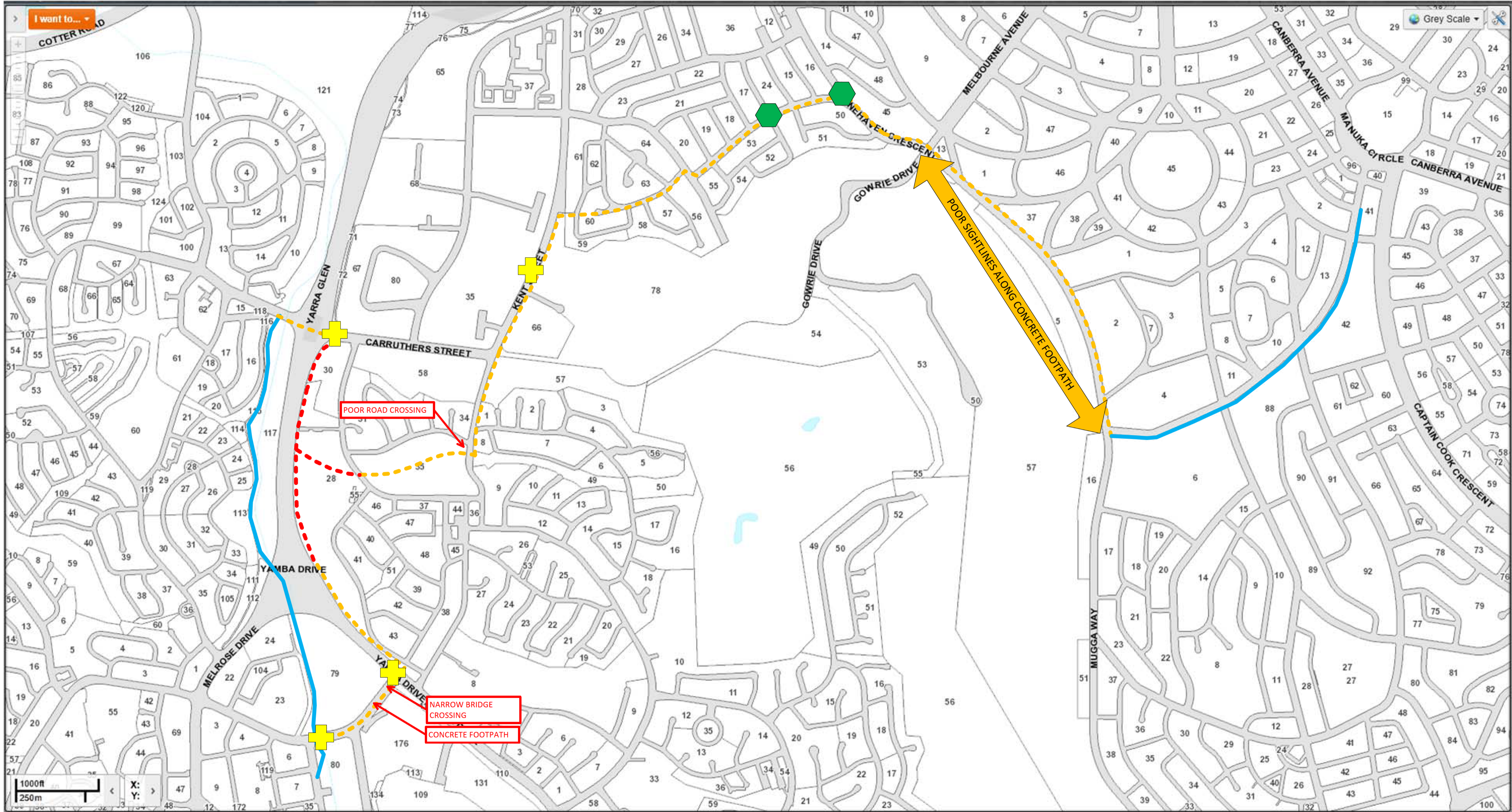
# Constraints Maps





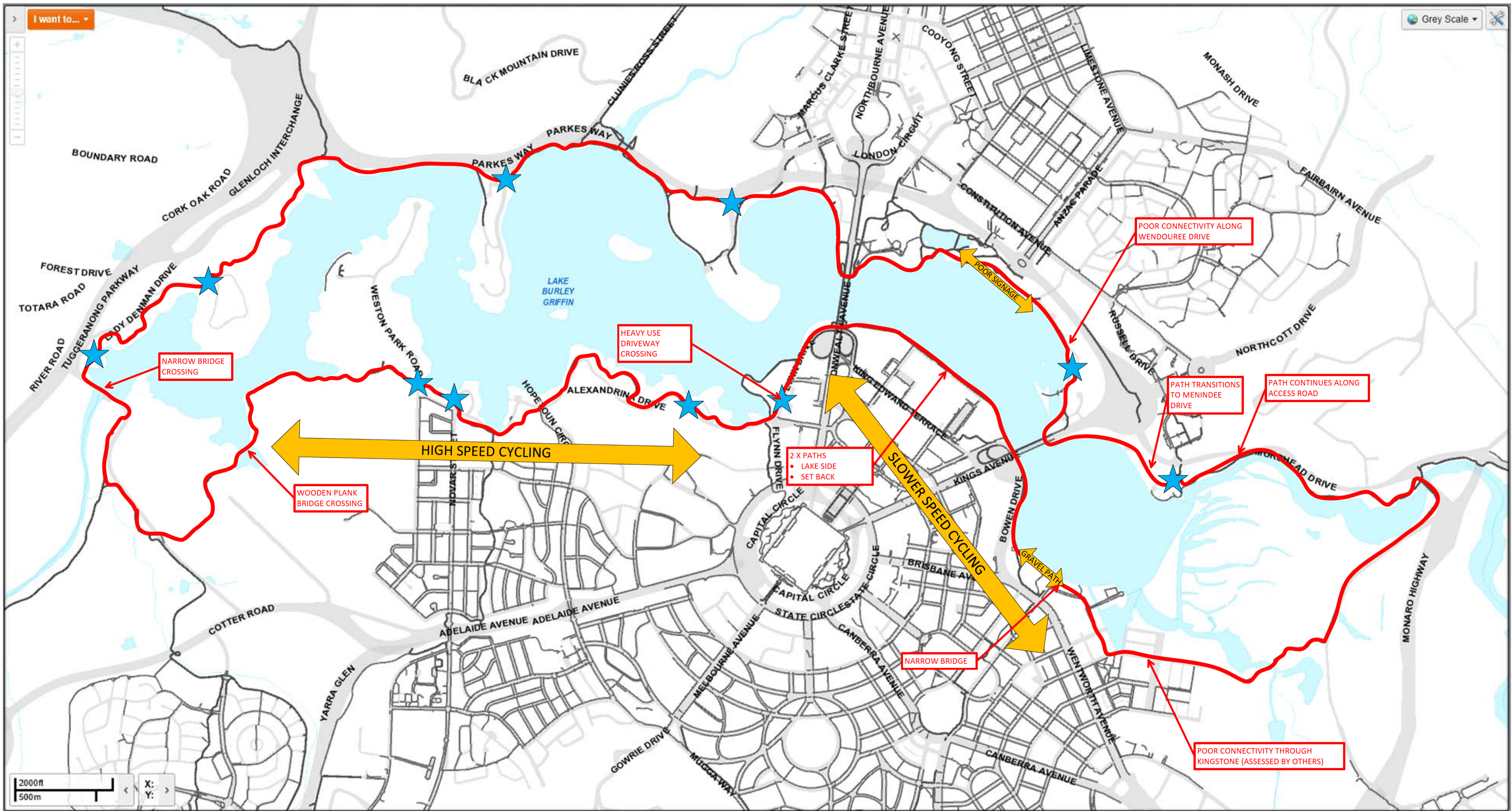
**LEGEND**

- BI-DIRECTIONAL PATH
- CONCRETE FOOTPATH
- NO MCR CONNECTION
- ROUNDBABOUT
- SIGNALISED CROSSING
- UNCONTROLLED ROAD/DRIVEWAY CROSSING



**LEGEND**

- BI-DIRECTIONAL PATH ▬
- CONCRETE FOOTPATH - - -
- NO MCR CONNECTION - - -
- ROUNDBABOUT ⬡
- SIGNALISED CROSSING +



LEGEND

- MCR █
- UNCONTROLLED ROAD/DRIVEWAY CROSSING ★



**LEGEND**

- COMPLIANT FOOTPATH █
- NO-COMPLIANT FOOTPATH █
- PATH CONNECTION PROPOSED - - -



**LEGEND**

- COMPLIANT FOOTPATH
- NO-COMPLIANT FOOTPATH
- PATH CONNECTION PROPOSED

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